LIBRARY
OF THE
UNIVERSITY
OF ILLINOIS

610.5
AM
v.47[2], cop.6

The person charging this material is responsible for its return to the library from which it was withdrawn on or before the **Latest Date** stamped below.

Theft, mutilation, and underlining of books are reasons for disciplinary action and may result in dismissal from the University.

To renew call Telephone Center, 333-8400

UNIVERSITY OF ILLINOIS LIBRARY AT URBANA-CHAMPAIGN

APR 9 1985

OCT 07 1988

SEP 23 1989

NOV 22 1999

BUILDING USE ONLY

L161—O-1096

The Journal of the American Medical Association

Published under the Auspices of the Board of Trustees.

VOL. XLVII. CHICAGO, ILLINOIS, OCTOBER 6, 1906. No. 14.

Original Articles

MEDICAL FEES IN COUNTRY PRACTICE.*

W. O. BRIDGES, M.D.
OMAHA, NEB.

At no time in the history of this country has general prosperity among our people been on so high a plane. To whatever preponderating cause theorists may attribute this fact, it must be admitted by all that one of the chief of those advanced is the financial independence of the American farmer. To him we owe the origin of a large proportion of all wealth. From him we expect the purchase, utilization and consumption of products and manufactures applied in his supplemental sustenance and as a means toward the accomplishment of his work and the comforts of his home. Between him and the source of his purchased needs is that great army of so-called middlemen inhabiting the great cities, manufacturing centers and the country towns and villages, whose very life is largely, if not completely, dependent on the tiller of the soil.

When the American farmer is prosperous, prosperity is general. In time of drouth, the manufacturer, the merchant and the coupon cutter experience adversity. Cities destroyed completely by Nature's freaks and fires rise again in the night, grander, loftier and more attractive than ever. Destruction of the tillable soil by whatever cause means devastation, poverty and distress, possibly for all time. There is no prosperity so continuous, so substantial and so elevating to mankind as that whose foundation is laid by the man, who, profiting by his knowledge of natural laws, digs out of the ground that which goes to support his fellow-man. To this account more than any other may be laid the wonderful accomplishment of this republic in a trifle over one hundred years, occupying to-day probably the foremost position among the nations of the earth.

The prosperity of the farmer affects directly the middlemen in his nearby town. When the farmer has plenty to sell at good prices, the banker, preacher, storekeeper, druggist, carpenter, painter and saloonman are kept busy in his wake. The result is more work, better returns and a general advance in the material development of the town. These thoughts, with the knowledge which has come to me of the fees charged by physicians in country practice, have led to the query: Does the country doctor participate in the benefits which accrue to his fellow-townsmen, because of the material advancement of the farmer, in like degree? In other words, has his income from his practice kept pace with the times? Is he receiving the remuneration commensurate with the increased cost of his education, with the advance in the price of his necessities, the hard work and responsibilities of his calling?

* Read before the Nebraska State Medical Society, Lincoln, May 5, 1906.

PHYSICIANS' FEES.

In a somewhat extended association with the physicians of Nebraska and western Iowa, I have come to learn something of the details of their work, the trials of their life and their compensation for service. Two facts ascertained have impressed me, one, the uniformity of their fees, and the other the low prices charged. For instance, inquiries of men, practicing in Iowa, north, east, central and southern Nebraska, in towns of 1,500 or less, showed up a schedule about as follows: Day visit in town, $1.00; office consultation and prescription, 50 cents; visits in the country, mileage one way only, 50 cents, and in some instances (a minority) $1.00 in addition for the call; obstetric attendance, $10.00 in the country and a few reported mileage 50 cents in addition. Many make no additional charge for instrumental deliveries, and those who did made a fee of $5.00 in addition. An extra charge for night work of any kind was a rarity, and the fees were not affected by storm, deep mud or other influences occasioning delay and undue exposure.

Individual reports, particularly of obstetric experience, were interesting, and some of which indicated a disposition to charge less than the schedule. I will recite one in point: Dr. T. was called four miles from town to assist Dr. B., who had been with a primipara twelve hours. Forceps had been applied at the inferior strait without result after prolonged effort. After examination and consultation, Dr. B. gave an anesthetic, Dr. T. applied the forceps and in an hour later delivered the child with a considerable perineal tear, which was repaired. Two weeks later Dr. B. asked Dr. T. what his fee was. He replied: "Oh, $15.00." Dr. B. rejoined: "That seems pretty steep, as I can not send them a bill for more than $20.00 for both our services and I had to catheterize her for three days after delivery." Dr. T. replied: "Then, make it $10.00." The patient's family was in comfortable circumstances.

COMPARISON OF CHARGES IN VARIOUS PARTS OF THE COUNTRY.

Several weeks ago, desiring to ascertain how the fees charged in this section of the country compared with those elsewhere, I wrote a number of letters to physicians in small towns in various parts of the country and received answers from North Carolina, Texas, Wisconsin, Arkansas, North Dakota, California and Utah. In all except two, Wisconsin and North Carolina, town visits were charged at $2.00 or above (California $2.50); office consultations, $1.00 or above (California $1.50). Three physicians reported visits in the country at $1.00 mileage one way, without extra charge for visit, one the same with $2.00 extra for visit, and three 50 cents mileage and $1.00 extra for visit. Consultation fees were $10.00 in four reports, $5.00 to $10.00 in one and $5.00 in two. Obstetric attendance was reported at

$25.00 in one (California), $25.00 in town and $30.00 out, in one (Utah), $15.00 in one (North Dakota), $10.00 and mileage in one (Wisconsin), and $10.00 in three. Forceps delivery additional charged in one $25.00 (Texas), $10.00 to $25.00 in one (Utah), $10.00 to $15.00 in one (California), $15.00 in one (North Dakota) and $5.00 in three. For night visits three physicians reported double day charges, two one-half more and two no extra charge. While there is no complete uniformity in the answers to my queries, it is very evident that in all save two (Wisconsin and North Dakota) the fees charged for like services are much higher than they are here, and yet it must be assumed that Iowa and Nebraska are as prosperous to-day as any section of the country.

INCREASED FEES OF ADVANTAGE TO PATIENTS AS WELL AS TO PHYSICIANS.

Looking over the subject of physicians' fees in the past twenty-five years, one is impressed with the fact that the charges made by men in country practice have not advanced one cent, whereas the classes of people whom he serves have doubled, trebled and even quadrupled their incomes. Twenty-five years ago the outlay for the physician's medical education in time required and money expended was less than one-half the present cost and in consequence thereof the value of service which he gives to-day as compared with the former period can not even be measured in dollars and cents. The charge of 50 cents for an office prescription may be all the prescription is worth many times, for, if it is the prescription which the fee is made for, the patient is not getting more than his money's worth. Too often is this impression given to patients or too seldom is he led to understand that the prescription is only an end result of an examination which requires technical knowledge and experienced judgment. A 50-cent fee is too apt to mean a 50-cent service. This is no reflection on the doctor whatever, for human nature is the same everywhere, and so long as it is the custom for our services to be measured in money value the reverse in most instances will apply, the value in money determines the service. To state an opposite hypothesis may make this statement seem less critical. Suppose the fee charged for office consultation were arbitrarily fixed at $5.00, is there a single physician in this state who would be content simply to ask a few questions, look at the tongue, determine the absence of fever, by the hand contact, turn around and write a prescription? What applies to a 50-cent office fee applies also to a dollar visit in town, a mileage of 50 cents without visit fee in the country and a twenty-four to forty-eight hour obstetric fee of $10.00. The low-fee proposition has two principal bad results for the physician. By the undervaluation of his own service, his confidence in himself in time suffers, his work becomes superficial and he ceases to develop, and, failing to earn a competency during the active years of his professional life, he too frequently goes into his old age without the necessities of life or is dependent on relatives for support. On the other hand, fees proportionate to good service mean much to the doctor. The stimulus to be thorough and painstaking, to think and to study over his cases, to relieve him of the necessity of outside financial interests, means much for his professional advancement, for the increased revenue and his inclination lead him to seek the change and advantages offered by the postgraduate schools and by the hospitals of nearby cities. He also feels better able to afford the time and pleasure of the county, state and national societies more frequently.

There is no community which would not be greatly benefited by an increased income to all the members of the profession in their midst. Suppose, for example, that each physician in a town having six physicians should devote from three to six months every six years to postgraduate hospital work, what effect would this have on the value of his service and who else would profit by it? Does a physician ever go to a county, state or other medical society meeting without receiving some new suggestion or having awakened some new thought? If he goes to Chicago, New York, Philadelphia or Baltimore for a month in contact with other medical men, does he not return with renewed determination to get out of a rut and to stay out? If he can figure that his professional income will admit of his doing this, and that by so doing he will gain vantage ground, and by the very move still further increase his income, is he not standing in his own light not to do it? Farther than this, does not his duty to his patrons and his influence in the community require him to do it? And if so, should they not pay for it in fees which will permit of a little more than a comfortable living? When I have talked with some of my professional friends about this subject, the reply has been "The fees in our community have been fixed so long that our patrons would rebel at any increase, and, furthermore, there would be lack of uniformity in competing towns and we might sacrifice our business." To the first suggestion I would offer a protest. From what I have written above as to the character of the service, it is assumed that the farmer or the tradesman is willing to pay for what he buys. If he is made to see that what he buys is worth the money, he pays. That he is not averse to doing so can be demonstrated time and time again, when he is seen to pay railroad fare in addition to a good-sized consultation fee to some city doctor, who may be no better or perhaps not so good as his own physician.

The increase and prestige of men aiming somewhat at specialization in small towns is an indication that good fees may be asked and collected without hesitation. Recently I saw a patient with her physician four miles from a town of 400 in the central part of the state. In eliciting the history, it was ascertained that six months ago the previous physician's first introduction to the family had resulted in a diagnosis of a large ovarian tumor. He advised her removal to a city hospital for an operation. Following part of his advice, she went to the next town, where the tumor was removed by a local surgeon who charged and collected $300.00 and $20.00 a week for a room and nursing. Let any one tell me that farmers will not pay the price, when this same work could have been done in Omaha for $50.00 and in Lincoln for probably $75.00.

ORGANIZATION AND A FEE SCHEDULE.

The frequency with which farmers and people from small towns go to nearby cities for minor medical and surgical consultation, ignoring often the local physicians, is, to my mind, the surest indication that they want to pay more, for, as a disinterested spectator, I have often seen them go to men inferior in every way, except in the fee. A young physician recently located in a fine Nebraska town complained to me that the outlook was poor, for nearly all the best people there went to the city, twenty miles away, for their medical advice.

610.5
AM
V. 47 2
cop. 6

I advised him of his great opportunity, for if he had the incentive to charge enough and an aim to earn his fee, with his qualifications, which I well knew, he could turn the tide in his own favor.

Would any reasonable man object to paying the doctor more for night than day work if asked? He has to pay the carpenter, the painter, the plumber who do overtime work at an increased rate, and why should he kick on the doctor? I have been surprised at the number of men who informed me that they did not discriminate between the fees for day and night work. A busy man at this rate burns the candle at both ends and quits at an earlier age without much to show for it. When one considers the number of unnecessary calls to which the physician is subject during his sleeping hours, he must feel that, with no difference in cost to the patron, it is a matter of slight concern whether he waits till night. An increase in the fee for this work would anticipate or postpone a sufficient number of calls to save the doctor much valuable time for his natural rest and keep him busier in the daytime. For the absolutely necessary work it would be a small man who would refuse double fee.

The question of custom and competition is advanced as a theory for low fees. How easy this can be corrected is exemplified by the statement of a physician from the southern part of the state to me only a few days ago. The subject of a fee schedule came up for discussion at a meeting of his county society, and an advance all along the line was agreed on. There were six towns in the county and between them a splendid large farming community. The new schedule was published in every newspaper in this county, duly signed by the members. He said there was some kicking for a while, but the new rates were soon accepted and had been in full force for some time. Organization, then, must be the solution of the question. The county and district societies should do as much for the doctor in this regard as they do in every other, and I am not so sure that a move in this direction by the state society for a minimum schedule which would be adopted by all its component parts would be in the right direction. It would do away with variations in schedules applicable to border towns and would be much more easily lived up to. I believe the competition element so far as fees are concerned in the selection of a physician is much overestimated. In time of drouth and depression, with poor crops and burdened farms, it might prevail, but certainly the drift at the present time of progress and prosperity is toward getting results, even if it does cost. Granting that nonmembers of societies or a few backsliders would keep up the old custom, this should not deter those who believe that a workman is worthy of his hire and by this very assumption attract those who believe with them. It was said of an old physician of my acquaintance that he had a large following, not because he knew more than any of his colleagues, for he really knew less than many of them, but because he charged large fees. If this kind of a bluff works, how much more effectual it must be if it is backed up by sincere effort, painstaking care, and a disposition to be worth the price.

My aim in bringing this subject up in this form is to unload a growing impression on my mind that the doctor in country practice in Nebraska is underpaid and that he himself is mostly to blame for it, that his schedule of fees has not advanced with the requirements of his education, of his needs and of his position, and that by means of a well-directed effort, individually and collectively, there is no reason why results should not be accomplished which would not only be to his advantage, but would react favorably on his constituency.

FURTHER OBSERVATIONS ON ROCKY MOUNTAIN SPOTTED FEVER AND DERMACENTOR OCCIDENTALIS.*

H. T. RICKETTS, M.D.
CHICAGO.

In view of the brief season during which Rocky Mountain spotted fever prevails, uninterrupted study of the disease is conditioned on the maintenance of the infection in experiment animals.

In a previous communication[1] my inability to preserve the disease by inoculation from guinea-pig to guinea-pig was referred to, and the hope was expressed that alternation of the infection between the monkey and the guinea-pig might result in the preservation of the virus.

This experiment has been entirely successful and Table 1 illustrates the life history of the virus since it was obtained from the patient, Bradley.

TABLE 1.

Number of animal.	Date.	Source, and Material Inoculated.
Monkey I	June 11	Patient, Bradley; defibrinated blood.
Monkey II	June 20	Monkey I; defibrinated blood.
Guinea-pig 12	June 27	Monkey II; fresh heart's blood.
Monkey IV	July 7	Guinea-pig 16; blood and organs.
Guinea-pig 16	July 14	Monkey IV; defibrinated blood.
Monkey V	July 22	Guinea-pig 16; blood and organs.
Guinea-pig 17	July 28	Monkey V; defibrinated blood.
Monkey VI	August 3	Guinea-pig 17; blood and spleen.
Guinea-pig 25	August 16	Monkey VI; blood and serum.
Monkey VIII	August 23	Guinea-pig 25; blood and organs.
Guinea-pig 36	August 30	Monkey VIII; spleen.
Monkey IX	September 6	Guinea-pig 36; blood and organs.

All infected animals have run identical courses of fever, which are typical in this respect, that an incubation period of from two to four days intervenes between the time of inoculation and the onset of the regular febrile course. Commonly a moderate rise in temperature follows immediately on the inoculation and persists for one or two days, then falls near to normal for one or two days more, when the customary course sets in. This initial or primary fever probably is caused by intoxication from the large amount of material which is frequently injected. When a smaller amount of blood or emulsion of tissue is used this initial fever has not appeared.

Several facts are relied on in concluding that the disease transferred by these inoculations is spotted fever rather than some other infection which may have crept in during repeated passage. In harmony with the experience which was met in making cultures from man, no growth is obtained from the blood of infected animals, provided the cultures are made at a time when agonal or postmortem invasion by common bacteria has not taken place. If plates are inoculated with the heart's blood at the instant of death, it is customary to obtain no visible growth on ordinary media, yet this same blood proves infectious for other animals. Again, the rather frequent development of a

* This work has been done under a grant made by the American Medical Association through the Committee on Scientific Research, and with the aid of Missoula and Ravalli counties, Montana, and of the Montana State Board of Health.

* From the Pathological Laboratory of the University of Chicago.

1. The Study of Rocky Mountain Spotted Fever (Tick Fever?) by Means of Animal Inoculations, THE JOURNAL A. M. A., July 7, 1906.

1145888

hemorrhagic eruption in the monkey or guinea-pig, a manifestation which is identical in appearanee, if not in distribution, with that seen in man, speaks for spotted fever rather than some other infection. This eruption is much more constant in the monkey than in the guinea-pig. In both animals it begins on the serotum and foreskin. In the guinea-pig it may be found on no other part of the body, although it can be seen as a more or less generalized eruption occasionally. The external genitals of the female guinea-pig commonly become swollen and congested; recently, however, extensive hemorrhages have oecurred in the skin of the labia in a number of females. But one female monkey has been used, and in her no cutaneous hemorrhages were discovered. It will be readily understood that the detection of a pink roseolar eruption in either the monkey or the guinea-pig is diffieult. In the guinea-pig it can be recognized with certainty only in white-skinned animals. In both animals the hemorrhagic eruption, when it appears, is a late manifestation and it would seem to be related in some way to the virulence and duration of the infection. The disease may be so virulent that the animal dies before the eruption would appear, or so mild that it does not oecur. The appearance of the hemorrhages does not necessarily presage a fatal issue; two monkeys and several guinea-pigs which had extensive hemorrhages into the skin have recovered.

A third faet whieh stamps this experimental disease as spotted fever consists of the identity of the course of fever with that produced in the animals by direct inoculation with human blood.

The essential anatomie changes, enlarged spleen and lymph glands, congested kidneys, etc., are identical with those seen in the animals first inoculated, and correspond with the changes found in man.

There seems to be no partieular difficulty involved in perpetuating the infeetion, except in the matter of expense. Duplicate inoculations should be made and the blood or organs used for inoculation may be taken at any time after the fever has reached its high point. To await the death of the animal before making the transfer is to risk the loss of the eulture; the animal may reeover.

THE DISTRIBUTION OF THE VIRUS IN THE BODY OF THE INFECTED ANIMAL.

In my first experiments the infectiousness of the blood, in spotted fever, was demonstrated. It would naturally by inferred that the various organs are infectious at least to the degree in whieh they contain blood. On this account one would reasonably expect the spleen to be infectious and this has proven true in a number of inoculations. The testieles have been used for inoculation a number of times. It was thought that the testicles might be a point of predilection for the virus, in view of the severe hemorrhages which often occur in close proximity to them, i. e., in the scrotum. They were shown to be infectious in several instances, yet their virulence was not so great as to indicate any special eoncentration of the virus at this point. The scrotal hemorrhages may have no relation to the amount of infection of the testicles.

The distribution of the virus among the organs of an infected monkey (VIII) was recently determined. The animal was exsanguinated from the earotid to deprive the organs of as much blood as possible. Each organ was then ground with sterile sand and suspended in physiologic salt solution. Identieal weights of the different organs were not used, but approximately the same mass was employed in each case. A further attempt at uniformity was made by rendering the different emulsions of approximately the same density. Five eubie centimeters of each emulsion were injected intraperitoneally into guinea-pigs, whieh varied in weight from 350 to 550 grams. Table 2 shows the results.

TABLE 2.—The Infectiousness of Different Organs.

Number.	Material Inoculated.	Result.
35	Mesenteric, inguinal and axillary lymph glands.	Death in 18 days.
36	Spleen.	Death in 7 days.
37	Bone marrow.	Death in 6 days.
38	Testicles.	Death in 15 days.
39	Liver.	Death in 8 days.
40	Kidney.	Death in 7½ days.
41	Medulla oblongata.	Recovered.
42	Cerebral cortex and adjacent white matter.	Death in 12½ days.

In the fatal cases cultures of the heart's blood were sterile except in the ease of guinea-pig 37, in whieh a few colonies of a staphylococcus developed. The technieal diffieulties in preparing the bone marrow increased the opportunities for infection. It is thought very probable, however, that the animal died of spotted fever because of the duration of the eourse.

Those organs seemed to be the most infectious which eontained, naturally, the most blood, i. e., the liver, spleen, and bone marrow (?). In these organs exsanguination still leaves rather large quantities of blood. The kidney, however, was fully as infectious as the organs which were much richer in blood. It is possible that the kidney becomes the repository of a larger mass of micro-organisms, by virtue of its excretory function. It is realized that this experiment does not give an exact measurement of the degree of infection of the different organs, and that the results, at the best, can be considered no more than approximate.

In another experiment an attempt was made to determine the minimum fatal dose of the blood of the infected monkey, the blood being taken six days after inoculation. The injections were intraperitoneal (Table 3).

TABLE 3.—Virulence of the Blood of the Infected Monkey

Guinea-pig.	C.c. of Blood.	Result.
30	0.5	Death in 14 days.
33	1.0	Death in 7½ days.
31	1.5	Death in 7½ days.
32	2.0	Death in 13½ days.
34	3.0	Death in 6½ days.

Plate cultures of the heart's blood were sterile in all eases. In this experiment the minimum fatal dose of the blood of the infected monkey on the sixth day of the disease was in the vicinity of 0.5 e.c. Guinea-pig 30, whieh received this dose, died on the fourteenth day, whereas, animals which live so long ordinarily reeover. Guinea-pig 32, whieh received 2.0 e.e., showed unusual resistance. The guinea-pigs weighed about 350 grams each. Other experiments indicate that subcutaneous and intravascular inoculations have a similar degree of virulence.

ACTIVE IMMUNITY.

I have not learned of an authentic example of a second attack of spotted fever in man, hence it has seemed somewhat probable that one attack renders the body immune. This has been found to be true in a recent experiment on the monkey.

On June 20, 1906, Monkey II was inoculated with the blood of Monkey I, the latter having just died as the result of inoculation with the blood of the patient, Bradley. Monkey II ran a typical course of fever, showed a maeular eruption of the perineal skin on the eighth day, and extensive hemorrhages of the scrotum.

perineum, back and extremities on the eleventh day. The temperature returned to normal on the twelfth or thirteenth day, hence the eruption became hemorrhagic as convalescence was about to begin. The animal regained its former health and activity.

Recently this animal was again inoculated with the blood and tissues of an infected guinea-pig (No. 36). The total mass of fluid injected was 8 c.c. With the exception of some indisposition on the following day, the injection produced no apparent effect. For a few days the temperature was slightly higher than before, but during this time and since the monkey has shown no indisposition and has been as active as before inoculation.

By way of control another monkey of the same size (No. IX) was inoculated with the same amount of material, the same quantity and by the same route. Between the third and fourth days the temperature began to rise, and until it was killed (7 days), it ranged between 105.1 and 106.3. The conjunctivæ became reddened, the animal shivered at frequent intervals and sat, inattentive and with head drooping, continuously. On the fifth day the supraorbital skin showed reddened patches, and on the sixth day a roseolar eruption was visible on the scrotum. The blood and tissues were used for further experiments.

From this experiment it is evident that one attack in the monkey confers an active immunity, and on the basis of reasonable analogies one may conclude that man probably acquires a similar immunity.

A similar acquired immunity has also been demonstrated in the guinea-pig. Its duration, beyond the period of two months for the monkey and three months for the guinea-pig, has not been determined.

THE LIFE HISTORY OF DERMACENTOR OCCIDENTALIS.

On account of the suspicion which attaches to *Dermacentor occidentalis* as the carrier, or a carrier of Rocky Mountain spotted fever, its life history is important. The following brief notes concerning this question are given by way of recording the changes which were observed under artificial conditions. No description of minute morphologic changes will be given at this time.

May 20, 1906, a fully developed female was placed in a cotton-stoppered test-tube.

June 21 (about), the tick began laying eggs, of which several hundred (estimated) were eventually deposited.

June 28 or 29 hatching began and continued for a week or ten days, resulting in six-legged larvæ of minute size.

July 13, the tube with its contents was placed in a tick-proof cage with a guinea-pig. The larvæ took hold readily for the most part, but did not feed continuously. They increased slightly in size. Eventually all remained attached to the skin for several successive days, grew to a length of 1 to 1¼ millimeters, and became swollen and of a uniform dark slate color. On August they began to drop from the guinea-pig, moved to a safe place, and went into a quiescent state, appearing as if dead.

August 5 they began to molt, throwing off a snow-white pellicle, and came out as eight-legged nymphs. After 7 to 10 days the molting of the brood was almost complete. When they first appeared they approximated the size of the well developed larvæ.

When again placed with a guinea-pig or monkey they seemed to feed intermittently for a time, but eventually attached themselves firmly and underwent a great increase in size, some reaching a length of about 3/16 of an inch. With the increase in size the color again changed to that of a uniform gray-brown or slate color. It required from 6 to 10 days for this development to take place after the ticks were placed with an animal. On August 30, practically all the ticks which remained alive had undergone this change.

As they reached the condition mentioned they were removed and placed in ventilated boxes where they went almost immediately into a second quiescent stage. In about 10 days molting again began, a white mantle being thrown off, and the mites emerged as adult ticks, with the marking which one finds under natural conditions in the early months in Montana.

The experiment was carried on entirely at room temperature, and the various stages may not correspond in point of time with those taking place under natural conditions.

Under natural conditions, in the Bitter Root Valley, the adult ticks begin to disappear during the latter part of June. This probably means that the males, and those females which have not found a host, die, whereas the fully developed females deposit their eggs. Locally, knowledge of the further history of the tick was limited, or nil. It is certain, however, that during the warm summer days, the conditions are favorable for the hatching of the eggs, and for the development of the larvæ, provided a host is reached. Inasmuch as a crop of adult ticks is not observed in the fall, it is possible that the second molting stage, mentioned above, represents the hibernating stage of the mite. It is well known, locally, that the first few warm days of the spring bring out the ticks. These few warm days apparently would be sufficient to bring to completion the second molting stage. On the other hand, it must be admitted as possible that the second molting stage is completed in the late fall, and that hibernation begins at once with the animal fully developed, the first few warm days of spring being sufficient to arouse him.

Observations of a more complete nature will be made at a future date.

OSTEOPLASTIC RESECTION OF THE COSTAL ARCH IN ORDER TO REACH THE VAULT OF THE DIAPHRAGM.*

WILLY MEYER, M.D.

Professor of Surgery at the New York Post-Graduate Medical School and Hospital; Attending Surgeon to the German Hospital; Consulting Surgeon to the New York Skin and Cancer Hospital and to the New York Infirmary.

NEW YORK.

Of all the regions within the abdomen the vault of the diaphragm is the most difficult of access, principally owing to the unyielding character of the lower portion of the thorax.

Various methods have been devised to overcome the difficulty. In cases of subphrenic and intrahepatic abscess or cysts of the convexity of the liver, one or more ribs have been resected, the pleural sac traversed or pushed up and drainage in a straight direction arranged for.

For the same purpose Lannelongue did resection of the eighth to the eleventh costal cartilages or of the respective ribs—a rather extensive additional operation.

Micheli[1] worked out on the cadaver an operation

* Read in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

1. Tenth Italian Congress of Surgeons, 1895.

similar to Schede's thoracoplasty. Of course, he avoids injury to the pleura and includes in the flap, diaphragm and parietal peritoneum. It seems that the operation was never done on the living subject.

While attempting to excise a carcinoma of the cardia and lowest portion of the esophagus, von Mikulicz once tried a plan very much like the one just described.[2] In a second case he made a median incision above the umbilicus, an additional transverse one at right angles with it and three further incisions, exposing the seventh, eighth and ninth ribs near their costo-cartilaginous junction, where the cartilages were divided. Then the flap plus costal arch could be pulled to the left and the cardia reached. In both instances the patient succumbed to the effects of the serious operation on the stomach.

Fig. 1.—Kelling's position for the upper part of the abdomen.

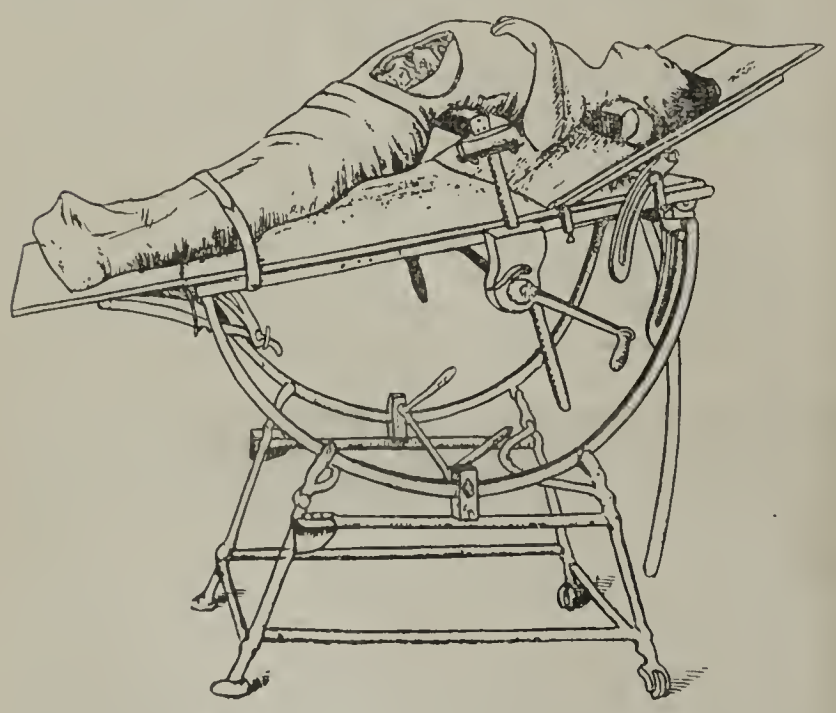


Fig. 2.—Kelling's later modification of the posture shown in Fig. 1.

In 1901 G. Kelling[3] recommended the posture which is best explained by Figure 1 taken from his article. It shows a Trendelenburg posture, as it were, for the upper part of the abdomen, "Beckenhängelage" in contradistinction to Trendelenburg's "Beckenhochlagerung." The posture seems cumbersome and makes the maintenance of perfect asepsis difficult. Later, Kelling[4] suggested in its place the posture shown by Figure 2.

Fig. 3.—Osteoplastic resection of the costal arch in the presence of a gastric fistula by means of a U-shaped incision for an impermeable cicatricial stricture of the esophagus.

Fig. 4.—View of patient, four weeks after splenectomy for sarcoma.

I doubt that this posture will make it possible to operate conveniently near the top of the diaphragm in difficult cases.

2. G. Gottstein: Technik u klinik der Oesophagoskopie, Mitteilungen aus den Grenzgebieten, vol. viii.
3. Centbl. f. Chir., 1901, No. 42, p. 1025.
4. Centbl. f. Chir., 1904, No. 4, p. 89.

Two years later, G. Marwedel,[5] unaware of von Mikuliez's previous attempts in a similar direction, described a simplified operation, an osteoplastic resection of the lower anterior portion of the thorax which he had thoroughly worked out on the cadaver and once successfully carried out in the living. The operation is less complicated than von Mikuliez's procedure. Asthoewer,[6] a few months later, stated that he also had done two somewhat similar operations several years before Marwedel.

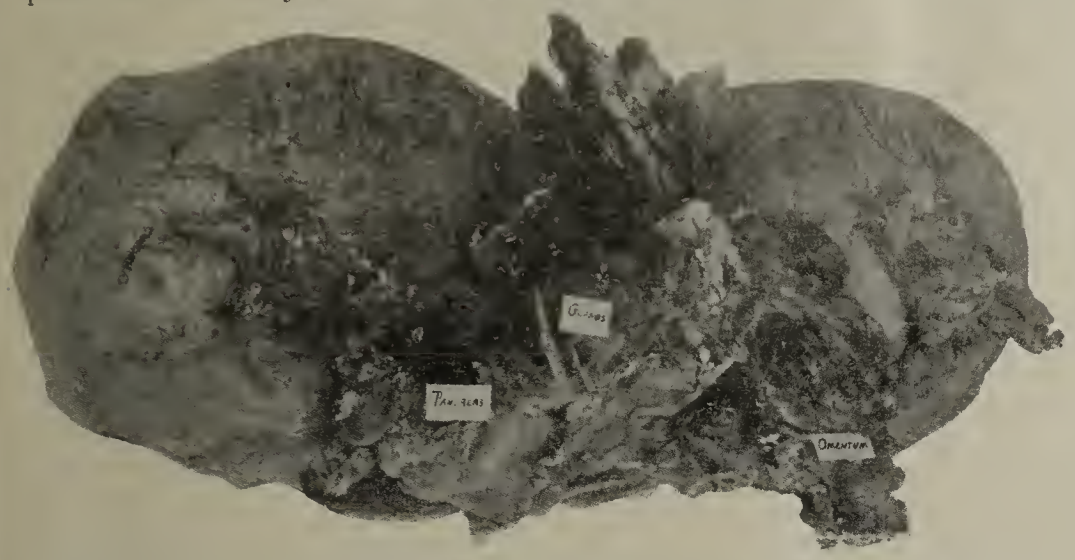


Fig. 5.—Multiple sarcoma of spleen, secondary to retroperitoneal sarcomatous glands, the spleen being the only intraperitoneal organ showing metastatic growths. The distal half of the pancreas is attached to the tumor.

Within the last two years I have had occasion twice to employ osteoplastic resection of the costal arch. It enabled me conveniently to do the work required, which otherwise would have been impossible. The various steps and important points of the operation can be brought out best, I think, by briefly relating the histories of the two cases:

CASE I.—This case has already been fully described.[7]

Summary of History.—A boy, 14 years of age, had an absolutely impermeable cicatricial stricture of the esophagus (caustic lye). For eight years he had been fed entirely through a gastric fistula. All attempts to enter the stomach from above as well as under direct inspection with the urethral speculum introduced through an esophageal lip fistula in the neck having failed, an osteoplastic flap was raised by a U-shaped incision, the water-tight gastric fistula being carefully preserved (Fig. 3). A part of the anterior wall of the

Fig. 6.—Same specimen divided longitudinally.

stomach, well above the fistula, was thus reached, horizontally incised and the passage upward searched for from below.

To my great disappointment this attempt, too, proved unsuccessful. The esophagus was evidently entirely obliterated for some distance. The stomach incision was, therefore, closed again by means of a double row of Lembert silk sutures; the osteoplastic flap was fitted back in its place and the skin sutured; there was no drainage. The boy made a good recovery. I saw him a few weeks ago. He still nourishes himself through the tube (in all now for ten years) and has gained in weight.

Two ways are still open to help this patient: 1. To raise again the osteoplastic flap, this time opening the stomach by a perpendicular incision just below the cardia, which, as I had seen at the time of the first operation, could be entirely brought into view and pulled down from the foramen esophageum for fully an inch and a half; or, better, 2. To attempt esophagogastrostomy in Sauerbruch's chamber under negative pressure,[8] or in Brauer's new apparatus with the bronchial tree placed under increased pressure.[9] For the present the boy's mother is opposed to further operation.

CASE 2.—Patient, a male, 29 years of age, came under my care in December, 1905.

He had entered the medical division of the German Hospital on account of a rapidly enlarging spleen and great weakness. The spleen was found to reach the umbilicus; its surface was nodular; there was some fluid in the abdomen. Diagnosis of malignant tumor (sarcoma) of the spleen was made and the patient transferred to the surgical division.

Operation.—On opening the abdomen, December 18, a large amount of sero-sanguinolent fluid escaped; the adherent omentum having been loosened and lifted out of the abdomen, the nodular spleen came into view. It was attached to many of the neighboring organs and particularly tightly fastened in the vault of the diaphragm; there was no metastatic growths in the liver or elsewhere. Radical operation was clearly indicated, chiefly in view of the patient's youth. Splenectomy was decided on. A transverse incision to the tip of the eleventh rib was added (Fig. 4). While this rendered access somewhat easier, it was still impossible to reach the upper pole of the spleen, although the lumbar spine had been well raised and the legs considerably lowered, while one assistant pulled the costal arch to the left with two hands, the other making traction on the enlarged spleen downward as far as possible.

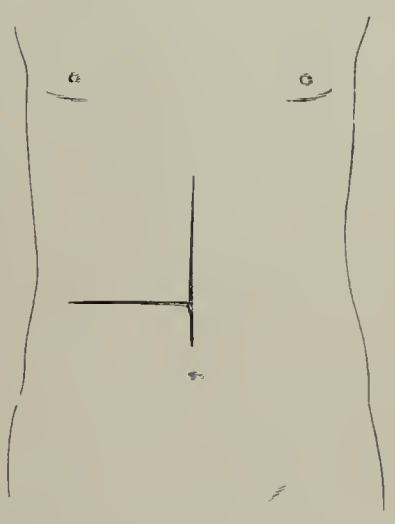


Fig. 7.—Right-angled incision.

It was evident that I should either have to give up or try some other way. The only chance of success seemed to lie in getting the costal arch out of the way. I therefore entered the space between the lower surface of the belly of the left rectus muscle and the peritoneum with posterior sheath of the rectus muscle, to which, further outward, the transversalis muscle is attached. From here I bluntly made my way upward to the border of the costal cartilages, which were quickly brought into view (Fig. 13).

This part of the work is very simple, for the reason that the rectus and external oblique muscles have their origin further up on the thorax and are attached to the latter in the portion concerned by very loose connective tissue only.

Then the seventh cartilage, representing the union of three,

5. Centbl. f. Chir., 1903, p. 938.
6. Centbl. f. Chir., 1903, No. 46, p. 1257.
7. Med. News, Oct. 29, 1904.
8. Mitteilungen aus den Grenzgebieten, vol. xiii, p. 3; and Meyer, Willy: Annals of Surgery, May, 1905.
9. Deuts. med. Wochft., Sept. 21, 1905, and April 5, 1906.

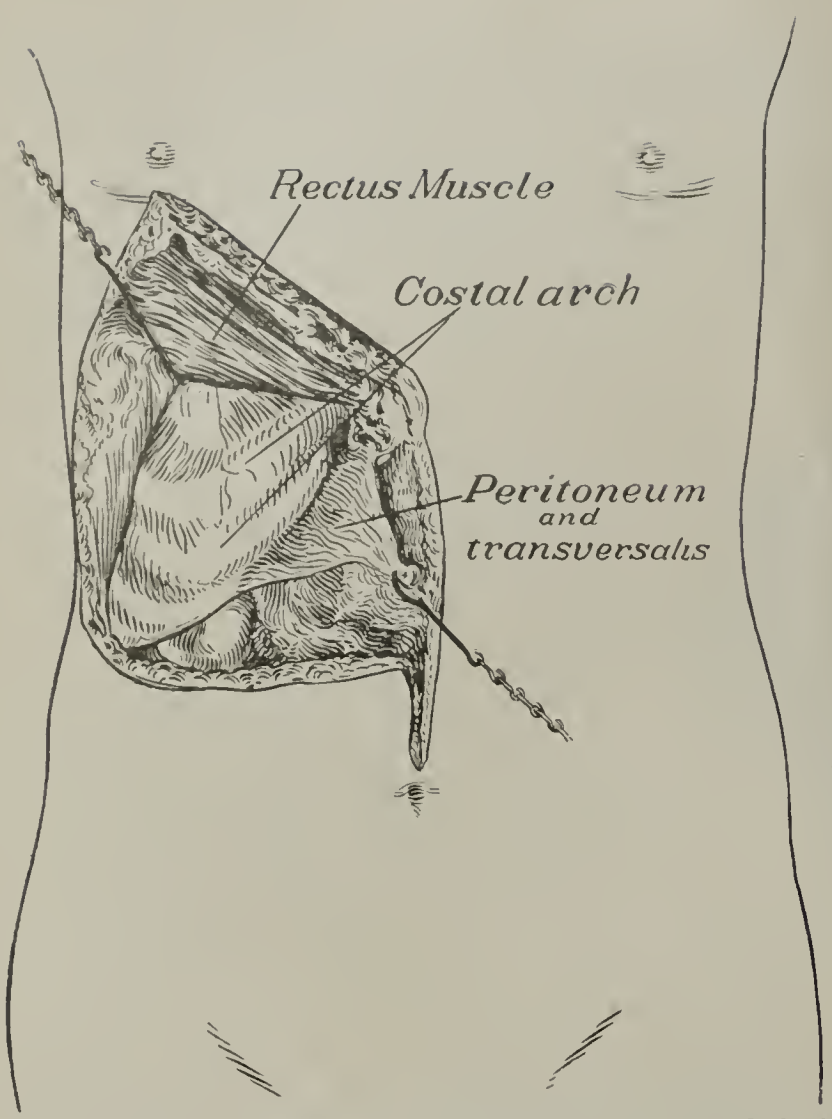


Fig. 8.—Right-angled incision. Skin-muscle-flap turned back, peritoneum and transversalis muscle remaining attached to costal arch, the latter exposed.

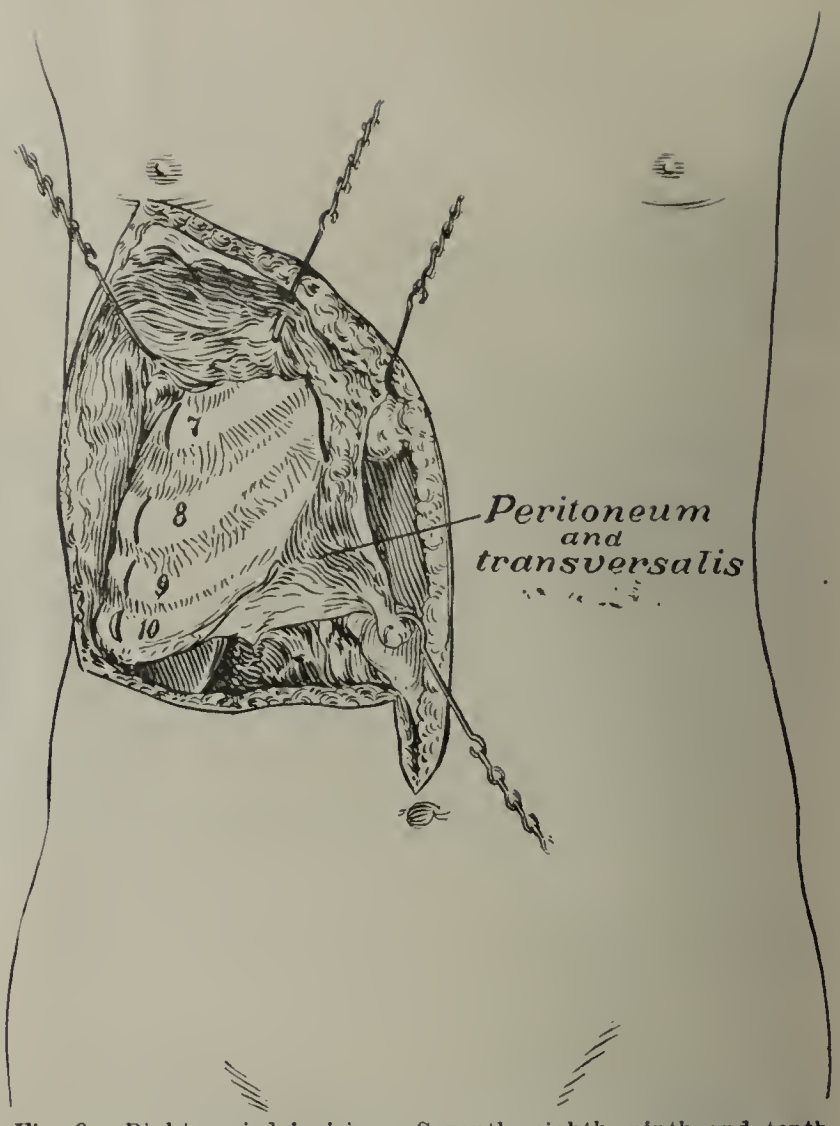


Fig. 9.—Right-angled incision. Seventh, eighth, ninth and tenth cartilages divided close to their juncture with the ribs; seventh cartilage, next to the sternum, also divided.

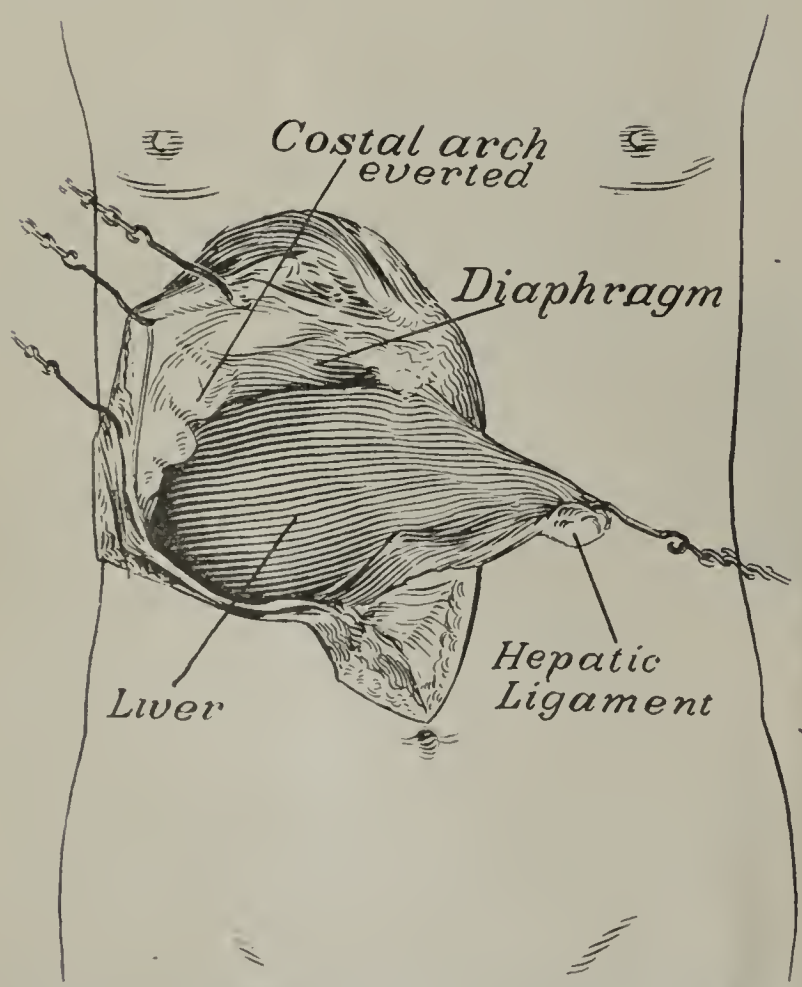


Fig. 10.—Right-angled incision. Skin-muscle flap returned to its place; entire costal arch then raised, exposing surface of liver; hepatic ligament pulled toward median line.

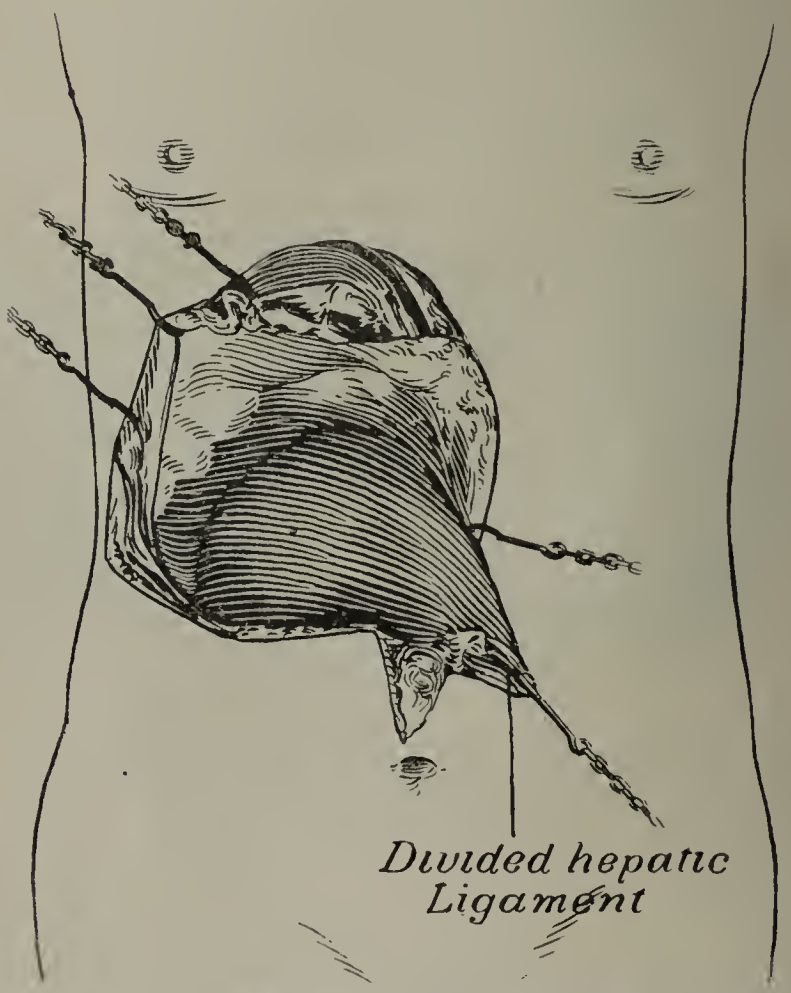


Fig. 11.—Right-angled incision. Hepatic ligament divided up to its diaphragmatic attachment; strong traction used on same, affording better view of liver.

was divided with the knife close to its sternal attachment, care being taken not to allow the knife to slip; and the seventh, eighth, ninth and tenth cartilages likewise, just in front of their union with the ribs (Fig. 14). Now the skin-muscle-bone flap is replaced in its normal position; two sharp retractors are hooked into the peritoneum and the costal arch is raised,[10] while the second assistant takes hold of the spleen, pulling it gently but firmly downward and inward.

It truly was fascinating to observe how readily the upper pole of the spleen with the ligamentum phrenico-lienale came into view and how the latter—in this case a short, broad, thick band —could be ligated in sections and then divided between two ligatures. The most delicate work in splenectomy, the division of the diaphragmatic attachment, could thus be carried out neatly and safely and in full view of the operator. Thereupon the spleen could be turned around its transverse axis, the upper pole made to emerge from the abdominal cavity and the whole organ gently pulled up by the first assistant, its pedicle thus being well stretched. It proved to be firmly adherent to the tail of the pancreas. From the latter a mass continued upward with the vena cava. I had to push off the latter, place a double chromicized catgut ligature around the body of the pancreas, divide it between the ligatures with Paquelin's cautery and tie off the greater portion of the adherent omentum. At the splenic hilus only the large vein

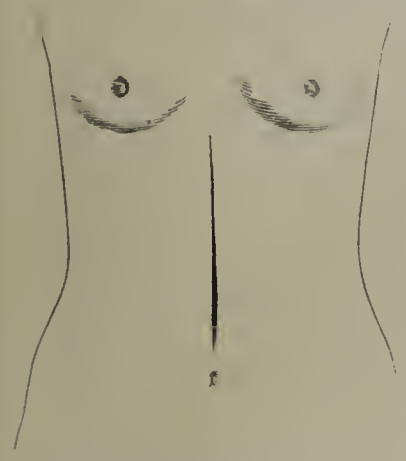


Fig. 12.—Straight, median incision.

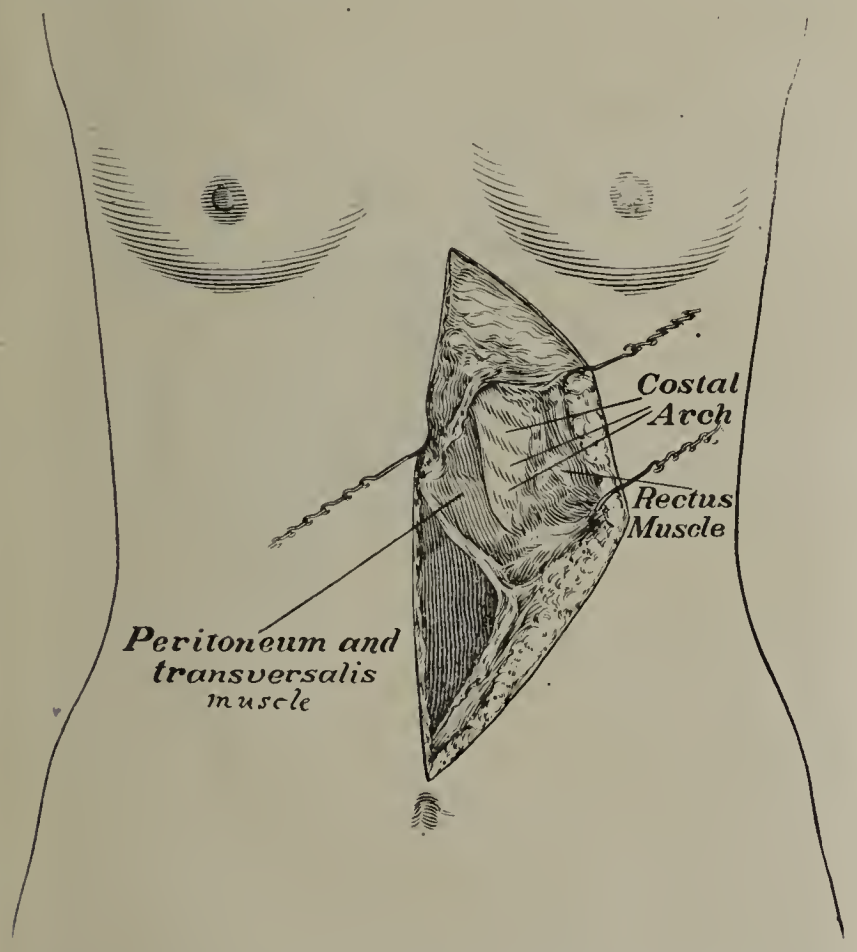


Fig. 13.—Straight median incision. Rectus muscle pulled outward and upward, peritoneum and transversalis muscle inward; costal arch exposed.

came into view. It, too, was divided between two ligatures, thus completing the operation, which had been done throughout in an absolutely bloodless manner. (Figure 5 nicely reproduces the interesting specimen.) Thereon a Mikulicz's tampon was placed in the diaphragmatic vault, the osteoplastic flap returned and pressed in position and the T-shaped abdominal wound carefully sutured. The abdomen was well strapped with zinc adhesive plaster and a snugly fitting binder tied around it. After two stormy days, when intravenous and subcutaneous saline infusions had to be freely used, the patient made a satisfactory recovery. He was up and about at the end of the fourth week (Fig. 14).

The spleen, twelve inches long and seven inches wide, weighing five pounds, when divided showed the typical picture of a secondary (metastatic) multiple tumor (Fig. 16), which, on microscopic examination, proved to be a small round-celled sarcoma.

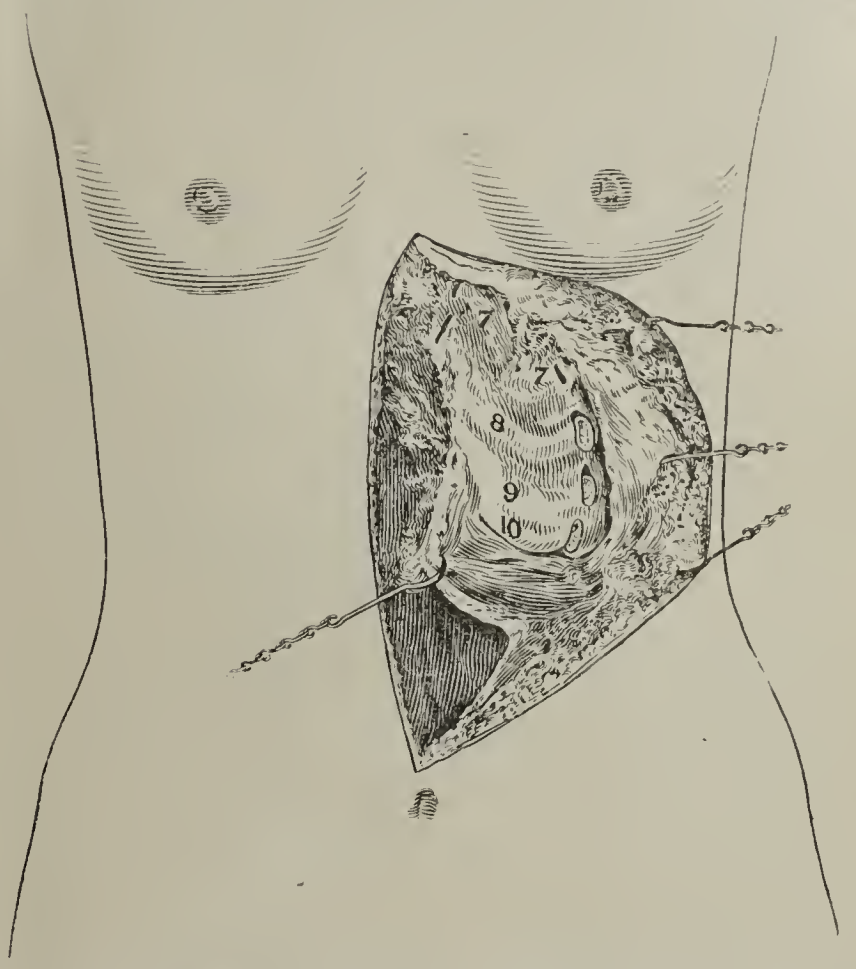


Fig. 14.—Straight median incision. Cartilages divided. In this specimen the cartilage of the eighth rib is not united with that of the seventh near sternum.

Of course, with such a microscopic diagnosis there was no hope of the patient's permanent recovery. We tried the *x*-rays, but without avail. He died suddenly, Feb. 26, 1906, ten weeks after operation, as a result of internal metastases. Autopsy showed the costal cartilages to have healed in place without any deformity and with good ligamentous union.

I believe that the primary tumor in this case had developed in the retroperitoneal glands which gradually approached the hilus of the spleen, the growth then perforating into the splenic artery and producing the multiple metastases found. This, at least, is the way I would venture to explain this peculiar dissemination of the disease in only one of the large intra-abdominal organs, and I do so on the basis of an observation I made a few years ago in a patient afflicted with carcinoma of the posterior wall of the stomach. Here the tumor had crept along on the outside of the gastric wall toward the right until it reached the portal vein, which it perforated. Then the blood current continuously took along and carried into the liver carcinomatous particles which produced intrahepatic (localized) metastases in an amazingly short time. The first embolic attack was marked by a chill and acute abdominal symptoms, simulating an abscess of the liver. Exploratory incision and postmortem, seven weeks later, explained this rare pathologic picture.

10. Often the assistant's hands will be found more useful than retractors, as will also be seen in this case later on.

Both cases related above proved the great help we may expect from this osteoplastic raising of the lower part of the thorax, when it becomes necessary to reach ordinarily inaccessible organs within the phrenic convexity. It is natural that in cases of need the ribs may be divided in place of their cartilages, further outward, including also the sixth and fifth ribs. It further is evident that the flap may be shaped according to indica-

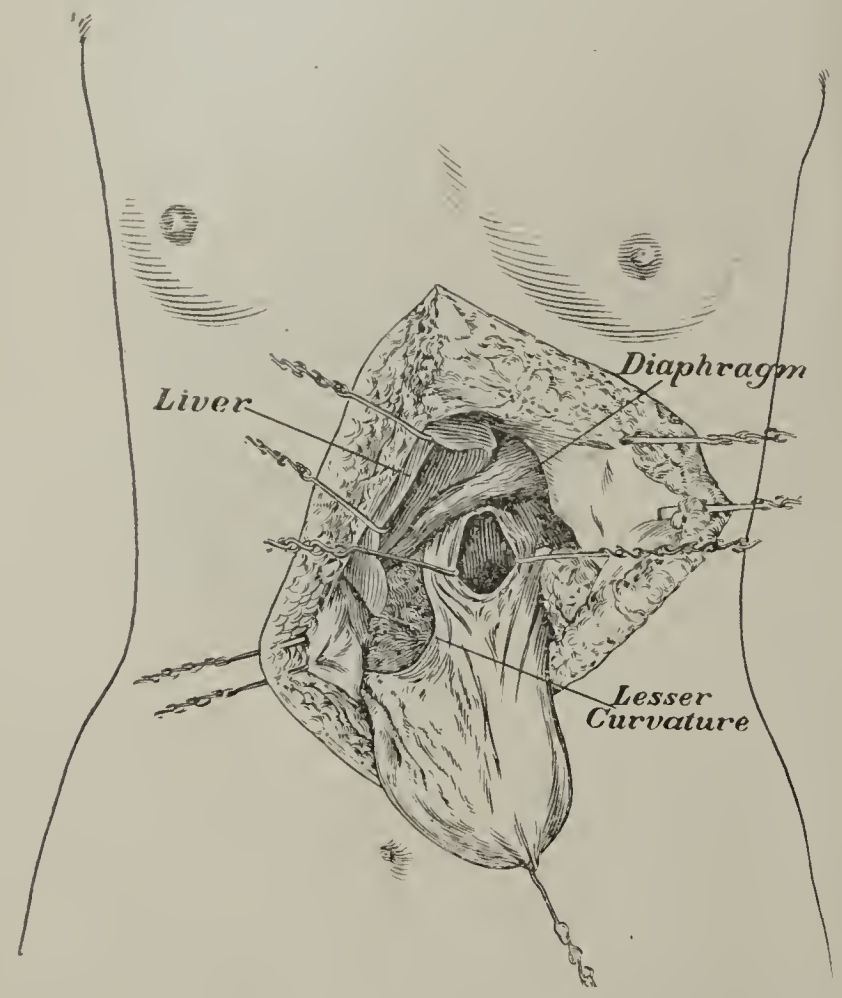


Fig. 15.—Straight median incision. Lumbar region of cadaver raised; skin-muscle-bone flap pulled upward and outward, exposing a large area of the stomach; the cardia incised and cut edges held apart by hooks.

tion as in Case 1 (Fig. 3). On the right side the surface of the liver can be better reached by pulling on the suspensory ligament (Fig. 10) or by dividing the latter up to its attachment to the diaphragm and then using it for strong downward traction (Fig. 11).

Through the courtesy of Drs. John Rogers and Irving S. Haynes, of Cornell University, I have been able to make some dissections on the cadaver in order to test this operation in combination with the various abdominal incisions that come into consideration: median, oblique and ⊢. The illustrations, representing pen-and-ink drawings made from photographs of the dissections (through the laboratory of Dr. Fred E. Sondern), speak for themselves (Figs. 7 to 17).

From my experiments on the cadaver I have concluded that the usual median (or rectus) incision can well be combined with osteoplastic resection of the costal arch; but, of course, the space gained in connection with this incision is not as satisfactory as when the oblique or ⊢ incision is used. It seems to me that in cases of resection of the stomach, in which the cardiac portion and lesser curvature can not well be pulled downward, but exposure of same is imperative, the additional room gained by dividing the cartilages will make radical work practicable. On the other hand, operations on the spleen or liver, if started by means of a median incision, will require an additional transverse incision. If a careful plan can be laid out beforehand, and it is feasible to employ the oblique incision, this will be found to afford excellent access, after lifting the lower part of the thorax. The resulting wound is not so convenient for closure. Through-and-through sutures are advisable.

Cases in which this osteoplastic operation will prove especially useful are those of injury to liver and spleen (stab- and bullet-wounds, as well as lacerations, due to a blunt force), also injuries and diseases of the diaphragm (hernia) and of the cardiac portion of the stomach. Inflammatory troubles (liver abscess and subphrenic abscess) will be attacked to better advantage, I believe, through or just beneath the complementary space of the pleural cavity after resection of one or more ribs.

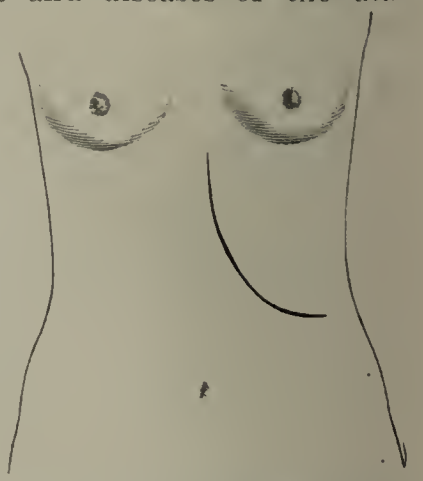


Fig. 16.—Oblique incision from xyphoid process to tip of tenth rib.

As far as I have been able to glean from the literature, osteoplastic resection of the costal arch has as yet received but little attention. It surely means a valuable addition to our operative resources. It renders possible much greater accuracy of work in a field hitherto more or less inaccessible.

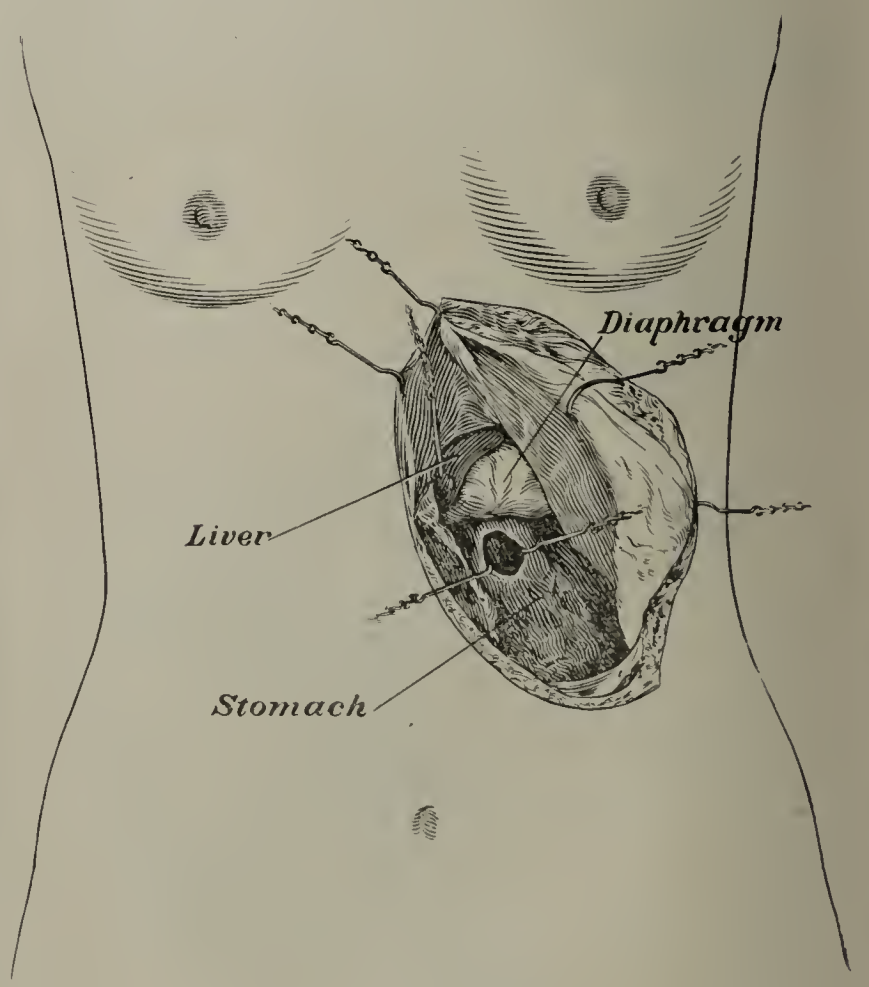


Fig. 17.—Oblique incision. After division of cartilages, as before, osteoplastic flap is raised, exposing vault of diaphragm and cardia, xyphoid process to tip of tenth

DISCUSSION.

DR. D. N. EISENDRATH, Chicago, asked why Dr. Meyer's operation would not be a practical one in the treatment of subphrenic abscesses following appendicitis, those that are situated between the diaphragm and the upper surface of the liver. These abscesses are comparatively common and the only way they can be dealt with at the present time is to go in below the costal arch, following up along the upper sur-

face of the liver, or to go in transpleurally, then there is danger of empyema.

Dr. J. R. Eastman, Indianapolis, believed that Dr. Meyer's method of osteoplastic resection of the cartilages will have an important place in the treatment of gunshot wounds of the upper abdomen, especially those implicating the upper surface and the posterior border of the liver. He cited a case in point. A ball of large caliber passed in at the eighth rib, passing through the pleura, lung, diaphragm and upper border of the liver, causing great laceration and serious hemorrhage at the posterior upper margin of the liver. Cutting through the lowest ribs, he managed to plug in an unsatisfactory way the wounded liver. The patient died. Dr. Eastman thought that if Dr. Meyer's method could have been employed the result might have been different.

Dr. Willy Meyer, New York, stated that subdiaphragmatic abscesses are reached best by the transpleural route or, if possible, just beneath the lower end of the pleura by pushing the latter up bluntly. However, if continuous suture is made on either side of the pleural incision before opening the diaphragm, it is possible to avoid the appearance of a pneumothorax or empyema. Regarding the improved accessibility of shot wounds of the liver, etc., it stands to reason, he said, that by doing this osteoplastic operation we can reach the convexity of the liver equally as well as we can reach the spleen and cardia on the opposite side.

THE DIAGNOSIS AND TREATMENT OF TUBERCULOSIS OF THE KIDNEY.*

ARTHUR DEAN BEVAN, M.D.
CHICAGO.

Although Ammor as early as 1833 pointed out clearly the essential clinical points of kidney tuberculosis, it has only been within the last ten years that the diagnosis and treatment have been placed on a sound working basis, and even to-day the frequency and importance of the lesion is not generally understood by medical men. To those of us who have been medical students for twenty-five years or more the evolution of this subject during that period furnishes some interesting reading.

Ebstein[1] reviewed the subject and described the process as a cheesy inflammation involving the kidneys and renal pelvis and ureters, as one difficult to diagnose except in the presence of some evident tubercuIous lesion; having a bad prognosis; as a condition in which the patient seldom lived more than a year. Ebstein states that all treatment is apparently hopeless. No suggestion of surgical interference is made.

In 1884 Henry Morris described the condition under the two titles of tuberculous disease and scrofulous disease of the kidney. He gives a very good clinical picture and says the treatment consists in alleviating pain and improving the general health. Further, he says that in tuberculous disease, in which the affection of the kidney is but a local manifestation of a constitutional disorder, nephrectomy would be useless, even if the other kidney were sound. When the scrofulous disease is limited to one kidney, nephrectomy promises much as a means of prolonging life by freeing the individual from a fatal malady.

In 1885 Samuel W. Gross read a paper on the subject of nephrectomy before the American Surgical Association, in which he collected twenty cases from the literature in which nephrectomy had been made for so-called strumous kidney, with twelve recoveries and eight deaths. An analysis of these cases showed that but the one kidney was involved in 65 per cent. of the cases, and that in cases in which a previous nephrotomy had been done no permanent relief was afforded by it, and he advises on this account an immediate nephrectomy when possible. Very few of these cases were done in America.

In 1885, in the German Congress of Surgeons, H. Fisher stated that all extensive operative procedures, "especially nephrectomy," for tuberculosis of the kidney should be condemned. In the same year von Volkmann said that he doubted whether operative treatment of tuberculosis of the kidney and kidney pelvis had any real value.

In 1891 Madelung collected sixty cases of nephrectomy for tuberculosis from the literature and reported three of his own cases. Eleven died from the operation and five within five months. He concludes that the operation is indicated when we can prove that the process is limited to one kidney.

In 1892 Tuffier reported twenty-five nephrectomies for renal tuberculosis, with 47.8 mortality and with but two definite cures, and fifty-seven nephrectomies, eleven abdominal, with 36.3 mortality, and forty-six lumbar, with 28.2 per cent. mortality.

In 1896 Dr. Willy Meyer,[2] New York, read a paper before the Medical Society of the State of New York, in which he emphasized the important facts that tuberculosis of the kidney is almost always at first unilateral and that it descends from the kidney to the bladder. He brings out clearly the value of the cystoscopic examination in making a diagnosis and calls attention to the peculiar appearance of the mouth of the ureter of the affected kidney. The mouth of the ureter, being indurated, presents a number of circumscribed, clearly defined, inflamed areas of mucous membrane between it and the trigonum. He says: "I could not compare this picture better than to liken it to the footprints in the freshly fallen snow."

He says too much stress can not be laid on the necessity of establishing a strictly defined diagnosis as soon as possible and of carrying out that treatment, which alone is the logical sequence of the same, to-wit: an early extirpation of the primarily diseased kidney.

In a monograph on tuberculosis of the genitourinary organs, published in 1897, Senn advocates nephrectomy, except in the cases in which the surgeon can satisfy himself that the opposite organ is present and in a healthy condition, and he dwells on the great difficulty of obtaining this evidence. Owing to the uncertainty of diagnosis during the early stages of renal tuberculosis and the existence of incurable complications in more than 50 per cent. of all cases, he says that the surgical treatment has not yielded as many permanent results as was anticipated during the early history of nephrectomy for this affection. He pleads for earlier diagnosis and earlier surgical interference.

In 1900 Ramsay, of Baltimore, published in the *Annals of Surgery* an article on renal tuberculosis, in which he collected 304 cases in which some form of operative treatment had been followed. Of these, fifty-five were nephrectomies with fifteen deaths within a month and but four cures. Of 191 primary nephrectomies there were 106 complete cures, thirty-one were improved, thirty-seven died within a month and seventeen later than one month after operation.

---

* Read in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

1. Ziemssen's Cyclopedia, 1877.

2. Meyer, Willy: "The Early Diagnosis of Tuberculosis of the Kidney," Medical News, March 7, 1896.

In 1901 Israel published his great monograph, reporting the kidney cases handled in his surgical clinic. Among these were thirty-one cases of tuberculosis. He made a nephrectomy in twenty-eight, a nephrotomy in two and a resection in one.

In 1903 Kuemmell and Rumpel reported the extensive kidney work of the Allgemeinen Krankenhaus in Hamburg. Among these are thirty-four cases of tuberculosis and among these thirty nephrectomies with twenty-seven cures and three deaths, and four nephrotomies, two deaths and two improved.

In 1904 Kroenlein reported on kidney tuberculosis and the results of operative treatment from his own clinic. He operated on thirty-nine cases of kidney tuberculosis, three times opened perinephritic abscesses, twice did nephrotomy and thirty-four times nephrectomy. He regards nephrectomy for tuberculosis, when limited to one kidney, as one of the most successful operations in surgery.

It is the intention to show in this brief paper that the views on the subject of kidney tuberculosis have changed greatly within the last twenty years, that to-day tuberculosis of the kidney is known to be a common disease, that it is almost always the result of infection through the circulation, that in 90 per cent. or more of the cases it is primary in a single kidney, that it is the duty of the general practitioner to diagnose early these cases and that it is the duty of the surgeon to operate on them early, because an early operation holds out a good prospect of cure. There was a time when the handling of a case of kidney tuberculosis was purely medical. In the enthusiasm of the early successes, surgeons said, tuberculosis of the kidney is a surgical disease and attempted to place the responsibility entirely on the surgeon.

We can say to-day that the responsibility of the successful handling of renal tuberculosis is divided equally between the physician and the surgeon. The physician must learn to recognize these cases early, at the time when the process is still limited, as it usually is, to one kidney; the surgeon must learn that the radical removal of the kidney involved holds out practically the only hope and, fortunately, a very large hope for the patient.

GENITOURINARY TUBERCULOSIS.

Before taking up the special subject of renal tuberculosis it will be necessary to say a word on the subject of genitourinary tuberculosis in general.

Within the last ten years the subject of tuberculosis of the genitourinary tract has been most carefully studied and new clinical and pathologic evidence obtained and carefully analyzed. This has been made possible by additions and refinement in our means of diagnosis. Of these, the careful examination of the catheterized centrifugated urine for tubercle bacilli, pus, blood, etc., the obtaining of the urines from the two kidneys separately by means of various segregators and especially by catheterizing the ureters, more frequent and intelligent employment of the cystoscope and the use of the *x*-ray and cryoscopic examinations of the blood and the urine and the more systematic histologic examination of tissue removed at operations, must be mentioned as the most important. Tuberculosis of the genitourinary tract, with but few exceptions, begins at one of four points: the kidney, the prostate, the epididymis and the tubes. It is difficult to state which is the most common focus of infection, although evidence has seemed to favor the conclusion that the kidney and the tubes and the epididymis are the common foci and are primary in about an equal number of cases, the prostate occupying the fourth place with a smaller but very considerable percentage of cases.

The kidney, tubes, prostate and the epididymis are, as a rule, primary only in the sense that in the individual affected they are the overshadowing and important focus of the disease. They are strictly secondary to a small, unimportant focus in the lymphatic glands, bones or lungs, the infection occurring through the blood. Infection of the genitourinary tract through the urethra and vagina, as in gonorrhea, is to be admitted as a possibility, but must, as a clinical fact, be exceedingly rare. Probably the most important practical result that has been obtained from these more recent studies has been the knowledge that primary kidney tuberculosis is exceedingly common, and in probably 90 per cent. or more of the cases is for a time limited to the single kidney first attacked. The work of Kuemmell, Kroenlein, Israel, Simon, the Mayos and myself has confirmed this fact. This knowledge has changed very materially our views in regard to the treatment and prognosis of these cases.

When the process is still limited to the kidney first involved, an early nephrectomy gives an excellent prognosis, both as to immediate and permanent results. On the other hand, the lesser operations, which have been so much employed, resection of the kidney and especially nephrotomy, are to be generally discarded. In the light of our present knowledge, resection in kidney tuberculosis has no place and nephrotomy is to be resorted to only as a palliative operation or to relieve urgent symptoms, such as sepsis and pain when the local condition is complicated, as, for instance, with a perinephritic involvement, or when the bad general condition of the patient makes the more radical operation unwarranted at the time. But even in these cases secondary nephrectomy is usually required in order to bring about a cure.

Tuberculosis of the bladder is seldom primary and is secondary to kidney tuberculosis, tuberculosis of the prostate or an extending tuberculosis from the epididymis. The treatment of this condition is still one of the unsolved problems of surgery and is to-day as unsatisfactory as it has ever been, with the exception of the cases of limited involvement of the mucosa, secondary, for example, to a primary focus in the kidney. In these cases it is not infrequently found that after the removal of the primary focus the limited lesion of the bladder undergoes a spontaneous cure. Ascending tuberculosis from bladder to kidney is probably rare.

Tuberculosis of the prostate was formerly believed either not to occur at all or to be exceedingly rare. Our recent studies have shown that primary tuberculosis of the prostate is by no means uncommon and that it forms a distinct proportion of cases of genitourinary tuberculosis.

Tuberculosis of the epididymis is exceedingly common, and when it is primary and limited to this organ radical removal has resulted in cure in about 40 per cent. of the cases. From the epididymis the vas and seminal vesicles and prostate may become involved and later general tuberculosis, or, infrequently, the bladder and kidneys.

Tuberculosis of the tubes is exceedingly common; the process frequently involves the ovary and peritoneum and occasionally the uterus.

Primary tubal tuberculosis rarely leads to involvement of the kidney, except in cases of such widespread tuberculosis that surgical treatment of the kidney would be excluded. In all these forms of genitourinary tuberculosis the great benefits to be derived from the outdoor, open-air and general hygienic treatment must be recognized as of great importance and must be taken advantage of and insisted on in all cases. This becomes very clear when we remember that even in the cases in which there is no evidence or history of a primary focus elsewhere in the body, nevertheless such a primary focus probably does exist and remains even after the radical surgical removal of the focus in the genitourinary tract.

Tuberculosis of the kidney is a common disease. It occurs at all ages, but is most common from 20 to 40 years of age. Women seem to be more often affected than men, about two to one, although on this point there is a divergence in statistics. It occurs in postmortem statistics more frequently as a bilateral lesion.

Report of 12,732 autopsies at Kiel showed that of the cases of renal tuberculosis 62.3 per cent. were bilateral and 37.6 per cent. unilateral.

The *clinical* evidence is different. In Kroenlein's cases 92 per cent. were unilateral and 8 per cent. bilateral. Israel found but 8.3 per cent bilateral. Facklam found but 9 per cent. bilateral. Kuemmell found but 12 per cent. bilateral. Israel concludes that if our attention is called to these cases early we should find 90 per cent. of them unilateral.

In surgical clinics in which kidney fixations are limited to suitable cases tuberculosis of the kidney usually furnishes the largest percentage of any single pathologic process, being more frequent than stone or tumor; tuberculosis of the kidney is frequently found associated with other evident tuberculosis, as tuberculosis of lung, cervical glands, bladder, bones and joints, and genital tuberculosis, as epididymis or tubes. Kidney tuberculosis is sometimes associated with other pathologic conditions, as an old gonorrheal invasion or renal calculus and hypernephroma.

SYMPTOMS.

Renal tuberculosis can and does undoubtedly run at times a silent course, without giving rise to any symptoms even when a single kidney has been entirely destroyed. The most common symptom is an increased frequency of urination. This frequency is seldom very great, unless there is present some degree of cystitis. There may be some pain on urination, but this, where marked, usually speaks for an involvement of the bladder. The patient may notice that the urine is cloudy; pus in the urine and blood in the urine are important symptoms.

In probably 25 per cent. of the cases blood is noted as a symptom. Sometimes a large quantity is found, even sufficient to fill the bladder and to cause an attack of renal colic by obstructing the ureter. More often it is slight or even microscopic in amount; pus is present in varying amounts, not infrequently there being a mixed infection with staphylococcus albus or colon bacillus. In advanced cases the segregator or ureteral catheter may show nothing but pus coming from the ureter, the kidney secreting substances being almost entirely destroyed.

Pain in the kidney region and radiating to the bladder along Poupart's ligament may be present, either as a sense of soreness and a dull ache or an acute attack of renal colic simulating stone and due to the plugging of the ureter with blood or tuberculous débris. When a perinephritic involvement occurs the tenderness and pain characteristic of such a process are present in the costovertebral angle. Temperature occurs in a fair proportion of cases (of the tuberculous type with slight elevation in the evening), or again as exacerbations which come on at intervals and last several days.

In well-marked cases, as in tuberculosis elsewhere, the general evidences of grave constitutional disease, i. e., loss of strength and weight and secondary anemia, are present. A swelling in the kidney region, due either to an enlargement of the kidney or to a perinephritic process, is present in a limited percentage of cases.

The differential diagnosis must be made between other inflammatory lesions of the urinary tract, simple pyelitis and pyelonephritis and kidney stone and neoplasm, and such rare and obscure lesions as the so-called essential kidney hemorrhage and polycystic degeneration of the kidney.

In my own clinic I find that the cases of simple pyelitis and pyelonephritis have been few as compared to the tuberculous cases and the other pathologic processes simulating tuberculosis. As a rule, the simple pyelitis and pyelonephritis sustain about the same relationship to tuberculous infections of the kidney as far as onset and history are concerned as does acute osteomyelitis of the upper end of the femur to hip-joint disease, i. e., there is not infrequently the history of the existence of a preceding suppurative process elsewhere, as a carbuncle, a furuncle or an acute infective process, as a grip or pneumonia, or an infection of the lower urinary tract, and then the sudden acute onset of the symptoms, with chill, temperature and pain, enable one to make the differential diagnosis between an acute suppurative infection and the chronic process of the tuberculosis. When an acute suppurative infection occurs in a tuberculous kidney, which has not been previously recognized, the diagnosis may be difficult or impossible.

In my own work I have been especially interested in the differential diagnosis between tuberculosis, stone, tumor, polycystic kidney and essential kidney hemorrhage. We have been confronted with this problem in sixty cases, in which the pathology was later determined by operation. Of these, twenty-eight proved to be stone, seventeen proved to be tuberculosis, ten proved to be hypernephroma, four proved to be essential kidney hemorrhage, one proved to be polycystic kidney, unilateral.

All of these pathologic conditions may present the following symptoms in common: 1. Blood and pus in urine. 2. Pain in kidney region and attacks of kidney colic. 3. Tenderness in kidney region. 4. Enlargement in kidney region. 5. Bladder symptoms more or less marked. 6. Constitutional symptoms, loss of weight, etc. 7. Slow onset of symptoms and chronic course.

We have attempted to make the differential diagnosis by means of: 1. Careful history and physical examination. 2. An *x*-ray examination. 3. A careful examination of urine for tubercle bacilli, etc. 4. A cystoscopic examination of the bladder. 5. Cryoscopic examination of the blood.

In the ordinary case, when this differential must be made, we adopt this line of procedure:

1. Several *x*-rays are obtained, which show satisfactory differentiation of the structures. If stone is found the diagnosis is made; if no stone is found, stone is excluded as a probable diagnosis in our work. The percentage of error in negative cases has been but 3 per cent.

2. In these negative cases, then, the urine is carefully examined for tubercle bacilli. If found, the diagnosis is made; if not found after a week's careful search, tuberculosis is not excluded, because we have failed to find tubercle bacilli in about one-half of our cases.

3. The bladder is then examined and if bacilli have been found, the ureters are catheterized to determine whether the process is limited to one or involves both kidneys and the mouth of the ureter is carefully examined.

4. In the cases in which the *x*-ray is negative and the examination of the urine for tubercle bacilli is negative, and when an enlargement of the kidney exists, the diagnosis of hypernephroma is most probable. We have been able to make this diagnosis in five or six cases on these grounds.

5. We make a cryoscopic examination of the blood, not of the urine, with the belief that in hematuria if the process is limited to one kidney we shall find the normal freezing point of — 0.56; if both kidneys are involved and kidney insufficiency exists, the cryoscopic examination will show — 0.60 or above.

Following the above methods, in this list of sixty operations we have been able to make the correct diagnosis in more than fifty cases. In only six or eight were the operations begun as exploratory operations.

TREATMENT.

The treatment of tuberculosis of the kidney depends to-day entirely on the facts as to whether one or both kidneys are involved. As already pointed out, in 90 per cent. or more, the process is an infection through the circulation and is limited to one kidney.

In these cases, there is but one operation to consider and that is nephrectomy, the removal of the diseased kidney. If, because of the existence of a mixed infection, the patient's condition is such as to make an immediate nephrectomy out of the question, a nephrotomy with drainage should be made simply as a palliative operation and with the understanding that, as soon as the condition of the patient permits, a radical operation of nephrectomy should be made.

A resection of the kidney is to be practically discarded from consideration. The multiple foci, which are disclosed by a careful examination of all the tuberculous kidneys removed at operation, show how useless such a procedure is.

When both kidneys are involved, the treatment must be nephrotomy and drainage in cases in which there are large abscesses, and the fresh-air and outdoor treatment of widespread inoperable tuberculosis.

OPERATIVE TECHNIC.

In uncomplicated and early cases a nephrectomy for tuberculosis presents few difficulties. An oblique incision, extending from a point a finger's breadth below the last rib and just external to the erector-spinæ muscles, is carried downward and outward to a point a finger's breadth above the crest of the ileum. This divides the skin, superficial fascia, latissimus dorsi muscle and the layers of the lumbar fascia down to the fatty capsule of the kidney. This incision runs about parallel with the lumbar nerves and these, as a rule, can be avoided. The kidney is entirely freed from its surroundings and brought outside of the wound. The ureter is ligated separately from the vessels. The vessels are double ligated with middle-sized catgut. The inside of the mucosa of the ureter, distal to the ligature, is cauterized with pure carbolic acid.

For a time it was believed that it was very necessary to remove the entire ureter. More recent experience seems to show that this is unnecessary and that the ureteral mucosa, even though involved in the disease, gradually recovers after the removal of the primary foci in the kidney proper. The external wound is closed with the exception of a cigarette drain carried down to the stump of the ureter and the great vessels. This is removed at the end of forty-eight hours.

RESULTS.

I know of no more satisfactory results in the whole field of surgery than those which are obtained by an early nephrectomy in unilateral kidney tuberculosis. With this fact established, it becomes our duty to make it more widely known and to plead for early recognition and early radical operation for kidney tuberculosis.

On the seventeen patients which I have handled surgically for tuberculosis, 21 operations were performed. 12 nephrotomies, 7 nephrectomies, 1 opening of a perinephritic abscess and 1 resection. Nephrotomy was made in most of the cases in my earlier work. None of these proved curative. The same result followed in the single resection which was performed. The histories of the seven nephrectomies have been very satisfactory. They have all recovered from the operation, except one, and have been apparently entirely cured.

The one fatal case is a case in which a nephrotomy had been done with a slight temporary improvement. A nephrectomy, which was performed later, was made extremely difficult by the extensive perinephritic inflammation, which resulted from the first operation. An ill-advised attempt was made to remove the kidney with its capsule. This made the operation very bloody and very prolonged, the patient dying of shock within a few hours. Since that time we have saved similar patients by removing the kidney from within the fibrous capsule, when the perinephritic adhesions are dense, which is a much easier and safer procedure and seems to give very satisfactory results.

DISCUSSION.

Dr. Van Buren Knott, Sioux City, Iowa, stated that the old surgical conceptions and ideas of the pathology of renal tuberculosis gained from postmortem records are being constantly revised by antemortem or operation statistics. It was commonly believed only a few years ago that kidney tuberculosis was an entirely hopeless affection; that surgical treatment did not offer anything very satisfactory in the way of results; and time and again the pendulum swung back and forth between medical and surgical treatment. Postmortem records nearly always showed bilateral disease of the kidney, when in nearly every instance kidney tuberculosis is primarily unilateral. A descending infection may and very frequently does occur; the bladder becomes involved, and if the case is neglected and is allowed to go on for an unreasonable length of time, it is only a question of months before the second kidney is involved. This being true, the duty of the physician is very clearly outlined. The patient should have not only dietetic and hygienic treatment, as recommended by the physician, but surgical treatment as well.

The diagnosis is of extreme importance. It is only by early diagnosis that proper treatment can be instituted. This is another one of the diseases where the only treatment that can accomplish anything is that which is instituted early. The use of the cystoscope in these cases is of the greatest assistance, although frequently cases are encountered where its use is very unsatisfactory. With a tubercular contracted bladder, the use of the cystoscope at times is extremely difficult, and catheterization of the ureters, or of one ureter, has, in some instances, been found to be a difficult procedure. In some cases it has been necessary to expose the second kid-

ney, making a definite diagnosis of the condition existing in the kidney known to be diseased. As a rule, it is a reliable method of determining the condition of the other kidney before attempting to do a nephrectomy on the diseased kidney. Dr. Knott had one unsatisfactory occurrence. After removing the kidney the patient's condition became alarming and death ensued. The second kidney, which had been supposed to be healthy, was found to be in an advanced stage of tuberculosis. So that even inspection of the second kidney does not always lead to the safest results.

As to cystoscopic pictures of the bladder, he has been able many times to find conditions made plain by finding advanced congestion in the neighborhood of the ureter. Dilatation of the orifice of the ureter is typical of kidney tuberculosis, and in most instances the catheterization of that ureter will not be necessary, as such a dilated orifice speaks sufficiently loudly for tuberculosis of the kidney.

Nephrotomy, he believes, was justly condemned by Dr. Bevan as a palliative operation. The attempt to conserve any portion of the kidney tissue is a mistake. He has had two cases in which attempts to conserve partially tuberculous kidneys by resections of a small portion of the viscus were followed by results which made resection of the whole kidney necessary. He emphasized that the treatment of tuberculosis of the kidney is now in the critical stage and that the future of this treatment will depend on the early recognition of the disease and the immediate institution of a radical operation, which in all instances should be nephrectomy when the disease can be located and is confined to one kidney.

DR. HOWARD A. KELLY, Baltimore, said that his experience with tuberculosis of the kidney covers about 49 or 50 personal cases, and a considerable additional number of cases in the hands of his associates, Drs. Hunner and Cullen. He has found that tuberculosis of the kidney is a very common affection. He was interested to know the frequency in which tubercular lesions in other regions are found in these cases. Very often the patient has had a tubercular joint lesion of an obscure or a manifest nature; or there have been lesions in the glands or in the bones; or, sometimes, a latent pulmonary lesion. The history of these cases always should be gone into very carefully.

In women the disease is almost always primary in the kidney. Dr. Kelly has never met with a case suggesting an ascension from the bladder to the kidney, nor does a clearly proven case exist in the literature. In men, where bladder tuberculosis originating from a testicular tuberculosis is common, as compared to the frequency of bladder tuberculosis without kidney involvement in the woman, it may occur. It is possible to picture an involvement of the vesical end of the ureter leading to stricture of same and a consequent hydroureter above, thus producing conditions favorable to the tubercular ascension. While granting the possibility of such an occurrence, it must be kept in mind that clinical autopsy and experimental facts all speak for its rarity. In women it is always of great importance to investigate the condition of the genital organs. There is a common association between renal tuberculosis and tuberculosis of the uterine tubes and even of the uterus itself. He has had several such cases. The first two or three came as surprises, but lately he has been looking out for them very carefully. Dr. Kelly had a patient who had a pelvic tumor and tuberculosis of the right kidney. When he opened the abdomen he found a disseminated tuberculosis, the peritoneum looking as if it had been peppered. He took out the much-involved pelvic organs, after which he did a right nephro-ureterectomy. The association of tuberculosis with hydronephrosis is remarkable, particularly with stone. The first case of this kind he saw was a patient whose physician had removed a kidney stone. Several years later she had tuberculosis in the same kidney and it was removed.

As to the diagnostic signs, it is not the common ones which demand attention, but the uncommon ones. Pain is not always a satisfactory sign, for the patient may have pain in the wrong side. The size of the kidney may be misleading, because a normal kidney may be hypertrophied. Tubercle bacilli in the urine can be demonstrated in some cases of pulmonary phthisis, without renal involvement, particularly if the twenty-four hours' urine is examined. Dr. Kelly also referred to a tubercular case in which the woman had been advised to have the wrong kidney taken out because it had a large ureteral orifice on that side. He has a patient with tuberculosis of the urinary tract, who had a golf-hole orifice on one side and a large red ureteral orifice on the other. He felt sure that the former was the affected side, but when he cut into the kidney there was no disease. He then cut into the other kidney and there also was no disease. It was a case of primary tuberculosis of the bladder with these interesting signs.

He noted the very common occurrence of stricture of the ureter in these cases. In two early cases he was misled and sent the patient back to her physician with a diagnosis of stricture of the ureter. She undoubtedly had the stricture, but it was due to tuberculosis of the ureter above the strictured portion. Nephrotomy, he said, may be necessary as a temporary means to relieve the patient, but nephrectomy must follow. Resection should not always be urged because Morris took out a kidney on one side and then the patient developed tuberculosis in the other kidney. He did a nephrectomy and four years later the patient was in good health and able to work at service.

DR. WILLY MEYER, New York City, believes that tuberculosis of the kidney is a very common disease, much more common than it has been thought to be in former years. The principal point is to make the correct diagnosis. It must be of value to have some more or less distinct clinical symptoms which will cause the surgeon to suspect the disease. Pain is a very important sign; but, according to his experience, a far more significant symptom is that of frequent urination with tenesmus (sometimes appearing in distinct attacks) not only during the day, but during the night. If a younger patient says that he has frequent urination, both during the day and during the night, that he has had renal colics with pus and blood in the urine, he at once suspects primary renal tuberculosis, especially if there has been no gonorrhea and the patient has never been subjected to intravesical instrumentation. If tubercle bacilli are then found in the urine, the diagnosis is established. In order definitely to locate the disease, he insists in these cases on cystoscopy. Of course, the bladder is here frequently contracted and irritable, and there is a great amount of catarrh, etc., but, if one will take the trouble to carefully irrigate the viscus, preferably with a weak bichlorid solution, after due cocainization, he will soon be able to introduce a sufficient amount (three ounces) of boric-acid solution to permit of a cystoscopy. If in such a case he sees the mouth of one ureter healthy and that of the other injected, or rather ulcerated, he diagnoses unilateral descending tuberculosis. He considers this cystoscopic picture the most important pathognomonic sign in determining which side is diseased. It is of greater value than unilateral pain.

Dr. Meyer fully agrees with Dr. Kelly that pain is sometimes misleading. In one of the cases observed by him, the patient complained of constant pain on one side, tubercle bacilli were found and he thought the diseased kidney would be on the painful side. He did cystoscopy and there was pronounced ulcerative catarh. The picture was blurred. He treated the man for a week or two and then repeated cystoscopy. He found an ulcerated ureteral mouth on the other side, and the one corresponding to the painful side was healthy. On the basis of this finding he diagnosed primary renal tuberculosis of the opposite side and cut down on that kidney. It proved to be the seat of the disease and was removed. The patient is well to-day.

Catheterization of the ureters can be dispensed with in the majority of these cases. If recurrent attacks of pain are located on the side that shows the ulcerated mouth of the ureter, and if tubercle bacilli are found, the diagnosis is still more firmly established. Therefore, in suspicious cases, the cystoscope should be used as soon as possible. If the mouth of one of the ureters is ulcerated, there is a descending tuberculosis. If the mouth of neither ureter is ulcerated, but if pyelonephritis is made out by urinary analysis, and tubercle bacilli are found, there is an ascending tuberculosis.

The kidney which is diseased should be removed, and the earlier it is removed, the better. Then send the patient out into the country, into the mountains, if possible. Let him benefit from hygienic régime, after he has had surgical treatment.

Dr. Joseph Ransohoff, Cincinnati, stated with regard to ascending tuberculosis of the kidney that there is such an occurrence as the result of a primary disease of the vesicles, the prostate or the testicles, with secondary involvement of the bladder. Otherwise it is always a descending tuberculosis. A non-motile bacillus can not travel up stream. Tuberculosis of the testicle is always an ascending tuberculosis from the epididymis running toward the prostate. He said that he understood Dr. Kelly to say that very frequently in women tuberculosis of the kidney is associated with tuberculosis of the genital tract. There is one thing that calls attention to the fact that tuberculosis is descending when coming primarily from the kidney, and that is, that tuberculosis of the kidney occurs as often in women as it does in men, and in women it could not have any association with the genital tract and become an ascending affection. Tuberculosis of the kidney must be kept absolutely separate and distinct from tuberculosis of the genital tract, in the male as well as in the female. Dr. Ransohoff said that some years ago he read a paper before the American Surgical Association on the treatment of tuberculosis of the kidney, and called attention to the fact that nephrotomy ought not to be done as a final operation. On that occasion he did report one case of partial resection, and that patient had done well since, but it ought not to be done often. Quite recently he had a tubercular kidney for removal. One of his assistants suggested that he save the kidney, taking out only the one pole that was involved. He made a section of that kidney and there were minute deposits in the cortical substance that would certainly have given rise to trouble later on.

He invariably makes a laparotomy to determine whether or not the other kidney is there. If it is in the right place, feels right and is of the right size, he takes it for granted that the kidney is doing its work right. If it is not, God help the patient. Even catheterization of the ureters and cryoscopy will fail sometimes to aid in making a correct diagnosis. The individual case must decide what operative procedure is to be adopted.

Dr. E. W. Lee, New York, referred to the case of a young man who two years ago received an injury to the testicle while playing football. Dr. Lee removed both testes because they were tubercular, and now that young man is suffering from tuberculosis of both kidneys, which has been demonstrated conclusively by catheterization of the ureters.

Dr. L. L. McArthur, Chicago, thinks it a mistake to let the dictum go out that all tubercular kidneys should be removed as soon as the diagnosis is made. That is, it would be a mistake to advise or to counsel the profession to remove kidneys affected with a severe mixed infection, from which the patient has been suffering for weeks, and is in practically a septic condition. Under these circumstances it is perfectly justifiable, and this is borne out by practical experience, to first drain that kidney, let the fever subside and restore the patient to good condition. Then perform the nephrectomy, but not until then.

The New Public Hospital at Berlin.—The great Rudolf Virchow Hospital is nearing completion. The total expense has been nearly $5,000,000. There are 57 separate buildings with 3,400 rooms, exclusive of the basement. The capacity of the hospital is 2,000 beds, divided as follows: 564 beds in the 11 buildings of the surgical service; 500 beds for the 10 buildings for internal medicine; 95 each for the obstetric and gynecologic wards; 11 beds for septic cases; 24 for the quarantine building; 34 for the diphtheria pavilion; 120 in the 4 infectious diseases pavilions; 18 beds for unruly patients, and 374 for males with venereal disease, with 146 for female cases. Some of the buildings have been in use for some time, the museum even before Virchow's death.

SODIUM CITRATE IN INFANT FEEDING.*

A. C. COTTON, M.D.
CHICAGO.

The infant deprived of the breast must, in relation to his feeding, be regarded as a pathologic problem. That this statement is axiomatic is shown by the fact that more earnest work has been bestowed on infant feeding during the past twenty years than on all other pediatric subjects combined. That the problem is still unsolved the high relative mortality and later morbidity of artificially fed infants bear constant witness.

The six essentials of Cheadle, enunciated by that observer some time in the '80s, bear witness that the essential requirements of an artificial food for babies were broadly understood 20 years ago. Quoting from memory, they are briefly as follows: 1. Sterility. 2. Antiscorbutic property. 3. Quantity. 4. Some animal constituents. 5. Form suitable. 6. Constituency. Much has been learned since Cheadle by amassing clinical results and observations. Meanwhile the deductions from *a priori* reasoning have proven unsatisfactory for the simple reason that so little was known of the physiology of infant digestion. Latterly the premises from which we reasoned have been proven, almost without exception, to be incorrect.

Thus the great American experiment known as the exact percentage method of feeding required that the baby's diet should consist wholly of cow products and water, so modified in its five gross constituents as to coincide quantitatively with similarly named constituents of average breast milk. One other ingredient only was allowable in this feeding mixture, viz., some alkalin solution, as lime water, sodium bicarbonate or magnesia. This dogma, which in connection with laboratories established throughout the country had almost become a cult in infant feeding, was practically based on seven assumptions, which have recently been proven erroneous, to wit:

1. The qualitative similarity in breast and cow's milk of the lactose, fats, albuminoids, proteids and their chemical combination with the milk salts.

2. The claimed alkalinity of breast milk in contradistinction to the acidity of cow's milk.

3. The possibility of a synthetical substitute for breast milk from cow products alone.

4. The claim that cereals were not allowable because indigestible in the infant's secretions and that they induced dyspepsia and intoxication by acting as decomposing foreign matter.

5. That cereal gruels were no more efficient in the prevention of dense milk coagula than dilution with plain water.

6. That HCl played no part in the digestive process until later infancy.

7. That the important proteid content of the baby's food could be made up from the non-coagulable whey albumin of cow's milk.

The elucidation of facts in refutation of these premises is due to the earnest work of a number of men, prominent among whom as members of this association may be mentioned Chapin on cereal gruels and gastric development, Kerley on milk reaction and alkalinization, Shaw on HCl secretion in infants. Stern on milk fats. Southworth on the art versus the science of infant feeding, Morse on acidified milk and buttermilk feed-

* Read in the Section on Diseases of Children of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

ing, and the recent unsurpassed work in chemistry of milk by Van Slyke and Hart at Geneva. Most of these contributions have enriched our literature and become familiar to all. The subject is still a broad one. I disclaim any intention of attempting in this limited paper to deal with it *in toto* and indulge in these preliminary observations merely to emphasize the fact that no royal road to successful feeding by exact mathematical formulas has yet been found. Nor do I wish to convey the impression that I would belittle the value of attempts at accuracy in determining the component parts of the infant's dietary.

Great credit is due and will ever be associated with the name of Dr. Rotch as the founder of a system which has not only served as an hypothesis for tentative feeding, but has stimulated to greater accuracy and more careful clinical observation and recording of results than was possible by any other method. As an enthusiastic advocate of the so-called American method, I am on record frequently both at home and abroad. I may be pardoned if I suggest that the tendency in general is too much along the line of the refinement of mathematical formulas to the neglect of the obvious importance of gastric development along normal physiologic lines.

The spectacle of a marantic infant with persistent curds in the stools, though cow proteids have been reduced to the extreme limit of attenuation by dilution with water, is a familiar one. So, also, too commonly in evidence is the child fed long, but not nourished, on whey proteids and cream whose gastric vigor has not progressed beyond that of early infancy.

Important as the rôle of carbohydrates and fats in infant development may be and difficult as the problem of properly dealing with fats is, it is to the management of the proteids that I beg to call your attention in the few minutes allowed. Their importance in the nutrition of the child needs no emphasis, as it is universally accepted both theoretically and clinically.

The intolerance of the infant's digestive organs to cow proteids, so widely different from those for which they were intended, is also well known. Of the many methods in vogue for the establishment of toleration of these refractory curds the one most common, unfortunately, is their quantitative reduction by dilution far below percentages absolutely necessary for the development and growth of the child. In fact, the common advice to infant feeders on percentages of milk in recognition of its refractoriness is either to restrict the proteid percentage far below that which is known to obtain in average breast milk (as though Nature would commit the absurdity of elaborating the necessary amount of proteid from even a less quantity when presented in the more obstinate form of cow casein), or to substitute the non-coagulable proteids of whey.

In either case Nature is cheated of her absolute demands. The pathetic malnutritional results of low proteid feeding, both immediate and remote, are too familiar to us all to need further elaboration. Aside from this slow starvation and stunted growth with its diminished resistance to intercurrent disease from insufficiency of nitrogenous food, abundance of proteids is demanded in a coagulable form for the normal development of the gastric function, as ably shown by Chapin and corroborated by a host of clinical observers. This the infant gets at the mother's breast in proteids which clot on admixture with the gastric contents in soft, floeculent, semi-solid coagula which readily pass the pylorus in a form suitable to intestinal digestion and absorption.

The important question, then, in feeding cow's milk is not how to reduce the proteids and sustain life, but how to *increase* the proteids and maintain unimpaired digestion. Buttermilk has been tried; acidulated milk has been tried; admixture with gruels has been tried; koumiss, matzoon and kephir milk have been tried; the addition of various alkalies is much in vogue; all with varying degrees of success, and each measure has its ardent advocates. That the question is not yet settled this diversity of opinion amply indicates. It is still an open field, and the cry that no chemical tampering with the milk should be encouraged need deter no one, since it is proven beyond dispute that cow's milk, however modified, is not a natural food for the human infant. The more orthodox observers of the original laboratory percentage modification have from the first chemically tampered with the milk in the addition of lime water, sodium bicarbonate, etc., in the mistaken notion of humanizing the mixture by rendering it alkalin. That we reached further than we intended in our administration of alkalies and secured toleration of the curds through neutralization of the normal gastric acids does not lessen the evils of inhibition of those digestive processes which can occur only in an acid medium.

Since deductive methods from *a priori* reasoning have thus far failed of a satisfactory solution of this problem, let us welcome inductive methods conducted along rational lines, since massed clinical evidence must ever be the tribunal before which all methods must come to trial. Whether *secundus artem* or *secundus scientiam*, it is the greatest number of babies who live and thrive and resist disease that demonstrates the merits of their hygiene.

AUTHOR'S EXPERIENCE.

It is with the firm conviction that sodium citrate, through its inhibition of dense coagulation of cow's milk in the presence of an acid and rennin, may prove valuable in the solution of the proteid problem that I present a brief résumé of my experience with this agent.

More than two years ago in a personal letter from one of my assistants, Dr. J. W. Vanderslice, who was studying abroad, my attention was called to this use of sodium citrate. The reports from Dr. F. J. Poynton's clinic at Great Ormond Street, London, from which the writer as an eye witness drew his conclusions, seemed sufficient to justify a careful consideration of this new method of overcoming some of the obstacles in the adaptation of cow's proteids to infant digestion.

Rather cautiously, I began prescribing the citrate in cases in which varying milk mixtures had been used with poor success. Later, as I found that infants would tolerate a larger proportion of the milk in the feeding mixture when citrated than by any other modification known to me, I used it more boldly, so that during the past two years I find a record of its employment for a longer or shorter period in more than 50 cases in both hospital and private practice. I have here, by the courtesy of Dr. J. D. Merrill, a report of 8 cases in which she has carefully observed its effects for a considerable time, also by the courtesy of Dr. Vanderslice a history of 29 cases reported by him at different times to the Chicago Pediatric Society. In addition to this I have read carefully Dr. Shaw's[1] report of 22 cases, making a

1. Shaw: Arch. of Pediatr., March, 1906.

total of 112 cases embracing nearly all conditions from simple dyspepsia to marasmus and ranging in age from the new born to adults who have suffered from milk dyspepsia.

Sodium citrate being very soluble in water, the method of employment is simple, as follows: An aqueous solution is ordered containing from 1 to 5 gr. to the dram. A quantity of this solution is furnished the mother or nurse with instructions to add to the baby's bottle immediately before feeding enough of the solution to represent 1, 2 or even 3 gr. of the citrate to each ounce of milk in the feeding mixture, according to the prescriber's idea of the requirements. The feeding mixture may consist of varying dilutions of milk with water or gruel with the addition of cane or milk sugar, with or without cream. No alkalies are added, the sodium citrate used being a neutral salt. A most noticeable feature in this method of feeding is the large proportion of milk in the feeding mixture that the infant will tolerate without evidence of gastric disturbance or the appearance of any considerable amount of undigested casein in the stools. In fact, the stools of babies fed on citrated milk have come to be regarded by Drs. Merrill, Vanderslice and myself as positively characteristic, being firm enough to show form on the diaper, free from fecal odor and homogeneous in color and consistency. The slight tendency to constipation mentioned by Dr. Vanderslice I have observed in a number of cases in which I attributed it to the low percentage of fat in the food, consisting of equal parts of milk and water or even one part of milk to two of water. In but few instances have I observed this constipation where the fat contents of the mixture equalled 3 per cent.

One indication for the increase of the sodium citrate, even in some cases to as high as 3 gr. to the ounce of milk, is vomiting of curds. Another indication is the appearance of curds in the stools, care being taken to exclude indigestion from excess or intolerance of fats. Of the stools, J. H. Salisbury, professor of chemistry, to whom they were submitted, reports as follows:

Three samples of the feces of infants fed with milk modified by the addition of citrate of sodium were examined. The feces were yellow, of a moderately firm consistence and remarkably homogeneous. On microscopic examination a few round masses, probably calcium soaps, could be seen scattered through the otherwise very fine débris. In two specimens short crystals of soaps could be detected. No free fat was found. On treatment with acetic acid more or less acid crystals could be observed and in one specimen this was especially marked. Chemical examination of one specimen for proteids was negative.

The duration of the administration of the sodium citrate, as well as the quantity employed, varies considerably in different cases, the purpose being to bring the baby's feeding up toward whole milk as rapidly as possible. As toleration is established the amount of citrate is reduced to one, to one-half and to one-fourth of a grain per ounce of milk until it can be discontinued. It happens not infrequently that the citrate is profitably resumed on the recurrence of signs of indigestion. In but 6 cases have I felt obliged to discontinue the citrated milk and adopt other methods of feeding. Some of these were among my early cases which, if occurring later, would possibly have received a more persistent treatment with citrated milk.

In consideration of this subject three questions naturally arise: 1. Is the employment of sodium citrate any better than other methods of rendering cow proteids tolerable and digestible? 2. Is its employment harmful? 3. In what manner does it act?

In answer to the first I would say that this method seems to allow a more rapid increase in the proportion of milk ingested than any other known to me. Moreover, the frequency of relief from milk indigestion on the addition of the citrate and the favorable reports from all whom I have known to give it a thorough trial are not without significance. In regard to its harmfulness no case of citrated milk feeding has been brought to my attention in which there appeared to be cause for regret because of the employment of this method.

Concerning its manner of action in a chemical sense there appears to be some difference of opinion. Professor Salisbury, above quoted, to whom the question was submitted, states as follows:

Citrate of calcium is insoluble in water, but dissolves readily in solutions of the alkali citrates. It is to be presumed, therefore, that when a solution of sodium citrate is added to milk which contains calcium in combination with casein a reaction would occur producing a sodium combination of casein and an insoluble calcium citrate. The latter would dissolve on the addition of an excess of sodium citrate. It is to be presumed, therefore, that the milk treated with citrate of sodium contains a sodium compound of casein and calcium citrate held in solution by the presence of sodium citrate. Such milk would not yield a curd containing an excess of calcium, but the calcium would be found in the whey as well as in the curd. The experiments of Dr. R. Aibinder do not contradict the theory of Poynton that sodium citrate acts by separating the calcium from the casein, thus rendering it less easily coagulable. Sodium citrate would react with hydrochloric acid solution to form sodium chlorid and citric acid. The decomposition would not be complete but so nearly so that a large quantity of sodium citrate would neutralize nearly all the free hydrochloric acid of the gastric juice. Too large an amount of sodium citrate in the milk might, therefore, interfere with the digestion of proteids in the stomach. Such digestion might occur in the intestine from the action of the pancreatic juice.

The physical behavior of citrated milk *in vitro* is obvious and may be demonstrated in a simple manner suggested by Wright and Poynton, who first exploited this method of feeding. Into each of two test tubes containing equal quantities of milk (to one of which sodium citrate has been added) drop a given quantity of liquid rennet and dilute HCl. In both milks coagulation occurs; with this difference, that the citrated milk clots less promptly and the resultant curd is softer, less dense, more nearly resembling the curd of breast milk.

DR. ALLIN'S EXPERIMENTS.

My assistant, Dr. F. W. Allin, as the result of more than a hundred careful comparisons, has obtained the following results:

Materials Used.—Ordinary dairy milk was used in these experiments. Wyeth's liquid rennet was used for curdling agent, which was always added last. A 1 per cent. hydrochloric acid solution and 4 per cent. sodium citrate solution was used. Two drops of HCl in 5 c.c. milk equals .025 per cent. Five drops of sodium citrate solution equals .25 per cent. One grain of sodium citrate to the ounce of milk would be .20 per cent. The gruels were standardized to one ounce of flour or oatmeal to the quart of water and cooked three hours in a double boiler.

Conditions.—The experiments were all performed at 40 C. in glass test tubes. The milk was used as whole

milk or diluted with water, flour gruel or oatmeal gruel. The dilutions made were two-thirds, one-half, one-third, one-fourth, one-eighth milk.

Results.—All experiments were repeated many times. The accompanying summary is a tabulation of results. The time recorded is the average of the results.

CONCLUSIONS

1. Sodium citrate in .25 per cent. or more retards, and very high percentages will inhibit coagulation.
2. The presence of HCl hastens coagulation.
3. Diluting milk generally retards coagulation.
4. Gruels appear to have little or no effect in retarding coagulation more than water when the citrate is used.
5. The coagula of citrated milk are softer, smoother and more jelly-like or more flocculent than those of milk not thus treated.

EXPERIMENTS WITH CITRATED MILK.

WHOLE MILK.

Milk. c.c.	Liquid Rennet. m.	HCl. 1% m.	Sod. Cit. m.	Time. min.	Curd.
5	5	2	0	3	Solid, firm.
5	5	2	5	9	Solid, soft.
5	5	0	0	5	Solid, firm.
5	5	0	5	15	Solid, soft.
5	5	2	1	4	Solid, firm.
5	5	2	2	4½	Solid, firm.
5	5	2	3	5½	Solid, firm.
5	5	2	4	7	Solid, softer.
5	5	2	10	12	Flocculi, no curd.
5	5	10	0	1	Solid, hard.
5	0	20	0	. . . . .	No curd.
5	0	20	5	. . . . .	No curd.
		HCl. 5%			
5	0	1	0	1 hr.	0
5	0	2	0	"	0
5	0	3	0	"	0
5	0	4	0	"	0
5	0	5	0	15	Small flocculi.
5	0	10	0	15	Few flocculi.

DILUTED MILK.

Milk.	Liquid Rennet.	HCl. 1%	Sod. Cit.	Diluent.	Time.	Curd.
⅔	5	2	0	Water.	3	Solid, firm.
⅔	5	2	5	Water.	5	solid.
⅔	5	2	0	Gruel.	3	Solid, firm.
⅔	5	2	5	Gruel.	20	No change.
½	5	2	0	Water.	3	Solid or co'rse granular.
½	5	2	5	Water.	7	Solid.
½	5	2	0	Gruel.	3	Solid, firm.
½	5	2	5	Gruel.	20	No change.
½	5	2	2½ c.c.	. . .	0	No change.
½	5	0	0	Water.	12	Soft, solid.
⅓	5	1	0	Water.	5	Granular.
¼	5	2	0	Water.	5	Hard, granular.
¼	5	2	5	Water.	5	No change.
¼	5	2	0	Gruel.	4	Granular or solid.
¼	5	2	5	Gruel.	0	No change.
⅛	5	2	0	Water.	6	Small solid.
⅛	5	2	5	Water.	0	No change.

The simplicity of this method commends it, especially in dispensary and out-patient practice where the mother's demand for "medicine" for the baby's dyspepsia may be met by the standard solution of sodium citrate to be administered in teaspoonful dose in each bottle of the feeding mixture. In private practice it furnishes another rational method of infant feeding.

1485 Jackson Boulevard.

The province of the doctor is to relieve the sick and suffering and to subordinate to that first object of his calling the obtaining of a financial reward for his labor. "Do your duty and then collect your money" is the physician's motto. "Be sure of your money before you deliver the goods" is the perfectly proper motto of the business man.—John B. Roberts.

THE TREND OF PEDIATRIC OPINION CONCERNING THE ARTIFICIAL FEEDING OF INFANTS.*

THOMAS S. SOUTHWORTH, M.D.

Attending Physician, Nursery and Child's Hospital, New York City
Children's Hospitals and Schools, Physician Out-Patient Department Babies' Hospital.

NEW YORK.

The artificial feeding of infants elicits to-day from our profession an even keener interest than at any time in the past. As a practical science it is making continual progress. A satisfactory working hypothesis having been established some years ago, the spirit of inquiry is now engaged in proving this structure and examining the principles on which it rests. Those portions which do not stand the test are being rapidly replaced by sounder material. Our labor in this direction is far from completed, but it may not be amiss at this time to review somewhat briefly the trend of pediatric opinion concerning certain of these important questions and to recount some of the recent advances.

Foremost among these, because the most fundamental, has been the recognition forced on us by the study of the comparative anatomy and physiology of mammalian species, that milk must be the basis of an infant's food, because milk proteid is alone capable of forming, with the secretions of the stomach, the soft solids requisite to such development of that organ as to fit the infant later for subsistence on the mixed diet of the adult. Cow's milk is the only milk at present obtainable commercially in sufficient quantities to meet the needs of the really appalling number of infants who for valid or in-valid reasons are deprived of their normal food from the maternal breast. Some of our chief problems of infant feeding have centered, therefore, about our efforts to adapt this milk of a foreign species to the infant's digestion. The inherent differences in the caseins of cow's milk and human milk and the size and character of their curds formed in the infant's stomach enhance the difficulties. Practically all methods of preparing milk for the infant which are of real value, including some of proprietary origin, have the common purpose of enabling the infant to digest successfully the casein of cow's milk in sufficient quantities to thrive. Viewed in this light, the claims of the advocates of different methods of feeding are reconciled, since they are but seeking by different routes the same goal.

STARCHES.

Discussion concerning the ability of the young infant to digest starches is giving way to a realization that the utility of cereal decoctions as diluents does not depend so much on whether the starch itself can be digested as on the mechanical subdivision of the casein curd and the absorption of the vegetable proteids which such cereals contain. If the starch itself causes any difficulty or such difficulty be feared, it can be readily transformed into soluble carbohydrates by previous dextrinization. A gruel which has been so dextrinized is no longer a solution of starch, but a mixture of soluble sugars with gums and vegetable proteids. However, what is commonly called starchy indigestion and starchy non-digestion are two very different things. The former, indigestion caused by starchy foods, is deleterious when it occurs, but the non-digestion and non-absorption of starch granules is often more or less present even in adults

* Read in the Section on Diseases of Children of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

wherever starch forms a part of the food. The mere presence of a starch reaction in the stools does not prove that the bulk of it has not been digested. If these decoctions of starch-bearing substances serve the primary purpose for which they are added to an infant's milk, the presence of undigested starch granules need not necessarily be more hurtful than that of cellulose and other undigested or unabsorbed residues.

USE OF BARLEY WATER.

Barley water, which is more commonly employed to make the curds of cow's milk smaller and more permeable by the digestive secretions, probably accomplishes this by its viscidity, which is partly due to its peculiar proteids. The addition of these vegetable proteids to the food may at times be no negligible quantity in determining the nutrition of the infant. This is not to be construed as advocating the feeding of infants entirely or even largely on cereals. While certainly not suited for indiscriminate use in all cases, the employment of cereal diluents for many children who have shown special difficulty in digesting the casein of cow's milk is now quite common in the hospitals of which I have knowledge. Barley water and barley gruel are much too elastic terms. Unless these are to be dextrinized the quantity of flour for young infants should not exceed one full teaspoon to each pint of water. The value of stronger cereal additions to the milk during the later months of the first year is now scarcely disputed.

CASEIN.

A new interest has been awakened in certain phases of feeding through a better interpretation of the behavior of casein in the infant's stomach and of the purposes and results of adding various alkalies to the food. Applying to these problems the most recent investigations, we have ceased to add alkalies on general but vague or unknown principles. Stated as simply as possible, these methods have resolved themselves as follows:

Casein readily combines with either alkalies or acids, and in doing so forms substances which have different chemical and digestive properties. Casein as it is found in cow's milk fresh from the udder is now called calcium casein, because the casein is chemically combined with calcium or lime. It would simplify matters if the term bicaseinate of calcium were applied to this casein of fresh cow's milk, for on adding limewater to such milk the casein takes up still more lime from the limewater and forms a new compound, which might be called caseinate of calcium. The difference between these compounds of casein and calcium in fresh milk, and in milk to which limewater has been added to the point of alkalinity with phenolphthalein, is as distinct as the difference between bicarbonate of soda (baking soda) and carbonate of soda (washing soda). Good fresh cow's milk requires the addition of from 60 to 80 per cent. of its bulk of limewater to make it alkaline to phenolphthalein and to change all the normal bicaseinate of calcium into this new compound, which is not coagulated by rennet.

When we add from 5 to 10 per cent. of limewater, as is customary in infant feeding, to a mixture containing but a small amount of actual milk, the casein will be wholly or almost wholly changed into the form which can not be coagulated by the rennet ferment of the infant's stomach until the secretion of acid has removed the extra calcium; but when the same percentages of limewater continue to be used, as the mixture is strengthened by additional quantities of milk, there begins to be present in the food more of the coagulated casein than the limewater is able to saturate. So that when we add from 5 to 10 per cent. of limewater to the weak milk mixtures suitable for a newborn infant we first give milk which is not curded, and later by gradually strengthening the food without raising the quantity or percentages of the lime water we supply increasing amounts of casein which will form a curd in the stomach.

OTHER ALKALIES.

Other alkalies added to fresh cow's milk will also form combinations with the casein and alter its digestive properties. Such are sodium carbonate, potassium carbonate, magnesium hydroxid, sodium bicarbonate and sodium citrate. The first three of these probably form caseinates of calcium and sodium, of calcium and potassium and of calcium and magnesium. Sodium carbonate and potassium carbonate are usually added in such quantity as to just about completely saturate the casein and prevent its curdling. But when we use bicarbonate of sodium we often add it in such quantity as not only to saturate the casein, but its unused portion remains in the food and acts as an antacid in the stomach. It not only modifies the digestive properties of the casein like the others, but its antacid properties which are not fully neutralized by the milk may be used to modify any natural or abnormal acidity of the stomach. It is especially in vomiting cases where the stomach is too acid from the production of abnormal acids that bicarbonate of sodium finds one of its best fields, although I believe that at times the more soluble compound with sodium is more readily absorbed than that formed with limewater.

The inhibition of the coagulating power of rennet on such casein as is saturated by the addition of these alkalies is, however, but temporary, for on the addition of an acid like gastric juice, in quantity sufficient to neutralize and remove the extra alkali, the normal properties of coagulation by rennet are restored.

On the contrary, when citrate of sodium is added to milk a very different chemical change takes place from that which accompanies the employment of the usual alkalies, for with citrate of sodium the casein is decalcified and a sodium casein is produced, which rennet can not thereafter affect, so that acid must form with it only the type of curd which acid would form with it outside of the body. My experience with the employment of from 1 to 2 grains of citrate of sodium to each ounce of actual milk in the feeding, as recommended by Poynton, has been sufficiently favorable to warrant the belief that it is worthy of a more extended trial in selected cases than it has yet apparently received in this country.

EFFECTS OF ACIDS ON MILK.

I can only refer here to the further effects of acids on fresh milk or alkalinized milk in freeing the casein entirely from its combination with alkaline bases and as a second step forming acid compounds with the freed casein. Such are the curds formed when natural souring takes place, or when acid is added, of free casein, casein lactate and casein hydrochlorid. When rennet acts on the milk either before or conjointly with the acid, producing calcium paracasein (junket), the acid transforms this first into free paracasein and then into paracasein lactate or paracasein hydrochlorid.

PERISTALSIS AND INTESTINAL DIGESTION.

The exceedingly valuable experiments of Prof. W. B. Cannon, of Harvard, have reconstructed our views on intestinal processes. Many of us were taught that peristalsis consisted in successive waves of contraction of the

circular muscular fibers of the intestine, which advanced the food mass, aided by shortening of the longitudinal fibers. Professor Cannon, by watching through the *x*-ray screen the movement of food masses containing bismuth, has shown that circular contractions occurring simultaneously at short distances in the small intestine cause a segmentation of the food mass. These contractions then relax and are followed by other contractions midway between the former, dividing the masses at new points, but causing them to reunite at the previous points of segmentation, and this is repeated until finally the masses are swept by a peristaltic wave further along in the bowel.

These observations throw new light on the mechanics of intestinal digestion and the method by which the chyme is churned and mixed with the digestive secretions in the intestine. We are all doubtless familiar with certain stools of infants which present the fecal mass divided into what I have elsewhere designated as flakes about the size of a flattened oat. These, while ordinarily termed curds, are often small masses of perfectly digested fecal matter. They are most typical in the stools of very young infants, securing only small amounts of milk from the breast, where a small fecal residue is accompanied by considerable quantities of mucoid secretion. For their formation I have heretofore been unable to secure a satisfactory explanation. In the light of Professor Cannon's work, it is readily explicable that these flakes are formed by segmentation in the small intestine, but the fecal residue being small and the intestinal secretion relatively large they are eventually surrounded by the latter so that subsequent fusion into larger masses is prevented.

Again, no better explanation could be offered us of the injurious influence on intestinal digestion of flatulent distension of the bowel. It is almost inconceivable that a much distended small intestine should be capable of producing a normal segmentation of the chyme or of bringing the food masses into repeated contact with the entire area of secreting surface. While improper digestion of the food leads to the formation of the gas which distends the bowel. this is but another instance of a vicious circle which must be broken before proper intestinal digestion can be resumed.

PERCENTAGE FEEDING.

Now that the furore which followed the introduction of the American system of percentage feeding and milk modification has subsided sufficiently to allow us to estimate calmly its value, certain conclusions are forced on us. The first of these is that in scope and elasticity it far surpasses all previous efforts at artificial feeding because it enables us, as never before, to control intelligently and with approximate accuracy the constituent elements of the food for each individual infant. On the other hand, it is no detraction whatever from the merited laurels of those who have devised, developed and popularized this system, to say that we should now realize that no method of artificial feeding can ever safely or properly replace the physiologically adapted milk of the human breast among the great mass of our population. Artificial feeding is unquestionably attended with more danger than breast feeding. The two alternatives should not be offered lightly to the prospective mother as though they were of equal value. While bad breast milk, if it be really bad, is worse than good artificial feeding, the nervously and socially overwrought mother does not make up the vast bulk of the motherhood of our country. Breast milk which is good and plentiful, or which can be made so with a little rational attention, far surpasses as a food that which is furnished by the cow and is infinitely beyond the combinations of the manufacturing chemist.

INFANT FOODS.

Whether the harm done by infant foods which claim to equal mothers' milk has been in any degree offset by the wide dissemination of their often faulty directions for infant feeding might perhaps be debatable. Parents who employ these on their own responsibility and physicians who recommend them should inform themselves, however, concerning their composition and understand that infant foods are but rarely safe or of value for any considerable period by themselves; that they are subtle and prolific causes of rickets, scurvy and malnutrition. and that many, nay most of them, are really successful only when combined with fresh cow's milk and its indispensable proteids, to which the child so fed owes its proper development, although the food manufacturers claim the credit.

CLEAN MILK.

The reason why cow's milk is the best commercial substitute when we are forced to resort to artificial feeding has already been stated. To be suitable for this purpose it must be fresh and pure. The movement for a clean milk supply which had its origin with Dr. Coit, in Newark, N. J., is yearly gaining headway over the country and must be accorded a place among the great life-saving measures of recent years. We have not yet reached such perfection that pasteurization or some modified form of sterilization is not usually necessary during the warm months of the year unless the circumstances be exceptional.

One of the objections most commonly raised to the introduction of modified milk feeding among the poorer classes has been that it would be impossible to teach the mothers properly to prepare the food. My personal experience has amply disproved this. If the physician himself thoroughly understands the steps to be taken and is willing to take the time not only to write out his directions, but to explain them fully, excellent results may be obtained. But this is not enough; he must later make the mother tell him in her own words what she is doing. for by this method only are serious errors and omissions corrected. With time and patience most mothers may be taught to prepare food suitable for their infants, using inexpensive instruments of precision. But they must also learn that such feeding requires supervision and change with the growth or temporary indisposition of the child. It is to ignorance of this fact, or to the inability on the part of the physician to maintain control, that artificial feeding owes its greatest dangers.

As a rational outgrowth of the movement to secure clean milk has come the conviction that the less milk and cream are manipulated the better they are digested by infants and consequently that the use of top milks of easily varied richness in fat is preferable to cream and milk mixtures. The fat content of food prepared from top milk can be more easily controlled. Possibly the only exception to these statements is where both the requisite purity and exactness of dispensing can be obtained through milk laboratories.

THE AMOUNT OF FAT.

Evidences of proteid indigestion are more readily comprehended than those of too high fat. For a not uncommon type of such stools Dr. Holt's simile of

scrambled egg is an excellent one which I have had frequent occasion to verify. The recognition should be more general of the fact that high fat is capable of causing constipation as well as a fat percentage which is too low, and also of the futility and probable danger of pushing the fat much beyond 4 per cent. for any child. This, then, constitutes one of the risks in the use of cream and milk mixtures, owing to the wide inaccuracies which may result from the variableness of all centrifugal creams, and the absolute impossibility of making any close estimate of the fat content of such creams without the use of the Babcock machine. Even commercial creams from the same source vary daily very considerably. I have in mind a recent instance in which the child's food had been made with cream and milk in the country, but on return to the city a cream was secured marked "special." This I found to contain 40 per cent. of fat. The previous formula made up with this actually contained 11 per cent. of fat, and only a fortunate habit of inquiring into details prevented the serious disturbance which inevitably would have followed. In other instances the persistent refusal of the child to take a suitable quantity from its bottles, or the otherwise unexplained presence of mucus in the stools, has led to similar discoveries.

FEEDING FORMULÆ.

Methods of obtaining milk formulæ and rules for the preparation of such food are now accessible in several standard text-books. Those, however, who are satisfied with securing a few stock formulæ will seldom attain to genuine success in infant feeding, for this includes the reclaiming of the marasmic as well as the conduction of the normal infant. Those who have no clear conception of the purposes subserved by the various component parts of the food nor of the indications for varying these have no clue to the solution of difficulties as they arise, and readily fall victims to the seductive claims of the patented foods in the hope that in some mysterious way they may be helped out of their troubles.

EXPLANATION OF DIFFICULTIES.

Many of the difficulties experienced arise, I believe, from the non-comprehension and non-application of certain broad principles. Surely, enough has been said recently by many writers concerning the necessity of feeding infants as individuals, but the distinction between the fairly normal infant and the sick child, which includes the child hitherto fed on condensed milk or various commercial foods, as well as the child with disturbed digestion or nutrition from any cause, is not sufficiently understood. The usual schedules for feeding at different ages may apply to the fairly normal child whose digestive powers have been developed, more especially when such feeding was begun at birth; but to endeavor to make an infant with disturbed or untrained digestion take the amount of casein in the food usually scheduled for its age is folly. Trial must first be made with much lower formulæ, and particular attention given to determining whether the difficulty lies with the digestion of the fats or of the proteids. The stools, the weight chart, and the behavior of the infant are the triad with which successful feeding must be conducted. In my wards of the Nursery and Child's Hospital the stool of each feeding case is brought to the cribside in a basin to be studied in conjunction with the range of the weight chart, inspection of the infant, and the nurse's report before changes are made in the food. Such changes must not be made too frequently and allowance should be made for minor variations of both weight and stools. In the case of an infant with bad stools the restoration of digestion as evidenced by better stools and greater comfort is infinitely more important than an immediate gain in weight. It is, in fact, a prerequisite to such gain. It is now rather generally accepted that fairly normal young infants whose artificial feeding is begun soon after birth will, while they are being trained to digest their new form of casein, usually take a rather high proportion of fat to proteids (3 to 1), since the fat supplies an easily absorbed source of heat and energy. Not all, however, will tolerate so high a proportion. When proteid digestion has been established, the proteid percentage should be pushed up somewhat more rapidly than was formerly deemed advisable, in order that there may be furnished adequate proteid for proper nutrition.

On the other hand, I think there is an increasing tendency in the sick wards of infants' hospitals to employ level fat and proteids (i. e., formulæ made from plain milk). These are better borne by sick children who have fever and are also better assimilated in malnutrition cases in which the infants have suffered from varied attempts at feeding. Fat starvation does not occur with these level mixtures as it does with almost fat-free infant foods or condensed milk which is relatively poorer in fat than good average fresh milk. There is a considerable number of such infants who can not take the high fat ratios of the common formulæ, although after good growth has been established on level formulæ cautious attempts may be made to raise the fat ratio a little higher.

Somewhat more advanced infants with fairly good digestions take the usual schedule proportions of fat and proteids (2 to 1) well, but much of what might be called subnutrition may be avoided after the sixth or seventh month by pushing the proteids somewhat above 2 per cent., a percentage which until recently has been considered a fair one at this period. The lack of formulæ between 4.7.2 and pure milk 4.4.4, except for such as could be made by the partial dilution of the milk, has been noticeable in some hospitals and milk dispensaries.

Finally, too much emphasis can not be given to the statement that the most carefully planned percentages are often fruitless because of overfeeding or improper intervals. Far less difficulty would be experienced in the feeding of infants if closer attention were given to the well-established rules governing the proper intervals and the quantity. No rules are so frequently violated even in hospital practice. It is especially noticeable in the tendency to overfeed undersized infants. Many poorly nourished infants are fed at intervals which correspond to their weight or apparent age. At the same time, despite or perhaps owing to their failure to gain, the quantity is repeatedly increased to equal or even to exceed that of a normal infant until the stomach can neither contract properly on its contents nor secrete sufficiently for their digestion. Energy and material which should be used for growth are thus expended on this undue labor of digestion, if indeed there can be any proper absorption from the partially digested mass. By giving at longer intervals and in smaller quantities (which may be made more concentrated as the stomach regains its tone) excellent results are produced in these cases.

807 Madison Avenue.

WHOLE MILK VERSUS LABORATORY MILK.*

A. McALLISTER, M.D.
CAMDEN, N. J.

Whatever opinion is entertained as to the intrinsic value and practical utility of cows' milk modified by the percentage method, as practiced in special laboratories, there is unanimity in pronouncing the plan the best yet advanced for securing constancy in the constituents of a substitute infant food. It admits of accuracy to a small fraction as no other known method does. It renders possible, from day to day, feedings practically invariable as to their proteids, fat and sugar.

In short, the laboratory product is an ideal substitute for mother's milk, theoretically. But if the accumulated experience in infant feeding has established one thing beyond another it is that we are not up against a theory but against a condition—a condition as stubborn as any met in the practice of medicine.

This condition is unnatural, morbid and confusingly variable. Infants are born anatomically and physiologically built for the warm mother breast and virile mother milk. Any other method and product in the dining-room appointments of this new arrival must be classed as abnormal. He may or may not take the imposition kindly. Frequently his whole being is thrown into a state of revolt and ordinary conciliatory measures may prove of no avail.

Physicians are generally consulted only in cases demanding extraordinary measures. A large proportion of these are already complicated by more or less functional, if not, indeed, organic, disease. No fast rules for feeding can be laid down, because no two cases are quite alike. Every infant deprived of its normal nutriment is distinctly a law unto itself.

As in applied therapeutics, so in infant feeding, the very multitude of plans and products that have been indorsed in the past is indicative of great problems yet unsolved. Ten years ago we sought an easy solution of the entire question in sterilization. Later we took up laboratory milk. The present plea is for a return to raw cow's milk.

In the subject of this paper the term laboratory milk is made to include every form of milk other than fresh raw cow's milk or fresh cow's milk diluted and warmed to about 100 F.

Clinically, milk modified by the percentage method has proved applicable only for temporary use in certain cases to bridge an emergency. For general use or for prolonged feeding in any one case the results have disappointed its most sanguine advocates. Economically its utility is even more restricted. The cost of such milk, the lack of proximity to a laboratory and the necessity for change of the prescription from time to time place the product within the reach of only a favored few among the wealthy.

Sterilized and pasteurized milk are now practically within the reach of every family, but no physician of large experience recommends either, especially not the former, for continuous feeding. They are employed now only for one of two reasons. When the milk supply is not above suspicion in freshness and purity, or has been condemned, recourse must be had to one of the above methods until a proper milk can be secured.

Again, in the event of serious disturbances in the alimentary canal it is the part of prudence to allow only sterilized milk while such disturbances are being removed. But this practice is now recognized as only offering to the belabored digestive organs a product more difficult of digestion. A better procedure is to allow only sterile drinks or thin gruel while the digestive tract is being cleared and then resume feeding with largely diluted milk. On the same principle and for the same reasons peptonized or partially digested milk is advantageously employed.

A synthetic breast milk is still to be found. Our nearest approach to it is laboratory milk viewed merely from the point of its chemical composition. From every point it is far from a duplicate of mother's milk. The natural milk emulsion has been destroyed in the process of centrifugalizing. The life-quickening principle which distinguishes milk from every other liquid food has been destroyed by heat. The product is a mixture of dead milk constituents.

The wire in your scrap pile may be an exact duplicate of that stretching overhead, but it is only a mass of inert metal, while that overhead is described as live. In much the same sense milk that once had the sanction of eminent authority is now recognized as scrap-pile goods. The life-quickening principle is not in it. It is dead. Fresh milk is not a dead liquid. Like the vital fluid tissue, the blood, of which it is an immediate product quite as much as nerve tissue, fresh milk is much alive.

FRESH COW'S MILK IDEAL SUBSTITUTE FOOD.

The ideal, natural, practical and economical substitute food for infants is fresh cow's milk. Drawn and handled with such care as to cleanliness and health as is required by laboratory standards, cooled at once and then kept at a temperature below 50 F., cow's milk possesses all the important vital constituents. It is a live fluid. These constituents give to milk the characteristics described as freshness or sweetness, and which are not found in stale, sterilized or laboratory milk.

Freudenreich ascertained that this freshness has a distinct germicidal power, typhoid and cholera bacilli being destroyed by fresh raw milk. This power he found absent in milk which was well kept, yet four or five days old, and in milk which had been heated to a temperature exceeding 130 F. Too little attention has been directed to securing the benefits of this native virility in cow's milk. We need as large a proportion of it as can possibly be secured to the infant. In country practice infants have the advantage of these benefits. The greater difficulties of infant feeding in city practice are at least in a measure due to the absence of these benefits. The difficulty is further heightened by the addition of deleterious qualities to milk through careless, dilatory and otherwise unscientific handling.

Each year makes the successful feeding of city infants with cow's milk a less difficult problem. Much is to be gained by persistent agitation. The laity can have a milk supply 100 per cent. better than now provided by simply demanding it. The first cost need not be materially increased. With our constantly improving railroad facilities, due to the popular clamor for rapid transit, the question of greatly improved milk transportation is no longer difficult.

Much has been accomplished along educational lines by our bacteriologic and milk laboratories. Methods by which cow's milk may be kept fresh and not only safe but superior without the addition of a preservative are not unknown to the average dairyman. He will employ these methods when the consumer demands it. There is

* Read in the Section on Diseases of Children of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

no doubt that at the present time inferior milk is marketed by pasteurizing it. The term is high-sounding and with some is synonymous with excellence. The laity need to learn that good milk properly handled not only does not require sterilization, but is positively made less valuable from the dietetic point of view by such process. Milk so treated is not freed from the products of bacterial growth. It is not absolutely sterile, and even if it were would require careful handling to guard against subsequent infection and multiplication of bacteria.

The subject of federal control of the system of milk production and distribution is receiving increasing attention. But, as in all matters closely related to the public health, education will do more good than legislation. Reynolds, of Chicago, has made a strong plea for twelve-hour milk. He pointed out that such milk is worth more for infant feeding than milk twenty-four hours old, while milk thirty-six hours old is not only of little food value, but positively harmful to young and delicate children.

The milk bottle is popular, but at the present time is too frequently looked on as a positive guarantee of freshness and purity. With all its advantages the bottle is the source of much mischief and positive harm. Much of our city milk is bottled at the milk depot, and not a little in the milk wagon on the streets. Milk bottled at the dairy permits of great leisure in transportation, and much of the milk when it reaches the consumer is in a state of semi-decomposition. Public sentiment needs an awakening along this line.

Most of the milk consumed in Camden comes from Salem and Burlington counties, New Jersey. The best quality is "certified milk" and gives general satisfaction in the feeding of infants.

580 Federal Street.

DISCUSSION

ON PAPERS OF DRS. COTTON, SOUTHWORTH AND McALLISTER.

Dr. D. E. English, Millburn, N. J., said he realized that bringing up a child in the country is a very different thing from keeping a child from dying amid the horrors of a great city. The working woman's baby in the country sits on the kitchen floor and uses his crust of bread or bone to wipe up the floor or scratch the dog's back, and then puts it into his mouth and does not get sick. Why? Simply because the mother has not time to bother with him. He is not taken up and fed until his stomach is entirely empty and he is really hungry. Then he is fed until his stomach will not hold any more, put into a clothes-basket and set out of doors under a tree, where he sleeps for three hours or more. It is an hour, or perhaps two hours, longer before he is again fed. This means that the baby's stomach has been distended with food, and that it has had time for digestion, evacuation, contraction and rest before the next feeding. This is the true idea of infant feeding. A baby's digestive organs can not always digest the same amount of the same kind of food in the same number of minutes. Again, a baby will not be healthy and happy unless he earns his living, any more than will an adult. A baby earns his living by the cool bath, the air bath, by exercising his limbs, by crying, and by being exposed to cool, fresh air.

Dr. John Lovett Morse, Boston, said that, in feeding babies, when breast milk can not be secured the idea is to give a food suitable to the baby's digestion. It is an advantage to know what one is working with and not to work with unknown quantities. This knowledge does not prevent trying all kinds of infant feeding, nor the use of good common sense. He believed with Dr. Southworth that milk can be modified at home, not only by the rich but by the poor. The only question is whether it will be modified correctly. He did not agree with Dr. Southworth in preferring top milk to milk and cream. His experience and that of many men accustomed to the use of modified milk did not agree with Dr. McAlister's statement. If the milk is pure and fresh and can be kept so, it is better not to pasteurize, as pasteurizaiton undouhtedly makes milk somewhat less digestible. Under other conditions, however, it is wiser to pasteurize in order to avoid the evils which result from bacterial contamination. He failed to see why it is necessary, in discussing infant feeding, to bring out the fact that some babies will do well on a bad food. Everyone knows that. Because a given baby happens to be able to live on a bad food, there is no reason that it should be given, nor should this fact be used as an argument for giving bad food to other babies. The aim should be to give the proper food.

Dr. C. G. Kerley, New York City, said that in infant feeding there should be as little manipulation of the milk as possible. He has used different chemicals in an endeavor to influence the digestibility of the proteid, and a few years ago he made a thorough study as to effects of alkaloids and antacids on coagulation, and he believed that the less milk is manipulated and the fewer chemicals employed, the better. There may, of course, be specific cases in which their use is necessary. It should be remembered that feeding the infant is something other than the addition of alkaline or an arrangement of percentages of the nutritional elements. The food is put into an infant's stomach in order to nourish a difficult feeding patient, who must be treated as well as we treat the food. The general hygienic management of the baby is most important and determines to a great extent its ability to overcome various digestive disorders.

Dr. R. B. Gilbert, Louisville, Ky., said that the extent to which bacterial flora get into the milk is well known, and no matter what the percentage of proteid may be, these bacteria are apt to occur. The presence of colostrum in milk is also an important matter, for the milk of one pregnant cow in a herd of twenty will so infect that milk that it will be injurious to the baby. He has demonstrated that the pancreas is fairly well developed in babies and has wondered that we have been taught that the pancreas does not secrete anything in early life. It is as well developed as any part of the intestinal apparatus. He thought that Dr. Cotton's suggestions relative to sodium citrate would help to solve many difficulties in milk modification.

Dr. T. W. Kilmer, New York City, said that the baby should be supplied with that which it has a right to demand, breast milk, and the physician ought to know what breast milk contains. The average general practitioner does not have this knowledge; therefore, he is unable to feed babies successfully. He should know how much fat, proteid and sugar he is giving the baby.

Dr. A. H. Wentworth, Boston, said that apparently it is desirable for the infant to take as much proteids as it can get. So far as he knows, all the evidence is otherwise. Chittenden and other authorities seem to show that the excess above a certain amount only throws more work on the various organs and serves no helpful purpose. Men who have done most for infant feeding in Germany are unanimous in the opinion that babies need very little beyond one per cent. of proteids in their infancy, that they get sufficient quantity in that amount to nourish them perfectly. In regard to distending the stomach, he thinks that overdistension of the muscles is deleterious.

Dr. Effa Davis, Chicago, mentioned a series of five cases in which the children were all doing well on the ordinary milk mixture, but when they were put on the sodium citrate modification all remained stationary in weight for six weeks and then began to lose, notwithstanding the fact that they were taking two and three times as much milk as usual. When they were taken off the treatment it took them all ten days to regain their normal equilibrium. All are now on the ordinary modification of milk and gaining. It is clear, therefore, that all babies do not do well on the sodium citrate feeding.

Dr. J. W. Vanderslice, Chicago, said that sodium citrate solution has been used in a large number of cases for three years by men who have a very wide clinical experience. Sodium citrate advocates say that they use the simple method, believing the method to be more simple than the modified

milk. They claim that they add a natural product to the milk which brings it more nearly to the nature of mother's milk. He thought no one could deny that the addition of sodium citrate to cow's milk renders a finer curd, whether that be done in the intestine or in the baby's stomach. In giving this mixture he does not begin with the small percentages of milk, but the child is put on equal parts of milk and water and one grain of sodium citrate to the ounce of milk. If with this amount the curds persist, he adds more citrate to the milk. He has never given higher than 2 grains to the ounce, and in no case has it ever been necessary to persist in the use of more than one grain to the ounce of milk for more than ten days. As rapidly as possible the percentage of milk is increased, whether the child be one day or one year of age. A new-born baby, necessarily fed artificially from birth, is capable at the end of two weeks of taking whole milk and digesting it.

In regard to the objection mentioned of using the sodium citrate as a medicine, the plan seems to commend itself especially when a Polish woman comes to the dispensary with, perhaps, her little girl as the sole interpreter who receives the entire directions of the modification of the milk. They are directed to use equal parts of milk and water and add a teaspoonful of the "medicine" to the mixture. Most of them are capable of doing that. It thus simplifies and aids the administration in dispensary work, which is one of the greatest benefits in the use of the method.

DR. SAMUEL AMBERG, Baltimore, said that artificial feeding is based on the average analysis of the human milk and that there has been a certain amount of success in obtaining mixtures which in their outward demeanor approach human milk. The human milk, however, can not be perfectly equaled. He called attention to a few points which seem to contain the keynote of the scientific basis of feeding. He mentioned the researches of Fischer and his workers, who point out that to know the difference between the proteids it is essential to know the difference between their decomposition products. Then there were the interesting experiments of a German investigator who fed himself on gelatin. It is known that gelatin is a proteid which contains very little tryptophane, tyrosin and cystin. While he fed himself on the gelatin he could not sustain his nitrogen equilibrium; when he supplied tryptophane, tyrosin and cystin, this difficulty was not only overcome, but he even obtained a nitrogen retention. Dr. Amberg thinks that in the light of modern research these points are the most important to be considered. The only differences in this regard we know so far between human and cow's casein are that human casein contains more sulphur than cow's casein and that human casein gives a very much stronger Molisch reaction. This reaction is generally supposed to indicate the presence of a carbohydrate group in the proteid molecule.

DR. GODFREY R. PISEK, New York City, said that if sodium citrate is used it should only be employed temporarily. Persistence with it in the feeding of children throughout the first six or nine months will impair the motor function of the stomach so that they will not be ready for semi-solid food.

DR. R. B. GILBERT, Louisville, Ky., said he first noticed the presence of colostrum in the milk of nursing mothers. In one case it was found to be very abundant. In another mother who had become pregnant the colostrum immediately appeared. Shortly after this case he knew of one in which the presence of colostrum was easily detected by the microscope. It is a well-known fact that during menstruation on the part of the mother the presence of colostrum is temporary.

DR. COTTON said he was in full accord with the suggestion that sodium citrate be used temporarily. It should be discontinued as early as the good digestion of a high percentage of milk is accomplished, this to be determined by the ordinary clinical evidence of growth in strength and weight and by the lack of evidence of indigestion in the stools. He also agreed with Dr. Kerley in thinking that there should be little manipulation of the milk. He thought that the discussion in regard to the bacterial content of milk did not quite fit in, because they were discussing pure milk, not bacterial milk, and no successful modification of impure milk is possible. Concerning Dr. Wentworth's remarks on the overworked metabolic processes Dr. Cotton said that so far as he knew there had not been enough experience of this pushing of the proteids under the effects of sodium citrate to determine this.

DR. SOUTHWORTH agreed that for the ordinary case milk should be as little manipulated as possible, but if enough casein can not be given in the ordinary form for the child to thrive on, something may be added to the milk which will change the form of the casein so as to be more readily absorbed in larger amounts. All these additions to milk should be used in selected cases and with a knowledge of what they are used for. Because a large amount of proteids can be borne with the addition of sodium citrate is no reason that the use of percentage feeding should be abandoned or that ridiculously large amounts should be given to young infants. No one had stated in the discussion, he said, exactly what sodium citrate does when it is added to the milk. Its action is to decalcify the casein so that it can not subsequently form tough paracasein curds. With acids it forms a soft flocculent curd. Some one stated that milk which has been boiled is dead milk. While no one is more in favor of a pure milk supply than he, he would rather take dead milk, whether boiled or pasteurized, than milk as much alive as some milk furnished in cities, with a bacterial count up into the millions per cubic centimeter. The bacteria of milk threaten the health of a good many children, and, of course, it is not known how deleterious they are, but still they do not prevent a good many children from thriving on such milk. We should not make a fetich of any one thing, but should seek the best in every direction.

DR. KILMER said that he hardly meant that all children are either predestined to die or to get well. He knows that by careful feeding he brings some children through who perhaps were predestined to die. One speaker seemed to think that there was much divergence of views. On the contrary, every year there is really a closer coming together on the fundamental principles. The points of variance are generally the non-essentials.

DR. MCALLISTER said that he did not decry modified or laboratory milk. His plea was simply for a clean pure milk. By insisting on perfect cleanliness of milk and sterilization of implements much could be done toward the solution of this problem.

THE PREVALENCE OF INTESTINAL PARASITES IN SIAM.

PRELIMINARY REPORT.

PAUL G. WOOLLEY, M.D.
Chief of the Siamese Government Serum Laboratory.
PHRAPATOOM, SIAM.

On coming to Siam from Manila, I brought with me as an inheritance from my study of amebiasis a desire to know something of the prevalence of that disease in my new abiding place. Accordingly my first questions were devoted to this subject. I was naturally astonished at being informed that this disease is infrequent, although I discovered that at least two Europeans in the small colony had suffered from abscess of the liver.

In order to satisfy myself more completely, I obtained permission from the minister of justice to visit the government prison at Bangkok, and, through the kindness of the attending physician of this prison, Dr. Adamsen, to make a series of examinations of the stools of prisoners. I was naturally disappointed in having access for examination only to the prisoners confined in the prison hospital, for such observations as I should be able to make would, under those circumstances, not apply to the population at large, but only to the sick element. Nevertheless I commenced at once systematic stool examinations, and the specimens were procured in the following manner: Each patient received an ounce of

epsom or rochelle salts, and the fluid fecal matter was collected in clean porcelain dishes with covers. This material was examined in a perfectly fresh condition. The series consisted of 50 patients, and the infections noted are tabulated as follows:

Total cases with intestinal parasitic infection, 18.

Amœbæ	11 cases
Uncinaria duodenalis (ova)	4 cases
Tricocephalis dispar (ova)	4 cases
Strongyloides intestinalis (ova)	3 cases
Opiscorcus sinensis (ova)	1 case
Ascaris lumbricoides (ova)	1 case
Hymenolepis nana (ova)	1 case

From the preceding figures it is evident that plural infections were present. They were as follows:

	Cases.
Amœbæ and *Strongyloides*	2
Amœbæ, Ascaris, Uncinaria and *Tricocephalus*	1
Amœbæ and *Opisthorcus*	1
Amœbæ alone	7
Total	11
Strongyloides and *Amœbæ*	2
Strongyloides alone	1
Total	3
Uncinaria and *Hymenolepis*	1
Uncinaria, Amœbæ, Ascaris and *Tricocephalus*	1
Uncinaria alone	2
Total	4
Tricocephalus, Amœbæ, Ascaris and *Uncinaria*	1
Tricocephalus alone	3
Total	4

Contrary, then, to the report I had received, amebas are not infrequently found in the stools of natives of Siam. Moreover, it can not be said that these amebas are of the non-pathogenic type, if such there be. At least three of the patients examined were suffering from a true amebic dysentery, others had more chronic or subacute intestinal symptoms.

In all 50 cases were examined, of which 18, 36 per cent., presented infections with intestinal parasites (exclusive of monads which were present in at least 60 per cent. of all the cases). Of the 18 cases of infection, 11 showed amebas, a percentage of over 61 per cent.

PERCENTAGE OF INFECTED CASES OUT OF A TOTAL OF 50.

	No.	Per ct. of infected cases.	Per ct. of total cases.
Infected cases	18	....	36
Infected with *Amœbæ*	11	61.1	22
Infected with *Uncinaria*	4	22.2	8
Infected with *Tricocephalus*	4	22.2	8
Infected with *Strongyloides*	3	16.6	6
Infected with *Opisthorcus*	1	5.5	2
Infected with *Ascaris*	1	5.5	2
Infected with *Hymenolepis*	1	5.5	2

The only conclusion that one may draw from these figures is that infection with animal parasites is widespread in Siam (the patients being from various districts and a few were Chinese), and that amebic infection is very common. It is my intention to make more complete records on this subject as time and opportunity allow.

So far as I can discover, *Opisthorcus sinensis* has not been previously reported from Siam. *Hymenolepis nana* has been reported from Siam by Rasch.[1]

1. Deutsch. med. Ztschr., 1895.

Palpation to Find Position of Fetus.—B. G. Snyder, in the *Canada Lancet*, June, 1906, in discussing the position of the fetus *in utero*, emphasizes the value of external palpation, as a convenient, simple method, which practically eliminates the danger of infection. It is of most value before labor, but the progress of labor can be judged just as accurately after a little practice by this method as by repeated vaginal examinations. Lastly, it compels a physician to study the different positions of the child and their relations to the birth canal and thus makes him a more intelligent obstetrician.

THE TREATMENT OF PURPURIC CONDITIONS AND HEMOPHILIA.*

JOHN W. COE, M.D.
NEW YORK CITY.

It is not the purpose of this paper to discuss the numerous theories concerning the etiology and pathology of these interesting conditions, for the multiplicity of ideas is the best evidence of the obscurity which still surrounds them, but to outline a course of treatment which has been beneficial.

Since A. E. Wright, in 1891 and 1893[1] and in subsequent articles, advocated the use of the chlorid of calcium to hasten the coagulation of the blood, many patients with hemorrhagic tendencies have been greatly helped by it while with others it seems inert. The preparations of the adrenal gland are also of value in many cases.

Boggs,[2] in 1904, demonstrated that the lactate of calcium had the same accelerating effect on coagulation as the chlorid.

Wright[3] and Paramore,[3] in 1905, published the results of a series of experiments in which they used the lactate of calcium and the carbonate of magnesium, as well as the chlorid of calcium. They found that the coagulation time was more uniformly influenced by the lactate than by the chlorid and that the magnesium salt had a similar accelerating effect. These were merely laboratory tests, some of them made on normal individuals, others on patients with various ailments, and the drugs were not used therapeutically.

During the past few months I have treated several patients with the lactate of calcium, with results that seem worth recording.

Case 1.—A well-known physician, aged 53, who has one of the largest general practices in New York, is a member of a hemophilic family. His grandfather and father were bleeders, as are also a sister and a son. In the patient the tendency to bleed appeared when he was ten years old. The bleeding has always been most profuse from the nose, but he has bled much from skin of the face and head and from the mucous membranes of the mouth. The nasal hemorrhages have often been prostrating and have been increasing in severity and frequency, often requiring plugging once or twice a day.

Needless to say, this patient has had the best of local treatment by specialists and, as he says, has taken barrels of calcium chlorid and the adrenalin preparations with no benefit. During the autumn of 1905, the bleeding was more profuse than ever before and the patient's large practice was a burden to him.

Blood Examination.—On December 17, the red blood cells were 3,680,000, white cells, 5,000, and the hemoglobin 70 per cent. The stained specimens showed pallor of the red cells, moderate variations in size and shape with a number of large cells. The plates were decidedly below normal as judged from a stained specimen. The differential count of the leucocytes was normal and need not be given in detail.

Treatment and Result.—At that time the patient was bleeding practically every day and very profusely. On December 21, when bleeding, fifty grains of calcium lactate, dissolved in water, were taken and in half an hour the hemorrhage ceased with no other treatment.

During the next week, that is until December 29, twenty grains of this drug were taken three times a day. There was no bleeding, but once or twice there was slight oozing from the nose, which stopped in a few seconds.

* Read before New York Academy of Medicine, May 22, 1906.

* From the Laboratory of Clinical Pathology, Cornell University Medical College.

1. British Medical Journal, Dec. 19, 1891; July 29, 1893.
2. Deutsche Archiv. für klin. Med., March 15, 1904, p. 539.
3. Lancet, Oct. 14, 1905, p. 1096.

No calcium lactate was taken from then until January 10, and, after a few days, moderately severe attacks of epistaxis began again.

On the evening of January 10 there was a profuse hemorrhage and the patient took sixty grains of the calcium lactate. The bleeding stopped almost at once.

By January 14 there had been a gain in weight of five pounds since starting the treatment, and the condition of the blood steadily improved. The experiment of stopping the lactate for several days was repeated on several occasions, always with the same result. During the last two months the patient has taken about once a week fifty grains of the lactate and has been comparatively free from bleeding. Occasionally there has been a hemorrhage of moderate severity, but always soon controlled. Previously, the putting of the head down, as in the act of lacing the shoes, would usually be followed by epistaxis, often lasting for hours. For months now, much more violent exertion than this has caused no discomfort. Examination of the blood a short time ago showed a perfectly normal condition.

The coagulation time in this patient, as measured by Wright's tubes, was never very high, being between six and seven minutes, but it is invariably lowered from a minute to a minute and a half by a full dose of the lactate. This effect is produced in an hour at the most and persists for about a week.

Probably no one would be so optimistic as to expect a cure of such a marked case of hemophilia running through four generations, but the improvement has been so marked and, to date, so constant that, compared with his previous condition, the patient is well.

This man's son, 23 years old, began to have frequent attacks of epistaxis at the age of 16. The hemorrhages have never been very profuse, but have made him quite uncomfortable, as they began without the slightest warning while he was walking along the street or at the table, etc. No records of his case have been kept, but during the past five months he has taken an occasional dose of the lactate, about forty grains once a week, and his condition has been much better than for years.

CASE 2.—J. S., male, aged 17, student, family history entirely negative.

History.—This boy began to have frequent, profuse attacks of epistaxis when five years old. These have recurred at irregular intervals to date, at times lasting for hours and causing him to faint. The gums and mucous membrane of the mouth at times ooze blood, but there has been none in the urine or stools. The severe attacks have usually been accompanied by numerous hemorrhagic areas over the legs, arms and beneath the eyes. When thirteen years old he began to have occasional rheumatic pain in the knees. This trouble has frequently recurred, usually with slight fever for a few days, and is associated with an outbreak of petechiæ on the legs. His physician, Dr. E. W. Perkins, states that practically all the time for years the boy has had well-marked purpuric eruptions somewhere on the body. The slightest bruise is invariably followed by ecchymosis. Four years ago, after having a molar tooth pulled, he bled profusely for three hours.

Examination.—When first seen, March 6, 1906, there was a moderate number of petechiæ over both legs and several larger areas on the thighs. The mucous membranes of the mouth showed several small purpuric spots and there were marks on the trunk, as from bruises.

Blood Examination: This showed: red cells, 4,680,000, white cells, 6,000, hemoglobin, 80 per cent. The coagulation time was four minutes. A stained specimen showed a normal differential count and that the blood plates were very few. Later the plates were counted and were found to be 29,000 to the cubic millimeter.

Treatment and Results.—The patient was given fifteen grains of calcium lactate three times a day for a week. At the end of this time the coagulation time was unchanged, being four minutes. The purpuric spots were much faded and no new areas had developed. A severe blow on the right knee had resulted in no ecchymosis.

The calcium lactate was stopped on March 20. On March 27 a profuse eruption appeared on the thighs and legs, associated with pains in both knees. The patient was given salicylic acid and sodium bicarbonate with fifteen grains of calcium lactate every morning. Four days later he reported that the improvement had been very rapid, much more so than from any previous attack. The purpuric eruption had nearly disappeared. He was then given Fowler's solution and iron with fifteen grains of calcium lactate, twice a week. From this time until May 14, that is, for more than six weeks, he remained free from bleeding, with the exception of an occasional spot on one or the other leg, and all the time he was playing and exercising as vigorously as other boys. He then neglected to have the prescription for the calcium lactate refilled and two days more than usual having elapsed between the doses, he was awakened on the morning of May 14 by the most severe attack of epistaxis for months. This lasted for over an hour.

The coagulation time on this date was four and one-quarter minutes and the blood plates very few.

It is interesting to note that in spite of the decided hemorrhagic tendency in this boy the coagulation time is at all times a low normal, the variations in health being between three and six minutes by Wright's tubes.

CASE 3.—A. H. G., aged 31, male, married, instructor in Latin. Family history entirely negative.

History.—The patient has never had any serious illness. When about six years old he bled profusely for hours after having a tooth pulled. Two years later frequent attacks of epistaxis began. The bleeding occurred from either nostril or from both simultaneously, and often continued for hours, requiring packing. Such attacks have recurred frequently to date and last autumn became more numerous than ever before, being only from four to seven days apart for weeks.

Any slight bruise, as even the rubbing of a dress-suit case on the legs, is always followed by ecchymotic areas. The last of December he developed a carbuncle on the upper lip. At the operation, performed in one of the large hospitals in the city, the bleeding was not extreme, but at the subsequent dressings, profuse hemorrhage occurred. He was given calcium chlorid with some benefit. A few days after leaving the hospital the epistaxis recurred.

Blood Examination.—When referred to me by Dr. D. B. Brinsmade, Jan. 23, 1906, the red blood cells were 4,372,000; white cells, 12,000, and the hemoglobin 70 per cent. A stained specimen showed marked pallor of the cells. The blood plates were very few and small in size. This point has also been noted in all subsequent specimens examined. On one occasion, when counted, they were 22,000 to the cubic millimeter. The differential count was normal. Before beginning treatment the coagulation time was eight and a quarter minutes. This promptly fell to seven minutes, where it remained.

Treatment and Result.—The patient was given twenty grains of the lactate of calcium three times a day for a week and after that forty grains twice a week. On February 5 he returned to work feeling as strong as ever and had no tendency to hemorrhage, even on blowing the nose

On February 13 medication was stopped and not resumed for a month. Then oozing began on three occasions from the left nostril, but ceased after taking sixty grains of the calcium lactate. His condition then continued excellent.

Examination about the middle of April showed several small ecchymotic areas. There had been no bleeding from these, but thinking to prevent any future hemorrhage, they were cauterized with silver nitrate solution. In less than twenty-four hours severe epistaxis, lasting several hours, occurred from sloughing. Since then administration of calcium lactate has been continued twice a week and he has also been given iron with Fowler's solution. There has been no further hemorrhage.

CASE 4.—J. C. K., aged 44, male, single, family history excellent.

History.—For twenty-one years the patient has been advance agent for a minstrel troupe and very active. He has al-

ways been in perfect health, except that two years ago he was treated for a mild attack of lumbago. The only indication of rheumatism has been slight pain and stiffness in the left shoulder at intervals, since last December. He first came under observation on Jan. 6, 1906.

This patient showed no purpuric tendency until the middle of June, 1905, when he noticed a purplish area several inches in diameter on the left thigh, followed a few days later by a similar area on the right thigh. About August 1 numerous small spots appeared on both legs and since then successive crops come and go, so that he has never been free from them. Walking is always followed by innumerable new eruptions. At times many spots have appeared on the limbs. The slightest bruise was invariably followed by an ecchymotic area.

While riding on a train, June 24, 1905, he had a sudden, profuse hemorrhage from the right nostril and fainted away. Between then and October 1 there were five very severe attacks of epistaxis, requiring packing of both nares. After one of these the patient was in a hospital for three weeks, merely from exhaustion, and he has not been able to work since early last autumn. There had been no profuse epistaxis since October 1, but frequent oozing from the nose. Numerous hemorrhagic areas have appeared on the gums and throughout the mouth. There has never been any blood in the urine or stools.

This patient was treated in several cities, both in hospitals and by physicians in private. He states that he was given calcium chlorid, the adrenal preparations, ergot, etc., and that the nose was treated locally with numerous styptics.

Examination.—When first seen, Jan. 6, 1906, there were multitudes of petechial and ecchymotic areas in all stages of development over both legs. There were a few small spots scattered over the trunk and large areas on the arms. The lips showed several spots, the gums were discolored in places and appeared soft.

Blood Examination: On January 6, blood examination showed red cells 4,928,000, white cells, 8,000, hemoglobin, 70 per cent. The differential count was normal and the plates practically absent.

Treatment and Result.—The patient was given sixty grains of calcium lactate at once and fifteen grains three times a day for a week. Two hours after the initial dose the coagulation time was lowered from six and one-quarter to five and one-quarter minutes. As this patient lived out of the city he was seen only once a week and later once in two weeks.

After the first week's treatment there was a marked improvement, the old spots fading, a few new ones appearing. The patient stated that he had noticed a change for the better in three or four days. From that time there has been a slow but steady improvement. For experimental purposes the calcium lactate was stopped on several occasions; such action was invariably followed by numerous petechiæ. At these times also the coagulation time was lengthened, only to be lowered by the lactate.

During the last two months this patient has taken regularly thirty grains of the lactate twice a week. He has led a very active life, often walking several miles a day over rough country and through bushes, and has also rowed a boat long distances. His condition is excellent and he seems a well man.

Blood examination recently showed the red cells to be 5,280,000, white cells, 9,000, and the hemoglobin, 90 per cent. A stained specimen was normal, except that the plates were still very low. The count of the plates was 25,023 to the cubic millimeter. This being so we do not consider this man cured, but believe the purpuric tendency is kept under control. The patient thinks himself as well as ever and is going to return to work soon.

Case 5.—H. H., male, aged 33, married.

History.—This man was very large and robust and had never had any sickness. For years he has been a steady drinker, taking three or four glasses of beer and one glass of whisky a day. He was first seen by Dr. L. L. Bradshaw, to whom I am indebted for the case, on April 8, 1906. Four months before, the patient had noticed a few reddish spots on the right ankle. These slowly extended upward to the knee and to the left leg. As there was no discomfort he did not consult a physician and continued at his work in a lumber yard. About two weeks before coming under observation he began to spit blood occasionally, from oozing of the gums, and this continued. On April 7 this was much more profuse, but he still worked all day. That evening eruption appeared over the entire body.

Examination.—When seen on April 8 there were petechial and ecchymotic areas, some larger than a palm, over the entire body, face and scalp. He was spitting blood several times a minute from the gums, and all of the mucous membranes of the mouth. Sixty grains of calcium lactate were at once given and thirty grains ordered three times a day. The next day, many of the areas had ruptured and were covered with crusts. The gums still bled freely.

Blood Examination: This showed red cells, 4,480,000, white cells, 12,000, hemoglobin, 90 per cent. The differential count was polynuclear leucocytes 79 per cent., lymphocytes, 12.3 per cent., large mononuclears, 4.3 per cent., transitional, 4 per cent., eosinophiles, 0.3 per cent. The plates were practically absent.

Urine: On the evening of this day the patient began to pass large amounts of blood in the urine. A specimen, centrifuged, showed 13 per cent. of sediment composed almost entirely of red cells. Large amounts of quite fresh blood also appeared in the stools.

Course of Disease.—The following day, April 10, there was much less blood from the mouth and the skin eruptions were fading. The urine showed 10 per cent. of blood. The anemia was increasing. The red cells showed marked variation in shape and size and a few normoblasts appeared. On April 11, the coagulation time, then taken for the first time, was eight minutes, and this was after large doses of the calcium lactate for several days. The urine showed 5 per cent. of blood. April 12, through a mistake of the nurse, sixty grains of the calcium lactate were given every three hours for six doses, but no ill effects followed. On the following day, the thirteenth, the urine was free from blood and all bleeding had ceased from the skin and mucous membranes. The red cells were now 3,168,000, white cells, 13,500, and the hemoglobin, 60 per cent. The coagulation time was six and three quarters minutes. The plates were still almost absent.

For several days during the bleeding period the temperature varied between 100 and 102 F. by mouth, and the pulse between 100 and 120. This, with the presence of a polynuclear increase, is an indication of an infection of some sort.

On April 14, Fowler's solution was begun in doses of four minims every four hours. On the next day the blood plates were fairly numerous, scattered throughout the specimen, but none occurring in clumps, as is normally seen. Many of them were large. The calcium lactate was continued, thirty grains three times a day, until April 17, when it was stopped. On April 21, the plates appeared normal in number and the improvement in the general condition was marked. The urine now showed a trace of albumin and a few hyaline casts, so the arsenic was discontinued. No further blood examination was made until April 27, when it was noted that the plates were again much reduced and a remark was made to the attending physician that more bleeding would probably occur.

On the evening of April 30 blood began to ooze from the gums. This gradually increased, reaching a maximum on May 3, when there was considerable bleeding from the gums and tongue, but not approaching in severity the original attack. There was no bleeding elsewhere. Only one dose of calcium lactate of 30 grains was given daily for the first three days, but on May 3 the dose was increased to 40 grains every three hours.

I did not see the patient until May 4, when the red cells were 4,120,000, white cells 7,000 and hemoglobin 70 per cent. The coagulation time was eight and three-quarters minutes. The plates were still nearly absent. The bleeding was much less on this day and ceased on May 5.

A blood specimen taken May 9 showed a few scattered plates. Administration of arsenic was started on this day. On May 10 the plates were much more numerous, many occurring in clumps. The next examination was on May 14, when they were perfectly normal in appearance. The calcium lactate was slowly decreased, first to 20 grains three times a day, then

twice a day and to one dose daily. The improvement has been rapid and the patient is now out of doors.

This case was one of acute hemorrhagic purpura of the most severe type. The prognosis in a large proportion of these is extremely grave.

Sahli,[4] as late as 1905, made the statement that the value of calcium chlorid in hemophilia is still awaiting judgment.

In view of the cases here reported, it seems that the calcium, or probably the magnesium salts as well, offer the best hope of relief of any therapeutic measure so far advised.

We are, of course, aware that theoretically there is some danger of causing thrombi formation, but this must be slight if we determine with each case the minimum dose necessary to make the patient comfortable. Thirty or forty grains of calcium lactate once or twice a week is usually sufficient in the chronic cases. The large doses given to the patient with acute hemorrhagic purpura is evidence of the harmlessness of the drug when such doses are necessary.

The lactate is more easily absorbed by most patients than the chlorid of calcium and the taste is much more agreeable. The chlorid is nauseating to many individuals, while the lactate is a tasteless, chalk-like powder.

All the patients were also directed to drink from one to two quarts of milk a day, and some of the improvement probably results from this, for Wright and Knapp[5] have shown that this accelerates coagulation.

Summarizing the coagulation experiments in the above cases, it is seen that in two of the five it was decidedly above normal, in two others a high normal, and in the fifth a low normal. In all cases the blood must have had a high content of calcium, so the results attained are in accord with those of Wright and Knapp,[5] who demonstrated by chemical means, in 1902, that blood which contains a small amount of calcium is not always less coagulable, and also that blood containing much lime salts is not necessarily more coagulable than usual.

It has been claimed that the continued administration of calcium chlorid is not effectual in keeping up an increased coagulability of the blood, but, on the contrary, serves to lengthen the time. Consequently, its use has been confined to stopping acute hemorrhages or to prevent hemorrhage at an operation. Whether the effect of the lactate is different in this respect or the improvement is due, in the chronic cases, to the fact that the patients have taken the minimal effective dose I can not say, but concerning the improvement there can be no doubt. In no case has the coagulation time been lengthened by the lactate.

The patient in Case 1, the physician, and the patient in Case 3, the teacher of Latin, are educated men and keen observers. One of them has now been under treatment for five months, the other for four months. By regulating the calcium lactate carefully they can keep themselves infinitely more comfortable than for years.

In the course of these examinations many blood examinations were made. The one constant feature was the very small number of blood plates. Other observers have reported this, but, we believe, have not attached sufficient importance to it. Following such bloods from day to day one can not help thinking that there is a close relationship between the small number of the plates and the liability to bleed. In one of the cases, the plates suddenly disappearing, it was suggested, fully forty-eight hours before it began, that bleeding was about to recur. Blood from another patient (Case 2), taken the same day on which had occurred the most severe attack of epistaxis for months, showed a total absence of plates, whereas they had previously been present, but much below normal.

After the cessation of the bleeding arsenic was given with the idea of stimulating the hemogenetic organs. While the origin of the plates is still a much disputed point, the fact that they rapidly increased in number soon after beginning the arsenic in Case 5 would argue in favor of the bone marrow as their seat of origin.

During the last few years much has been written on the technic of counting the plates. Pratt's method of diluting the blood with a 2 per cent. solution of sodium metaphosphate and obtaining the ratio of the plates to the red cells is probably the best. While the actual enumeration is more accurate and especially valuable in reporting cases, the technic is arduous and can not be applied in many cases. Heretofore nearly all observers have agreed that little concerning the plates could be learned from a stained specimen. It must be remembered, however, that such investigations were made before the use of the azure dyes was common. We believe that by making evenly smeared, thin specimens and using a stain like Wright's, Leischmann's or the Nocht-Jenner of Hastings, which we have employed, fully as good an idea of the plates can be obtained as by counting them.

Secondary anemias, whether from hemorrhage, neoplasms or various other causes, always show a marked increase in the plates. In all the cases above reported there was at some time distinct anemia, but the plates were constantly reduced.

Another point of difference between the two varieties of anemia is that a leucocytosis is usual with secondary anemias, while it is uniformly absent with the anemia of purpura.

Keeping these points in mind, one should always be able to differentiate between a bleeding from a hemorrhagic diathesis and a hemorrhage from other causes.

4. Ztschr. f. klin. Med., 1905, vol. 56, p. 264.
5. Lancet, Dec. 6, 1902.

New Appliance

A BED LIFT.

H. H. JANEWAY, M.D.
NEW BRUNSWICK, N. J.

The form of apparatus here described has proved itself so useful in the care of many of my postoperative cases, that it has seemed as though both those connected with larger hospitals as well as many who do most of their work with limited nursing help would welcome its use. There are many forms of bed lifts manufactured by the instrument makers, but all of these, so far as I have been able to discover, are so arranged that the patient must be lifted bodily on the machine, as a patient would be lifted on a stretcher, before it can be used.

DESCRIPTION.

In this form of apparatus, however, one nurse is easily able to place three bands beneath the patient, and thus alone to lift the patient. The one passed beneath the shoulders is readily placed by first lifting one shoulder and pulling the band down underneath the back until the upper border is on a level with the axilla, then the other shoulder is lifted and the band adjusted on this side of the body; the band passing under the hips is first pushed beneath the small of the back, and then first by lifting, or slightly rolling up one hip, and then the other, it is

easily pulled down until its upper border is on a level with the anterior superior iliac spine. The other two bands are very quickly put in position, one beneath the calf of the leg, and the other attached to the same end-piece as the shoulder band, under the head (Fig. 1). The placing of all these straps is very rapidly done, being only a matter of a couple of minutes, and can all be accomplished by one person. The patient can now be lifted by one nurse and lies, when the bands are in their proper places, at perfect rest on them (Fig. 2.).

Figure 1.

BENEFITS.

The nurse is then at liberty to change the bed, turn the mattress, introduce the douche pan, or thoroughly rub the patient's back. In cases of any tendency for the development of a bed-sore in a patient who has been obliged to remain for a long time on the back, instead of using one strap beneath the hips, which would rub on the sore, two straps with the bed-sore in the interval may be used, and thus the developing bed-sore readily dressed. In this case one strap passed beneath the small of the back and the other under the thigh just beneath the buttocks. It will thus be seen that any part of the patient's body can be made accessible. The patient is

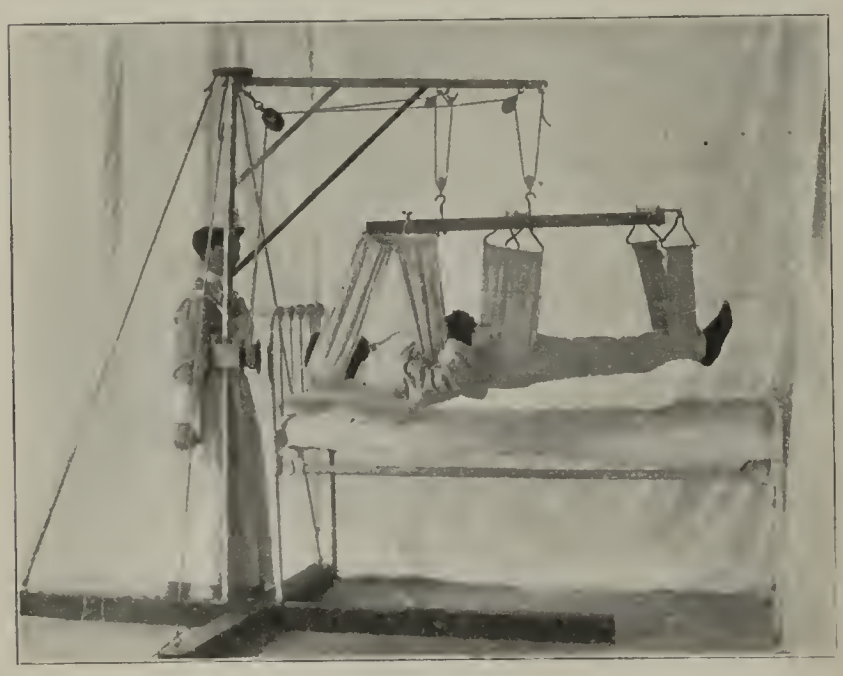


Figure 2.

still at perfect rest when so lifted. This method of introducing the straps can also be used when, on account of excessive weight, it is more difficult to pull the hip strap down under the pelvis.

Aside from making nursing easier, the apparatus, in many cases, proves a veritable Godsend to the patient. The rest to the back after being lifted is very great. This is especially noticeable after operations, and is most useful for a long time after such operations as nephrorrhaphy, where it is undesirable for a patient to turn off from the back for some little time. Even after an ordinary laparotomy the possession of a way of lifting a patient off the back without strain contributes greatly to the taking of any tension off from the wound, such as might otherwise be due to excessive restlessness or too early turning. Of course, to that class of cases in which turning is very difficult, such as fracture cases and chronic illnesses, the machine proves a real blessing throughout the entire sickness.

Lately I have used the machine in cases of typhoid fever at the home of the patient with most gratifying results. By swinging the crane out to the side of the bed one nurse is able to give a regular bath without strain to herself or exertion to the patient (Fig. 3). Where the means of the family are limited so that only one nurse can be engaged, this form of bed lift has really meant to the patient the difference of having the bath treatment or going without it. Each nurse who has thus far become accustomed to the use of the lift has expressed herself enthusiastically over it.

The simplicity of the machine enables it to be manufactured at comparatively slight cost, Charles E. Dressler, 143 East Twenty-third street, having reproduced the one here presented at a most reasonable figure.

In one family in which the expense of a nurse was out of the question, and in which the mother lay for several months

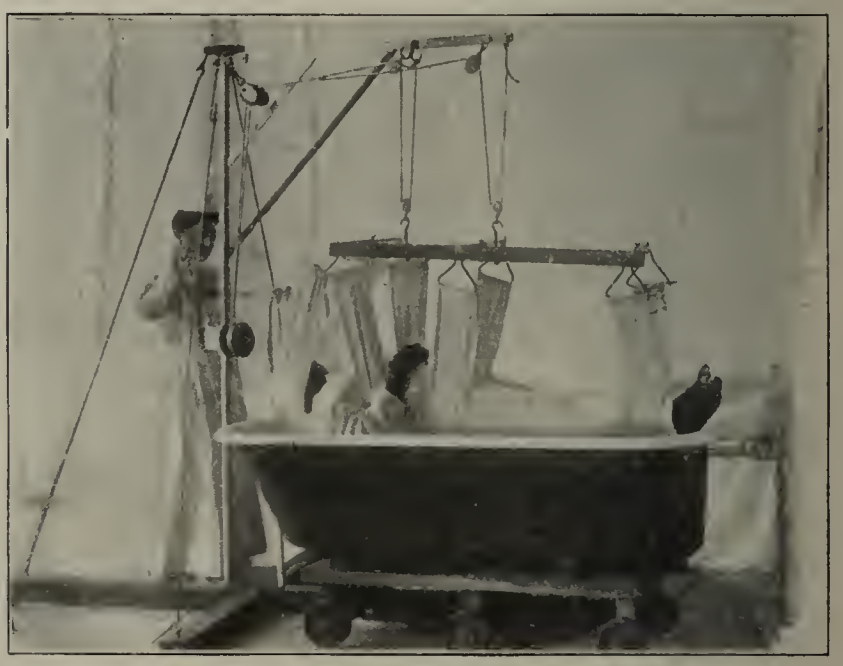


Figure 3.

dying from secondary carcinoma of the liver, being absolutely bed-ridden, and before death weighing over 200 pounds, this apparatus enabled the two daughters to care for their mother, to make her comfortable, and to keep her back and bed in good condition until she died.

Clinical Note

CONGENITAL DISLOCATION OF THE HIP.

REDUCTION AT AN EARLY AGE.*

PRESCOTT LE BRETON, M.D.
BUFFALO, N. Y.

In cases of congenital dislocation of the hip diagnosis is possible soon after the child begins to walk, because the limp in unilateral cases or the waddle and lordosis in bilateral cases call attention to the condition.

In a certain number of cases, which are, nevertheless, congenital, dislocation does not occur until a later time. The period depends on the amount of deformity present.

*Read at a meeting of the Eighth District Branch of the Medical Society of the State of New York, Aug. 17, 1906.

This fact was well illustrated in the case of a child under my observation. When 2 years old she had a waddling gait and slightly increased lordosis, but not one symptom of dislocation could be discovered. Three months later the waddle and lordosis had increased and all the typical signs of a double dislocation were present. Complete luxation occurred between the examinations.

There is considerable difference of opinion as to the time that treatment should be begun in these early cases. Some orthopedists, notably Lorenz, prefer to wait until the third year, when diapers can be dispensed with. Others argue that it is best to reduce at once, in spite of the inconvenience in trying to keep the child clean. Their reasons for doing this are that it is much easier to reduce the dislocation at this time, complications are less likely, the period of treatment is short and the outcome more favorable because time has not allowed further changes to develop in the joint and neighboring soft parts. In regard to this matter Lorenz[1] says:

Before beginning treatment, I wait not merely till the discrepancy in the gait declares itself beyond any question, but till the child is able to keep itself clean. Then, for reasons which are easily deduced, the treatment is so much simplified that I am accustomed to wait till the expiration of the second year before attempting reduction. It pleases me most if the children come to me for treatment after the expiration of the third year. By this time the unclean accompaniments following reduction are done away with; and on the other hand there is the important advantage that the greater tone of the soft parts materially enhances the stability of the primary position after the reposition is brought about, and so increases the chances for permanent reduction.

Ridlon[2] believes that those who have operated on cases under 2 years appreciate that, while it was perhaps more easy to return the head to the acetabulum than in the older cases, it was more difficult to keep it there. Wilson[3] thinks that, while it might appear on the surface that the earlier replacement is made the better it would stay, the fact exists that if the child is unable to walk a very important factor in the result is lost.

On the other hand we have the following opinions. Hoffa[4] says:

In my opinion, the earlier children with congenital dislocation of the hip are subjected to treatment, the better will be the results.

Heusner[5] thinks that early infancy, with its energetic growth, offers the best prospects for regeneration, while delay invites rapid aggravation of the deformity.

Freiberg[6] says:

The earliest possible replacement must be considered an important desideratum. The results amply justify the great additional care which is necessary to prevent the dressings from becoming soiled.

He reports the case of a child of 17 months of age, in which he obtained a good result. Bartow[7] reports three similar early cases, with good results. He also modifies the plaster cast in such a way as to prevent soiling. Hoffa covers the plaster cast with a solution of rubber to make it impervious to moisture.

The following case may be added to others in which treatment was instituted early:

C. S. P., male, aged 20 months, was referred by Dr. Dean, Mayville, N. Y., August, 1905. Family history, negative.

Personal History.—A first child. Labor had been prolonged for twenty-four hours, but neither force nor instruments had been employed. Baby was always in good health. For the previous two months, since he began to walk, a limp was noticed. This was so marked that it was really a lunge forward and downward on the right leg at every step. The child, however, made no complaint, but played and ran about freely.

Examination.—All the signs of a typical unilateral dislocation were found. The right leg was three-quarters of an inch shorter than the left. The trochanter was above Nelaton's line. On placing the finger on the upper edge of the trochanter and the thumb on the anterior spinous process, and then applying intermittent traction to the leg, the trochanter very plainly slid up and down under the finger, showing a lack of firm apposition between the femur and the pelvis. The right thigh was half an inch less in circumference than the left. The gluteal muscles of the right side showed a slight atrophy. There was no spasm. Motions were very free except abduction, which was slightly limited. On rotation, the trochanter did not move in the arc of a circle. On flexing and adducting the thigh, the head of the femur could be felt under the gluteal muscles. An *x*-ray picture, taken by Dr. W. W. Plummer, showed the elevation of the trochanter on the right side. It also seemed to show anteversion of the femoral neck.

Operation.—On Aug. 29, 1905, reduction was accomplished under chloroform anesthesia by the Lorenz method. The replacement was not difficult. The apposition was firm, and it was necessary to bring the thigh down from the Lorenz position to full extension before redislocation occurred, when the bone would jump suddenly back on the dorsum of the ilium. When reduced, there was the usual shortening of the hamstrings. The plaster spica was protected by rubber dam and the mother was instructed in detail about the care of the skin. A high shoe allowed free walking.

Postoperative History.—The child was sent home, returning in November, when the hip was examined and found in good condition. Dislocation did not occur even when the thigh was brought down parallel to the opposite one. In this extended position the legs were of equal length, and the firmness of the reposition argued well for the future. A new cast was applied with flexion reduced to 45 degrees, and with lessened abduction. On Feb. 3, 1906, a similar state was found, and the flexion was further reduced. On March 24, there was found for the first time a distinct fulness in front of the acetabulum near the anterior inferior spine, which disappeared during thigh flexion. The inference was plain that, owing to the deformed neck of the femur, the result would be an anterior transposition. A removable spica was made for night use, to hold the thigh during sleep in the primary position. This was continued for six weeks. A half-inch raise in the left shoe continued a slight abduction of the right leg.

Examination on July 2 showed a functional cure. The fulness could be felt, as before, in front of the acetabulum. The legs were of equal length and circumference. No limp and no increase of lordosis. The child appeared normal, and had had perfect freedom from restraint for over two months.

REMARKS.

It would seem that in this case, at least, a wait for a period of a year or over would have been a mistake. The mother did not complain of the extra trouble involved in caring for the child, and she was successful, inasmuch as no cast had to be changed because of soiling. The baby grew rapidly during its confinement, playing contentedly every day. The result obtained is the same as in the majority of cases, i. e., a functional cure by anterior transposition. Permanent replacement of the head in the acetabulum is obtained in a small minority of cases only. The frequency of this forward position of the head of the femur is supposed to be due to the anteverted neck and the shortening of the pelvi-trochanteric muscles, which latter is caused by the primary position of Lorenz. As the leg is finally brought to full extension these two factors throw the head forward out of the acetabulum.

1. Lorenz: Am. Jour. Orthopedic Surgery, vol. ii, p. 231.
2. Ridlon: Am. Jour. Orthopedic Surgery, vol. iii, p. 154.
3. Wilson: Am. Jour. Orthopedic Surgery, vol. iii. p. 155.
4. Hoffa: Am. Jour. Orthopedic Surgery, vol. ii, p. 239.
5. Heusner: Phil. Med. Jour., Feb. 14. 1903, p. 309.
6. Freiberg: Am. Med., March 5. 1904.
7. Bartow: Am. Jour. Orthopedic Surgery, vol. iii, p. 147.

New and Non-Official Remedies

THE FOLLOWING ARTICLES HAVE BEEN TENTATIVELY ACCEPTED BY THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR INCLUSION IN THE PROPOSED ANNUAL, "NEW AND NON-OFFICIAL REMEDIES." THEIR ACCEPTANCE HAS BEEN BASED LARGELY ON EVIDENCE SUPPLIED BY THE MANUFACTURER OR HIS AGENT, BUT TO SOME EXTENT ON INVESTIGATION MADE BY OR UNDER THE DIRECTION OF THE COUNCIL. CRITICISMS AND CORRECTIONS ARE ASKED FOR TO AID IN THE REVISION OF THE MATTER BEFORE FINAL ACCEPTANCE AND PUBLICATION IN BOOK FORM.

THE COUNCIL DESIRES PHYSICIANS TO UNDERSTAND THAT THE ACCEPTANCE OF AN ARTICLE DOES NOT NECESSARILY MEAN A RECOMMENDATION, BUT THAT SO FAR AS KNOWN IT COMPLIES WITH THE RULES ADOPTED BY THE COUNCIL.

W. A. PUCKNER, SECRETARY.

(*Continued from page 1021.*)

CREOSOTAL.

CREOSOTE CARBONATE.

Creosotal is a mixture of carbonic acid esters, analogous to guaiacol carbonate, prepared from creosote.

It is prepared by passing a current of carbonyl chloride into a solution of creosote in sodium hydroxide, and purifying the oily product by washing with weak soda solution and with water.

It is a yellowish, thick, honey-like, perfectly clear and transparent liquid, containing 92 per cent. of creosote. It is odorless and has a bland oily taste. It is insoluble in water, but soluble in alcohol, ether, chloroform, benzene and in fixed oils.

The addition of a few drops of ferric chloride solution to the alcoholic solution should not cause any change in color. On boiling with potassium hydroxide solution the odor of creosote is evolved.

It is incompatible with boiling alkalies.

Actions and Uses.—Creosotal has the same action as creosote, but is claimed to be non-toxic and devoid of irritant properties. It is recommended as a substitute for creosote for internal exhibition in tuberculosis, pneumonia, and as an intestinal antiseptic.

Dosage.—From 0.3 to 2.0 Gm. (5 to 30 grains) for children, to 1 to 4 Gm. (15 to 60 grains) for adults in milk, coffee, wine, cod-liver oil or emulsion. Externally it may be applied undiluted.

Manufactured by Farbenfabriken, vorm. Friedr. Bayer & Co., Elberfeld, Germany (Continental Color & Chemical Co., New York). Fabrik von Heyden, Radebeul, near Dresden. German patent No. 58,129; U. S. patent No. 501,235; U. S. trademark.

DENTALONE.

A saturated solution of chloretone (which see) in a liquid composed of oil of cloves, oil of gaultheria and oil of cassia, and containing 30 per cent. of chloretone.

It is a reddish-brown oily liquid of characteristic odor and taste.

Actions and Uses.—Dentalone possesses pronounced anesthetic properties and is intended for use by dentists in the treatment of exposed nerves in decayed teeth.

Prepared by Parke, Davis & Co., Detroit, Mich. U. S. trademark.

DERMATOL.

A name applied to Bismuthi Subgallas, U. S. P.

Manufactured by Meister, Lucius & Bruening, Hoechst a. M (Victor Koechl & Co., New York).

DIABETIN.

LEVULOSE. FRUIT SUGAR. FRUCTOSE.

Diabetin is a pure, crystallized fructose (levulose), $CH_2OH.CHOH.CHOH.CHOH.CO.CH_2OH = C_6H_{12}O_6$, absolutely free from dextrose (ordinary glucose).

It is prepared from invert sugar by precipitation as calcium salt, decomposing the precipitate with carbonic acid, and crystallizing. It is a colorless, odorless, slightly hygroscopic, crystalline powder, having a sweet taste comparable with that of ordinary cane sugar (saccharose). It is readily soluble in water and in diluted alcohol, slightly soluble in alcohol, insoluble in absolute alcohol and in ether.

Its aqueous solution reduces Fehling's solution and rotates the ray of polarized light to the left (—90.2).

Actions and Uses.—Levulose is metabolized in the body by other agencies than those that act on dextrose and most of the other sugars and appears to be more completely utilized by the diabetic organism than the other sugars.

It is recommended for the nutrition and for sweetening the food and drink of diabetics, in pulmonary tuberculosis, infantile malnutrition and marasmus.

Dosage.—It is given in diabetes in daily quantities of 30 to 60 Gm. (1 to 2 ounces); in grave forms of the disease the amount is reduced to from 12 to 24 Gm. (3 to 6 drams) daily.

Manufactured by Chemische Fabrik auf Actien, vorm. E. Schering, Berlin (Schering & Glatz, New York). U. S. trade-mark No. 21,864.

DIONIN.

ETHYL-MORPHINE HYDROCHLORIDE. CODETHYLINE HYDROCHLORIDE.

Dionin, $C_{17}H_{17}NO(OH)(OC_2H_5)HCl + H_2O = (C_{19}H_{24}O_3ClN + H_2O,)$ is the hydrochloride of the ethyl ester of morphine.

It is prepared by the action of ethyl iodide on morphine in the presence of alkali, the basic product being purified by crystallization from hot alcohol, dissolving the crystals in hydrochloric acid and crystallizing.

It is a white, microscopically crystalline powder, odorless and only slightly bitter. It is soluble in about 7 parts of water and in 2 parts of alcohol, insoluble in ether and in chloroform. It melts completely with decomposition at 125° C. (257° F.).

It gives the usual reactions for alkaloids. It is distinguished from morphine salts by its insolubility in excess of alkali, and by not producing an immediate blue color, but gradually developing a blue-green coloration, when its solution is added to dilute ferric chloride solution containing a fragment of potassium ferricyanide.

It is incompatible with alkalies and their carbonates and alkaloidal reagents, as potassio-mercuric iodide, tannic acid, picric acid, etc.

Actions and Uses.—It is claimed that this compound acts like morphine without producing constipation, nausea or lassitude. It is the conclusion of some good observers that it possesses no advantage over codeine. Applied to the eye, it causes a local vaso-dilation, leading to acute conjunctival edema.

Dionin is recommended to relieve pain, especially in respiratory affections, as an antispasmodic in whooping-cough, for insomnia and externally in the treatment of corneal affections, conjunctivitis, iritis, etc.

Dosage.—0.015 to 0.06 Gm. (¼ to 1 grain). Externally it is applied in 10 to 20 per cent. solutions.

Manufactured by E. Merck, Darmstadt. (Merck & Co., New York). German patents Nos. 102,654, 107,225, and 108,075. U. S. trademark.

DIURETIN.

A name applied to theobromine-sodium salicylate, which see.

Manufactured by Knoll & Co., Ludwigshafen, Germany (E. Merck & Co., New York).

DUOTAL.

A name applied to Guaiacolis Carbonas, U. S. P.

Manufactured by Farbenfabriken, vorm. Friedr. Bayer & Co., Elberfeld, Germany (Continental Color & Chemical Co., New York). U. S. patent No. 466,913. U. S. trademark.

DUOTONOL.

A name applied to a mixture of equal parts of calcium tonol and sodium tonol. (See tonols.)

Actions and Uses and Dosage.—See Glycerophosphates.

Manufactured by Chemische Fabrik auf Actien, vorm E. Schering, Berlin (Schering & Glatz, New York). U. S. trademark.

ELIXIR EUPNEIN.

COMPOUND ELIXIR OF HEROIN, CREOSOTE AND TERPIN HYDRATE, SCHIEFFELIN.

A preparation said to contain in each dose of 8 Cc. (2 fluidrams): heroin 0.0026 Gm. (1/24 grain), terpin hydrate 0.13 Gm. (2 grains), creosote 0.3 Gm. (5 grains), in a menstruum containing 30 per cent. of alcohol with glycerin and aromatic essential oils.

Actions and Uses.—From its composition it appears to be well adapted to use in chronic cough from bronchitis, etc.

Dosage.—4 to 12 Cc. (1 to 3 fluidrams).

Prepared by Schieffelin & Co., New York. U. S. trademark No. 36,419.

ELIXIR SAW PALMETTO.

ELIXIR SABALI, SANTALI, ET ZEÆ MAIDIS.

A preparation said to represent in each 30 Cc. (fluidounce): Saw palmetto berries 8 Gm. (120 grains); sandalwood 2 Gm. (30 grains); and cornsilk 8 Gm. (120 grains).

It is stated to contain 36.7 per cent. of alcohol.

Actions and Uses.—The constituents of this preparation are credited with diuretic properties and believed to be sedative to the genitourinary tract and to exert a curative action on the inflamed mucous membrane, especially in chronic cases.

Dosage.—4 to 16 Cc. (1 to 4 fluidrams) three times a day.

Prepared by Parke, Davis & Co., Detroit, Mich.

EMPYROFORM.

Empyroform is a condensation product of birch tar and formaldehyde.

According to the patent specifications birch tar is boiled with formaldehyde solution and the hot liquid poured into hydrochloric acid. When cold, the solid mass is collected and washed until free from acid.

It is a grayish-brown, almost odorless powder, insoluble in water, but readily soluble in solutions of caustic alkalies, in acetone, and in chloroform.

Actions and Uses.—Empyroform is an antipruritic, sedative and desiccant. It is said to be superior to tar and free from irritant or toxic effects.

It is claimed to be useful in all stages of eczema, psoriasis, lichen, urticaria, prurigo, pityriasis, etc.

Dosage.—It is applied as a 5 to 10 per cent. ointment, 10 to 20 per cent. zinc paste, 10 to 20 per cent. tincture, and 37.5 per cent. suspension.

Manufactured by Chemische Fabrik auf Actien, vorm. E. Schering, Berlin (Schering & Glatz, New York). U. S. patent No. 761,260. U. S. trademark No. 43,419.

EPICARIN.

OXYNAPHTHYL-ORTHO-OXYTOLUIC ACID.

Epicarin, $C_6H_3(OH)(COOH)(CH_2C_{10}H_6OH)2:3:1 = C_{18}H_{14}O_4$, is β-naphthol-hydroxy-toluic acid.

It is obtained by the action of chlormethyl-salicylic acid on a solution of *b*-naphthol, in glacial acetic acid, thus:

$$C_6H_3(OH)(COOH)(CH_2Cl) + C_{10}H_7OH = C_6H_3(OH)(COOH)(CH_2C_{10}H_6OH) + HCl$$

It forms colorless or yellowish needles, melting at 190° to 195° C. (380° to 389° F.), difficultly soluble in water, but easily soluble in alcohol, ether, acetone, and in soaps. It dissolves in oils on the addition of a little ether. It has the character of a strong acid, forming well crystallized salts, which, however, are sparingly soluble in water, particularly the sodium salt. On exposure to air it acquires a reddish color due to oxidation; if it is then recrystallized from glacial acetic acid, colorless crystals are again obtained which melt at 166° C. (338° F.). These, however, retain a little acetic acid, but lose this by heating at 120° C. (248° F.).

The alcoholic solution of epicarin produces an intense blue color with ferric chloride. When heated with concentrated sulphuric acid, a red-brown solution, having a vivid green fluorescence, is produced. If shaken with chloroform and solution of potassium hydroxide, a yellowish color, changing later to yellowish green is developed, thus distinguishing epicarin from *b*-naphthol, which produces a deep blue color under the same conditions.

Being a strong acid it is incompatible with alkaline hydroxides or carbonates, especially those of sodium with which it forms an almost insoluble salt. It should not be exposed to the air, which colors it red.

Actions and Uses.—Epicarin is a non-poisonous antiseptic and parasiticide. Administered internally, it is excreted mostly undecomposed. It has been found useful in the treatment of skin diseases, particularly scabies, tinea tonsurans, prurigo and certain forms of eczema.

Dosage.—It is used externally only in the form of 5 to 20 per cent. ointment, with petrolatum or wool fat (lanolin) as base, or in the form of oily or alcoholic solutions (10 per cent.).

Manufactured by Farbenfabriken, vorm. Friedr. Bayer & Co., Elberfeld, Germany (Continental Color & Chemical Co., New York). U. S. patent applied for.

ERYTHROL TETRANITRATE.

ERYTHROL NITRATE. TETRANITROL.

Erythrol tetranitrate, $C_4H_6(NO_3)_4 = C_4H_6O_{12}N_4$, is the tetranitrate of erythrite or butane-tetrol, $C_4H_6(OH)_4$.

It is obtained by the nitration of the tetratomic alcohol erythrite.

It forms colorless crystalline scales, insoluble in cold water, readily soluble in alcohol, melting at 61° C. (141.8° F.). On percussion it explodes much like nitroglycerin.

Actions and Uses.—It is a vasodilator and antispasmodic, like nitroglycerin. Its action is slower and more lasting; it begins in 15 minutes and persists for three or four hours.

It is recommended in angina pectoris and cardiac diseases. It is reported as especially useful as a prophylactic in preventing anginal pain.

Dosage.—Because of its explosiveness it is marketed in the form of tablets, each containing 0.03 Gm. (½ grain). One or two tablets every four to six hours.

Manufactured by E. Merck, Darmstadt (Merck & Co., New York). German patent No. 81,664.

ETHYLENEDIAMINE.

AETHYLENDIAMIN. AETHYLENE DIAMINE. ETHANE DIAMINE. *a,b*-DIAMINO-ETHANE.

Ethylenediamine, $C_2H_4(NH_2)_2$, is a substitution compound of ethylene and ammonia.

It is prepared by heating ethylene bromide with an excess of alcoholic ammonia for 12 hours at 100° C. (212° F.), removing the ammonium bromide formed, by filtration, evaporating the filtrate to dryness, distilling the residue with potassium hydroxide, and collecting the fraction distilling between 115° and 130° C. (239° to 266° F.) and bringing the liquid by successive purifications to a constant boiling point at 117° C. (242.6° F.).

It is a clear, colorless, thick liquid, having a sp. gr. 0.97, boiling at 117° C. (242.6° F.), without decomposition, having a strong alkaline reaction, an ammoniacal odor and a caustic taste. It is freely soluble in water, and may be mixed with cresols, but is not miscible with benzene (benzol) or ether. It dissolves albumin very readily, even when boiled.

Being a strong base its incompatibilities are about the same as those of sodium hydroxide.

Actions and Uses.—It is said to be non-corrosive. It is recommended as an albumin solvent for the solution of false membranes in diphtheria and similar affections of the mucous membranes. It is recommended for use in the form of kresamine (which see).

Manufactured by Chemische Fabrik auf Actien, vorm. E. Schering, Berlin (Schering & Glatz, New York).

EUCAINE.

The "Eucaines" are two closely allied synthetic bases, which were originally differentiated as eucaine "A" and eucaine "B," but are now designated as "Alpha-eucaine" and "Beta-eucaine" respectively, alpha-eucaine being a synthetic derivative of triacetonamine, while beta-eucaine is a synthetic derivative of vinyl-diacetonekalmine. Both of these bases are supplied as hydrochlorides and are recommended as substitutes for cocaine, over which they are claimed to have certain advantages.

They are described under alpha-eucaine hydrochloride and beta-eucaine hydrochloride.

EUCALOIDS.

A name applied to gelatine capsules, each containing 0.3 Cc. (5 minims) of pure oil of eucalyptus.

Dosage.—1 to 2 globules three or four times a day.

Prepared by Edward G. Binz, Los Angeles, Cal.

(*To be continued.*)

Travel Notes

DISEASES AND HOSPITALS OF AFRICA.

NICHOLAS SENN, M.D.
Professor of Surgery in the University of Chicago; Professor and Head of the Surgical Department, Rush Medical College.
CHICAGO.

(*Continued from page 1051.*)

THE HOSPITALS OF PRETORIA AND CAPE TOWN.

Pretoria, the former proud capital of the republic of South Africa, is only two hours distant from Johannesburg by rail. There is nothing to be seen here which would remind one of the terrible struggle which the brave Boers made in defending their rights and in maintaining their independence. Their leader, the late President Kruger, sleeps now in the little cemetery, surrounded by members of his family, who preceded him in death, and blue violets are blooming on his grave, symbolic of the purity of his private and public life. The city remains the same as before the war, but the magnificent public buildings, built and paid for by the Boers, are now in possession of the new administration. The Boers, a law-abiding people, have accepted their defeat in humility. Their worldy losses will be repaired in course of time, but the wounds inflicted by the cruel war will never heal under the present methods of foreign administration.

The city has about 25,000 inhabitants and is beautifully situated in a valley, surrounded by picturesque mountain scenery. It is an ideal capital city without the noise, smoke, and disturbances of manufacturing establishments. It has wide well-paved streets, many beautiful residences, very interesting botanic and zoologic gardens combined, good public schools, fine churches and a most excellent little hospital.

Fig. 1.—Pretoria Hospital.

THE PRETORIA HOSPITAL.

This hospital was completed, as indicated by an inscription on the corner-stone laid by President S. J. P. Kruger, June 21, 1890. The hospital, built of brick on the pavilion plan, has accommodations for 170 Europeans and 80 natives (Fig. 1.). It is charmingly located in a quiet outlying part of the city on an eminence and in the midst of large grounds, tastefully laid out and ornamented with evergreen trees, shrubs and a profusion of flowers. The general wards are airy, well-lighted and everywhere the most scrupulous cleanliness prevails. The snow-white linen, the cheery fires in open grates, the happy contented faces of the patients, white and black, old and young, suggest that the management of the institution is in competent hands (Fig. 3.). The nursing is in charge of five English sisters, assisted by 45 pupil nurses, who remain in training three years before they are permitted to apply for the final examinations. The corridors and walls are paved with large squares of artificial stone admirably adapted for this purpose. Dr. G. Thornton, the medical superintendent, lives in a comfortable, well-appointed house in the same grounds. The nurses' home, recently completed, is what such an institution should be, a real home for the nurses with all the comforts of a home. Dr. Thornton and his wife, formerly a trained nurse, devote their whole time and attention to the best interests of the institution and the comfort and well-being of its inmates. Dr. Thornton is a careful, conscientious practitioner and thoroughly devoted to his patients, regardless of their color. The natives in this hospital receive more consideration and care than in any other hospital visited. In the female wards for natives, I saw a patient about 35 years old, the subject of advanced carcinoma of the uterus. The woman was a half caste. Recently a case of molluscum fibrosum was observed in the hospital and through the courtesy of Dr. Thornton I make use of a photograph which he took himself (Fig. 2.).

Oil of cinnamon in three-drop doses, in emulsion, is the routine medication in typhoid fever. The mortality of this disease in the hospital does not exceed ten per cent., certainly an enviable record. In 3 out of 24 cases of perforation of the bowel in typhoid cases, life was saved by operative interferance. Pneumonia here, as in all other hospitals in Central South Africa, is one of the most frequent and fatal of all diseases. The mortality ranges between 10 and 40 per cent.

From the report of the hospital for 1904-1905, I have gleaned a number of important facts. The operating theater is not what it should be, and a recommendation to rebuild it is one of the first items in the report. The *x*-ray apparatus and room are in good working condition, as shown by a number of specimen illustrations exhibited by Dr. Thornton. Reference to venereal diseases is made as follows: "Our experience shows that venereal diseases, both among the males and females, are becoming increasingly prevalent in the natives, thereby constituting a grave danger to public health, seeing that so many are employed in domestic serviee." Few sufferers of this class of disease are actually admitted into the hospital, but many are treated as "out-patients." The whole number of patients in this hospital during the year was 1,697, of whom 929 were Europeans and 768 natives. Only fifty-two cases of malaria came under treatment, and all the patients recovered. Of 140 patients with pneumonia, 33 died, and of the total cases, 97 were natives, with 28 deaths. Twenty-four natives suffering from tubereulosis of the lungs were admitted and 11 of these died. Of 33 cases of scurvy occurring, the disease proved fatal in one. Four cases of leprosy and one of filariasis, all in natives, were observed during the year. Among the native patients the diagnosis of malignant tumor appears 6 times and of benign tumor, strangely, only once. Concerning the malignant tumors, no distinetion is made between sarcoma and carcinoma.

The farther south I travel and the more the natives are bleached out by the admixture of European blood, the more I find them receptive to the diseases of the whites, and this applies with speeial force to appendicitis and malignant disease. My observations in different parts of the world have convinced me that the nearer the human race approaches the animals in eating and habits of life the more they are exempt from malignant disease and appendicitis.

Two cases of appendicitis occurring in natives are recorded in the report, of which one proved fatal. Of 5 cases of gunshot wounds occurring in natives, all recovered. Dr. A. W. Sanders is the visiting surgeon and exercises a general supervision over the treatment of surgical cases and performs most of the major operations. During the year, 361 operations were

performed, covering nearly the entire field of surgery, and of these 20 patients died. The greatest mortality was in cases of abscess of the liver, 6 cases with 4 deaths and operations for malignant tumors, 7 cases with 2 deaths.

TRANSVAAL LEPER SETTLEMENT.

Five miles from Pretoria in a valley surrounded by hills is the Transvaal Leper Settlement, founded by the Boers long before the war and now administered by the new government. It is a large village made up of comfortable little houses in separate groups for males and females, whites and blacks. The administration building, in which reside the superintendent and physician and supervising trained nurse, and in which the pharmacy and offices are located, are modern, substantial structures. The number of lepers who reside here now is 330, of which 280 are natives and 50 whites, most of the latter are Boers of the lower classes. The village is laid out in streets and includes a neat little Dutch Reformed church, school house and a building for public amusements. Small vegetable and flower gardens contribute much to mitigate the picture of human woe and suffering seen on all sides. Segregation is aimed at but not strictly enforced. Friends and visitors are admitted on stated days and by obtaining permission the lepers can leave the enclosure but must return the same evening. The settlement is under government control and all expenses are paid out of the public fund. Patients are paid a small

Fig. 2.—A native patient in Pretoria Hospital with fibroma moliuscum

sum for their work, if they choose to employ a part of their time in that way. This is an excellent thing, as useful employment chases away melancholy and with the little money earned the patients can buy for themselves such things as will make them more comfortable and happy. All the patients were decently dressed, their surroundings were clean and their general appearance indicated that they are well cared for and make the best of their misfortune. I saw here many cases in which the disease had produced frightful ravages, both in the tubercular and in the anesthetic forms. The treatment pursued is entirely symptomatic, no vaunted specifics are tried. Miss A. M. Whiteman, an English trained nurse, is the ministering angel in this valley of human suffering and misery. The patients respect and adore her and she is devoted to them. She speaks Dutch and all the native tongues and all come to her when they are in trouble, or in need of her services, which she so cheerfully and willingly renders them.

"For man to assist man is to be a God.
This is the path to eternal glory."

Plinius Major.

CAPE TOWN.

Cape Town is the metropolis of South Africa and the capital of Cape Colony. It is situated at the base of Table Mountain on the south-west shore of Table Bay. It was founded by the Dutch in 1562, and ceded to Great Britain in 1815. The location of the city is picturesque in the highest degree. It faces the broad Table Bay and behind it are the almost perpendicular huge gray granite walls of Table Mountain. The city was laid out by its Dutch founders with mathematical precision, all its principal streets running in straight lines from the mountain to the sea and being crossed again by the other less important ones at right angles. It is the easiest city of its size for the stranger to find his way without a guide; he can not possibly get lost as the city occupies the narrow but long belt of land hemmed in on one side by the mountains and on the other side by the bay. Its length, with the many suburbs, must be at least ten miles, while its width does not exceed anywhere three-quarters of a mile. The main streets and sidewalks are wide and well paved and kept in good repair and thoroughly clean. The perfect system of sewerage, the abundant supply of pure water from the mountains and the superb climate make it one of the healthiest cities in the world. It is lighted by electricity and the two-story electric tramway cars promote easy transportation to all parts of the city and suburbs.

The principal business street is Adderly street, which is to Cape Town what State street is to Chicago or Broadway to New York. At the business end of this street a broad street-like walk lined on both sides with venerable oak trees leads to the base of the mountain. On the right side of the magnificent walk are the Botanical Gardens and South African Museum. In these gardens will be found nearly all the principal trees and shrubs indigenous to Africa, all labeled in botanical terms. It

Fig. 3.—Native ward in Pretoria Hospital.

is a pity that the common names by which the people know the trees and shrubs are not given in the legends. The museum contains a fine collection of wild animals of Africa, well mounted and kept in excellent condition. The collections of minerals, birds and insects are very large and well arranged. The oldest landmark in the city is the castle, an old-fashioned fortress on the very edge of the bay, built by the Boers in 1660; in its almost medieval Dutch architecture, it forms a curious sight among the modern surroundings.

Table mountain furnishes the botanist with the greatest variety of interesting and rare specimens of plant life. Cape Colony has the largest variety of flowering plants to be found in any country, some 7,000 having been classified. On Table mountain and its slopes and ravines, 400 different varieties of heather have been found and analyzed. This small shrub has a profusion of small tubular flowers in vivid colors, red, yellow and white. These flowers are sold in large bunches on the street for a shilling each. The most interesting tree on Table mountain is the silver tree (*Leucadendron argenteum*) with its long narrow, willow-like shining silvery leaves arranged in dense imbricated clusters at the very end of the thick, abruptly ending twigs. The fruit is a cone the size of a duck egg.

(To be continued.)

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

103 Dearborn Avenue . . . . Chicago, Ill.

Cable Address . . . "Medic, Chicago"

Subscription price.....Five dollars per annum in advance

[*For other information see second page following reading matter.*]

SATURDAY, OCTOBER 6, 1906.

THE INTESTINAL ORIGIN OF PULMONARY TUBERCULOSIS.

It is the general belief that pulmonary tuberculosis in the overwhelming majority of cases is the result of inhalation of tubercle bacilli. This seems such a natural and easy way to account for tuberculosis of the lungs. This explanation is supported by numerous experiments on animals in which forced inspiration of bacilli appeared to be followed by direct localization of bacilli in the lungs. The inhalation theory is also in harmony with the well-known fact that living bacilli occur in the dust and in droplets of sputum about tuberculous patients that use little or no care to prevent contamination of their surroundings; and with the further fact that commonly there is no lesion discoverable elsewhere in the body to which one can trace the pulmonary disease.

Nevertheless important objections are being urged against the inhalation theory of pulmonary tuberculosis, especially in its extreme form, which tends to minimize the dangers of the alimentary route of infection. Behring's contention that the milk of tuberculous cows is the most important source of tuberculosis is so well known that details need not be discussed. The recent anatomic studies by Harbitz[1] of the distribution of tuberculous lesions, especially in children, afford many points in support of the view that tuberculosis of the lungs and adjacent lymph nodes may result from invasion through the digestive tract. It is not feasible to bring forward in detail all the facts and interpretations bearing on this question. Suffice it to state that until recently there existed no really satisfactory evidence of an experimental nature showing that tubercle bacilli introduced in the digestive tract actually are primarily or rapidly localized in the lungs and thoracic lymph nodes. The experiments of Calmette and Guérin[2] of Lille appear to furnish important information in regard to this phase of the question. These investigators find that in cattle and goats the introduction of a single quantity of virulent bacilli by means of the esophageal tube, particular care being taken to avoid contamination of the respiratory tract, is followed regularly in from 30 to 45 days by the development of subpleural and peribronchiolar tubercles at the tops and anterior borders of the lungs. Later the alveoli may be invaded from extension of the lesions which primarily are intracapillary. As others have shown before, the bacilli can pass through the walls of the stomach and intestines without leaving any lesions; on reaching the chyle vessels the bacilli are taken up by leucocytes and conveyed to the regional lymph nodes, whence they may escape into the thoracic duct without necessarily causing lesions until they reach the capillaries of the lungs and the thoracic lymph nodes as well as, but more rarely, elsewhere. As localization occurs, Calmette and Guérin believe that the leucocytes which carry the bacilli become immobilized by toxic bacillary products. They also point out that previous experiments which appeared to demonstrate tuberculous invasion by the respiratory tract are open to the objection that the bacilli introduced in reality were absorbed by the digestive tract.

Assuming that the experimental results here outlined in great brevity are applicable to human beings, it necessarily follows that particular care must be taken to avoid all possible sources of contamination of food and drink by tubercle bacilli. Dust, sputum droplets, contaminated flies, soiled hands and articles of various kinds may be the means of introducing bacilli of human origin into food and drink. Efforts should also be directed to exclude the carrying of bacilli into the mouth in more direct ways. The possibility that tuberculosis, pulmonary and otherwise, in reality is of intestinal origin oftener than expected hitherto clearly does not tend to essentially alter in any way the usual preventive measures now in practice. As to milk and other products of tuberculous cows, our attitude, on the whole, will remain unchanged and the practical procedures will depend, as heretofore, on the view taken as to the disputed question of the infectivity for human beings of bovine tubercle bacilli.

Calmette and Guérin have shown also that animals may survive the single introduction of tubercle bacilli into the stomach, the resulting pulmonary lesions healing completely. Such animals are now immune to tuberculosis. The bearing of this demonstration on the human disease we propose to discuss later.

1. Jour. Infectious Dis., 1905, vol. ii, p 143.
2. Ann. de l'Inst. Pasteur, 1905, vol. xix, and 1906, vol. xx, 609.

THE NEW BUILDINGS OF THE HARVARD MEDICAL SCHOOL.

It is the general opinion of all who have had the pleasure of seeing them—and this includes the visitors to the memorable Boston session of the American Medical Association—that the new buildings of the Harvard Medical School are the most beautiful academic or public buildings in America. It is pleasant to note that, in their construction, usefulness for the varied purposes of a great medical school has not in any way been sacrificed in order to have architectural beauty and distinction. The architects have succeeded admirably in combining perfection from the utilitarian as well as from

the architectural point of view. As is reported in detail in this issue,[1] these buildings have now been dedicated with appropriate ceremonies to the purpose for which they were designed and they are now in use for the education of medical students and for medical investigation. Medicine has received a large addition to its resources in this country and all friends of medical progress unite in grateful thanks to the persons who gave the money necessary and in congratulating Harvard Medical School on the completeness and permanence of this part of its external equipment.

So far as the buildings necessary for instruction and investigation in the sciences fundamental to clinical medicine are concerned, this school is now in a most favorable and enviable situation. But medical education and investigation require much more than great buildings. In order that buildings like those at Harvard can be put to their highest usefulness, there must be liberal endowments to pay the men who are to work in them and to furnish the equipment and supplies with which to work. Undoubtedly the same spirit of altruism that prompted wealthy men and women to build the monumental structures just dedicated to medicine in Boston will result in adequate recognition of the choice opportunity and privilege here offered to put more money to the best possible use. And it should be emphasized that an institution requiring the bachelor's degree for entrance on medical work, and possessing such an incomparable group of buildings as Harvard now does, will be expected to do far more than to carry on a high grade of undergraduate medical instruction. Here, if anywhere, should flourish scientific investigation in medicine and special opportunities should be offered not only recognized successful investigators, but also those who promise to develop into such.

Finally, a word in regard to clinical medicine at Harvard. The buildings just dedicated do not provide for clinical work. From recent public utterances by members of the Harvard faculty, it appears that at present the facilities for clinical work, though known to be of high order, are not altogether satisfactory. The hospitals and dispensaries at present are far removed from the medical school proper. This in itself is undesirable. We see, then, that the new Harvard buildings are built for the future to which the friends of Harvard look with hope for adequate endowment, on the one hand, and better provision for clinical medicine, on the other. May these hopes be realized soon.

THE ALCOHOL QUESTION.

At the recent meeting of the British Medical Association the vexed question of the value of alcohol generally and of its use as a drug was dealt with at various times. We referred two weeks ago to the decreased use of alcohol and the increased use of milk in the London hospitals, as reported by Sir Victor Horsley at the luncheon given by the Canadian Temperance Union. Sir Victor Horsley, continuing this subject, said that he not only regards alcohol as the most potent bane of civilization and the cause of physical and mental deterioration of a not inconsiderable portion of the British race, but, further, that he is able to see very little good in alcohol as a drug. In cases of shock subsequent to a severe operation he recommends the employment of another drug than alcohol. The latter he condemns in unsparing terms.

Prof. Sims Woodhead, of Cambridge University, England, took the ground that if it can be proved that alcohol is a remedial agent in any disease, let it be used, but until it has been so proved it should not be employed. He claimed that up to the present time experiments in this direction have obtained such comparatively slight results that they afford no basis for asserting that alcohol has any definite value as a drug. Indeed, investigators working under seemingly like conditions have come to conclusions so diametrically opposed that they have effected little more than to bring confusion to the minds of seekers after the truth.

In the section on therapeutics, Dr. Blackader, of McGill University, expressed the opinion that the action of the heart stimulated by alcohol has been overestimated and that it is sometimes feeble and transitory. The action on the nervous system is more complex, but it is certainly depressing on the centers of judgment, discernment and self-control. Alcohol in medicinal doses increases the bactericidal powers of the blood, while a long series of experiments has shown that large doses in infectious diseases increase the power of the disease poison. It has a food value and, used in fevers and in cases of exhaustion or of indigestion, may be of marked benefit, as it makes no tax on the organs of digestion, but, on the contrary, favors secretion and favors action on the hepatic cells.

Dr. Meltzer, of New York, was far more decided in his support of alcohol as a drug. He asserted that those who opposed its use in disease were those who had never made practical experiments, and that he placed no value on statistics. He drew attention to the fact that, as a rule, German investigators do not believe in the harmfulness of alcohol. In his opinion, alcohol, judiciously used, is capable of stimulating the heart to activity and supports immunity in infectious diseases. Alcohol in health may be a poison, but in disease it is beneficial.

Dr. W. E. Dixon, Cambridge, England, pointed out that the heart rate is no criterion as to whether alcohol stimulates the circulation, that the accelerating action of alcohol on heart rate is due to its stimulating effect on the medulla. According to Dr. Dixon the conflicting results obtained by different investigators are due to the fact that they undertake their experiments on animals under the influence of an anesthetic, which greatly

1. See page 1113.

neutralizes the action of the alcohol. Another point to which he drew attention was that in order to accelerate the action of the heart it is necessary to give an exact small dose of alcohol, and that but a slight increase over this quantity produces decided slowing. In his opinion, if a man who is suffering from disease is accustomed to the use of alcohol he should not be completely restricted from its use when sick, and a man suffering from delirium tremens should be given alcohol.

Dr. Osborne, of New Haven, thought that alcohol should be regarded purely as a drug and that its well-known harmfulness when used as a beverage to excess should be set aside when discussing its therapeutic action. There are no pathologic disturbances when alcohol is used as a drug, and, therefore, it should be thus used in cases which call for its employment. He held that it is harmful when employed solely as a cardiac stimulant, merely acting as a whip to an already overstrained system. The opinion was practically unanimous that the employment of alcohol in cases of delirium tremens should be condemned, and Dr. Rose Bradford, of London, took the occasion to warn medical men against a custom which prevails somewhat widely of recommending alcohol to convalescent patients, and especially to women.

The discussion has not increased our knowledge on the subject to any appreciable degree. To all intents and purposes, so far as the elucidation of moot features of the alcohol question is concerned, we are where we were.

FOOTBALL FATALITIES.

The newspapers are already announcing deaths from football, and yet the season is only just opened. It was hoped that the modification of the rules effected by the intercollegiate committee last winter would be adopted and that they would eliminate many of the injuries and all of the serious accidents. Apparently in some places they have not been adopted or have failed to accomplish this purpose. Such modifications as have been made were only as the result of a large amount of pressure brought to bear on the rules committee by medical journals and newspapers, by the protests of faculties and alumni and by the popular feeling that no sport is worth so many lives as football has been costing in recent years.

It is rather difficult for most people to understand why there should be so much insistence among college men on the necessity for continuing Rugby football since, as the game has developed here in America, it has become inevitably bound up with so many rough features. Radical modification of the rules, such as would make the game much less rough, has always been opposed on the grounds that this would so lessen the interest in the sport as to cause it to cease to be the drawing card for large audiences that it now is. It is well known that college athletics derive their main support from the large gate receipts obtained at football games. To the physician it seems utterly absurd to urge that a question of money such as this should stand in the way of modification in a university sport that is intended to save lives and to prevent accidents that produce permanent injury. But even the argument itself with regard to gate receipts on the drawing power of football, irrational, indeed ludicrous as it is, loses all its force when the records of the attendance at English football games are carefully studied. The open game of football in England, which has nothing like the fatalities of our American Rugby, draws even larger crowds. The record attendance at a London football game is over 110,000 and frequently there are 50,000 people present. It is evident then that this argument which has so far had so much weight with college men is simply founded on the lack of knowledge of football conditions elsewhere.

If we are to have this year a repetition or an approximation of the awful record of recent years and of last year especially, it will practically amount to a conviction of our university authorities of lack of power to control certain of the vicious elements in student human nature. If gate receipts are to continue to be a supposed justification for rough play that draws a crowd, then the epithet of Maxim Gorky, which created so much resentment last summer, can not be gainsaid, i. e., that we are an essentially brutal people, since we delight in stories of cruelty and bloodshed in newspapers and find pleasure in spectacles in which life is put in danger.

PATHOLOGISTS IN HOSPITALS FOR INSANE.

The movement to provide for the services of pathologists in hospitals for the insane appears to be extending. Thus Illinois has arranged[1] for civil service examinations to select such assistants. While the complete plan for this important addition to the service of these institutions has not been made public (so far as we are aware), it is evidently the intention to make the laboratory at one of the hospitals the central laboratory through which the work in the other institutions may be stimulated and in a measure directed and coördinated. At all events, largely, we believe, as the result of the activities of the Board of Charities under the high-minded guidance of its president, Dr. Frank Billings, a new factor enters into the work of the Illinois hospitals.

In the aggregate the general result of this new departure should be to put the daily routine work of the institutions on a higher plane than can be hoped for in the complete absence of the stimulus and interest that come from study and investigation. It has frequently been pointed out that the best clinical work, diagnostic and therapeutic, is done in those clinics that associate the treatment of disease with teaching and investigation. The patients, then, are sure to receive almost immediate

1. The Journal A. M. A., Sept. 15, 1906, page 868.

benefit, mental and physical, from the introduction of progressive methods of study in the hospitals for the insane.

In the next place, continued, careful study of the rich material in these institutions increases, little by little, our knowledge of insanity and of nervous and other diseases, and among the facts thus gathered many may prove to have far-reaching future importance. Furthermore, the establishment of positions like those now in mind should increase the real opportunities for research, and the more numerous and attractive such opportunities the more likely that men with the power of accomplishment will seek them, and the greater the chance of securing for psychiatry the occasional man of genius who can make discoveries and develop new lines of research.

Undoubtedly, the two most important steps that a state hospital for insane can take is to divorce its management from the baneful influence of "politics" and to provide the men and the means to place its psychiatry on a firm, progressive basis. Unless the first step is taken, it is exceedingly difficult, if not impossible, to take the second.

THE SCIENCE AND ART OF EATING.

Our Athenian contemporary, Professor Bedelar Maturin, has a hobby which he rides on every possible occasion—the exploitation of the work which Brillat-Savarin wrote a century ago on "The Physiology of Taste." The latter believed that human beings should cultivate the wholesome enjoyment of life; that the education of the tastes and the appetites should be an index of the degree of civilization. The man of good instincts and refinement should know how to eat and drink, to converse (a lost art to-day), to appreciate a beautiful landscape, to enjoy the fragrant flowers—in all things to deport himself sanely and soberly. Like the much-maligned Epicurus of old, Savarin was an exceedingly temperate man. They both comprehended well, wise philosophers as they were, that true pleasure lay not in gluttony and other inordinate appetites, but in the knowledge and practice of reasonable conduct in all the manifold aspects of existence. "The love of good living is not merely a physical, but an intellectual and a moral quality, as well, almost deserving to rank as a virtue." We would omit the "almost." Savarin's book (which de Balzac termed "adorable") was written with a double object in view: "to lay down the fundamental theory of gastronomy, so that she would take her place among the sciences in that rank to which she has an incontestable right," and "to define with precision what must be understood by the love of good living, so that for all time that social quality may be kept apart from gluttony and intemperance, with which many have absurdly confounded it." Lest the reader imagine Savarin's work to be lacking in profundity, we quote the following: "The most momentous decisions of personal and of national life are made at table." "But for life the universe were nothing; and all that has life requires nourishment." "The fate of nations depends on how they are fed." "The man of sense and culture alone understands eating." "A good dinner is but little dearer than a bad one." These and other aphorisms in the book are exceedingly practical: "One should eat slowly and in minute portions;" this is, in essence, the Fletcherism of today. "Digestion, of all the bodily functions, has most influence on the *morale* of the individual." "The great majority of us eat and drink too much;" is not this dictum announced to-day with trumpets, as if its utterance had never before been essential? Savarin was probably the first exponent of the modern science and art of gastronomy, which has been enormously developed since his day. But among the many tomes on food and dietetics now extant, among the mass of literature on practical cookery to be found in the magazines, no writing will be found more scientific or more useful than that which this genial and kindly Frenchman, a century ago, left us for a legacy of good cheer. If it were more read and its precepts followed, there would be less dyspepsia, less crime and fewer divorces.

THE OPERATIVE TREATMENT OF VARICOSE VEINS OF THE LEG.

Varicose veins in the lower extremities occur as the result of varied conditions, some inflammatory, some of less definite character. It is probable that hereditary tendency is of etiologic significance in this connection. The disorder is due to incompetency of the valves whose function it is to prevent the stagnation of blood in vessels, the contents of which must be propelled in opposition to the force of gravity. Phlebitis, complicating or following pregnancy, or some operative procedure or acute infection, is the cause in a considerable proportion of cases. The erect posture long maintained in predisposed individuals will account for another group of cases. Palliation can be afforded in many instances by means of the recumbent decubitus or elevation of the affected member or members, or by the use of elastic constriction. but operative intervention becomes necessary for radical relief, the object being to effect occlusion of the saphenous vein. By one method of procedure the superficial veins of the affected part are divided between ligatures. while by another the saphenous vein and its branches are excised throughout a varying extent, and by a third the vein is divided between ligatures. In a recent communication dealing with this subject Dr. Robert T. Miller[1] reports the results of operative treatment in 128 cases of varicose veins of the lower extremities and associated disorders observed at the surgical clinic of the Johns Hopkins Hospital, some of which were followed for periods of ten years and more. One hundred and seven of the cases occurred in whites, and 21 in colored individuals; 73 in males and 55 in females. The largest number of cases in any decade developed between the years of 20 and 29, namely 41; 81 developed before 40. and 37 after. The disorder appears thus not to be a manifestation of senility. In 40 cases a definite history of phlebitis was obtained; pregnancy was responsible for

1. Bull. Johns Hopkins Hosp., September, 1906, p. 289.

the condition in 25, typhoid fever in 9, erysipelas in 2, pneumonia in 1, acute enteritis in 2, operation in 1. In 88 cases no inflammatory factor could be ascertained; among the causes assigned were constipation, excessive walking or standing, pelvic tumor. The right leg was involved alone in 21 cases, the left alone in 25; both legs were involved in 74, and in the majority of these the left was the more affected. The leg was involved alone in 91 instances, the leg and the thigh together in 25, the thigh alone in 1. In addition to the favorable results from the operation named first it has the advantage of avoiding division of large cutaneous nerve-trunks, with secondary anesthesia or hyperesthesia. Also there is no subsequent edema. Further, the operation can be performed readily under local anesthesia. Finally, there is less likelihood of recurrence of the condition after adequate excision than after ligation. Pulmonary embolism—characterized by sudden dyspnea, cyanosis, tachycardia, signs of collapse, elevation of temperature—may occur as a complication of any of the modes of operation mentioned.

THE PASSING OF DOWIE.

In its editorial notice of "The Passing of Dowie" the Chicago *Tribune* remarks that there is for him in his downfall perhaps more a feeling of pity than exultation, even among those who have regarded him from the outset as among the chiefest of impostors. To a certain extent this is true, the fall is a severe one, but, after all, it is not more, or even as much, as the man deserves or as his dupes have suffered. It is said that, while he deceived others, he was also himself deceived, that he had faith in himself and was the victim of a delusion. That may be the case. A man is capable of creating a delusion in himself, as he may repeat a lie so often that he finally actually believes it is truth. Dowie may have been deluded, but there was certainly a vast amount of method in his delusions. During the past dozen years or more he has been appropriating the savings of thousands of honest dupes, and what he has not spent of it in personal extravagance and luxury he has claimed as his peculiar personal property, making his self-styled prophetship a matter of the most outrageous personal profit. There have been many of his kind. The starting of a new religion is an old confidence game, but there have been very few in which the financial motive has been more prominent and which have been worked out with such success. We might except Eddyism, perhaps, of which it is hard to say whether the female figurehead or the very evident working syndicate are the true "profits." That, too, must come to its end, though it may develop into a sort of religious sect, as has Mormonism, or may at least continue in a more or less modified form, for some time to come. Even now its doctrines are something like the so-called British constitution, modified to meet every case that may arise. Its projectors and managers do not apparently, like Dowie, rake in the savings of the poor. They take the shekels of the well-to-do, for whom their system is specially elaborated, with its catering to the lust of the eye and the pride of life and its easy-going denial of sin and pain. In some respects, therefore, Dowie was the more contemptible sinner, and his earlier passing out of pernicious activity is the less to be regretted. His sect for a while may continue, but the medical fallacies and absurdities, on which it was so largely based and which have been, to a great extent, responsible for so much individual human suffering, have already practically disappeared.

MEDICAL FALLACIES.

In the last number of the *American Magazine* is an article on popular medical fallacies by Dr. L. K. Hirshberg which, while rather nihilistic in tone, is, on the whole, commendable. A number of popularly accepted propositions with regard to medical matters are directly contradicted. Virchow used to say that all of the medical fallacies accepted generally by the people have been at one time doctrines recognized by physicians. Undoubtedly many of the present-day popular medical fallacies even yet are accepted by certain physicians, and it is this that helps to keep them alive. For instance, there are still physicians who say that boils are always a manifestation of a blood disease. While it is true that a run-down condition will predispose to the appearance of boils, these are practically always due to infection from without. It is suggested that men suffer more from boils on the neck than do women, because the former wear starched collars that are likely to produce lesions through which infective agents find their way beneath the skin. The possibility of taking cold in a boil or in a cut or wound, which is believed in by most people, is thrown out as one of the old-fashioned notions that we are through with. Certain popular remedies, such as sage and other old-time teas, are discussed, and whatever efficacy they have is attributed to the true cause—the hot water employed in making them. Of course, the mental suggestion that something has been done which is likely to be beneficial removes the despondency that comes with illness of any kind and helps to restore the patient to normal conditions. In the same way the vaunted efficiency of many liniments is attributed rather to the rubbing associated with their application than to any remedial virtue that there may be in the drugs of which the liniments are composed. The popular impression that there is a specific remedy for each disease and that nothing but this specific will cure it is at the bottom of many of these fallacies. This was an old-time medical notion that has not as yet gone out entirely, but whose disappearance will do much to make popular medical ideas more sane and sensible.

THE EXISTENCE OF HYDROPHOBIA.

The lay press of late has been considerably interested in certain allegations published in the organ of the humane societies that no such disease as hydrophobia exists, and the idea is naturally acceptable. The eminent physicians who are quoted as questioning the existence of the disease can properly speak from their own experience and have a right to any honest opinion they may hold on the matter, but to support such claims by saying, as some of them are said to do, that they know of no other

physician or surgeon who has seen a case, would imply a more limited acquaintance with the leading men of the profession and their work than ought to be the case. There have been plenty of cases of hydrophobia published in the medical press by eminently respectable authorities whose word and judgment on any other disease would not be questioned—and why should they be in this? Some of these cases reported leave no ground for supposing that any mental element entered into the causation of the symptoms, the victims even dying without any recognition whatever of the true nature of their disease. If there are any of the obscurer nervous diseases that are clearly established as clinical entities, hydrophobia is one, and its comparative rarity, for which we ought to be sufficiently thankful, does not in any way affect the fact that such a disease exists.

Medical News

ALABAMA.

College Opens.—The forty-first annual session of the Medical College of Alabama, Mobile, opened October 3.

Hospital Notes.—Jefferson County Medical Society has endorsed the proposed charity hospital to be erected in Birmingham, and a committee has been appointed to frame a bill providing for the erection and to decide whether bonds shall be issued to cover the cost of constructing and maintaining the hospital.

State Did Not Make Out Its Case.—In the case of the state of Alabama against Drs. Philander S. Boyd and Breckinridge J. Duckett, Florence, charged with manslaughter due to the use of a too strong solution of carbolic acid, the judge closed the case of the state September 20 by taking it out of the hands of the jury and dismissing the defendants, as the experts agreed that the death was not due to carbolic acid poisoning.

CALIFORNIA.

Fined for Selling Impure Milk.—Emmanuel Fagundes, Oakland, was fined $100 in the police court September 14 for selling milk which was found to contain two-fifths added water.

To Equip Laboratories.—The San Francisco board of health has called on the board of supervisors to provide $6,000 for the equipment of the chemical and bacteriologic laboratories of the board.

Diphtheria.—The Grant public school, Oakland, was closed September 15 by order of the board of health on account of an epidemic of diphtheria among the pupils. More than 20 cases have been reported during the last few days.

Isolation of Contagious Diseases.—The board of supervisors of San Francisco has passed the ordinance proposed by the health board, authorizing the latter to remove at its discretion patients suffering from contagious disease.

Hospital News.—Mrs. Herbert Kraft has given a site for a hospital at Red Bluff, to be organized under the name of the St. Elizabeth's Hospital and to be conducted by the Sisters of Mercy.——A county hospital for San José County is soon to be erected at a cost of $65,000 on the site of the old county building, San José, which was destroyed by the earthquake last April.——A hospital is planned at Grass Valley, to be under the charge of Dr. John T. Jones.

Health Report.—The nineteenth biennial report of the State Board of Health was submitted to the governor September 15. The chief recommendations of the board are a larger appropriation for the State Board of Health, the more rigid enforcement of sanitation at summer resorts, and that vaccination ordinances be more strictly enforced. Many and extensive improvements are recommended for the State University at Berkeley, where sewerage is reported to be bad. A hospital for the students is also recommended. During the year 20,909 births were reported, equivalent to 11.7 per 1,000. The deaths during the same period were 27,026.

Coroner's Report.—During the fiscal year 1905-06 the coroner of San Francisco County reports 2,196 deaths, 428 of which were due to the earthquake and fire of April 18. The remainder are classed as follows: 1,200 from natural causes, 340 from accident, 177 from suicide, 36 from homicide, and in 11 cases the cause of death was undetermined. Of the suicides 142 were males and 45 females; illness was given as the cause of the greatest number of suicides, drinking next, insanity third, and finally financial troubles. By occupations laborers headed the list, housewives came next and clerks and bartenders third and fourth respectively. No lawyers or physicians appeared on the suicide list.

COLORADO.

August Deaths.—The total number of deaths in the state during August was 856, equivalent to an annual death rate of 15.52 per 1,000. Of the deaths 46 were due to typhoid fever, 9 to diphtheria and 8 to scarlet fever.

Comparative Morbidity During August.—During August 464 cases of typhoid fever were reported, an increase of 291 cases as compared with July; 91 cases of scarlet fever, a decrease of 14 cases; 28 cases of diphtheria, a decrease of 3 cases, and 4 cases of smallpox, a decrease of 26, as compared with the previous month.

Physicians Injured.—Dr. H. Calvin Lefurgey, Durango, while making a professional call, was thrown from his buggy and suffered a comminuted fracture of the left arm.——Dr. Wilbur W. Bulette, Pueblo, while driving with Dr. William H. Campbell, few miles north of Pueblo, was thrown from the buggy in a runaway accident and sustained severe contusions. He was removed to the Pueblo Hospital.

New Hospital.—A new dispensary building is to be erected in connection with the Denver and Gross Medical College, to cost about $16,000. Land has been secured adjoining the present laboratory building and work will soon be initiated.——Ground was broken September 20 for a sanatorium to accommodate 52 patients at Glenwood Springs, to be under the charge of Dr. William F. Berry.

DISTRICT OF COLUMBIA.

Personal.—Dr. George F. Simpson, inspector in the district health department, has resigned to take effect September 28.——Dr. T. S. Vincent, Washington, fell from the second story window of a hotel at Braddock Heights, Md., and broke his right leg at the ankle.

Health Conditions.—In the report of the health department for the week ended September 22 it was announced that the improvement in typhoid fever conditions was more pronounced than at the close of the previous week. There was reported a decrease in the number of cases from 288 to 280. During the week 37 new cases were reported and 45 patients discharged, with only 2 deaths having occurred. No new outbreak of smallpox was reported. The total deaths numbered 127, as compared with 108 during the previous week and 104 as compared with the corresponding week of 1905. The principal causes of mortality were: Consumption, 16; heart disease, 13; nephritis, 10; malignant disease and diarrheal diseases, each 9; pneumonia, 6, and cerebral hemorrhage and bronchitis, each 4.

ILLINOIS.

Hospital to be Built.—The plans and specifications for the Graham Hospital, Canton, are nearly completed and construction will be begun this fall.

Personal.—Dr. Josiah M. Cody, Tremont, has been elected physician for the Tazewell County Farm.——Dr. Coleman J. Eads, Oquawka, has been obliged to discontinue practice on account of ill-health, and has sold his property to Dr. C. E. Kaufmann.——Dr. James W. Sanders, Decatur, has been elected a member of the board of directors of the Bethsaida Hospital Association.

Pills Prohibited.—At a meeting of the Streator city council, September 19, an ordinance was passed prohibiting the posting of any handbills or other advertising matter for "patent medicines," etc., in any street or public place in Streator, and also prohibiting the distribution of any samples of medicine within the city limits. The fine for violation of this ordinance is not less than $5 nor more than $50 for each offense.

Chicago.

Automobile for Health Department.—The council finance committee, on September 28, authorized the health commissioner to purchase an automobile for the emergency inspection work.

Personal.—Dr. James Alexander Harvey returned from Berlin, October 1.——Dr. and Mrs. Arthur R. Elliott are expected to return from Europe this week.——Mr. John Lynn Thomas, Cardiff, Wales, spent a few days in Chicago last week and was entertained by the surgeons of the city.

Building Commissioner Enforces Regulations.—By order of the building commissioner, on September 27, the three upper floors of the Jenner Medical College were closed for several hours, on account of failure to comply with the provisions of the building laws. The commissioner ordered two fire escapes put in the building, more exits cut through and exit signs placed.

Health of the City.—During the week ended September 29, 44 fewer deaths from all causes were reported than during the week previous, although there were 15 more deaths from violence. The important death causes showing decreases were: Acute intestinal diseases, 23; consumption, 21; apoplexy, 6; typhoid fever, 5; cancer, 3; heart disease, 2, and diphtheria, 1. The total number of deaths for the week was 538, equivalent to an annual death rate of 13.69 per 1,000. There were 57 more deaths than for the corresponding week of 1905. The principal death causes were: Acute intestinal diseases, 99; consumption, 57; violence (including suicide), 54; nephritis, 47; pneumonia, 37; heart diseases, 34, and cancer, 22. There were 12 deaths reported from suicide, an increase of 7 over the preceding week.

IOWA.

Site for Hospital.—It is reported that the state board of control has decided to locate the State Tuberculosis Sanatorium on the Grant farm, near Fort Dodge.

Typhoid Fever at Dubuque.—Owing to the prevalence of typhoid fever in Dubuque, the people have been warned to boil the drinking water. The disease is said to be prevalent in all sections of the city.

Bacteriologic Report.—The secretary of the State Board of Health reports that during August 382 examinations were made in the bacteriologic laboratory. Of these 85 were for diphtheria, 69 for typhoid fever and 184 for tuberculosis.

Medical College Opens.—The Sioux City College of Medicine and Surgery opened for its annual session September 19 with addresses by Dr. George S. Browning and the dean, Dr. Hial S. Wheeler. The following faculty changes were reported: Dr. R. M. Conmey, professor of physiology, and Dr. G. E. Barr, assistant in hygiene.

Personal.—Dr. and Mrs. William Cammack, Salem, have started for London en route for South Africa, where they enter the service of the American Board of Commissioners for Foreign Missions.——Dr. A. W. Crary, Boone, has been made a medical instructor in the medical department of the State University, Iowa City.

Hospital Board Meeting.—At the annual meeting of the board of the Eleanor Moore Hospital, Boone, held September 17, the following directors were elected: Drs. Alpheus A. Deering, George D. Rowe, J. Henry Nordstrom, George H. Stanger, Lemuel A. Barrett, Evalene Peo, Clyde W. Payne and Kate S. Harpell. During the year more than 2,000 patients were treated and more than 100 operations performed.

KENTUCKY.

Money for Sanatorium.—At a meeting of the board of directors of the Kentucky Anti-tuberculosis Association, September 21, it was decided to attempt to raise the $11,000, the balance necessary for the erection of the proposed tuberculosis sanatorium.

New Hospital.—A contract for the erection of the building of the Good Samaritan Hospital, Lexington, has been let. The building will cost $12,000 when completed.——The new King's Daughters' Hospital, Shelbyville, was formally opened September 19. The building is three stories high with 12 rooms, including two wards of three beds each.

Personal.—Dr. Florence Meder, who succeeds Dr. Minnie C. Dunlap at the Eastern Kentucky Asylum for the Insane, Lexington, has arrived and assumes her new duties as third assistant physician. Dr. Dunlap has been transferred to the Western Kentucky Asylum for the Insane, Hopkinsville.——Dr. Donald R. Jacob has been elected president, and Dr. Oliver H. Kelsall, secretary, of the Louisville Academy of Medicine, and Dr. Gavin C. Fulton has been re-elected treasurer of the organization.

Typhoid Fever and Diphtheria.—Mercer County is said to have an epidemic of typhoid fever, and it is reported that there are at least 200 cases in the county and in Harrodsburg.——An epidemic of typhoid fever is said to be raging at Hindman.——Diphtheria in malignant form is reported to be epidemic in the western part of Cumberland County.——Typhoid fever is reported to be epidemic and on the increase in the eastern part of Bath County. Diphtheria is also reported to be prevalent throughout the county.

MARYLAND.

New Hospital.—Ground was broken September 19 for the new wing of the Frederick City Hospital, to be erected by Mrs. Margaret Hood as a memorial to her late husband, James Mifflin Hood.

Automobile Accident.—Drs. Henry P. Fahrney, Frederick, and Morris A. Birely, Thurmont, while making a professional call in an automobile belonging to Dr. Fahrney, were seriously injured by the overturning of the machine at the foot of a steep hill.

State Society Meeting.—The semi-annual meeting of the Medical and Chirurgical Faculty of Maryland was held September 27 and 28. In the address of welcome, the governor suggested that the portraits of two of the most eminent founders of the faculty be placed in the senate chamber. Dr. Charles M. Ellis, Elkton, offered a resolution suggesting that $200 be appropriated to cover the expense. A committee was selected composed of Drs. Charles M. Ellis, Elkton; Eugene F. Cordell, William H. Welch, Herbert Harlan and Robert W. Johnson, Baltimore, to select five or more names from the 101 founders to be submitted to the faculty, which will at that time select the two founders to be honored.

Baltimore.

New Municipal Hospital.—The members of the Municipal Hospital commission have decided on the plans of the building to be constructed for the isolation hospital, for which $25,000 was appropriated by the city council.

University Reorganized.—The medical faculty of the Baltimore University School of Medicine has reorganized and an effort will be made to secure re-establishment of membership in the Association of American Medical Colleges. It is said that a new hospital and medical school building is to be erected in the northern part of Baltimore and that the institution will open under the new régime this fall. The organization of a dental school is also being considered.

Typhoid and Diphtheria Increase.—The report of the health department for the week ended September 22 shows an increase in the number of cases of diphtheria and typhoid fever as compared with the corresponding week of last year. Deaths from all causes for the week were 212, or 16 more than for the corresponding period of last year. Of these, consumption caused 29; diarrhea, 24; Bright's disease, 16; cancer, 13; heart disease, 12, and congenital disability, 10. Twenty-four cases of diphtheria were reported and 51 cases of typhoid fever, 12 more than for the corresponding week of last year.

Personal.—Dr. and Mrs. John C. Hemmeter have been the guests of Dr. C. K. Pell, head of the department of medicine of the University of Amsterdam, and Prof. K. Schapp, Groningen, where they attended the opening ceremonies of the university.——Dr. Ira Remsen has returned after a summer in Maine.——Dr. Howard A. Kelly was given the honorary degree of LL.D. at the four hundredth anniversary of the foundation of the Aberdeen University.——Dr. Albertus Cotton has returned from Europe.——Dr. Llewellys F. Barker was taken ill at the opening exercises of the Harvard Medical School and was taken to a hospital at Brookline, Mass.

MASSACHUSETTS.

Leper Alleged to be Cured.—It is reported that Mary Barros, a leper in Wareham, after a year's incarceration and two years' surveillance at the State Leper Colony, Penikese Island, is to be released as cured.

School Inspectors Appointed.—Drs. William Galvin, Henry J. Millard, Philip Potter, George A. Fagan, Alfred A. Harper, Wilfred A. Brosseau and Ransford D. Canedy have been appointed inspectors of schools at North Adams.

New Hospital.—The plans have been accepted for the new Franklin County Public Hospital, to be erected in Greenfield at a cost of about $40,000. The building first to be erected will contain accommodations for about 30 patients.

Personal.—Thomas J. Bean, Lowell, has been made a member of the board of health, vice Dr. William B. Jackson.——Dr. Frank L. Morse has been appointed city physician of Somerville, but will continue also as bacteriologist of the city.——Dr. Laura A. C. Hughes, Boston, was elected president of the Spanish-American War Nurses' Association, September 6.

Pure Milk for Infants.—The Cambridge Medical Improvement Society has finished its first year's experiment of providing pure and sanitary milk for infants, during the summer season, which closed September 15. The city appropriated

$1,000 for the experiment, $800 of which was expended. During the year 35,000 bottles of modified milk were distributed under the auspices of the city.

Close of Floating Hospital Season.—The trustees of the Boston Floating Hospital announce the close of the season's work and issue a circular giving the comparative statistics for the period of four weeks on the old and new boats, showing the increased work that the institution has been able to accomplish with the new boat.

	Old boat.	New boat.
Number of days' care given to permanent patients	1,436	2,958
Number of trips made by day patients	1,298	1,086
Number of trips made by mothers of sick children	1,151	1,349
Number of trips made by well children under six years of age, who could not be left at home	477	690

Medical School Inspection.—The Springfield Board of Health has had printed a circular containing rules for medical inspection, which details the duty of inspectors as follows: The identification of pupils requiring medical aid; the detection of children suffering from communicable diseases; the detection of other than communicable diseases and ailments, and the detection of defective eyesight, hearing or other disabilities. It is directed in the circular that the following described children should be sent to the inspectors on Monday and Thursday morning of each week: Every child returning to school after an illness or absence from unknown cause without a certificate from the board of health; every child suffering from contagious or infectious disease, or showing signs of ill health, and every child who returns to school after having been excluded by the medical inspectors. Children showing signs of the following diseases are to be sent home immediately: Smallpox, scarlet fever, measles, chickenpox, tuberculosis, diphtheria, influenza, tonsillitis, whooping-cough, pediculosis, scabies, trachoma, ringworm and impetigo contagiosa.

MICHIGAN.

Interurban Railway Surgeons.—The Michigan United Railway has established a complete surgical system over its lines and has appointed the following surgeons: Lansing, Dr. Harry A. Haze, surgeon-in-chief; alternate, Dr. Robert E. Miller; St. Johns, Dr. Samuel E. Gillman; alternate, Dr. W. A. Scott; Jackson, Dr. C. G. Carnell; alternate, Dr. H. Duane Brown; Parma, Dr. Vene D. Farmer; Albion, Dr. Alfred J. Abbott; alternate, Dr. George C. Hafford; Marshall, Dr. L. A. Harmon; alternate, Dr. Frank M. Foote; Battle Creek, Dr. William S. Shipp; alternate, Dr. Clarence S. Gorsline; Augusta, Dr. Charles E. Doyle, and Kalamazoo, Dr. Albert B. Cornell; alternate, Dr. Leonard H. Stewart.

MINNESOTA.

Hospital Nearly Ready.—The new Bethesda Hospital, Crookston, is expected to be ready for occupancy about October 1. The building is of white stone, two stories in height, and is equipped with all modern conveniences.

Diphtheria.—Diphtheria in virulent form is reported at Sauk Center.——It is reported that diphtheria exists in three families near East Park, White Bear Lake, and complaint has been made to the board of health that the members of the afflicted families are not quarantined.

Personal.—Dr. Henry M. Bracken, secretary of the State Board of Health, has been elected president of the National Conference of Licensing Embalmers' Boards.——Dr. George H. Freeman, senior interne at the City Hospital, St. Paul, has been selected as senior assistant at the St. Peter State Hospital for the Insane, vice Dr. C. J. Tuomy.

Red Cross Organized.—The Sons of Veterans of Minneapolis have organized a Minneapolis Red Cross Society, with the following officers: Major Thomas T. Wareham, surgeon-in-chief; Capt. George D. Bentley, assistant surgeon; Lieut. W. J. Burns, passed assistant surgeon, and Drs. W. G. Dawson and D. Edmond Smith, contract surgeons.

NEW YORK.

Bequeaths Library.—By the will of the late Dr. Louis A. Weigel, Rochester, his medical library is bequeathed to the Reynolds Library, Rochester.

Boil Water.—The health commissioner of Buffalo announces the presence of the colon bacillus in the city water, enjoins that all drinking water be boiled, and emphasizes the need of a filtration plant.

Personal.—Dr. and Mrs. Henry Adsit, Hornell, have sailed for Italy.——Dr. John L. Heffron, Syracuse, returned from abroad September 15.——Dr. J. Wilson Poucher, Poughkeepsie, returned from Europe, September 18.

New Hospital.—The Ilion Emergency Hospital has been incorporated with a board of 11 directors. An anonymous benefactor has donated $25,000 for the erection of the building, and an acre of land has been offered as a site for the new institution.

Society Changes Name.—The Practitioners' Society of Rochester, composed of women, has been authorized by the Supreme Court to change its name to the Blackwell Society of Rochester, in honor of Dr. Elizabeth Blackwell, the first woman graduate of medicine in America. The change became operative September 8.

After-Care of the Insane—Five months ago the State Charities Aid Association started an organized movement for the after-care of the insane. It had been observed that many persons discharged as cured of insanity soon relapsed when returned to their former surroundings and mode of life; this organization endeavors to follow such patients and to place them in such employment and amid such surroundings as will prevent a relapse. It is claimed that there is a large field for this kind of work and that the organization is accomplishing much good.

Hospital Notes.—The Buffalo General Hospital trustees have purchased for $85,000, 118 feet frontage on Goodrich Street, east on Ellicott, which backs up on the land now owned by the hospital. On this site will be built the Children's Hospital, for which Dr. De Villo W. Harrington made a bequest estimated from $75,000 to $100,000.——The common council of Lockport has directed the city clerk to advertise for bids for a new city hospital to cost $15,000. The city has donated the site and $5,000; $5,000 has been raised by subscription and the same amount was donated by the late Augustus Keep.

Illiteracy.—The second annual report of the state educational department shows that 58 of the 61 counties have a lower proportion of illiterates than New York City in their population over ten years of age. In the state there are 54 illiterates per 1,000 population, and in New York City 81. The average number of illiterates per 1,000 is 59 for the entire state, and there is one illiterate to every 18 voters. Eighty per cent. of the illiterates are of foreign birth, but there are more illiterate children of native than of foreign parentage. There is dire need for the enforcement of the law compelling children to attend school in the rural districts.

New York City.

Bequests.—The will of the late Henry I. Barbey gives St. Luke's Hospital $25,000, the Society of the New York Hospital $20,000, and the Home for Incurables attached to St. Luke's Hospital $10,000.

Health Board Raids Building.—As repeated warnings from the health department to the effect that certain sanitary changes in the building at the corner of Broadway and Canal Street had been disregarded, the police officers of the department drove tenants and help from the building and plumbers were immediately put to work to remedy defects.

Personal.—Dr. Kirke Stanley is at the Harlem Hospital, recovering from a fracture of the base of the skull, supposed to have been due to an assault by a robber, as when he was found his watch and money were gone.——Dr. Charles Senter has been appointed temporary head of the Bronx health department, vice Dr. Gerald M. V. Shiel.——Dr. Robert J. Morrison, Brooklyn, sailed for Europe September 15.

Contagious Diseases.—There were reported to the sanitary bureau for the week ending September 22, 354 cases of tuberculosis, with 154 deaths; 154 cases of diphtheria, with 16 deaths; 134 cases of typhoid fever, with 29 deaths; 59 cases of scarlet fever, with 2 deaths; 55 cases of measles, with 2 deaths; 30 cases of whooping-cough, with 8 deaths; 5 cases of cerebrospinal meningitis, with 7 deaths; and 9 cases of varicella, a total of 800 cases, with 218 deaths.

The Season's Milk Report.—The Nathan Strauss pasteurized milk depots have just completed their fourteenth season. The quantity of milk distributed during the past summer exceeds that of any other season by 471,855 bottles. The total number of bottles given gratis or for which the sum of one cent was paid was 3,142,252, and the number of glasses drunk on piers, from booths and in parks was 1,078,405. The increased demand for this milk makes it evident that the task of supplying modified milk to tenement house babies will soon be beyond the bounds of private charity and it will devolve on the municipality to shoulder the burden. Mr. Strauss has just signed contracts for the erection of a new building on East Thirty-second Street, to be devoted exclusively to the modification and pasteurization of milk.

Typhoid Fever.—From Jan. 1, 1906, up to Sept. 12, 928 cases of typhoid fever have been reported to the sanitary bureau. During the week ending September 8 the greatest number of cases occurred, 81 in all, while during the week ending June 5 there were only 5 cases. The greatest number of deaths occurred during the week ending August 25, 23 being the total. Up to July 14 the number of living cases reported did not exceed 20. Of all the cases reported a large per cent. were residents of tenement houses, and mostly house workers. The department of health examined the blood and urine in over 80 per cent. of the cases reported; in 50 per cent. of the cases the Widal test showed positive and the diazo in 33 per cent. In the majority of the cases the spleen was enlarged and rose spots were present. Water showed as the most common cause in nearly 34 per cent; next, milk, 25 per cent.; while oysters were the least common cause, representing 5 per cent. The board of health of Brooklyn announces that from August 14 to Sept. 2, 1905, the number of cases of typhoid fever reported in Brooklyn was 689, while during the same period this year only 173 cases were reported. This is attributed by the board to the campaign of education instituted last year.

NEW JERSEY.

State Asked to Withhold Allowance.—The commissioner of charities and correction made a report to the governor, September 21, in which he advised the state to withhold the allowance for the support of the insane patients in the Salem County almshouse until proper accommodations have been provided for the patients.

Personal.—Dr. Charles Dingee has been appointed city physician of Burlington, vice Dr. Edmund Eastwood.——Dr. Jacob Hempstead, Paterson, succeeds Dr. Anthony as house physician to the Muhlenberg Hospital, Plainfield, October 1.——Dr. William C. Boone, who resigned from active service on the medical board of the Muhlenberg Hospital in July, after a service of more than 25 years, was appointed consulting physician of the hospital, September 10.——Dr. J. Edward Blair, Burlington, was operated on for appendicitis at the German Hospital, Philadelphia, September 3.——Dr. Albion C. Christian,, Irvington, has returned from a trip to the Pacific Coast.

PENNSYLVANIA.

Typhoid Fever in Pittsburg.—Twenty new cases of typhoid fever were reported to the Pittsburg bureau of health for the 24 hours ended at noon, September 26.

Personal.—Dr. Joseph H. Bittinger has been chosen president; Dr. John D. Keller, vice-president, and G. Harry Jordy, secretary and treasurer, of the Physicians' Club of Hanover. ——Dr. William J. Hanlon, Mount Carmel, is confined to his house on account of illness.

Must Secure Burial Permits.—The board of health of Chester has decided to take legal steps against funeral directors who do not secure burial permits before interring bodies. It is said that a number of physicians of Chester fail to issue necessary certificates, especially in cases of death from diphtheria.

Chi Club Organized.—A number of physicians of Scranton and vicinity, graduates of the Medico-Chirurgical College of Philadelphia, organized a "Chi Club," September 20. The following officers were elected: Dr. Gilbert D Murray, Scranton, president; Drs. Charles P. Stackhouse, Wilkesbarre; William B. Stricker, Nanticoke, and Frank J. Wagner, Carbondale, vice-presidents, and Dr. Thomas Monie, Archbald, secretary and treasurer.

Philadelphia.

August Vital Statistics.—The report of the division of vital statistics for the bureau of health for August shows that 1,905 deaths and 2,604 births were reported.

Druggist Fined for Selling Morphin.—William Frost, a drug clerk, who was arrested, charged with selling morphin without a prescription and without placing a poison label on the bottle, was found guilty and sentenced to pay a fine of $50.

Pure-Food Prosecutions.—Last week, for the first time since the inauguration of the pure-food crusade by Dr. Warren, several cases were tried in the quarter sessions court. Ten men accused of food adulteration pleaded guilty before Judge Martin and were each fined $50 and costs.

Personal.—Dr. Hobart A. Hare narrowly escaped serious injury by being thrown from his automobile in a collision with a trolley car, September 26.——Dr. Howard T. Karsner sailed for Europe, September 28.——Drs. Harris A. Slocum, Ralph W. Seiss, George B. McClellan, A. Allison O'Daniel, James M. Anders and John C. Heisler have returned from Europe.

Physical Culture in the Public Schools.—The superintendent of the city schools, in his report to the board of education, recommends and approves systematic physical culture in the public schools throughout the city. His report provides for the appointment of a director at $2,500, and as many assistants at $1,000 a year each as may be needed. Dr. Brumbaugh mentioned that under the act of March 8, 1901, such instruction is obligatory.

Health Report.—The total number of deaths reported for the week ended September 29 reached 439. This is an increase of 17 over the number reported last week, and an increase of 35 over the number reported in the corresponding period of last year. The principal causes of death were: Typhoid fever, 17; pertussis, 8; diphtheria, 13; consumption, 52; cancer, 18; apoplexy, 23; heart disease, 35; acute respiratory disease, 38; enteritis, 56; appendicitis, 6; Bright's disease, 27; congenital debility, 14; suicide, 3; accidents, 15, and marasmus, 6. There were 180 cases of contagious disease reported, with 30 deaths, as compared with 190 cases and 20 deaths reported in the preceding week.

Medical Inspection for August.—The report of the division of medical inspection of the bureau of health for the month of August shows that the number of inspections made, excluding schools, was 3,416, and that 494 fumigations were ordered. Eighteen cases were examined for special diagnosis; 182 cultures were taken, 106 injections of antitoxin were administered and 473 vaccinations were performed. In the division of milk inspection 5,584 inspections were made, 107,760 quarts of milk were examined and 40 quarts condemned. The report of the bacteriologic laboratory shows that 606 diphtheria cultures were examined, 552 Widal reactions were performed, 669 quarts of milk were examined, and 92 specimens of sputum. The laboratory supplied 1,708,500 units of antitoxin.

College Openings.—The annual opening of Jefferson Medical College for the sessions was held in the college laboratories, September 24. The introductory student address was delivered by Prof. Howard Hansell.——All the departments of the Medico-Chirurgical College were opened for the session of 1906-07 with the usual exercises, September 25. The annual introductory address was delivered by Dr. John V. Shoemaker, who spoke on "The Scientific Foundation of Modern Treatment of Disease."——The one hundred and sixty-seventh annual session of the University of Pennsylvania began September 28. The opening exercises were held in the new medical laboratories, and the opening address was delivered by Dr. Charles Frazier, dean of the medical department.——The fifty-seventh annual opening exercises of the Woman's Medical College of Pennsylvania were held in the college building, September 26. Dr. Clara Marshall, the dean, made the introductory address, and the annual oration was delivered by the professor of pathology, Dr. Aloysius O. J. Kelly.

TENNESSEE.

Hospital Addition.—An addition is to be erected to the St Thomas Hospital, Nashville, increasing the capacity of the hospital about 60 per cent., at a cost of $60,000.

Communicable Diseases.—The opening of the public schools of Gallatin has been suspended on account of diphtheria.—— An epidemic of typhoid fever has developed in the east section of Owingsville, where thirty cases are said to exist.

To Hunt Down Illegal Practitioners.—The Dickson County Medical Association, at a recent meeting, resolved to bring to justice every individual in Dickson County endeavoring to vend or practice medicine contrary to the statutes of the state.

Personal.—Dr. J. M. Trout, Jackson, is in New York City on his way to Europe, where he expects to remain about a year.——Dr. Frank S. Raymond, Memphis, president of the Memphis Board of Health, has applied for leave of absence on account of ill health.

College Opens.—Meharry Medical College, the Department of Medicine of Walden University, Nashville, opened for its thirty-first annual session, September 5. The faculty has been reinforced by the addition of Prof. C. H. Elliot, who will take charge of the chemical laboratory.

Academy Incorporated.—The Nashville Academy of Medicine was incorporated September 5 by Drs. Marvin M. Cullom, G. C. Savage, Lucius E. Burch, William R. Sifford, Holland M. Tigert and Charles A. Robertson. The purpose of the organization is said to be interchange of ideas and a general furtherance of the general science of medicine.

TEXAS.

Smallpox.—Four cases of smallpox have been discovered near Tyler. The patients have been isolated and are under quarantine.

Asylum Completes Year Without Deficit.—The superintendent of the Northern Texas Hospital for the Insane, Terrell, reports that for the sixth consecutive year, the business of the institution has been so managed that the appropriations made by the legislature have been sufficient to meet the expenses of the institution.

Physicians Must Register.—At a meeting of the San Antonio Board of Health, it was decided to enforce the old ordinance requiring every physician in the city to register at the office of the board. The purpose of the ordinance is to make it possible for the board to find at any time if men not qualified practice or pose as physicians.

Hospital Notes.—It is generally agreed that the new hospital for the Santa Fe system is to be located at Temple.——The Alpha Sanitarium, Llano, for consumptives, has materially increased its accommodations for patients, and on August 25 it opened its new and enlarged quarters.——A sanatorium to cost $250,000 is to be erected in Shannon.

City Chemist Needed.—At a meeting of the Dallas Medical and Surgical Society, held September 8, resolutions were unanimously adopted that the society realizes the importance of the movement now being carried on by the city health officer to inspect foodstuffs offered for sale in Dallas, and urging the establishment of a department, to be in charge of a competent chemist, whose duty it shall be to examine such foods as may be brought before him, analyzing and reporting on them.

Personal.—Dr. Joseph Gilbert, Austin, physician of Travis County, has resigned to become chief medical officer at the Agricultural and Mechanical College, and assumed his duties at that institution September 8.——Dr. Herbert F. Sterzing, Austin, has been appointed physician for the city of Austin and Travis County, vice Dr. Joseph Gilbert, resigned. Later on the county commissioners appointed Dr. George S. Beaty, Sprinkle, as county physician.——Drs. Margaret Gilbert and Horace Holiday have been elected assistant physicians to the State Lunatic Asylum, Austin, vice Dr. James H. Eastland and Louis H. Kirk, resigned.

VIRGINIA.

Cocain Sellers Fined.—Richard Hunycutt and John Boush, colored, were each fined $100 and costs in the Norfolk police court September 10 on the charge of selling cocain.

Personal.—Dr. J. N. Craushaw, Fredericksburg, has been appointed physician in the University Hospital, Charlottesville. ——Dr. Herbert O. Forbes, Jetersville, broke his arm while playing baseball September 15.

Hospital Fire.—A fire early in the morning of September 10 in Newport News General Hospital for a time threatened peril to the inmates. A panic was averted by the fire chief of Newport News, who had been operated on for hernia in the hospital a few days before, and who directed the work of the firemen.

Health Department Ordinance.—The ordinance revision commission of Norfolk will submit to the council at its meeting in October the following recommendations: That there shall be a health commissioner, who shall act as the head of the health department, at a salary of $2,500 per annum; that he shall have one assistant, who shall be head of the sanitary force of the city, and act as office man, at a salary of $1,800 per annum, and that he shall have two assistants who shall act as physicians to the city poor, at a salary of about $1,200 each per annum.

WASHINGTON.

Typhoid Fever at Camp Tacoma.—Typhoid fever is said to have been epidemic at Camp Tacoma. Up to September 4, 33 patients had been sent to the Vancouver barracks for treatment, and the same number had been treated in the field hospital.

Typhoid Fever.—An unusual number of cases of typhoid fever are in the hospitals of Spokane at present, it is said. St. Luke's Hospital has 16 cases; the Sacred Heart Hospital about 20; Washington Hospital, 10, and the Deaconess Hospital, 8. The health officer states that almost all the patients contracted the disease out of town.

Tuberculosis Society Organized.—At the meeting of the Washington State Medical Association the Washington Association for the Relief and Prevention of Tuberculosis was organized, with the following officers: President, Dr. Clarence A. Smith, Seattle; vice-presidents, Drs. Frank H. Luce, Davenport; Wilson Johnston, Colfax, and Elmer E. Heg, Seattle, and secretary, William R. M. Kellogg, Seattle.

Health of King County.—According to the report of the county health officer, Dr. Bartholomew E. Hoye, Auburn, from Dec. 1, 1904, to Sept. 1, 1906, there have been 100 cases of scarlet fever, 121 of diphtheria, 82 of typhoid fever and 22 of tuberculosis in King County outside of Seattle. Three small epidemics of scarlet fever have been reported, one from North Bend, one from Woodville and one from South Park.

WISCONSIN.

Maternity Moves.—The Milwaukee Maternity Hospital and Dispensary Association has moved into its new quarters at 424 Vliet Street.

To Build Sanatorium.—The state board of control has appointed J. E. Hoyt superintendent of construction of the Wisconsin Tuberculosis Sanatorium, to be erected at Wales, Waukesha County.

Hospital for Janesville.—The physicians of Janesville met at the office of Dr. Samuel B. Buckmaster, September 1, to consider the proposition of establishing a hospital to be operated in Janesville under the management of the Sisters of Mercy.

College Opens.—The opening exercises of the Milwaukee Medical College were held September 17. Addresses were made by the president, Dr. William H. Earles, and others, who made references to the university negotiations, the establishment of which are now pending.

Epidemic Diseases.—Bayfield is said to be experiencing an epidemic of typhoid fever. About 15 cases are reported and the disease is thought to have been caused by bad water.——In Lodi 5 cases of typhoid fever have been reported.——On account of 2 cases of diphtheria at Wauwatosa, three grades of the public schools have been closed.——Smallpox is reported to have broken out in Cambria, where 10 cases have appeared. The church conference which was to have been held in Cambria has been transferred to Portage on this account.——Smallpox is reported at McDill, where 2 cases have appeared.

Personal.—Dr. James S. O'Brien, Milwaukee, has been elected president of the board of directors of St. Mary's Hospital; Dr. George D. Ladd, vice-president, and Dr. George W. Fox, secretary.——Dr. Joseph P. McMahon, Union Grove, has sailed for Europe.——Dr. Guy C. Bowe, Fond du Lac, has discontinued practice in the state and will remove to Ashland, Va.——Dr. Thomas W. Nuzom and wife, Brodhead, have returned from Europe and will locate in Janesville.——Dr. G. Fred Colter, Marinette, has been reappointed a member of the advisory board of the State Tuberculosis Sanatorium.

GENERAL.

American Electro-Therapeutic Association.—The sixteenth annual meeting of this association was held in Philadelphia, September 18-20, under the presidency of Dr. Charles K. Mills, Philadelphia. The name of the association was changed to the Physico-Electro-Therapeutic Association, and the following officers were elected: Dr. Morris W. Brinkmann, New York City, president; Dr. J. D. Gibson, New York City, and Mihran K. Kassabian, Philadelphia, vice-presidents; Dr. Albert C. Geyser, New York City, secretary, and Dr. Richard J. Nunn, Savannah, Ga., treasurer (re-elected), and Drs. William B. Snow, New York City; Fred H. Morse, Boston, and Francis B. Bishop, Washington, D. C., executive council. The association will meet in Jamestown, Va., in 1907.

Hospital Superintendents Meet.—The Association of Hospital Superintendents held its eighth annual meeting in Buffalo, September 18-21. After the meeting had been called to order by the president, George T. Ludlam, New York City, Mayor J. N. Adam welcomed the association to Buffalo, and Dr. George H. M. Rowe of the Boston City Hospital responded. In his annual address the president declared that the hospital as an institution had not kept pace with the development of the country, and that in an organization where all the hospitals in the country are bound together by common ties, would be the greatest hope in expansion. He suggested that the name of the association be changed from the "Association of Hospital Superintendents" to "The Hospital Association," in order to allow the admission to membership of managers, trustees and representatives of medical boards, in addition to superintendents. The following officers were elected: President, Dr. Renwick R. Ross, Buffalo General Hospital; vice-presidents, Superintendent Curtis, St. Luke's Hospital, Chicago; Superin-

tendent W. W. Kenny, Victoria General Hospital, Halifax, N. S., and Dr. Alice M. Seabrook, Woman's Hospital, Philadelphia; secretary, Superintendent George J. Bailey, Jefferson Medical College, Philadelphia, and treasurer, Superintendent Asa Bacon, Presbyterian Hospital, Chicago. The next meeting of the association will be held in Chicago, Sept. 19-21, 1907.

CANADA.

School Medical Inspection in Montreal.—School inspection in Montreal has become an actual fact. Twenty-one inspectors have recently been appointed from among the medical fraternity of that city.

The consumption of Liquors and Tobacco in Canada.—During the year ending June 30, 1906, the *per capita* consumption of alcoholic liquors and tobacco in Canada was as follows: Gallons, spirits, 0.927; beer, 15.660; wine, 0.698; tobacco, pounds, 2.991. There was a decrease in the consumption of spirits and an increase in that of beer, wine and tobacco.

Medical Schools Open.—The inaugural address in connection with the opening of the Medical Faculty of McGill University was delivered September 18 by Dr. R. F. Ruttan, professor of chemistry in McGill. This is the seventy-fifth session.——The Manitoba Medical College reopened the first week in October. ——The Medical Faculty of Toronto University commenced work for the session October 1.

Personal.—Sir William Broadbent, who has been in Canada for the last six weeks, has returned from a trip across the continent, and has sailed for home.——Dr. Gerin Lajole, formerly a practitioner in Montreal, but for the past six years in France, has been appointed a surgeon-major in the French army.——Dr. J. L. Robinson, Montreal, has been appointed medical superintendent of the Vancouver General Hospital.

Hospital News.—During the three months ending June 30, 1906, 881 patients were treated in the Montreal General Hospital. There were 59 deaths. In the out-door departments there were 10,893 consultations. Dr. F. J. Shepherd was elected to fill the vacancy on the committee rendered vacant through the death of Dr. Craik.——The annual report of the Toronto General Hospital for 1905 has just been issued. In it is incorporated a report of 110 cases of typhoid fever treated in the institution from Jan. 1 to Dec. 31, 1905. Seventy-four per cent. showed rose spots; the spleen was enlarged in 54 per cent. The Widal reaction was positive in 76 per cent. before the seventh day of admission. The diazo reaction was obtained in 52 per cent. of the series. Nine patients died, a percentage of 8.2. Relapses occurred in 14 cases. Lobar pneumonia occurred in 7 cases; bronchopneumonia in 1 case; pleurisy with effusion in 2; bronchitis in 12; perforation of the bowel in 2 (both treated with purgatives); phlebitis in 11; convulsions in 2.

FOREIGN.

Institute for Testing of New Drugs.—The "George Speyer House," an institution erected and endowed by the widow of a Frankfurt capitalist, was dedicated with much ceremony September 3 at Frankfurt a. M. The institution is to be under the supervision of Professor Ehrlich, and is designed for the investigation and testing of new drugs.

The Schaudinn Medal.—An endowment has been raised for the purpose of presenting a medal every two years for the most prominent works in the domain of microbiology. The medal will be known as the Fritz Schaudinn medal, and will be awarded on the anniversary of Schaudinn's death, at the Institute for Ship and Tropical Diseases, at Hamburg, the scene of Schaudinn's last labors. The medal will be awarded irrespective of nationality.

Diploma of Public Health in Australia.—The faculty of medicine of the University of Sidney, according to the *Lancet*, has recommended the adoption of by-laws and regulations for a diploma of public health which will testify to the candidate's proficiency in all branches of study, scientific and practical, necessary for the proper performance of the duties of health officer. The examination will be in two parts: (1) The general principles of sanitary science; and (2) state medicine and the applications of pathology and sanitary science to public health.

Hallucinations of Chloroform.—A Paris physician who had performed an operation under chloroform on a housemaid was accused by the latter of taking improper liberties with her mistress, as she saw while coming out from under the influence of the chloroform. The medicolegal experts, Professors Brouardel and Debove, testified that chloroform was liable to induce hallucinations, not only during the anesthesia, but even after partial awakening. The French court accepted this testimony and ruled out the housemaid's evidence in a recent divorce case.

New Sanitary Service for India.—It is reported that in view of the continuance of the epidemics of plague, cholera and smallpox in India and the heavy perennial mortality from malaria, that the government has decided to create an entirely new service whose duty it will be to safeguard public health. According to the *British Medical Journal*, Lord Kitchener is greatly concerned by the high percentage of preventable diseases in the army and has instituted a system of lectures on sanitation, to be delivered during the cold season in every military station in India by specially selected officers of the Royal Army Medical Corps.

A "Patent Medicine" Before the German Courts.—The proprietor of a cure for baldness and the business manager of a local paper at Hanover, Germany, were recently sued for publishing extravagant claims in regard to the virtues of the remedy known as *eau de merveille*. The *Allg. med. Ct.-Ztg.* quotes an account of the proceedings to the effect that the chemical experts testified that the 50 cent bottle contained merely alcohol and water with some aromatic oils, the cost of which could be only a few pennies. The proprietor, while vaunting the efficacy of the remedy, was nonplussed by the inquiry why he had not used it on his own bald head. The two defendants were fined $5 each.

Change Desirable in Meeting Places.—There is considerable discussion just now in Germany as to the place where the annual congress of internal medicine shall be held. An effort is being made to have the members vote to have the congresses held invariably at Wiesbaden, instead of, as at present, at Wiesbaden only every second year, and the intervening years at different places. Much ink is being used to proclaim the importance and benefits of holding the congresses at various points so as to give all the physicians occasionally a chance to have the congress in their immediate neighborhood, and save them the time and money of a long journey to the meeting place, besides the other advantages of change.

Epileptic Colony in Scotland.—The Colony of Mercy for Epileptics, in connection with Quarrier's Homes at Bridge of Weir is now ready for occupancy. One house has been opened and is occupied by 12 colonists, all young men. It is proposed to fill up the houses gradually as suitable applicants are found. Only thoroughly sane young men who are capable of taking part in healthy outdoor garden and farm work will be admitted to the colony. Each colonist is expected to provide himself with clothes, and to pay a minimum sum of about $2.50 a week toward his expenses. It is not expected that the colony will be self-supporting, but as funds become available it is intended to erect buildings for women and children.

The Wanderings of a Leper in Europe.—A recent similar occurrence in the United States lends interest to the statement in an Austrian exchange that a man of 48, in the early stage of leprosy, recently arrived at the Austrian frontier on his way to his home in Roumania. Passage through Austria was not allowed, and he was sent back, with a car to himself, the doors locked and sealed. The Bavarian railroad returned the man to the place where he had taken the train, Frankfurt a. M., where he was transferred to the city hospital and isolated. It is proposed to send him back to London, where the disease was first diagnosed and where he started on his journey. Our exchange queries in conclusion: "What country will finally have to keep him?"

Health Board Warns Against a Fake.—The local board of health at Carlsruhe, Germany, has recently published a notice in regard to an electric battery advertised by "Professor Keith-Harvey of London" in the local papers as a sure cure for deafness. It describes the absurdity of expecting that deafness can be cured by "a mild galvanic current conducted to the muscles of the ear," even if the advertised battery is all that it claims to be. It also calls attention to the printed circular letter sent out by the advertisers in reply to applicants, although they advertise "a careful individual diagnosis made from the symptoms described in each case." The notice closes by warning explicitly against the "swindle gotten up solely for the purpose of obtaining money from the credulous."

Much Radium in Vienna.—Some time ago the Vienna Academy of Sciences received by official grant 10.000 kilograms of the uranium ore from which radium is produced. It was sent to the academy from the government mines at Joachimsthal for purposes of scientific research. The radium derived from this raw material has been accumulating until now the academy has on hand pure radium to an amount worth fully a quarter of a million dollars, according to the present market value of radium. It is not to be sold, but will be distributed among scientific bodies for purposes of research. The Austrian authorities have decided to erect a special laboratory at

Joachimsthal for the production of radium salts on the spot. As recently already mentioned by our Vienna correspondent, a health resort is to be opened there to take advantage of the radium emanations in the waters.

Behring's Tulase.—The first report on the treatment of patients with tulase has just been published in the organ of the International Antituberculosis Association, *Tuberculosis*. The remedy is, for the present, given only to a few clinics which have sent one of their assistant physicians to Behring's institute at Marburg to take a three months' course in preparatory training in the use of the remedy, and have agreed to keep records according to a prescribed system. The experiences to date have demonstrated that the tulase can be administered subcutaneously, intravenously or by the mouth. It is given to infants in milk. It is not claimed to be a remedy that will cure already existent tuberculous processes, but it is said that administered to the young, it will prevent the development of tuberculosis, and will act on an existent tuberculous process in such a way that the natural tendency of the lesion to heal will not be interfered with by renewed tuberculous infection. The tulase is given in minute doses, and for diagnostic purposes can be substituted for tuberculin. Behring's first announcement in regard to his tulase was mentioned in these columns on page 869.

How They Humbug the Dear People in Italy.—A correspondent, Dr. F. E. Sondern, New York, writes from Geneva, Switzerland: "While in a small Italian town some days ago, the enclosed circular was being distributed." The circular is in Italian and reads:

> A free visit will be made by one of the 20 professors of the American Medical Association residing in Milan, on August 25, at Verbano Restaurant, from 8 till 2 p. m., at Stresa. These professors cure by the homeopathic method, acknowledged to-day to be the best for the cure of all diseases, especially the most obstinate, chronic cases. The remedies used for the cure of these acute and chronic diseases are imported directly from the United States of America and from Germany, and are sent out by our house in Milan, in conformity with the law of the realm. With this new scientific system of treatment, thousands of cures have already been obtained in Italy in acute and chronic diseases, many of them declared incurable by renowned professors in Italy, and with little expense, as we can prove by the thousands of letters from grateful patients, which we will take pleasure in showing to whoever will apply at this office.

Then follow names and testimonials of some among the alleged 4,320 patients that have been cured. The circular is signed, "American Medical Association, Milan-Palazza, Genova 3, Milan."

Relief of Australian Dependent Children.—The report of the State Children Relief Board of New South Wales for the year ending April 5, 1906, shows 7,036 children dependent on the state, being about 0.5 per cent. of the population. Of these a little over one-half are placed in homes apart from their mothers, with an average of three children to two guardians. This secures, as far as possible, the individual attention of the foster mother. The maximum number of children in a home is fixed at three, except under peculiar circumstances. The care of the children is supervised by visitors, both salaried and voluntary, in such a way that each child receives a visit on the average twice a year. Cottage homes having the average capacity of twenty are provided for invalid children who are not sick enough to be placed in a hospital, but need special nursing and attention. These homes are under the charge of experienced women, who act as nurses under medical supervision. Deserted wives and widows are allowed to board their own children under supervision. Statistics show that while the aggregate of the women is now decreasing each year, the proportion of deserted wives to widows is steadily increasing. Older children are apprenticed, the board collecting their wages and depositing them to a fund out of which the children are paid their share partly on completion of the indentures and the balance when the child has reached the age of 21 years. The board considered it necessary to oppose the proposition of a milk wagon drivers' association to deliver milk but once a day on holidays, on account of possible injury to the health of children, and was successful in defeating the proposed action.

LONDON LETTER.

(From Our Regular Correspondent.)

LONDON, Sept. 8, 1906.

The Milk Supply.

The problem of a pure milk supply greatly exercises those interested in public health. Under existing conditions there is undoubtedly gross neglect of sanitary precautions and cleanliness. The much advertised precautions such as washing hands and udders are seldom carried out, and the milk is polluted with cow dung and other dirt. "If canned meat has killed its thousands, milk has killed its tens of thousands.," declares a health officer. It is computed that there are over 4,000,000 milch cows in the United Kingdom, and that the average yield of milk per cow per annum is 420 gallons. Thus the total yield is about 1,700,000,000 gallons. As milk is sold for fourpence a quart, the total cost per annum amounts to about $570,000,000. In only a minority of cases are the conditions of this enormous industry above suspicion. The question of transit also presents difficulties. Almost all the milk consumed in London comes from such distances that it is from 12 to 24 hours old before it is delivered. The milk taken from cows at 4 a. m. arrives only in time for the afternoon delivery, when only half of it is required. The remainder is kept by the dairyman to be mixed with the afternoon supply for delivery next morning. Thus the morning supply is a mixture of milk more than 12 hours old with milk more than 24 hours old. But something still worse may happen. The fact that a cow gives a richer milk in the smaller afternoon milking than in the larger morning milking leads unscrupulous dealers to mix separated milk with the richer article. This can be seen going on almost any day at the large railway stations. When the supply is larger than is required the surplus is allowed to remain at the station, to be manipulated day by day with further supplies until it can be advantageously disposed of—perhaps three or four days after milking. Acting on the recommendation of the public health committee, the progressive London County Council has determined to seek in the next session of parliament several important powers for dealing with matters of sanitation and public health. The most important relate to the supervision and regulation of the milk supply of London. Power will be asked to enable the council to prohibit the supply of milk from a dairy if the health officer is of the opinion that infectious disease is caused or likely to be caused by the consumption of such milk. To enable necessary supervision to be carried out the council seeks power to require dairymen to supply lists of their customers and the sources from which their milk supply is obtained, and power to impose penalties for selling milk from tuberculous udders. It is also proposed to compel dairymen to report cases or suspected cases of tuberculosis of the udder and to isolate cows suffering from this disease. Power is sought to enable the council to take samples of milk arriving at any railway station in London and elsewhere and to deal with milk which is found unfit for consumption. With regard to milk for infants, the council intends to seek authority to enable the various local metropolitan borough councils to provide and to sell milk for the food of infants. This has been done with good results as to infant mortality by some local councils, but the expenditure is illegal.

Medical Education in London.

The high standard demanded by the University of London for the degree of doctor of medicine causes only a small minority of the London students to seek to obtain it. The majority content themselves with obtaining a license from the College of Physicians and Surgeons. This is sufficient for the purpose of practicing, but the licensee is not strictly entitled to the title of doctor, though it is freely given to him by the lower and lower middle classes. Among the upper and educated classes he is termed "Mr." and is under some disadvantage as compared with those who have obtained the degree of doctor of medicine from a university, and who are correctly styled "doctor." This degree is much more easily obtained in the provincial, Scotch and Irish universities than in London. Consequently there is a tendency of students to flock to the latter to the neglect of the London schools, and yet the London hospitals provide opportunities for the study of clinical medicine which are unequaled in the British Isles. The subject is discussed by the *Lancet* in its annual address to students. Last year the number of students at the London medical schools was rapidly dwindling. "By so much," says the *Lancet*, "as the work done in the wards and out-patient departments of the London hospitals is not utilized for educational purposes is our country placed at a disadvantage compared to others—we are wasting our opportunities."

The Study of French and German for Medical Students.

Professor Osler has issued the following memorandum to the Oxford undergraduates regarding the importance of the study of French and German: "During your undergraduate days you should become familiar with the French and German languages. To do this one of the best ways is to read small French and German text-books, of which (with the advice of colleagues) I enclose a list. Half an hour a day will soon give you the necessary facility in translation. Later in your course get into the habit of reading, in the Radcliffe Library, a French and a German periodical. You will in this way

become familiar with foreign literature, which has ever been deemed a necessary equipment of a cultivated physician." The following list of French and German books is recommended to undergraduates taking science courses: French—Aubert: "Phénomènes de la Vie." Ditte: "Premières Notions de la Chimie." Joubert: "Traité d'Electricité." Meric: "Dictionnaire des Termes de Médecine Franç.-Anglais." German—Born: "Compendium der Anatomie des Menschen." Reynolds: "Leitfaden zur Einführung in die Experimental-Chemie." Fiedler and Sandbach: "A First German Course for Science Students." Osbonne: "German Grammar for Science Students." Schenk und Gurber: "Leitfaden der Physiologie des Menschen." Lang and Abrahams: "German-English Dictionary of Terms Used in Medicine and the Allied Sciences."

Central Emergency Fund of the British Medical Association.

The British Medical Association has for some time been engaged in combating the evils of contract practice. Many clubs take advantage of the severe competition which prevails in the profession to pay exceedingly inadequate fees to their medical officers or, in the language of the trade unions, to "sweat" them. No matter how low the remuneration, the clubs have usually been able to obtain a physician to fill a vacancy caused by dissatisfaction of the previous holder of the appointment. The British Medical Association, however, has put a check on this unlimited competition by arranging concerted action of the profession. The local branches determine whether the conditions of an appointment are satisfactory and if not, endeavor to prevent any physician from taking it. In the advertisement pages of the *British Medical Journal* warning notices are inserted asking physicians not to apply for any appointment without first communicating with an officer of the association, whose name is supplied. At the places mentioned some dispute is in progress, usually in connection with some form of medical contract work. Any physician who thinks of applying for the vacancy is put in possession of the facts. The current number of the *British Medical Journal* contains as many as 19 such notices. The association has now gone a step farther. Last year the central council passed a resolution providing that a central emergency fund for dealing with disputes in case of contract practice and otherwise, under the management of the medico-political committee, be created by voluntary subscription. The following scheme of the fund has now been prepared: 1. The fund is created by voluntary subscription to assist members of the profession in various parts of the country in maintaining the interests of the profession against organized bodies of the community. 2. All members of the profession are invited to contribute. Any contribution may be marked for use in specified disputes, or for application to special methods of carrying on the objects of the fund, and when not so marked shall be deemed to be given for disposal at the discretion of the medico-political committee. 3. The fund may be applied as follows: (a) By a grant or grants to any individual practitioner to assist him in maintaining any position in which the association shall have decided to support him or to compensate him for losses which he shall have incurred through taking action approved by the association. (b) By a grant or grants to any division or branch of the British Medical Association, for its assistance in defraying expenses incident to the conduct of local disputes falling within the scope of the objects of the fund. (c) By expenditure under direct supervision of the medico-political committee for any action which the committee may deem necessary or advisable for the promotion of the general objects of the fund.

London, Sept. 15, 1906.

First Report of the Expedition to the Amazon of the Liverpool School of Tropical Medicine.

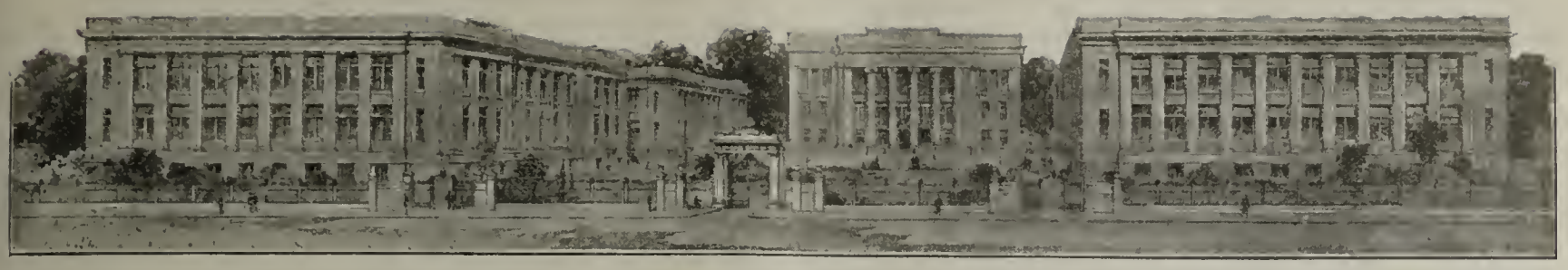
This expedition left its headquarters at Manaos, Brazil, and proceeded up the River Amazon for the purpose of invesigating the distribution of disease and of yellow fever in particular. Iquitos in Peru was reached on Dec. 31, 1905. A stay of three months was made there and a report was presented to the Peruvian government. Iquitos lies along a high bank overlooking the river Maranon and behind it are swamps. The roads are in a wretched state—undrained, full of ruts and holes—and in wet weather become almost impassable. The town, especially along the river bank and near the swamps, is noted for the number of mosquitoes. Houses near the river are never free from them and unless wire screens are used the situation becomes intolerable after dusk. Neither water reservoirs nor privies are protected from mosquitoes; stegomyia and culex were frequently found breeding in both. As is usual, stegomyia was found to breed freely in the various discarded pots and pans, bottles and barrels which accumulate in tropical establishments. The sanitary condition of the town is very bad. Drains for the most part are mere trenches cut in the sandy soil. There is no public water supply; water is obtained from springs or from cisterns sunk in the ground in which rain water is stored. There is no proper system of sewage disposal. The poorer classes defecate indiscriminately in every part of the town, and fecal contamination of drinking water is common. *B. coli communis* and eggs of *Ankylostoma duodenale* were frequently found in the water. There is no system of garbage disposal; household refuse is deposited almost anywhere. Notwithstanding its insanitary condition, Iquitos is not exceptionally unhealthy. The prevailing diseases from January to March are whooping-cough, measles, bronchitis and infantile diarrhea among children; gastritis, gastroenteritis, bronchitis and malaria among adults. Other diseases seen were leprosy, amebic dysentery and tuberculosis. The expedition had hoped to see "*vomito negro*," which is locally considered to be distinct from yellow fever, but no cases of either occurred. From the information given by the local physicians they appeared to be the same disease. To ascertain the prevalence of malaria in the blood of the general population, 764 persons were examined. In 98 the malignant tertian parasite was found. The majority of those infected were Indians and men employed in launches along the rivers. Of 97 children between the ages of 4 and 14, only 2 were infected. The hemoglobin showed a low average in Indians and the poorer classes, varying between 45 and 72 per cent., and in the better classes between 72 and 80 per cent. The explanation of this marked anemia is believed to be ankylostomiasis. Practically all the native children are infested with the parasite. An accompanying infection with ascaris lumbricoides or various teniæ was frequently observed. Among the domestic animals at Iquitos the following diseases were observed: In cattle piroplasmosis, malignant edema and perhaps quarter evil; in swine trichinosis; in poultry chicken cholera and fowl diphtheria; and in rats *Trypanosoma lewisi*.

Glycerinated Calf Lymph.

A preliminary report has been made to the local government board by Drs. F. R. Blaxall and H. S. Fremlin on experiments undertaken to determine whether or not the active agent of vaccine lymph could withstand, without loss of potency, temperatures below freezing point. Afterward the doctors were directed to ascertain whether sustained subjection of glycerinated calf lymph to a temperature of 5 degrees (C.) below freezing point could be used to maintain a reserve of lymph without loss of activity. General experience and numerous experiments have shown that the agents most productive of weakness and failure in glycerinated lymph are age and heat. Thus crude lymph loses its potency if subjected for five minutes to a higher temperature than 57.5 C. Glycerinated lymph becomes inert if kept at 37 C. for more than thirty-six hours. It was anticipated that if the everyday deleterious influence of heat on lymph could be prevented the loss of activity which is associated with age could be diminished and a method of storage attained. Experiments were commenced in January, 1900. The lymph was exposed to various low temperatures, including that of liquid air (—180 C.). The following conclusions were reached: 1. Glycerinated calf lymph can survive a temperature of 180 C. below freezing point for a considerable time without loss of potency. 2. It can be retained in a cold store at —5 C. for a year without diminution of potency, whereas stored for the same time at 10 C. it loses activity to a considerable extent. 3. Sustained subjection to cold appears not to be injurious.

The Overlying of Infants.

The overlying of infants is the cause of more than 1,600 deaths annually. A meeting has taken place between six members of the National Society for the Prevention of Cruelty to Children, three representatives of the Coroner's Society and three members of the British Medical Association. The subject was thoroughly discussed, and it was decided to take some step toward amending the act for the "Prevention of Cruelty to Children." The form of the amending bill and the steps to be taken to insure its acceptance by the legislature were left for settlement at a later date. It seems probable, however, from what passed at the meeting, that the death from suffocation of a child under the age of 3 years as a consequence of its sleeping in the bed of its parents or other adults, as also the death of a child under the age of 10 years from burning or scalding from being allowed access to an unprotected and lighted open fireplace, *ipso facto*, will be made evidence of neglect in the sense in which the term is used in the act mentioned.



THE HARVARD DEDICATION.

New Buildings of Harvard Medical School Dedicated September 25-26.

The ceremonies attending the formal opening of the new medical laboratories of Harvard University, which were described in THE JOURNAL, July 7, page 50, have more than a local interest. They mark the completion of an important step in the development of a scheme in medical education and instruction not hitherto attempted in this country. The Harvard faculty believes that a medical school should be something more than a place of instruction. It believes that the student in medicine should be so trained and drilled in research methods that it becomes the basis of all his work. This view is strongly reflected in the magnificent buildings just dedicated. In these four great laboratories every facility has been provided for instruction, training and drilling of each student individually, both as to the essentials of past research, as well as in the methods by which those fundamentals were acquired. While the laboratory methods are emphasized strongly in this celebration, they are but the nuclei about which hospitals are to be grouped at no very distant date. Boston offers annually a hospital clinic of over 15,000 ward patients and more than 130,000 ambulatory patients. In the care of this great number of afflicted persons the Harvard medical faculty has almost unrestricted facilities for studying and demonstrating disease in its various forms.

A Medical University.

In order that the greatest amount of advantage possible to suffering humanity, as well as to medical science and instruction may result from a closer union of the laboratory and the hospital clinic, these new laboratories are to be an integral part of a great hospital teaching medical center—a medical university. The hospital of the Good Samaritan is already established on the site, and the remaining fifteen acres are to be used for the Harvard Dental School, an infant's hospital, children's hospital and a large general hospital, all to be under the jurisdiction of the corporation of Harvard University. The whole plant is to form a part of a general architectural scheme, of which the Fenway is the center. To meet this design the administration building and the four laboratories face a quadrangle 215 feet wide and 480 feet long, which is the continuation of a proposed boulevard extending to the Fenway.

Plan and Construction of Buildings.

All these buildings are of white marble, and are designed in a simple, classic style, an adaptation from the Greek. The administration building, facing the open court, is raised on a high terrace, which gives a setting pleasing and majestic. The approach is by means of a broad flight of steps from the terrace to the front portico of the building, from which rise six ionic marble columns, each over fifty feet high. The interior of this building, on the ground floor, is treated with marble floors and wainscoting and columns, etc., in keeping with the general design of the exterior. The right wing of this floor is arranged for the administrative offices of the school, the faculty room, committee rooms, and others. The left wing contains rooms for students and alumni, a reading room, and a smoking room. Over the students' room is an amphitheater, with entrance so arranged that the students enter from the second floor to the upper tier of seats, while the lecturer with his lecture material, is admitted from an intermediate floor below. This lower floor has a connected preparation room, to which the elevator runs from the receiving room and museum, so that specimens may be transported directly on movable tables. The seats in this amphitheater, as in all the other class rooms, are especially designed with movable seats and writing tablets. Every facility is provided for illustrating by means of lantern projections. The remaining portion of the second floor in this building is divided into class rooms.

The Warren Museum.

The Warren Museum occupies the entire upper portion of the building, and has a total floor area of over 22,000 square feet. The museum is equipped with dust-proof cases and has every modern museum appliance. The curator's room and receiving room are equipped for laboratory work and have elevator connections with the receiving room in the basement. In the basement are located x-ray rooms, students' lockers, rooms for instruction in bandaging, and a receiving room for museum specimens. The locker room is extended on both sides into a wide corridor which runs underneath the terrace facing each laboratory, thus forming a covered passage between the four laboratories and the administration building.

The four laboratories are so arranged that those most closely affiliated with each other are in the same building. These buildings are located as follows: On entering the court from Longwood Avenue the first building on the right is the hygiene and pharmacology building; the other building on the right is the physiology and chemistry laboratory. On the opposite side of the court the building nearest Longwood Avenue is for pathology and bacteriology, while the one for anatomy and histology is next to the administration building. In the rear of the pathologic and bacteriologic building and separated from the main laboratory, is a building for animals, with accommodations for all kinds and sizes, from cows and sheep to birds and guinea-pigs. The power house is situated some distance in the rear of the hygiene-physiology pair of buildings and at the best advantage for furnishing heat, light, electricity, refrigeration and compressed air to the several laboratory buildings, and also to the adjacent hospitals now built and to be built in the future. Provisions are made for increasing the size of this power plant so as to provide for future hospitals and other buildings, as well as the enlargement of the present laboratories.

Construction of Laboratories.

The construction of the laboratories is unique and original. They are constructed on a plan devised and amplified by Prof. William T. Porter and Prof. Charles S. Minot of the Harvard Medical School. This plan consists of an aggregation of "units," and is briefly as follows: The outside walls are built with piers 4 feet each and the windows between are 6 feet wide and extend to the ceiling to provide proper lighting, the whole making a unit of 10 feet. The outside and corridor walls and the floors are the fixed portions of the buildings, the corridor walls being hollow to contain the heating and ventilating flues. Running through each wing is a central corridor, from which the laboratories lead. The unit room is roughly, 23 feet deep by 10 feet long, the window coming in the middle of the ten-foot exterior wall space. The partitions opposite each unit pier are composed of terra cotta, which can be easily removed or supplied, making a room 23 by 20 feet, or any multiple of 10 feet, thus providing for rooms suitable for small sections, laboratories, private research or for the professors' or instructors' personal use. As the growth of the school necessitates, each wing can be lengthened by additional piers and windows, and when extended to a distance of 216 feet may be connected together in rear, enclosing a court 112 feet long by 70 feet wide. This trebles the capacity of each laboratory without interfering with light or architectural design. The buildings are divided into stories to conform to the needs for which they are intended. In the large laboratories for general students' use the stories are high and the windows are carried to the ceiling, thus affording abundant light to all parts of the room, sufficient for microscopic work.

For smaller rooms used for individual research work intermediate or "mezzanine stories" are introduced. In the center of each building is an amphitheater occupying two stories, and in the second story of each is a library. These are accessible from both wings. Each amphitheater has a seating capacity of 265, and completed facilities for lantern

projections, etc. Each laboratory building is equipped with every facility for carrying on the work of that special department, e. g., the anatomy and histology building has its separate driveway for introducing anatomic subjects, large refrigerator for storage, isolated dissecting rooms, and an elevator so located as to properly serve the dissecting and demonstrating rooms; the physiology and chemistry building its pens, cages, exercise yards, etc., for animals on the roof, while each department conducting operations on animals has its animal operating suite, equipped with most approved hospital appliances; the chemistry wing is constructed with special reference to the varied methods of research and investigation now attracting the attention of scientists; in the bacteriologic and pathologic building four large students' laboratories occupy one wing, while the south wing is divided into mezzanine stories for research work.

The rear end of one basement is devoted to photography. In the hygiene and pharmacology building a completed museum of food products, models of appliances relating to the public health, etc., are given a special section. Comparative pathology forms a separate and distinct department in this building.

The acoustic properties and seating arrangements of the various amphitheaters and laboratories have been carefully supervised by Professor Sabine of Harvard University.

Dedicatory Exercises.

The formal dedicatory exercises were held at the new buildings on Longwood Avenue, Boston, September 25 at 2 p. m. Grouped about President Eliot on the portico and terrace of the administration building were gathered an assemblage of eminent and distinguished scientists and notable persons, while the large gathering of alumni and lay persons on the lawn in front testified to the intense interest felt in this great event. Besides the president and fellows and overseers of Harvard University and the medical faculty, some of those occupying seats on the platform were Governor Guild, Russian Ambassador Rosen, Mr. J. Pierpont Morgan, Mr. Charles H. Tweed, Most Rev. W. H. O'Connell, D.D., Boston; Prof. W. H. Welch, Johns Hopkins University; Prof. William Keen, Philadelphia; Prof. A. Jacobi, New York; Sir Thomas Barlow, London; Dr. William Ewart, London; Prof. Franz Keibel, Freiburg; Prof. John Glaister, Glasgow; Professor Durfour, Lausanne; Prof. C. S. Sherrington, Liverpool; Prof. Ramos Mexico; Prof. R. A. Reeve, Toronto; Sir William Hingston, Montreal; Prof. R. F. Leith, Birmingham, England; Prof. G. S. Woodhead, Cambridge, England; Prof. Harvey Littlejohn, Edinburgh; Prof. S. C. Minot, representing Royal Institute, Florence, Italy, and representatives of every university and medical school in America, as well as from many American and foreign scientific bodies.

Program.

The exercises consisted of prayer, George Angier Gordon, D.D. Address, "The Enlarged Foundation," J. Collins Warren, (Hon.) Moseley Professor of Surgery. "The Buildings," Charles A. Coolidge, representing the architects. "Acceptance of the Buildings," the President of the University. "The Faculty of Medicine," the Dean. "The Laboratories," Thomas Dwight, Parkman Professor of Anatomy. "The Clinics." Frederick C. Shattuck, Jackson Professor Clinical Medicine. Dedication of the Buildings, the President of the University. Benediction. Demonstration of the buildings.

The Enlarged Foundation.

Dr. John Collins Warren spoke as follows:

It is my duty and privilege to announce to you on this occasion the completion of the great undertaking in which the faculty of medicine has been engaged during the past five years.

The first great step toward the foundation of a medical university has been accomplished. The laboratories for teaching and research are about to be opened on a scale far beyond what has been attempted before, and this great machine, with all its vast resources, is to be made an agent not only for the diffusion of learning, but for substantial aid and comfort to the suffering in the numerous hospitals by which it is soon to be surrounded.

But these noble buildings speak not only for a new era in medical teaching and medical research, but also for the interest which has been aroused in its behalf by men and women of public spirit.

How could a more appropriate and enduring monument to illustrious dead be raised than such as these?

This group of three buildings, with classic outline, a fitting memorial to a noble Junius, one whom we are proud to remember as a former citizen of Boston, is to-day dedicated to science by the princely liberality of a son—Filius patre dignus—whose benefactions are a household word wherever science and the fine arts are held in high esteem.

Nearby stands a memorial to one of the pioneers who have opened a pathway for the commercial world to the treasures of our great west, a monument made possible by a lady bountiful, whose devotion to the memory of her husband has been illustrated in many a worthy cause.

But it should not be forgotten that one building is the gift of a citizen of Boston, and is to bear an honored Boston name, a name which stands for all that that implies; and we shall ever gratefully recall the innumerable gifts of the grand army of Bostonians who are, and always have been, ready with generous aid.

Last, but not least, we must remember to-day the good deed of one who studied with intelligent care this great educational problem and by generous endowment made it a living reality.

To you benefactors, all I stand here to-day, in behalf of my colleagues, to say that from the bottom of our hearts we thank you, and that we appreciate what you have done for us, and we would pray for good will and sympathy from you in our work, for does not the Scripture tell us that "where thy treasure is there will thy heart be also"?

Dedication by President Eliot.

President Eliot's dedication of the buildings was as follows:

> I DEVOTE THESE BUILDINGS AND THEIR SUCCESSORS IN COMING TIME TO THE TEACHING OF THE MEDICAL AND SURGICAL ARTS, WHICH COMBAT DISEASE AND DEATH, ALLEVIATE INJURIES, AND DEFEND AND ASSURE PRIVATE AND PUBLIC HEALTH, AND TO THE PURSUIT OF THE BIOLOGIC AND MEDICAL SCIENCES ON WHICH DEPENDS ALL PROGRESS IN THE MEDICAL AND SURGICAL ARTS AND IN PREVENTIVE MEDICINE. I SOLEMNLY DEDICATE THEM TO THE SERVICE OF INDIVIDUAL MEN, AND OF HUMAN SOCIETY, AND INVOKE ON THEM THE FAVOR OF MEN AND THE BLESSING OF GOD.

In accepting the buildings President Eliot said that the buildings and the permanent funds accompanying them was the largest single addition to the university since 1650. He further said:

The president and fellows well understand to whom they are indebted for this great gift. It is due in the first place to the constructive imagination and indomitable zeal of a few of the university's teachers of medicine; secondly, to the discerning and liberal acceptance by a very few rich men and women of veritable opportunity to do some lasting and pervasive good, with no admixture of evil, and with high promise of prompt beneficent results, a promise firmly based on the rapid progress of medical science within the past thirty years; thirdly, to the accumulated influence in favor of the medical profession which has been exerted in Boston and its vicinity for more than 100 years by a series of much-respected medical personages and strong medical families; and lastly, to the habit of contributing to public objects from private means, clearly manifested by the first settlers on Massachusetts Bay, and maintained and amplified by the best part of the community in every generation since, as the people rose from poverty to comfort and through a diffused well-being to occasional private affluence and public magnificence.

These superb buildings, therefore, are an expression of the intelligence and public spirit of many generations, and of the ardent hopes of the present generation for a new relief of man's estate.

The Medical Faculty.

Dean William L. Richardson spoke briefly on the growth and development of the school during its twenty-three years in the Boylston Street building. Continuing he said:

In these new buildings all that one could ask for has been provided, both for medical education and for scientific investigation and research. Here we have, as the president of the university stated on another occasion, "the means for a new start for medical education and research in our country."

The facilities are so ample and the equipment so complete that the faculty has decided to make a new departure and to open all courses, including laboratory courses, to persons not candidates for the degree of doctor of medicine, but to special students in other departments of the university.

In taking possession of these new buildings the faculty feels a great responsibility, and can only express the hope that the future history of the school will show that the faculty has been faithful to the trust this day committed to it.

Laboratory Opportunities.

Prof. Thomas Dwight, in speaking for the laboratory, said in part:

One of the most striking phenomena of medical education during the past thirty years has been the gradual, unconscious, progressive, self-arrangement of the various studies into two grand groups, that of the laboratory and that of the clinical departments. The former are in the main preparatory to the latter, in which the patient is the central figure. Sometimes the former are spoken of as the scientific courses; but this is a usage against which I protest. It is a reflection on the clinical courses, for all study and instruction should be scientific. On the other hand, the word "scientific" may suggest that the laboratory courses are not practical. This would be to say that they are taught under a misapprehension of the primary purpose of a medical school, which is to train students to practice medicine on their fellow-beings. But, and here is the heart of the matter, there is a sharp distinction between courses which are essential to a degree, and those which are not.

But this pronounced separation of the departments into these groups implies no opposition between them. On the contrary, I see everywhere the laboratory departments adding more and more copiously to the knowledge directly applicable to the welfare of our neighbors. If I mistake not, a new era has begun which already has given an earnest of what science can do for humanity, and which in the future will gain results beyond our hopes.

Clinical Facilities.

Dr. Frederick C. Shattuck, in speaking for the clinics, traced the course of study offered in medical schools and emphasized the fact that the laboratories represented only half of the undergraduate study. Continuing he said:

The paramount fact to which I beg to call your attention is that you see about you only a portion—I think I can safely say the subordinate portion—of the necessary means for furthering progressive medicine. You see provision for the foundations of medical study and for such research into the nature of the disease as can be adequately carried on outside of, more or less apart from, a hospital which is as truly a laboratory as any one of this group of buildings.

The two great and many of the lesser hospitals of the city are within easy access. We have good reason to hope that within a few years a new and largely endowed general hospital will be in operation at our very doors, in full coöperation with the university in the promotion of the highest aims of medicine.

I do not know a medical school in the country which at present enjoys such clinical advantages as does the Harvard school. On the continent of Europe hospitals and medical schools are practically parts of the state and are supported by it. In this country the two grow up independent of one another, for reasons which, however interesting they are, we can not here consider. Their separation has been and is still a bar to progress in this country.

The keen American intelligence of those responsible for hospital management is rapidly recognizing the indisputable fact that the humanitarian and the educational duties of the hospital do not conflict—that they are indissolubly bound together if, indeed, they are not identical. The patients under the charge of a teacher of medicine, surrounded by sharp-eyed and critical young men, are sure to receive more careful study than patients not so guarded. That sick man is fortunate whose doctor, while caring for him, cares also for the advance knowledge in medicine in the largest sense.

After the dedicatory exercises demonstrations were given in the various laboratories, and light refreshments were served from booths erected on the terraces. Music was furnished during the exercises by a specially trained alumni chorus.

In the evening the officers of the Alumni Association tendered an informal reception at the Boston Medical Library to the alumni and invited guests and delegates.

Academic Session.

This part of the celebration was held at Sanders Theater, Cambridge, September 26 at 11 a. m., and took the form of commencement exercises. The following program was carried out:

Sheriff Fairbairn called the assemblage to order. Rev. Edward C. Moore offered prayer. Then followed the hymn, "Here Discovered are Foundations" by Grieg, sung by the large alumni chorus, which later was heard in the specially composed number by Professor Converse, "Laudate Dominum;" "Great is Jehovah" by Schubert-Liszt, and the Harvard hymn, sung by chorus and audience. The literary portion of the exercises consisted of addresses by President Eliot and Professor Welch, the presentation of the roll of delegates by Dr. Harold C. Ernst and the conferring of degrees.

The scene at the theater was one of the most brilliant ever witnessed there, the many colored academic costumes of the visitors and the almost universal gowning of the Harvard men giving the occasion an academic touch unique at medical school exercises. The spontaneous and tumultuous ovation given Dr. Warren and Dr. Bowditch when President Eliot announced the names of the recipients of honorary degrees, was one of the most marked tributes ever paid by a Harvard audience to a Harvard man. Later, when Professor Welch acknowledged the obligation which the medical profession owes to President Eliot, the audience broke forth in applause which lasted many minutes.

The Future of Medicine.

President Eliot said in part:

The future occupations and interests of the medical profession are to be in some respects different from those of the past, and they are to be more various. The ordinary physician has for the last 100 years been almost exclusively a man devoted to the treatment of diseases already developed in human bodies or of injuries already incurred.

The progress of what we call civilization exposes human beings more and more to the ravages of disease. When savages come in contact with men called civilized, they invariably suffer from diseases new to them. When a rural population crowds into cities, it falls a victim to diseases from which in the country it had been exempt. When hundreds of thousands of people huddle into small areas, and create there smoke, dust and noise, they suffer not only from new diseases, but from the exacerbation of diseases, not wholly unknown to them in the rural condition.

If civilized society is to endure under its new exposures and dangers it is clear that the medical profession must take up with more ardor the work of preventing approaching disease in addition to the work of treating diseases arrived. The profession must recognize that health is eminently a social product, just as the psychologists have recognized that the mind of a civilized man is a social product.

Thus thousands of physicians all over our southern states must for years be teaching the people how to protect themselves from yellow fever. Maj. Walter Reed and his colleagues proved how yellow fever is communicated and—what was equally important—how it is not communicated; but thousands of medical men must see to it that intelligent application is made of that precious knowledge.

Recent events have brought into strong light a new function of the medical profession which is sure to be amplified and made more effective in the near future. I mean the function of teaching the whole population how diseases are caused and communicated, and what are the corresponding means of prevention. The recent campaign against tuberculosis is a good illustration of this new function of the profession. To discharge it well requires in medical men the power of interesting exposition, with telling illustration and moving exhortation.

Obviously, the function calls for disinterestedness and public spirit on the part of the profession; but to this call it is certain that the profession will respond. It also calls for some new adjustments and new functions in medical schools, which should hereafter be careful to provide means of popular exposition concerning water supplies, foods, drinks, drugs, the parasitic causes or consequences of disease in men, plants and animals, and the modes of communication of all communicable diseases.

Medical museums should be arranged in part for the instruction of the public, and with some suitable reservations should be statedly open to the public. The medical schools should also habitually provide popular lectures on medical subjects, and these lectures should be given without charge on days and at hours when working people can attend. In other words, selected physicians should become public preachers, as well as private practitioners. America has much to learn from Europe in regard to this public-spirited service on the part of the profession.

The University of Medical Sciences.

Dr. William Henry Welch of Johns Hopkins University said:

To have recognized fully from the beginning of his administration the importance of this vitalizing union of the medical school with the university, to have striven patiently wth full grasp of the problems and with intelligent sympathy with the needs of medicine for the uplifting of the standards of medical education, and, with the aid of his medical colleagues, to have planted these standards where they now are in the Harvard medical school, is not the least of the many enduring services which President Eliot has rendered to American education, and, in behalf of our profession, I wish to make to you, sir, on this occasion, grateful acknowledgement of this great and beneficent work.

During the last two decades we have witnessed in this country the extraordinary rise of practical laboratory instruction from the weakest to the strongest and best organized part of our medical curriculum of our better schools. Our laboratory courses are, I believe, in several instances more elaborate and occupy more time than corresponding ones in most foreign universities.

It is, however, in my judgment, an error to suppose that from the point of view of science any fundamental distinction exists between the clinical and so-called laboratory subjects other than that based on differences in the subject-matter of study. The problems of the living patient are just as capable of study by scientific methods and in the scientific spirit and they pertain to independent branches of medical science just as truly as those of anatomy, physiology or the other so-called laboratory subjects. All of the medical sciences are interdependent, but each has its own problems and methods, and each is most fruitfully cultivated for its own sake by those specially trained for the work.

There is a highly significant and hopeful scientific movement in internal medicine and surgery to-day characterized by the establishment of laboratories for clinical research, by the application of refined physical, chemical and biologic methods to the problems of diagnosis and therapy, and by the scientific investigation along broad lines of the special problems furnished by the living patient.

The most urgent need in the medical education at the present time in this country I believe to be the organization of our clinics both for teaching and for research in the spirit of this modern movement and with provision for an intimate, personal contact of the student with the subject of study as he finds in the laboratory.

In addition to the undergraduate instruction, our laboratories at present furnish better opportunities for the prolonged, advanced training of those intending to make their careers in anatomy, physiology, pathology and other sciences, than are afforded by most of our hospitals to those who aim at the higher careers in medicine and surgery. A further disadvantage is that while the former class, after good, scientific work may reasonably look forward to desirable positions as teachers and directors of laboratories, the latter, however high their attainments, in consequence of the separation of the medical school from any control over the appointments to the hospital staff, can not anticipate with any degree of assurance similar promotion in their chosen lines of work, and consequently the medical faculty has not so wide a field of choice in filling the clinical chairs as in filling those of the auxiliary sciences.

The removal of these deficiencies on the clinical side of medical education in America requires some reorganization of its staff on the part of the hospital, or at least its voice in appointments to the hospital staff. So far as our resources permit, we have, I think, accomplished this reform at the Johns Hopkins Medical School and Hospital. The welfare of the patient is the first obligation of the trustees of the hospitals and of physicians in attendance, but nothing is more certain than that cordial coöperation between medical school and hospital best subserves the promotion of this welfare. Fortunate the hospital and fortunate the patients brought into such relations with the Harvard medical school.

Award of Honorary Degrees.

President Eliot awarded the honorary degrees as follows:

Honorary Doctor of Arts.—Charles Allerton Coolidge, architect, designer of the buildings.

Honorary Doctor of Science.—Dr. Simon Flexner, New York.

Doctors of Laws.—Dr. John Collins Warren, Boston; Dr. Henry Pickering Bowditch, Boston; Dr. Jose Ramos, Mexico; Dr. Franz Keibel, Freiburg, Germany; Dr. Charles Scott Sherrington, Liverpool, England; Dr. Francis John Shepherd, Montreal; Sir Thomas Barlow, London, England; Dr. Abraham Jacobi, New York.

The Triennial Dinner.

This was held in Memorial Hall at the close of the exercises. About 700 guests and students were present. Dr. Alfred Worcester, president of the association, presided. Speeches were made by President Eliot, Governor Guild, Professor Welch, Professor Jacobi, Sir Thomas Barlow, Dr. Warren, Professor Keibel and Senor Ramos. All the speeches contained allusions to the new medical school, and the chairman's reference to the occasion as "one common brotherhood" of the medical fraternity all over the world called forth prolonged enthusiasm.

President Eliot emphasized the religious side of medical science, and referred to the deep religious sentiment prevailing in the music rendered by the alumni chorus at the different exercises. He counseled the medical profession to get together and work together in harmony and coöperation to attack moral as well as the physical evils which infest human society. Governor Guild made a most stirring address on the achievements which Massachusetts and Massachusetts men have accomplished for the betterment of mankind. He recalled three notable advances in public health legislation enacted by the Massachusetts legislature during the year 1906, namely, the state care and education of feeble-minded children; the compulsory medical inspection of school children in all the schools of the state, and the law regulating the sale of "patent medicines" containing poisonous drugs.

Sir Thomas Barlow said that he and his colleagues never dreamed of seeing such a vision of beauty, of charm, of absolute adaptation to the needs for which such buildings are erected as that which he had witnessed on this occasion.

Professor Jacobi said that the astounding impression made by the new medical school took him back to the age of Pericles and Phidias.

Congratulatory speechs were made by Professor Keibel and Dr. Ramos. The ceremony was fittingly closed by Prof. J. Collins Warren, who announced that a large general hospital in connection with the new buildings would soon be erected, and that plans were well completed for beginning the undertaking at a very early date.

Correspondence

The Attacks on the American Medical Association.

SAN FRANCISCO, Sept. 21, 1906.

To the Editor:—Please allow me to congratulate you most sincerely on the presentation, in recent issues of THE JOURNAL, of the facts pertinent to the Walker resolutions, which were introduced at the Boston session, and also the explanation of the attitude of the *Medical Record* in its despicable attack on the Association.

In regard to the Walker resolutions, it is rather unpleasant to me to note that my motion, which, you will recall, was to reconsider the motion which placed these resolutions on the table, has been rather generally looked on as an indication of approval of these resolutions. This is most emphatically an error. Dr. Happel correctly stated the intent of my motion in his reply to Dr. Carstens' letter. My desire was to emphasize the rejection of the proposed resolutions, and to prevent any attempt at their subsequent consideration. The President ruled my motion out of order and, while I disagreed with him as to the correctness of his ruling, I did not consider it a point of sufficient importance to raise an objection.

In regard to the oft-reiterated claim of dissensions in the ranks of the Association, of course, I can speak only for our state, but, so far as California is concerned, I take great pleasure in advising you that never before, within my knowledge of society affairs, has there been such a general approval of the American Medical Association and of its many and various important undertakings. Never has dissension been further away than at the present time. PHILIP MILLS JONES.

Standardization of Suprarenal Products.

DETROIT, Sept. 25, 1906.

To the Editor:—A very erroneous impression is likely to be made on the minds of your numerous readers by your editorial on page 944 of THE JOURNAL, September 22. To 19 men out of 20 the clear meaning of the article is that manufacturers do not standardize their suprarenal preparations, whereas, speaking emphatically for ourselves, we do standardize these products, with special reference to our adrenalin and adrenalin solution, ointment and inhalant. We have always done so. In THE JOURNAL as far back as 1902 (see page 150, Jan. 18, 1902), our exact method of standardization was set forth in the fullest detail by our chief pharmacologist, Dr. E. M. Houghton.

We have no objection to government supervision over the suprarenal preparations of the market: some of them need it. But the very thing which you are urging we have performed systematically ever since we began to market *any* of the preparations of the suprarenal gland, standardizing each and every lot of every single preparation and guaranteeing its physiologic activity.

If you will refer to page 1732 of the last edition of the National Dispensatory you will find likewise a complete working method for the assay of adrenalin and other products which are not susceptible of chemical assay.

PARKE, DAVIS & CO.,
Per E. G. SWIFT, General Manager.

Populations of Cities in the Educational Number.

PORTLAND, ORE., Sept. 19, 1906.

To the Editor:—In the Educational Number of THE JOURNAL, August 25, in giving the population of cities, you give Portland, Ore., 98,655, and, while this is taken from the United States census of 1903, it places our city in an unfair position. Our city to-day has a population variously estimated at from 150,000 to 200,000. From all available sources the conservative estimate places our city at 175,000, and this is not "hot air." We have substantial facts to bear us out.

I have asked Governor Chamberlain, Mayor Harry Lane, M.D., of Portland, Auditor Devlin of Portland, and Tom Richardson, manager of the Portland Commercial Club, for estimates, and will enclose their replies. Portland has not been advertised as most western cities have been, and is comparatively little known in the East, and it is only just to give us the prominence to which we are entitled.

BYRON E. MILLER, M.D.,
Secretary of the Board of Medical Examiners of the State of Oregon.

[The letters which Dr. Miller enclosed estimate the present population of Portland at from 150,000 to 178,705. Since the statistics referred to were for last year, the growth in population *subsequent to 1905*, while a matter for congratulation, is immaterial. The figures published were taken from the official estimates made by the Census Bureau in 1903, so as to have a recognized basis. We are glad to give publicity to the facts brought out by Dr. Miller.—ED.]

The Teaching of Medical Jurisprudence.

PHILADELPHIA, Sept. 8, 1906.

To the Editor:—A valuable service to the cause of good medical education was done by your editorial August 25 concerning the extent of teaching of medical jurisprudence in American medical schools. During a considerable part of my active professional life, I was chemist to the coroner and district attorney of this city, and had, therefore, much opportunity to see the necessity of instruction in the determination of causes of death. It seemed sad to see the vast amount of valuable material that was allowed to go to waste in connection with numerous and varied forms of violent death.

In this city the coroner appoints one or more physicians, who make the necessary postmortems and report to the office. As is known throughout the nation, Philadelphia has been for many years in the grip of a political ring, which has no superior in the world for corruption and obstruction. The coroner's office is most important to the great corporations. Verdicts from the coroner have important bearings on damage suits, and in the years in which I was familiar with the coroner's office in this city, it was the custom of one of the street railway companies to give money, generally $5, to the

coroner's clerk when a death on that road was under inquiry. In one case, the clerk wanted $10 (probably a difficult case!), but the road would not give more than $5. The result was a verdict blaming the railroad company. The late Mr. Singerly of the Philadelphia *Record* was the principal officer of the road. He immediately set his reporters to work on the records of the coroner's office, exposed a startling amount of corruption and broke up the whole combine by publication of all the details in the *Record*.

It has so happened that almost at no time during the past forty years in this city has a coroner's physician been connected with a medical school in a capacity that would enable him to utilize the material for instruction of students. Most of them have had no teaching positions, and many could not obtain such. In one case a teacher of pathology in a prominent local school was coroner's physician, but he had no interest in medical jurisprudence properly so called, and was, indeed, so unreliable that he would have been a misleader more than a leader.

In The Journal, September 8, exception is taken by a correspondent to your remark that certain New York schools make no mention of the subject; it is stated that a judge of a New York court delivers fifteen lectures to third-year students at Long Island College. I do not desire to cheapen in any way the work of the person in question, especially as I have not the slightest knowledge of the character and scope of the course, but I wish to state emphatically that lectures by a member of the bar, however eminent and able, are not sufficient as instruction in medical jurisprudence. Experience with trials in criminal courts will amply convince any physician that no lawyer fully appreciates the problems and methods of the science of medicine. For many years I have been a member of the Medical Jurisprudence Society of this city, and I have heard many lawyers, some of them eminent and with a large criminal court experience, discuss questions of medical jurisprudence. In most cases they are wholly out of line with the scientific aspects of the case.

The probability is that lectures by a lawyer will cover questions of ethics, general and legal, limitations of professional duties and rights, and cognate questions, but what the medical student needs is practical instruction in the determination of the cause of death. He should have opportunity to see and examine the bodies of the drowned, poisoned, shot and strangulated and victims of other violent deaths; to learn, not by reading or listening, but by seeing, the distinction between still-born and murdered infants, and so on. Then there is the vast field of insanity, so misunderstood by the community at large and so mistried by the courts. In one famous case in this county, in which the evidence of delusional insanity was as clear as day, the trial-judge, one of the most able and honored of the Philadelphia judiciary, shouted out in antagonism to one of the defense witnesses: "If this man is insane, then I wish to say that this is the kind of insanity for which we hang men in Pennsylvania." No, lawyers alone can not conduct a course of medical jurisprudence..

Henry Leffmann.

Nostrums and Advertising.

Gum Springs, Va., Sept. 17, 1906.

To the Editor:—On receipt of bill for renewal of my subscription to the *Monthly Cyclopedia of Practical Medicine*, I acknowledged it by writing them the following letter:

Gum Springs, Va., Aug. 4, 1906.

F. A. Davis Co., Philadelphia.

Gentlemen:—Your favor of the 3d inst. received, enclosing bill for subscription to the *Monthly Cyclopedia* for 1906.

Permit me to say, first, that I did not subscribe for this journal for 1906. Second, that while recognizing merits which it has, there are considerations found in its advertising columns which will keep my name off its mailing list.

A casual glance reveals advertisements of such frauds as Antikamnia, Anasarcin, Uric-Antagon, Melachol, Ergo-Apiol (Smith), Kelmol, Peptomangan, etc. Continuing, I find, under the caption, "Notes and Comments," a series of "writeups" of numerous proprietaries of this class, such as Neurosine, Vin Mariani, Peptomangan, and others. With these facts before me I do not care to subscribe for the *Monthly Cyclopedia of Practical Medicine*.

Very respectfully,

W. K. McCoy, M.D.

In reply to this I received the following letter:

Philadelphia, Aug. 8, 1906.

Dr. W. K. McCoy, Gum Springs, Va.

Dear Doctor:—Your favor of the 4th inst. duly received. We note that you have passed condemnation on our Journal for carrying the ads of firms that have been and are occupying advertising pages in all the leading medical journals of the country, with the exception of The Journal of the A. M. A., which, however, carries the ad of Vin Mariani, which you refer to in your letter as unethical.

When we feel assured that the mass of the medical profession share your views, we will then take up the question and decide whether or not to continue to publish our journals. Certainly we cannot compete with other publishing houses if we are to be debarred from utilizing this source of revenue which they enjoy. As probably less than a half dozen doctors have expressed an unfavorable opin on of our advertising in five years' time, our opinion is that the mass of the profession are not in sympathy with the views which you express.

This, however, is not to be construed as an endorsement of any pharmaceutical preparation. The idea that we wish to convey is that at present the question is too vague for settlement. We consider the good will of our customers as of a great deal more importance than the interests of an advert'ser, and whenever we are convinced that the sentiments of our subscribers are becoming in accord with you own, we shall then, as above stated, decide whether to continue our journals without advertising or discontinue them altogether. Very truly yours,

F. A. Davis Company.

Is it not time that physicians let publishers of medical journals know their opinion regarding the advertising of nostrums? This firm says that their "opinion is that the mass of the profession are not in sympathy with the views which you [I] express." Are they correct? If not, is it not time for us to let them and other publishers know it? Very respectfully,

W. K. McCoy, M.D.

[Editor's Note:—If every physician would take the trouble to do as Dr. McCoy did, there would soon be a radical change in the advertising pages of many of our journals, and the most effective blow would be struck at the nostrum evil that it is possible for the profession to strike. Every physician will acknowledge that if the newspapers should refuse to accept the alluring advertisements of fraudulent "patent medicines," the fraudulent "patent medicines" would become a minus quantity. If medical journals should stop publishing advertisements of nostrums, nostrums would soon cease to exist, or nearly so. The F. A. Davis Company says that The Journal of the American Medical Association carries the advertisement of Vin Mariani. The advertisement of Vin Mariani has not been in The Journal of the American Medical Association for five years.]

The Oppenheimer Institute and Its Endorsers.

Oil City, Pa., Sept. 27, 1906.

To the Editor:—The following is a copy of a letter to the *Literary Digest* and Mr. Wagnall's reply. The letter is so wholesome, and its tone on the whole so fair and candid, that I believe it should be given space in The Journal:

Oil City, Pa., Sept. 22, 1906.

Funk and Wagnalls, New York:

Gentlemen:—Your circular letter announcing the coming of a new magazine from your press, *The Circle*, and asking that I pledge my support to the new venture by filling and returning the "enclosed card" reached my desk yesterday. Coincidently, and with the same mail, the *Digest* and *Collier's* for to-day, September 22, were received.

It then occurred to me that I had before me a strange combination. On my right, its pages open on the last of the series, "The Great American Fraud," by Samuel Hopkins Adams, lay *Collier's Weekly*. On my left, its advertising pages given to the endorsement of the same, lay the *Digest*. Between the two, pleading, with a wealth of rhetorical diction, for my support, lay the letter.

Judging from its tone, together with the preliminary introduction of the magazine in embryo, the purpose seems plain, i. e., the uplifting of the home circle—hence the title, *The Circle*.

Assuming that a great many of the *Digest* subscribers belong to the medical profession, and as one of the class, I believe we should know in advance the policy which the advertising department of *The Circle* intends to maintain.

Will my sons and daughters in reading the advertising pages of this new magazine

"Find themselves stricken with fear and dismay,
Feeling God or the devil has led them astray?"

A question was then suggested, "Why have I never read an abstract of 'The Great American Fraud' in the *Digest?*" I turned to the *Digest* at my left for the answer. It says (see advertisement of the Oppenheimer treatment):

"The Alcoholic Craving, by Means of the Treatment, is Absolutely Removed in 12 to 48 Hours, and the Patient is Permanently Restored to a Normal Condition."

Impossible. Contrast this statement with the letter written to Oppenheimer by America's honored and loved Mark Twain, in which the Oppenheimer doctor is invited to put his business on a basis of common honesty, etc. Think of it! A man of Mark Twain's standing is moved to invite one, whose dishonest claims have found voice in the *Digest*, to put his business "on a basis of common honesty."

Turning again to the last of the series by Mr. Adams, we are shocked to learn of Mr. Wagnalls, of Funk and Wagnalls, lending his influence to the fake, and with "no personal knowledge of beneficial results or otherwise." Money makes fools of us all.

There is that about printers' ink which to the average mind suggests truth. A printed statement will be believed where a verbal one would perish in doubt. What a power this has given the press! How that power has been abused! What a pity to betray such unbounded confidence, such a trust. I am sure that *The Circle* will be a gem in the literary world; if its purpose is to elevate the home, it must necessarily follow that its advertising pages should be kept clean. Promise this, and my influence, small though it is, my voice, weak as it is, my money, scarce as it is, will be gladly given to welcome the coming of *The Circle*. Very truly your,

J. C. O'DAY.

NEW YORK, Sept. 26, 1906.

FUNK AND WAGNALLS COMPANY,
Office of the Vice-President.

Dr. J. C. O'Day, Oil City, Pa.

Dear Sir:—Your letter of 22d inst. is before me. Concerning my name used by an institution, I would say that I am not responsible for the partial statements made by others. When I wrote to Mr. Clemens last November I was particular to say that "my name was used at the beginning" (over twelve years ago) "of the institution *through misunderstanding. Some years ago I positively ordered the withdrawal of my name from the list of advisory directors.*" The original representations made me were quite different from what it seems the institution now is. There never was any money in it. Indeed, if any had been, I positively would have declined in the very beginning. I am not constructed in that way at all. Nor can you find my name anywhere else.

I am pleased to add that the advertising department of the *Literary Digest* has struck that institution off from its list of advertisers admissible to its columns. I am glad Mr. Adams has shown up the concern.

Thanking you for your good words in behalf of *The Circle*, I remain, Yours very kindly,

A. W. WAGNALLS.

The work of revelation that Mr. Adams has been carrying on in *Collier's* is having its effect, and we who claim to represent all that is high and good in the medical world should willingly encourage those who are giving their columns to the cause.

Very truly yours, J. C. O'DAY.

Interstate Reciprocity and Frauds in Medical Schools.

SAN FRANCISCO, Sept. 28, 1906.

To the Editor:—The September 15 issue of your esteemed JOURNAL contains a reply of Dr. Harison, secretary of the Michigan Board of Registration, to Dr. Tait of California (letter September 1), and to Dr. Harvey of Massachusetts (article August 25), both of whom consider that system as either pernicious or dangerous, at least under present conditions.

The California statute provides for reciprocity in the discretion of the board of examiners, but the board has thus far remained outside of the reciprocity fold, although often invited to enter. It may interest the profession to know that the reciprocity clause of the California statute was before the Supreme Court of that state in the case, Ex Parte Gerimo, decided on in 1904. Counsel of Gerimo, an ex-judge of the court, attacked the law on the ground of the alleged unconstitutionality of the clause in question. Dr. Harison himself has pronounced against the constitutionality of the particular clause, assigning as his reason that it fails to recognize the so-called rights of practitioners licensed without examination under the former legislation of other states. This objection was directed by the ex-judge against the entire act. The Supreme Court, however, brushed the objection aside, holding that the reciprocity provisions were not an integral part of the statute; that they might be unconstitutional without impairing the validity of the remainder of the act; in which event, the court declared, the effect would be to subject all applicants to the examination. Of course, if Dr. Harison is right in his contentions that the provision for reciprocity is unconstitutional, then all hope for reciprocity between California and her sister states is, under present conditions, gone; for certainly the Board of Examiners can not, at the instance of the enthusiastic apostles of that system, make the statute constitutional.

Dr. Harison distinguishes between absolute and what he is pleased to term restricted or individual reciprocity. The California act would seem to be broad enough to include both forms. Nevertheless, the discretion expressly conferred on the board would have to be exercised within the limitations of the statute, for in California, as elsewhere, the right to reciprocate is derived from the statute. In the language of the act itself, the requirements of the other board must have been at the time of issuing the certificate, in no degree or particular less than those of California at the time it is presented for registration. Is it certain that the requirements of the boards seeking to exchange certificates with California are in no degree or particular less than those of California at the present day?

In California the applicants are known to the examiner by number only, and the secretary can not be an examiner. Judged by the statutes, the ties of blood and of friendship, and more sordid considerations perhaps, would seem to be particularly strong with the medical alma mater, and in this state the legislature has surrounded even the Board of Examiners, although chosen by the profession, with safeguards against fraud. In California the examination of candidates is entirely in writing and the papers must be filed. Any state anxious to reciprocate with California may thus readily ascertain whether the standard of medical knowledge exacted by that state is fully up to her own. Dr. Harison says that under a reciprocity agreement the boards may and are expected to go behind each others' certificates. Michigan, he declares, exercises her right to go behind credentials. Now, if it is advisable that the credentials of an individual applicant should be reinvestigated, why is it not equally advisable that the reciprocating board should have the examination papers of the applicant before it, for without such an inquiry how may it determine whether or not he possesses the qualifications which would have been demanded of him had his application been an original one? All this greatly multiplies the labor of the boards, and furthermore, it is contrary to the spirit and purpose of reciprocity. It is not reciprocity at all.

The California board has up to the present time doubted the legality and advisability of reciprocity between herself and the states willing to exchange certificates with her. Nevertheless, she has always been willing to stand shoulder to shoulder with her sister boards in the task of providing competent physicians for the people. She has not favored reciprocity because it looked too much like abdication and surrender of sovereignty when absolute, and as entailing arduous duties and apparently almost impossible of conscientious fulfillment, when restricted and individual. In place of the doubtful advantages and the dangerous tendencies of reciprocity, so clearly illustrated by Dr. Harvey in his admirable paper, California has endeavored to bring about a system of coöperation between boards of examiners for the common good of the profession and the people, whose interests are, after all, identical. Believing that insufficient medical education was the disease responsible for boards of examiners, the California board has sought to take the evil at its source as far as the law permitted it, and two years ago invited interboard coöperation in the matter of the investigation of medical diplomas. The board instructed its secretary to forward to other boards the results of its investigation of credentials, inviting similar information in return. Numerous instances of grave irregularities and even fraud on the part of supposedly high-grade colleges were reported by California. In response a few boards approved of the "plan of reporting candidates failing at the examinations!" None sent any information relating to investigation or rejection of diplomas. What wonder, then, that the impression that eastern boards, Michigan among the number, still failed to go behind diploma and affidavit, so universally the practice under the old régime, should prevail in California. Dr. Harison has neither published nor furnished us with statistics to the contrary.

The California board lays great stress on the investigation of credentials, in obedience to the state statute; and, before reciprocity with other boards can be considered, the members of the board would certainly wish to know whether similar functions are exercised by the boards seeking to reciprocate with California, and also which boards go behind the applicant's affidavit as to his preliminary and medical education.

On behalf of the board I would like to inquire the extent of the rejection of diplomas, if any, and whether any case is within their knowledge, where a certificate procured by fraud was canceled on that ground.

WILLIAM C. TAIT,
Attorney for California Board of Medical Examiners.

SAN FRANCISCO, Sept. 21, 1906.

To the Editor:—September 1 you published a letter by Dr. Dudley Tait in which statements were made derogatory to the good name of the College of Physicians and Surgeons of San Francisco. Each and all of those statements that in any way reflected on the college mentioned were incorrect. Regarding this case Dr. Tait secured no information and made no effort to secure information from the college authorities. He ignored the fact that this student secured advanced standing on good and sufficient credentials, and took his required work in the summer courses which this college was then conducting. He ignored the further fact that this student was in attendance in the freshman and sophomore years. I have no desire to infringe on your space, but I ask the profession to reserve judgment until both sides are heard. To go into details here would require more space than you are probably willing to grant. Any one who desires the truth regarding the matter may obtain it by writing to me. D. A. HODGHEAD,

Dean, College of Physicians and Surgeons of San Francisco.

Internal Administration of Antitoxic Sera.

EAST ORANGE, N. J., Sept. 21, 1906.

To the Editor:—May I inquire if any readers of THE JOURNAL have administered antitoxic serum in other ways than by subcutaneous injection, and if so, what has been their experience? In England and elsewhere it has been demonstrated clinically that serum given *per os* or *per rectum* is effective, yet one seldom or never hears of these methods being practiced in this country. As the question is of considerable practical importance, it may be interesting to refer to some of the literature on the subject which justifies the change of method.

Within the last few days it has been announced that Professor Behring's latest remedy against tuberculosis, called tulase, is about to be given an extensive trial in the hospitals of France and Germany, and, by his direction, it may be introduced into the system either by subcutaneous injection or by swallowing. This is in accord with the experimental work of others. Figari (*Berlin klin. Woch.*, Jan. 18, 1904), experimenting with the blood of animals immunized against tuberculosis, found that it contained substances which administered to guinea-pigs internally in the form of a powder, raised the agglutinating power of their blood serum and antagonized the action of tuberculous toxins. The same effects were produced by him in the human subject. Roncagliolo administered a similar serum to his patients internally, and also claims to have increased the antitoxic power of the blood with an encouraging therapeutic effect (*Medical News*, Feb. 27, 1904, page 403).

Sera are also efficacious when given *per rectum*. In the London Temperance Hospital, the administration of various sera by rectal injection has been practiced for the last six years, and it has been found they have precisely the same effect as when injected subcutaneously; the action seems equally rapid, while the danger of spreading inflammation and local abscesses at the site of injection is removed (*Lancet*, May 5, 1906).

In an article on "The Treatment of Malignant Endocarditis by the Rectal Administration of Antitstreptococcic Serum," a writer states that he has used this serum in more than 200 cases of septic infection of various kinds, but found that the usual method of injecting the serum under the skin was open to objection. It was so painful that patients, especially if they were stout, dreaded the injection, and it was liable to be followed by rashes of the skin and joint affections. The administration of the serum per rectum was therefore tried, and the result has been so satisfactory in over 25 cases as to lead to the abandonment of subcutaneous injection of the serum (Ib., April 21, 1906, p. 1103).

In a communication on "The Use of an Antistreptococcic Serum in Gonorrheal Infections and in Certain Cases of Purpura Hemorrhagica," Fenwick and Parkinson state that during the last two years they have never encountered a genuine example of gonorrheal rheumatism, either in hospital or private practice, that was not immediately benefited by the serum given per rectum. The effects were immediate, pain being relieved after the second dose, and the tenderness and swelling of the joints rapidly subsiding after the third (*Lancet*, May 5, 1906, p. 1244).

Clinical evidence of the value of antidiphtheritic serum when given by the mouth is furnished by the communications of various physicians to the medical journals (see "Progressive Medicine," Sept. 5, 1905, p. 30). The experience in every case is very similar. One physician relates that two years ago, while injecting the serum, something went wrong with his syringe, and the serum was given by the mouth, with the very happiest results as compared with his previous orthodox cases. Since then he has never used the syringe for this purpose. All his cases were verified by bacteriologic examination (*Brit. Med. Journal*, Dec. 31, 1904, p. 1751). For eight years Paton (Ib., May 5, 1906, p. 1032) has been using by the mouth serums both normal and the product of immunity, with remarkable therapeutic results, and the English branch of Parke, Davis & Co. has for years supplied him with a low potency antidiphtheritic serum especially made for oral use.

As to the objection that the digestive juices destroy the antitoxin before it can be absorbed by the system, recent experiment proves the contrary.

"At the last meeting of the Society of Biology held July 28, 1906, M. Catacuzene and M. Riegler communicated a paper on 'The Toxic Phenomena Following the Administration, *per os*, of Dead Glanders Bacilli.' They had observed that the intrastomachal injection of dead glanders bacilli gave rise to grave symptoms in guinea-pigs, whether young or full grown. The symptoms were those of poisoning followed by death at longer or shorter intervals, or by recovery according to the dose of microbes employed. The preparation of bacilli employed was a culture on glycerin agar, emulsionized in alcohol, in which the bacilli died in a few hours. This emulsion was then centrifuged and the dead bacilli were dried *in vacuo*. When injected into the intestine the dead bacilli gave rise to toxic symptoms varying in gravity with the size of the dose. Not only the soluble portions of the substance, but the very bodies of the bacilli themselves passed out through the intestinal walls and could be detected in the lymphatic glands, in the spleen and in the lungs, in which last organ they produced foci of bronchopneumonia. Small doses given by the mouth produced a tolerance for the poison, provided that three months were allowed to elapse between two doses." *Lancet*, Sept. 8, 1906, p. 688.

To the bacteriologist who injects his serum into guinea-pigs, horses and other of the lower animals, the method employed is a matter of indifference; but to the general practitioner who deals with nervous, excitable children, or with adults who dread the slightest pain, be it only the prick of a needle, it is often an advantage to be able to administer remedies by the mouth instead of subcutaneously, and there is the further advantage of not having to fear the disastrous results which sometimes have followed the injection of an impure serum; at least, this danger is greatly diminished if not actually abolished.

EDWARD M. MERRINS, M.D.

Plaster-of-Paris Dressings.—Dr. R. O. Meisenbach, in the *American Journal of Orthopedic Surgery*, June, has investigated the properties of plaster-of-Paris and brings out some important practical conclusions. The plaster should be manipulated during the initial set, but not after the actual setting has begun. The practice of completing the plaster dressing by rubbing either water or plaster cream on it after the actual set has taken place is entirely wrong, he declares, and tends to weaken rather than to strengthen the dressing. Sodium chlorid tends to hasten the setting, but weakens the strength in proportion to the amount added; dextrin increases the strength, but lengthens the time of setting. Starch in small amounts also increases the tensile strength. Portland cement strengthens the bandage in all its essentials. It also renders the bandages more porous, which permits their being worn with greater comfort and for a longer time.

Miscellany

Leukemia Treated Successfully with Arsenic.—In the London *Lancet*, Aug. 18, 1906, F. L. Dickson reports the case of a man, aged 24, who had an acute, painful enlargement of the inguinal, right axillary and posteervical glands with slight increase in dulness of the splenic area. The case was diagnosed (after blood examination) as one of acute or subacute lymphatic leukemia and a fatal prognosis was given. Dickson administered liquor arsenicalis, 5 minims, three times a day, and after three days the glandular swellings were less and there was marked improvement in the condition of the blood. The dose of the liquor was increased rapidly to 15 minims, and then gradually diminished. In about two months' time the patient made a complete recovery.

Alcoholism.—In an address given before the medical society of Munich (rep. in *Med. Klinik*, April 1, 1906), Kraepelin credits nearly one-half of the admissions between November, 1904 and November, 1905, to the new psychiatric clinic of that city to alcohol; of the imbecile, 42.9 per cent.; of the epileptics, 65.1 per cent. among the males and 28.5 per cent. among the females; of the manic-depressive cases, 43.5 per cent of the males; of the traumatic psychoses, 23.1 per cent.; in arteriosclerosis, 64 per cent. of the male cases, and of the paretics, 51.9 per cent. in men and 43.5 per cent. in women. With the elimination of alcohol, he thinks, one-third of the cases of paresis could be avoided. Beer drinking seems to be responsible for alcoholic dementia to a large extent in Munich. Kraepelin believes in educational work against alcohol, beginning in the school, and the encouragement of total abstinence.

Diagnosis of Stomach Disorders.—Burdick (*American Journal of Clinical Medicine*) says that in treating stomach troubles the physician should first attempt to answer the following questions: 1. Might the symptoms be caused by any trouble exterior to the stomach, and if so, what? 2. Is the stomach normal as to size and location? 3. Is there food stagnation—in other words, does the stomach empty itself with reasonable promptitude? 4. Are the secretions normal or abnormal? 5. Are there evidences of inflammatory change or other morbid conditions of the mucosa? Preceding this inquiry he should ascertain the family history, the duration of the disease, coexisting affections, the presence and character of pain, and effect of eating and of alkalies on it, conditions of the occurrence of nausea or vomiting, location of tenderness, and the condition of the bowels. The routine attention to these points renders diagnosis and treatment much less difficult, and avoids mortifying mistakes.

Human Sympathy Doctor's Highest Need—A Layman's View.

The following by Chancellor Andrew S. Draper, superintendent of education, New York, appeared in the Chicago *Tribune* as a "lay editorial":

It is too bad that people seem so unable to get rid of a doctor who has become a piece of the family bric-a-brac, when they really want to. The only national society yet to be organized which I can think of, is one which will give the members courage to get rid of physicians of whom they have tired and who have more nerve than they themselves have. If one doesn't like a lawyer he goes to another with his next case, but if he doesn't like his physician he holds on to him with a sternness which philosophy never has explained and experimental psychology has never yet solved. If men and women were not so subject to clap-trap and pretense, they would have better health, pretenders would not be so common nor so persistent, and physicians of worth would be recognized more widely and more uniformly regarded. There is room here for just one more philanthropic national organization, and we ought all to give support to one that would take this good cause in hand.

It needs no mere theory and no bare logic to show that science and sympathy must go together in the successful practice of medicine. The life of every successful physician makes it obvious enough. The lower ranks of the profession are full of men who blunder along and hold on to a weakling or an unfortunate with all of the persistence which credulity permits; but the upper ranks of the profession hold the really successful men in whom human sympathy unites with learning to develop the great soul whom the world recognizes on the instant and for whom it always is eager to remove its hat. The men who are capable of service and who are anxious to serve are the only men worthy of recognition in the medical profession.

And all of us have some sort of claim on the most eminent and successful medical men, and the qualities that have made them successful make them respect it. One who has served whoever called, for small fees or no fees, at all times of day or night, and has come to the time when he can do it no longer and must of necessity discriminate and may in a way fix his own terms, no longer may be bound to respond to every call, but he is bound to have youngsters around him who will, and to keep them straight.

They tell a story of my friend, Dr. Newell Dwight Hillis of Plymouth church, that I do not vouch for, but that easily may be true. It is said that when Dr. Hillis was serving a small church in Evanston, Mrs. Hillis being desperately sick, the young preacher called an eminent specialist, Dr. John C. Webster of Chicago, whose ministrations were successful. Dr. Hillis worried about the bill and after a little went over and said: "Dr. Webster, I can not pay you at once, but I want to know what your bill is, and I will soon arrange it. Here is $50. It is all that I can pay now. Money never can discharge my debt for such eminent services as yours. If you will tell me the amount of your bill I will pay it in full just as soon as I can." Dr. Webster replied: "You keep your money. I owe you as much as you do me. You have made as good in theology as I have in medicine. I will keep Mrs. Hillis out of heaven as long as I can, if you will keep me out of hell as long as you can."

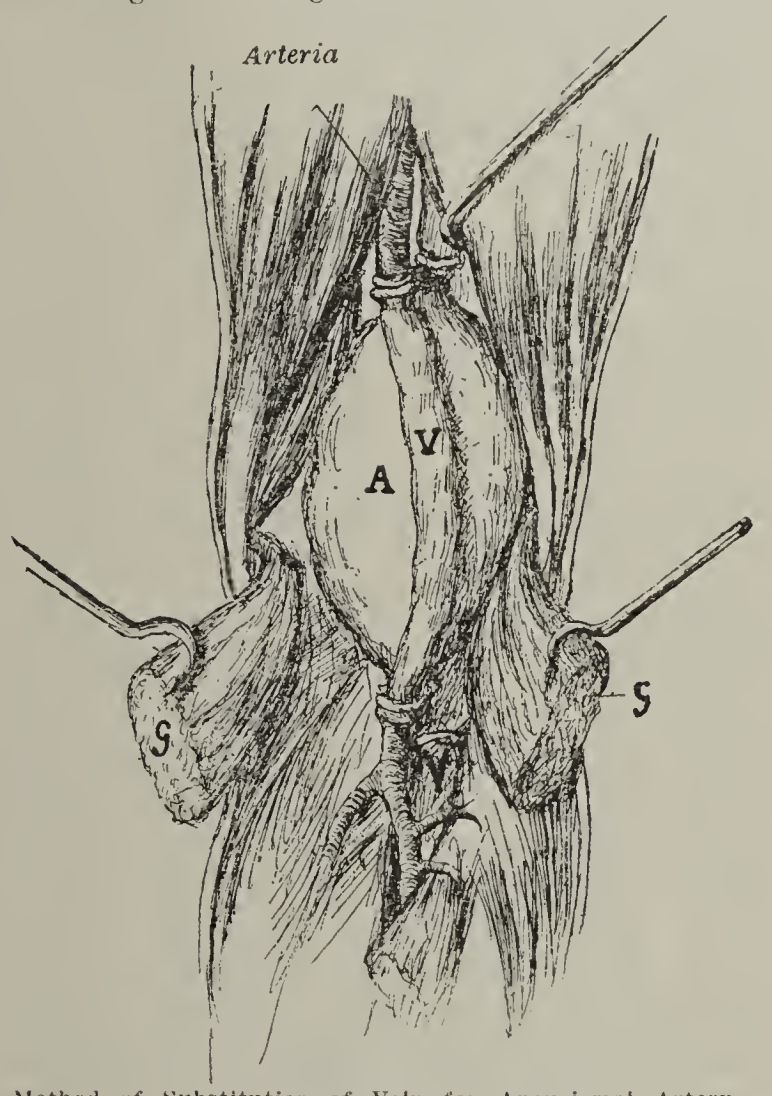
The medical profession is bound to be more than clean and pure and square, more than scientific, and more than sympathetic. It must be steady, cheerful, courageous, optimistic and confident. It is bound to put courage into people to the end that doctor and patient may work together in meeting exigencies and finding the way back to normal health. Half the worth of half the doctors is in their buoyant and bracing temperament.

The medical profession is more than all that; it is a patriotic profession. It is expert on the principles which the state must observe to be healthful and concerning the practices which society must prevent if we are to live in crowded settlements with any degree of comfort and safety. We look to this profession to set up the machinery which may assure the common health and to provide schools, laboratories and hospitals, always expensive, which will make modern scientific knowledge available to the mass and meet the needs of the many who must be overtaken inevitably by accident and disease under the swiftly moving and dangerous conditions of our complex life.

Chloroform Anesthesia.—A. Wilson (*Medical Chronicle*, August, 1906), discusses certain types of accidents from chloroform, which are not well recognized, directing attention particularly to two points. 1. Serious failure of the circulation and impending dissolution are indicated, not by gradual cessation of the respirations, but by exaggerated respiratory movements. 2. In a large class of cases, raising the patient into the sitting position is a most powerful aid toward recovery. Attention was first directed to this procedure and to the reasons for it by Dr. Leonard Hill. These chloroform accidents may result from: 1. Exaggerated action of the muscles in the stage of excitement actively interfering with respiration and circulation. 2. Paralysis or loss of tone of the accessory respiratory muscles so deranging the patency of the respiratory passages that respiration is seriously interfered with. Circulation is also hampered by deficient aeration of the blood and engorgement of the right side of the heart. 3. The specific paralyzing action of the drug on the fundamental nerve centers in the medulla. These accidents happen from some interruption in the orderly progressive course of the narcosis, whereby the circulation or respiration is paralyzed at an early stage of the administration. In the first class of accidents extreme muscular exertion caused by

exciting dreams results in sudden heart failure, cyanosis, possibly lividity, with deep, sometimes stertorous, breathing. The signs of danger are the sudden cessation of the struggles and the deep inspirations, associated with dilated pupils and twitching of the arms. The patient should be raised into a sitting position, and the thorax compressed while he is in that position. By alternately raising and lowering the patient, and the steady practice of artificial respiration the whole time, in the majority of cases recovery will ensue, provided always that treatment is begun promptly, whereas if the patient is kept in the recumbent position the danger is increased. In accidents of this class the onset of the failure of circulation is sudden, and the cause mainly due to the paralyzing action of the chloroform on the heart, and partly to the obstruction to the respiration impeding the circulation. It occurs at an early stage of the administration, often before the patient is deeply under. Cases of the second class occur in the later stages of administration from some obstruction to the respiration such as a faulty position of the head and are indicated by less pronounced symptoms. Still Wilson is convinced that if these cases of so-called primary respiratory paralysis were carefully observed, an acceleration of the respiration or signs of increased respiratory activity would be found to precede the final paralysis of circulation and respiration. The symptoms of danger are increased pallor of the face, dilatation of the pupils, exaggerated respiratory efforts, and absence of the pulse. The treatment is the immediate application of artificial respiration, removal of the obstruction to the air passages, and raising the patient into the sitting position to empty the heart. The specific toxic action of chloroform is usually shown first by its action on the circulation and especially on the vasomotors. By this vasomotor paralysis blood accumulates in the splanchnic area and the patient is practically bled into his own vessels and dies with all the symptoms of sudden hemorrhage. In a typical example there is sudden increased activity of the respirations, pallor, dilatation of the pupils and failure of the pulse. Wilson thinks that quickening of the respiration is evident before any change can be detected in the pulse. This condition may occur at any stage of the administration. The symptoms vary according to the degree of anesthesia reached and the condition of the patient. If it occurs early the suddenly-produced anemia will give rise to anemic convulsions. With increased narcosis the muscular disturbance is less, but there is always increased activity of the respiration. This is a gross sign that can not be overlooked, though it is nearly always misinterpreted, he declares. The indications for treatment are to encourage the flow of blood to the heart and nerve centers, to stimulate the heart to renewed contractions, and to restore the blood pressure. With this object in view the patient's head should be placed in a dependent position, the end of the table raised, and energetic artificial respiration performed. Artificial respiration should be applied in such a way that the chest is firmly compressed, so that some pressure is brought to bear on the heart; the intention being not so much to get air into the chest as to stimulate the heart and to raise the blood pressure. The patient ought also occasionally to be raised into the sitting position to prevent the blood stagnating in the vessels of the brain. Prompt treatment, Wilson states, offers good chance of recovery, but exhaustion and rigid chest walls are unfavorable to success. The failure of circulation is so sudden that there is little prospects of drugs being absorbed in time to be of any use. It is better, therefore, Wilson thinks, to rely on artificial respiration.

Substitution of Vein for Artery in Aneurism.—The *Siglo Mëdico*, Sept. 8, 1906, contains an illustrated description of the successful treatment of a popliteal aneurism by plastic substitution of the popliteal vein for the artery. The operation was performed by J. Goyanes, professor of surgery at Madrid, who credits the idea to Prof. San Martin of Madrid, in 1902. This is the first time it has been applied in the clinic, but experiments on animals had amply demonstrated its feasibility. It has the advantage over other methods, Goyanes says, that the circulation through the artery is retained without trusting to collateral circulation. The sacrifice of the vein is comparatively unimportant at most points where aneurisms are liable to occur. The patient in the present case was a woman of 41, with an extensive fusiform aneurism of the left popliteal artery, considerable arteriosclerosis and a history of syphilis and some alcoholism. The operation included ligature of the artery above and below the aneurism, with compression above. The vein was also ligated above and below the level of the aneurism, and both artery and vein were cut inside the ligatures. The central stump of the artery was then united with the peripheral stump of the vein above the aneurism, and again a similar anastomosis was done below the aneurism. The latter was thus cut off completely from the circulation which passed through the interposed tunnel of vein which lay along the aneurism like a bridge over it. The stumps were sutured by being drawn into the shape of a prism by Carrel's technic. The artery was clamped with forceps above and below the seat of the operation. The lower forceps were taken off first, and then the ones above the aneurism, and lastly the digital compression of the femoral artery in Scarpa's triangle. The blood rushed briskly through the interposed tunnel, and circulation was restored throughout the leg. A fine stream of blood issued



Method of Substitution of Vein for Aneurismal Artery.

from a small accidental puncture hole in the vein, but was arrested at once with a suture. The nerve had been found adherent to the aneurism, which explained the pain previously experienced. The wound healed smoothly, although there was a trifle of suppuration for a few days, evidently due to infection of some gelatin which had been injected as a last resort before attempting surgical intervention. Goyanes thinks that this double arteriovenous anastomosis may possibly have a brilliant future. It might be supplemented by extirpation of the aneurism according to Purmann's technic, especially in case the vein is adherent. The internal saphena seems amply able to take charge of the return circulation in the limb. In the illustration reproduced, A represents the aneurism, V the bridge of vein interposed in the artery in place of the aneurism, and V′ the ligated vein below. Goyanes reviews the various other methods of anastomosis of blood vessels in vogue, and states that he has used the Payr technic of anastomosis over a cylinder of absorbable magnesium and

found it very safe and simple. The chief drawback is that several millimeters of the vessel have to be sacrificed. His comments on the Matas method indicate that he is not fully acquainted with the principles that govern the technic, or the clinical evidence that has already accumulated in its favor. (See The Journal, Sept. 29, 1906, pages 990, 1017 and 1019.)

Application of Physical Chemistry to Pharmacology.—The importance of physical chemistry to the pharmacologist and physician is shown by T. S. Price in the *Pharmaceutical Journal*, July, by illustrations drawn from the comparative toxicity of different salts as indicated by their power to kill anthrax spores. It is found that mercuric cyanid is far less poisonous than mercuric chlorid, although we should expect the contrary, because it contains the radical of the very poisonous hydrocyanic acid. The explanation of the apparent anomaly is found in the fact that the electrolytic dissociation of the cyanid is less than that of the chlorid. When a compound such as chlorid sodium or sulphate sodium is dissolved in water it separates to a large extent into atoms or groups of atoms, one positive and the other negative, which pass to opposite poles when acted on by the electric (galvanic) current and which, therefore, have been named negative and positive ions, and the process of separation in this way has been called ionization or electrolytic dissociation. A solution of chlorid of sodium contains a mixture of sodium ions and chlorin ions which the electric current separates, the positive sodium ions going to the negative pole and the negative chlorin ions appearing at the positive pole. In the case of sulphate of sodium the separation is into positive sodium ions and negative sulphate ions. The more concentrated the solution of a salt, the less the number of its molecules which separate into ions and the greater the dilution of a solution the more complete the ionization, i. e., the larger the proportion of the salt molecules which are broken up into ions. It has been found that acids which readily undergo ionization when in solution are more powerful as acids and have a correspondingly greater action on the tissues, as a rule, than those which ionize with difficulty. Thus hydrochloric acid ionizes readily and is a strong acid, while acetic acid ionizes less readily and is a weak acid. If in any way we could hinder the ionization of hydrochloric acid we could lessen its activity as an acid. For the weaker acids it appears that the extent of ionization decreases when a salt containing the same negative ion as that of the acid is added to the solution. The acidity of acetic acid is diminished by the presence of an acetate. Mercuric chlorid may be regarded in some respects as analogous to a weak acid. It is a compound of a comparatively weak positive ion with a strong negative one, and it exhibits an acid reaction to litmus paper. If an alkali chlorid is added to mercuric chlorid it is to be expected that the ionization of the mercuric chlorid will be restrained and hence its toxic activity reduced. Such is actually found to be the case, and the disinfectant power of the mercuric chlorid is diminished by the addition of an alkali chlorid such as sodium or ammonium chlorid in proportion to the amount of alkali chlorid added and to the strength of the solution. That is to say, the greater the dilution the greater the tendency to dissociation or ionization and the less the inhibition of ionization on account of the presence of sodium or ammonium chlorid. These additions, therefore, while increasing the solubility of the mercury salt, diminish to a limited extent its toxicity and disinfecting power. Practically, however, as the disinfectant is used in dilute solution a marked diminution of disinfectant power is not to be feared. Still more striking is the effect of the production of certain double salts of mercury or silver on the toxicity of these metals. Thus yellow mercuric oxid dissolves in potassium thiosulphate to form a solution containing a new combination which dissociates into potassium ions and those of a complex group containing each an atom of mercury. The mercury is no longer present as mercury ions and does not exert the activity of the ordinary mercury ion. The salt would be expected to be non-poisonous and such, in fact, is the case. Similarly the toxic effect of silver salts can be reduced by the addition of sodium thiosulphate: the Ag ion combines with the thiosulphate ion (S_2O_3) to form the complex ion AgS_2O_3, which is non-toxic.

Book Notices

Physiology and Therapeutics of the Harrogate Waters, Baths and Climate. Applied to the Treatment of Chronic Disease by W. Bain, M.D. and W. Edgecombe, M.D. Cloth. Pp. 300. Price, $2.60 net. New York: Longmans, Green & Co. 1905.

This work is based on experimental research and clinical observation, and will be found of most value to those who wish to employ the particular spring referred to. The action and therapeutic value of all natural mineral waters, however, is made clear by the introductory chapter which discusses the chemical and physical action of the waters, both within the body and experimentally. This elementary review of osmosis and electrolysis gives the reader a very much clearer understanding of the subsequent exposition of mineral waters in general, the Harrogate waters in particular. Section 1 is devoted to the pharmacology and the physiologic and therapeutic action, and Section 2 classifies the baths. Section 3 discusses the factors which determine climate, as, for example, temperature, humidity, rain fall, sunshine, winds, etc. Features of the town are briefly described, sanitary conditions, etc. The final section of the book is devoted to a detailed description of the chronic diseases which may be treated by the waters, baths and climate. The authors have logically paved their way for the presentation in tabulated form of the great variety of diseased conditions which have been benefited by the spa treatments. Other factors in the treatment, such as diet, exercise and drug therapy have not been lost sight of. We are glad to note that exaggerated claims of results, which are so commonly made for a treatment so diversified in its application, find an unusually small place in this book.

Physiology of the Nervous System. By J. P. Morat. Authorized English Edition. Translated and Edited by H. W. Syers, M.A., M.D., Physician to the Great Northern Central Hospital. With 265 Illustrations. Cloth. Pp. 680. Price, $7.50 net. Chicago: W. T. Keener & Co., 1906.

There is no subject in medicine which requires a more accurate knowledge of the anatomy and physiology than does the nervous system, in order to be able to reason out the pathologic conditions. The physiology of the nervous system, however intricate, must be fairly well understood by the teacher in order to aid the student to grasp this difficult subject. If this part of the student's instruction is neglected his interest in the clinical study of nervous diseases will necessarily be below the proper standard, as the pathologic reasoning must be based on a knowledge of the anatomy and physiologic relations of the parts involved.

In his researches and writings Morat has elucidated a great many theories and has given to the medical profession advances in the physiologic functions of the nervous system by going more deeply than former investigators into the functions of certain centers and, in some instances, by correcting the opinions of other writers. The chapter on "Superior Systemizations" is of special interest. The illustrations given are of value in connecting the clinical and pathologic findings with the physiology of the part involved. To those interested in the study of the diseases of the nervous system this work can be recommended.

Human Sexuality, a Medico-Literary Treatise on the Laws, Anomalies, and Relations of Sex, with Especial Reference to Contrary Sexual Desire. By J. R. Parke, Sc.B., Ph.G., M.D. (Late Acting Assistant Surgeon, U. S. Army). Cloth. Pp. 476. Price, $3.00. Philadelphia: Professional Publishing Company, 1906.

This is a valuable addition to the literature on the subject. It is a readable volume, and, for most practitioners, will be found more satisfactory than many of the elaborate works which treat of the various phases of the subject in more detail. It presents a summary of what is known of the customs of all peoples as regards sexual selection, betrothal, marriage, divorce, etc., and the relation of the sex problem to modesty, vanity, poverty, wealth, morality, Christianity, civilization, virtue and the welfare of the race. In the main, the attitude of the author is judicial, broad-minded and helpful, but he has been led far astray in his endeavor to treat the subject with entire disregard of so-called prudery. Sexual matters should be treated with perfect frankness, particularly in a work for

physicians, but we can not justify the author in his facetious and flippant manner of telling unnecessary stories and of illuminating some pages with headlines of questionable wit. It is regrettable that an author whose general attitude is so evidently wholesome should thus mar his book. The publisher advertises that the book "reads like a novel," which, we submit, is hardly necessary in such a work.

CLINICAL BACTERIOLOGY AND HEMATOLOGY FOR PRACTITIONERS. By W. D. Emery, M.D., B.Sc., Clinical Pathologist to King's College Hospital and Pathologist to the Children's Hospital, Paddington Green. Cloth. Pp. 240. Price, $2.00. Philadelphia: P. Blakiston's Son & Co., 1906.

The present edition of this work contains many improvements over the previous edition. More space is given to the bacteriologic examination of materials from special parts of the body and to the examination of blood, especially with reference to the diagnosis of disease. The technical part of the work has been rewritten to include descriptions of new methods and new apparatus.

HYGIENE OF PREGNANCY. By W. B. Jennings, Ph. B., M.D., Attending Physician (O.P.D.), St. Mary's Free Hospital for Children. Flexible Leather. Pp. 48. New York: Medical Review of Reviews.

This monograph is intended for the use of nurses and expectant mothers. The language is simple and free from technical terms.

Marriages

JOSIAH CALVIN MCCRACKEN, M.D., Canton, China, to Miss Ellen Newpher of Cleveland, Ohio, September 12.

DAVID HENRY FITZGERALD, M.D., Fond du Lac, Wis., to Miss Lillian Virginia Gannon of Chicago, October 3.

J. H. DUNCAN, M.D., Killbuck, Ohio, to Miss Alberta Esther Dugan of Mechanic Township, September 19.

ANDREW MOYNIHAN, M.D., Sauk Center, Minn., to Miss Emma Collins of St. Paul, September 25.

HARRY R. BROWN, M.D., Chillicothe, Ohio, October 3.

Deaths

Eduardo Andrade, M.D. University of Georgetown, Medical Department, Washington, D. C., 1894; a member of the American Medical Association; bacteriologist of the State Board of Health of Florida; a member of the Duval County (Fla.) Medical Society, and one of the most brilliant and popular young practitioners of Jacksonville, Fla., died suddenly in New York City September 20, aged 33. The State Health Officer of Florida pays the following tribute to the memory of Dr. Andrade: "Words can not convey nor can human tongue express the grief which the State Board of Health feels in the loss of its talented associate, who, although young in years, nevertheless possessed the mental qualities of an accomplished and polished scholar and scientist, and typified in every act of life all the attributes of a Christian gentleman." The Jacksonville Board of Trade and the Duval County Medical Society appointed special committees to attend the funeral.

William K. Otis, M.D. College of Physicians and Surgeons in the City of New York, 1885; a member of the American Association of Genitourinary Surgeons, American Urological Association, New York Academy of Medicine, St. Luke's Alumni Association; Hospital Graduates Club; New York County Medical Society and Medical Association of the City of Greater New York; professor of genitourinary diseases in the New York School of Clinical Medicine; attending surgeon to St. Mark's Hospital and the West Side German Dispensary; consulting surgeon to the City Hospital and the Throat and Nose Hospital, died suddenly at his home in New York City, September 22, from pneumonia, aged 36.

Walter Clarke Jackson, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1852; a member of the Alabama State Medical Association before the Civil War, one of the reorganizers of the association in 1868, and for several years its treasurer; once president of the Medical and Surgical Society of Montgomery; one of the ten physicians who in 1872 organized the Social Medical Club in Montgomery, died at his home in Montgomery, September 22, after an illness of only three days, aged 79.

Albert R. Ong, M.D. Columbus (Ohio) Medical College, 1877, a member of the American Medical Association, one of the most prominent physicians of Martins Ferry, Ohio; for a number of years professor of mathematics and astronomy and vice-president of Richmond College; a member of the Board of Pension Commissioners and chief of the Volunteer Fire Department of Martins Ferry, died suddenly at his home in that city, September 22, from acute gastritis, aged 58.

Francis Perley Taylor, M.D. Pennsylvania Medical College, Philadelphia, 1857, L.R.C.P., Edinburgh, 1865, and F.R.C.P., Edinburgh, 1871; one of the founders and a constant patron of the Prince Edward Island Hospital, and for many years a member of the Charlottetown Board of Education; one of the most prominent and beloved practitioners of Prince Edward Island, died at his home in Charlottetown, September 17, after an illness of only half an hour.

Andrew Fine, M.D. Toland Medical College, San Francisco, 1866; one of the best known practitioners of Oakland, Cal.; for 24 years a member of the California State Board of Pension Examiners; consulting physician to the Home for the Adult Blind, and for several terms a member of the Board of Education of Oakland, died at the home of his son in that city, September 20, after a long illness, aged 63.

John M. Buckingham, M.D. Jefferson Medical College, Philadelphia, 1852; a member of the American Medical Association, Ohio State Medical Association, Southwestern Ohio Medical Society and Clark County Medical Society; a member of the staff of the Springfield City Hospital, and health officer of Springfield, Ohio, died suddenly in that city, September 27.

Thomas H. Helsby, M.D. University of Maryland School of Medicine, Baltimore, 1859; surgeon in the Fifth Army Corps during the Civil War, and for 30 years thereafter a practitioner in Williamsport, Pa., died at his home in Baltimore, September 26, aged 71.

Thomas F. M. Phelan, M.D. Bellevue Hospital Medical College, New York City, 1882; city physician of Orange, N. J., in 1891, and health officer, died from general paresis, at a sanitarium in Worcester, Mass., September 11, after an illness of several years.

William B. Foster, M.D. Medical Department of the University of Louisiana, New Orleans, 1850; one of the oldest and most highly respected physicians of Hope, Ark., died September 14, at a sanitarium in Texarkana, after a surgical operation, aged 84.

Charles E. C. Beach, M.D. Fort Wayne (Ind.) College of Medicine, 1905; interne at Hope Hospital, Fort Wayne, in 1903 and 1904, died at his home in Coesse, Ind., September 20, from cerebral congestion, after a short illness, aged 27.

George S. Rittenhouse, M.D. Jefferson Medical College, Philadelphia, 1880, a member of the Cecil County Medical Society, died at his home in North East, Md., September 22, from tuberculosis, after a lingering illness, aged 49.

Samuel Wesley Lippincott, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1897, of Phildelphia, died at the University Hospital, September 22, from hemorrhage due to gastric ulcer, aged 36.

William D. Kerr (Years of Practice, W. Va.), for forty years a practitioner of that state, while making a professional call near his home at Huntington, Dec. 13, 1905, was struck by a railway train and instantly killed.

Thomas C. Dodson, M.D. New York University, New York City, 1849, of Mount Vernon, Texas, died suddenly September 18, at the home of his daughter in Tishomingo, I. T., from heart disease, aged 78.

Daniel M. Skinner, M.D. New York University, New York City, 1858; a surgeon in the Navy during the Civil War, died at his home in Belleville, N. J., September 26, from cerebral hemorrhage, aged 71.

G. W. Wilson, M.D. University of Nashville, Medical Department, 1902, of Westmoreland, Tenn., died at a hospital in Nashville, September 15, five days after an operation for appendicitis, aged 43.

Ambrose H. Martin, M.D. Jefferson Medical College, Philadelphia, 1885; for a number of years a practitioner of Pendleton, Ore., died in Portland, Ore., September 18, after a surgical operation.

Higgins C. Smith, M.D. Bellevue Hospital Medical College, New York City, 1869, died at his home in Broadwell, Ky., September 17, from disease of the stomach, after a long illness, aged 70.

James C. Miller, M.D. Jefferson Medical College, Philadelphia, 1885, of Jeannette, Pa., died at the Westmoreland (Pa.) Hospital, September 22, from pneumonia and uremia, aged about 50.

William J. Cox, M.D. Kentucky School of Medicine, Louisville, 1894, of Uniontown, W. Va., died at the North Wheeling Hospital, Wheeling, W. Va., from nephritis, September 15.

M. M. T. Hutchinson, M.D. Medical College of Georgia, Augusta, 1859, for three years a member of the School Board of Thomasville, Ga., died at his home in that city, August 21.

Richard Sanford, M.D. London (England) Hospital, 1849; assistant surgeon during the Yakima Indian War, died at his home in Glencoe, Ore., August 29, aged 83.

Albert L. Walker (Examination, Michigan) died from accidental poisoning, at his home in Ann Arbor, Mich., August 31, after an illness of two days, aged 57.

H. E. Babcock, M.D. Albany (N. Y.) Medical College, 1855, died at his home in New London, N. Y., September 20, after an invalidism of four years, aged 79.

J. Y. Campbell, M.D. Chicago Medical College, 1865, for 25 years a practitioner of Paxton, Ill., died at his home near Rochester, Ind., September 21.

George W. A. Collard, M.D. Hahnemann Medical College and Hospital, Chicago, 1880, died at his home in Bridgeport, Conn., September 18, aged 75.

Adam Orr, M.D. Queen's College, Cork, Ireland, 1862; M.R.C.S., Edinburgh, 1864; died at his home in Allegheny, Pa., September 25, aged 66.

William Jasper Packwood, M.D. University of Buffalo, Medical Department, 1876, died suddenly at his home in Buffalo, September 24, aged 54.

Oscar Alfred Fliesburg, M.D. College of Physicians and Surgeons, Chicago, 1885, died at his home in Minneapolis, Minn., September 12, aged 55.

George W. Davies, M.D. College of Physicians and Surgeons of Chicago, 1895, was found dead at his home in Waterloo, Wis., September 22.

Chauncey B. Howe, M.D. Syracuse (N. Y.) Medical College, 1861, of Seneca Falls, N. Y., died in the Geneva Hospital, August 27, aged 80.

Harvey Dunn, M.D. St. Louis Medical College, 1867, died at his home in Perry, Ill., September 11, after an illness of several years, aged 72.

Eva M. L. Scobell, M.D. Hering Medical College and Hospital, Chicago, 1899, died at her home in Chicago, September 11, aged 33.

J. J. Wilkinson, M.D. Philadelphia University of Medicine and Surgery, 1868, died at his home in Orland, Ind., September 6, aged 64.

Charles W. Pfeffer, M.D. Baltimore Medical College, 1883, died at his home in Baltimore, September 22, after a lingering illness.

William F. Wallace, M.D. Columbus (Ohio) Medical College, 1880, died at his home in Rochester, N. H., recently.

Deaths Abroad.

Hermann Cohn, M.D., the well-known ophthalmologist and hygienist, died at Breslau, September 14, aged 68. He began his scientific career with physics and chemistry, and then devoted himself to medicine, presenting theses in each of these branches of science. Since 1866 he has confined his efforts to ophthalmology and hygiene, and has won fame and honors in both. He has published more than 200 articles on subjects in these lines, besides a number of manuals and compilations of statistics, etc. His first important work was his famous study of the condition of the eyes of 10,060 school children, with suggestions for the hygiene of the eyes during school life. This was followed by "The School of the Future." "Tests for Vision," "How Can the School Combat Masturbation Among the Children"?- etc. One of his latest communications proclaimed the efficacy of radium in treatment of trachoma.

O. Vierordt, M.D., professor of internal medicine and pediatries at Heidelberg, died September 2, aged 50. He was stricken with cardiac paralysis while greeting the members of the German medical study trip as they were visiting his clinic on their rounds through Heidelberg.

W. Czermak, M.D., professor of ophthalmology at Prague, died September 8, aged 50. He has published numerous articles on his specialty, on the origin of glaucoma, corneal fistula, etc., besides a manual of ophthalmology and guide to operations on the eyes.

G. A. Morache, M.D., professor of legal medicine at Bordeaux, died recently, aged 69. He was sent by the French government to China and elsewhere on several special medical missions.

A. Högyes, M.D., director of the Pasteur Institute at Budapest, formerly professor of internal medicine, died September 7.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish name or address will be faithfully observed.

INFORMATION WANTED REGARDING PUBLIC CARE AND TREATMENT OF INSANE.

SALINA, KAN., Sept. 24, 1906.

To the Editor:—I am looking for a book or publication which will give me some practical information regarding public care and treatment of our unfortunates. Will you kindly help me toward this end? O. D. WALKER, M.D.

COUNTER-IRRITANTS IN PNEUMONIA.

WARSAW, VA., Sept. 12, 1906.

To the Editor:—1. When are the following counter-irritants indicated in pneumonia: (a) Blisters in lobar pneumonia? (b) Mustard plasters, poultices or paste in bronchopneumonia?

2. Will stallsties show a lower percentage of mortality or shorter duration of disease by their use? L.

ANSWER.—1. The question of the use of counter-irritants in pneumonia is one on which opinions differ widely. By many, the use of these remedial agents is regarded as entirely useless; others believe that particularly at the beginning of pneumonia, when there is severe pain, not only is relief from pain obtained by these local applications, but that in some way the course of the disease is modified. That pain may be relieved by the use of hot applications, poultices, plasters and blisters, we think can not be doubted. That lobar pneumonia or bronchopneumonia are modified in their course by such applications is not believed by clinicians generally; and often more harm than good is done by the pain and annoyance from the applications, from the mechanical interference with respiration caused by heavy poultices or plasters, and by alternate heating and chilling of the body due to poultices becoming cold. We know of no special indication for the use of these applications in broncho-pneumonia.

2. No.

TREATMENT OF "CANKER SORES."

LORAINE, ILL., Sept. 19, 1906.

To the Editor:—Will you kindly publish in THE JOURNAL a good treatment for canker sores of the mouth? X. Z.

ANSWER.—The expression "canker sores of the mouth" may cover a multitude of sins, from a dirty, sour nursing bottle causing sore mouth in an infant, to the mucous patches of syphilis. Therefore, a knowledge of the cause is of the first importance in the treatment. The cause may be purely local, as when a burn produces vesiculation in the mouth, or it may be practically entirely constitutional, as in syphilis. In the usual case, as seen in infants and children, a combination of both conditions commonly exists, and the more obstinate the case the more influential the constitutional element. Of the local causes, sour and improper foods, with a lack of cleanliness of the mouth, play the most important rôle. Of the constitutional conditions, scurvy, ricketts, syphilis, the depressed state following the acute infectious diseases, etc., are the most important. The treatment, therefore, must be both local and general. The food should be pure and sweet and such as the child can properly digest. It should be given cool because warm drinks irritate the mouth more than cold ones. With a clean camel's hair brush or fresh cotton swab the spots may be touched gently but thoroughly with a solution of from 0.5 per cent. to 1 per cent. of permanganate of potassium or a solution of from 1 to 2 per cent. of nitrate of silver. If the pain is so severe that the child can not be made to take any nourishment the sore spots may be carefully touched with a 2 per cent. solution of cocain, which will deaden the pain for the time being so that the child will nurse. This, of course, should only be used by the physician himself or by a perfectly competent trained nurse under his direction. A diet suitable to the age and condition of the child, at times with tonics, should be prescribed for the general condition. Syphilis, of course, requires its own specific treatment.

The Public Service

Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending September 29, 1906:

Kirby-Smith, R. M., asst.-surgeon, left Army General Hospital, Presidio of San Francisco, on 30 days' sick leave of absence, with permission to apply for two months' extension.

Hoff, John Van R., asst.-surgeon-general, relieved from duty as chief surgeon, Dept. of the Missouri, and will proceed to San Francisco, and take transport to sail Nov. 5, 1906, for the Philippine Islands, and on arrival at Manila will report in person to the commanding general, Philippines Division, for assignment to duty.

Girard, Joseph R., asst.-surgeon-general, relieved from duty as chief surgeon, Philippines Division and will proceed to San Francisco, on transport sailing from Manila in December, 1906, reporting on arrival in the United States to the Military Secretary of the Army for further orders.

Rhoads, Thomas L., asst.-surgeon, relieved from duty at U. S. Military Academy, West Point, N. Y., and ordered to Fort Crook, Neb., for duty.

Smith, Herbert M., asst.-surgeon, advanced to the rank of captain from Sept. 20, 1906.

Cox, Walter, asst.-surgeon, leave of absence extended two months.

Hoff, John Van R., asst.-surgeon-general, relieved from duty at camp of instruction at Fort Riley, Kan., and will return to his proper station at Omaha.

Barlett, C. J., asst.-surgeon, advanced to the rank of captain, from September 21.

Jones, Harold W., asst.-surgeon, will accompany 14th Cavalry from Sequoia and the General Grant national parks, to Presidio of Monterey, Cal., and report, on arrival, for temporary duty. Also to report by letter to commanding general of the department for further orders.

Carter, Wm. F., surgeon, granted leave of absence for one month, to take effect about October 6, with permission to apply for one month's extension.

Davis, Wm. B., deputy surgeon general, left Headquarters, Department of the Lakes, Chicago, on 21 days' leave of absence.

Ford, Clyde S., asst.-surgeon, will repair from New York City to Washington, D. C., and report in person to the Military Secretary of the Army for instruction in the matter of personal identification record.

Koerper, C. E., asst.-surgeon, granted thirty days' leave of absence.

Lynch, Charles, surgeon, general staff, leave of absence extended fifteen days.

Love, Albert G., asst.-surgeon, will accompany troops from Yosemite National Park to Presidio of San Francisco, on arrival at the latter post to report for temporary duty, also report in person to the commanding general, Department of California, for further orders.

Wakeman, Wm. J., surgeon, left Fort Thomas, Ky., on thirty days' sick leave of absence.

Wadhams, S. H., asst.-surgeon, will accompany Companies B and D, 4th Infantry from Fort Slocum, N. Y., to Fort Mackenzie, Wyo., instead of First Lieut. James D. Fife, asst.-surgeon, previously assigned to this duty.

Morris, Samuel J., asst.-surgeon, ordered to proceed from Fort Schuyler, N. Y., to New York City, and report in person to commanding officer, U. S. Army Transport *Sumner* for duty as transport surgeon.

Shellenberger, James E., contract surgeon, granted an extension of two months to his sick leave of absence.

Hutson, T. Ogier, contract surgeon, returned to Fort McPherson, Ga., from temporary duty at Fort Moultrie, S. C.

Hereford, John R., contract surgeon, ordered from Fort Caswell, N. C., to Fort Screven, Ga., for temporary duty.

Hasseltine, Hermon E., contract surgeon, ordered from Bristol, Vt., to Fort Thomas, Ky., for duty.

Myers, William H., contract surgeon, relieved from duty at Washington Barracks, D. C., and ordered to the Army Medical School for a course of instruction.

Johnson, Howard H., contract surgeon, relieved from duty at the Army General Hospital, Washington Barracks, D. C., and ordered to the Army Medical School for a course of instruction.

Macy, Fred S., contract surgeon, relieved from duty at Fort Adams, R. I., and ordered to the Army Medical School, Washington, D. C., for a course of instruction.

The following contract surgeons have been ordered from the places designated to Washington, D. C., for a course of instruction at the Army Medical School: Rukke, Guy V., Ann Arbor, Mich.; Bryan, Ray W., St. Louis; Pillsbury, Henry C., Boston; Christie, Arthur C., Clymer, N. Y.; Gostin, Bernard S., Macon, Ga.; Bartlett, William K., Minneapolis, and King, Edgar, Van Buren, Ark.

Hogan, David D., contract surgeon, relieved from duty at Fort Hamilton, N. Y., and temporary duty at Fort Jay, N. Y., and ordered to Fort Schuyler, N. Y., for duty.

Stone, Frank P., dental surgeon, returned to duty at Fort Sam Houston, Texas, from leave of absence.

Navy Changes.

Changes in the Medical Corps, U. S. Navy, for the week ending September 29, 1906:

Bell, W. H., surgeon, to special duty in the Bureau of Medicine and Surgery, Navy Department, Washington, D. C.

De Bruler, J. P., asst.-surgeon, detached Navy Yard, Washington, D. C., etc.; to special duty in the Bureau of Medicine and Surgery, Navy Department, Washington, D. C.

Benton, F. L., surgeon, detached Naval Hospital, Navy Yard, Pensacola, Fla., to the *Texas*.

Langhorne, C. D., surgeon, to the *Brooklyn*.

Freeman, G. F., P. A. surgeon, to duty Naval Hospital, Portsmouth, N. H.

Webb, U. R., P. A. surgeon, detached Naval Hospital, Portsmouth, N. H., to the *Brooklyn*.

Baehus, J. W., P. A. surgeon, detached U.S.R.S. *Franklin*, Navy Yard, Norfolk, Va., to the *Texas*.

Moore, A. M., surgeon, retired, to Navy Recruiting Station, Memphis, Tenn.

Page, J. E., surgeon, to Naval Hospital, Norfolk, Va.

Tolfree, H. M., P. A. surgeon, detached Naval Hospital, Norfolk, Va., to the *Connecticut*.

Taylor, E. C., asst.-surgeon, detached U.S.R.S. *Hancock*, Navy Yard, New York, N. Y., to duty Naval Hospital, New York.

Rennie, W. H., asst.-surgeon, detached U.S.R.S. *Lancaster*, Navy Yard, League Island, Pa., to duty Naval Hospital, Pensacola, Fla.

Lovering, P. A., medical inspector, detached from duty as member of Naval Medical Examining Board, to duty in command of Naval Hospital, Norfolk, Va.

Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ending Sept. 26, 1906:

Gassaway, J. H., surgeon, granted leave of absence for three days.

White, J. H., surgeon, granted leave of absence for seven days from Sept. 23, 1906.

Gulleras, C. M., surgeon, granted leave of absence for one day.

Wertenbaker, C. P., surgeon, granted extension of leave of absence for seven days from Sept. 22, 1906.

Stimpson, W. C., surgeon, granted leave of absence for two days from Sept. 21, 1906.

Lavinder, C. H., P. A. surgeon, relieved from temporary duty at Detroit and directed to proceed to Stapleton, N. Y., reporting to the Medical Officer in Command for duty and assignment to quarters.

Grubbs, S. B., P. A. surgeon, granted leave of absence for two days.

Hobdy, W. C., P. A. surgeon, detailed to represent the Service at the semiannual meeting of the California Public Health Association at San Jose, Cal., Oct. 10, 1906.

Ward, W. K., asst.-surgeon, granted leave of absence for seven days from Sept. 24, 1906, under the provisions of Paragraph 191 of the Regulations.

Gibson, L. P., acting asst.-surgeon, granted leave of absence for five days.

James, W. F., acting asst.-surgeon, leave of absence granted without pay to Acting Assistant Surgeon James for fifteen days from August 31, 1906, revoked.

Scott, E. B., pharmacist, granted leave of absence for twenty-three days from Aug. 23, 1906, on account of sickness.

Scott, E. B., pharmacist, granted leave of absence for twenty-four days from Sept. 20, 1906.

Slough, Charles, pharmacist, relieved from duty at Honolulu, T. H., and directed to proceed to San Francisco, reporting to the Medical Officer in Command for duty and assignment to quarters.

Beck, J. E., pharmacist, relieved from duty at San Francisco, and directed to proceed to Honolulu, T. H., reporting to Chief Quarantine Officer for duty and assignment to quarters.

Iltis, George W., pharmacist, granted leave of absence for thirty days from Sept. 22, 1906.

Hall, L. P., pharmacist, granted leave of absence for seven days from Sept. 23, 1906, under Paragraph 210 of the Regulations.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service during the year ended September 28, 1906:

SMALLPOX—UNITED STATES.

Indiana: South Bend, Sept. 16-22, 1 case.
Kentucky: Lexington, Sept. 8-15, 1 case.
Louisiana: New Orleans, Sept. 8-15, 7 cases (6 Imported).
Ohio: Cincinnati, Sept. 14-21, 1 case.
Pennsylvania: Altoona, Sept. 15-22, 1 case, 1 death.

SMALLPOX—FOREIGN.

Africa: Cape Town, Aug. 4-18, 8 cases.
Brazil: Bahia, Aug. 11-18, 6 cases; Pernambuco, Aug. 1-15, 3 deaths; Rio de Janeiro, Aug. 12-Sept. 2, 10 cases.
Chile: Antofagasta, July 29-Aug. 12, 39 cases, 4 deaths; Coquimbo, 30 cases, 1 death; Talcahuana, present.
India: Bombay, Aug. 14-28, 4 deaths; Calcutta, Aug. 4-11, 2 deaths; Karachi, Aug. 12-26, 5 cases, 2 deaths; Madras, Aug. 4-17, 3 deaths.
Russia: Moscow, Aug. 18-25, 2 cases; Odessa, Aug. 25-Sept. 1, 6 cases; St. Petersburg, Aug. 18-25, 2 cases, 1 death.
Siberia: Vladivostok, July 28-Aug. 4, 1 case.
Spain: Barcelona, Sept. 1-10, 8 deaths; Seville, Aug. 1-31, 31 deaths.
Turkey: Constantinople, Aug. 26-Sept. 9, 2 deaths.

YELLOW FEVER.

Cuba: Habana, Sept. 27, 2 cases.
Ecuador: Guayaquil, Aug. 1-31, 9 deaths.
Mexico: Merida, Sept. 2-15, 5 cases, 4 deaths; Tuxtepec, 4 cases, 5 deaths; Vera Cruz, 2 cases, 1 death.

CHOLERA—INSULAR.

Philippine Islands: Manila, July 28-Aug. 4, 38 cases, 30 deaths; Provinces, July 28-Aug. 4, 731 cases, 534 deaths.

CHOLERA—FOREIGN.

India: Bombay, Aug. 14-28, 89 deaths; Calcutta, Aug. 4-17, 8 deaths; Madras, 19 deaths; Rangoon, Aug. 11-18, 1 death.

PLAGUE—INSULAR.

Hawaii: Honolulu, Aug. 18-25, 1 case, 1 death.

PLAGUE—FOREIGN.

Brazil: Rio de Janeiro, Aug. 12-Sept. 2, 8 cases, 4 deaths; Pernambuco, Aug. 1-15, 2 deaths
Egypt: Alexandria, Aug. 28-29, 2 cases, 4 deaths; Suez, Aug. 24-25, 2 deaths.
India: General, July 28-Aug. 11, 2,321 cases, 167 deaths; Bombay, Aug. 14-28, 61 deaths; Calcutta, Aug. 4-11, 2 deaths; Karachi, Aug. 12-26, 10 cases, 8 deaths; Rangoon, Aug. 4-18, 205 deaths.
Japan: Formosa, Aug. 10-20, 3 cases, 3 deaths.
Peru: Lima, Aug. 18-25, 7 cases, 4 deaths; Mollendo, 1 case, 1 death; Paita, 3 cases, 2 deaths.

State Boards of Registration

COMING EXAMINATIONS.

GEORGIA Board of Medical Examiners (Regular), Capitol, Atlanta, October 9. Secretary, E. R. Anthony, Griffin.

ARKANSAS State Medical Examining Board, Little Rock, October 9. Secretary, J. P. Runyan, Little Rock.

KANSAS State Board of Medical Registration and Examination, State House, Topeka, October 9. Secretary, F. P. Hatfield, Grenola.

MICHIGAN State Board of Registration in Medicine, Lansing, October 9. Secretary, B. D. Harison, Detroit.

MISSISSIPPI State Board of Health, The Capitol, October 9. Secretary, J. F. Hunter, Jackson.

DISTRICT OF COLUMBIA Board of Medical Supervisors, Washington, October 11. Secretary, Geo. C. Ober, Washington.

NEW JERSEY State Board of Medical Examiners, Trenton, October 16-17. Secretary, J. W. Bennett, Long Branch.

TEXAS State Board of Medical Examiners, Houston, October 16-18. Secretary, T. T. Jackson, San Antonio.

FLORIDA Board of Medical Examiners (Regular), Jacksonville, October 17-18. Secretary, J. D. Fernandez, Jacksonville.

ILLINOIS State Board of Health, Great Northern Hotel, Chicago, October 17-19. Secretary, J. A. Egan, Springfield.

LOUISIANA State Board of Medical Examiners, New Orleans, October 19-20. Secretary, F. A. Larue, New Orleans.

KENTUCKY State Board of Health, Louisville, October 23. Secretary, J. N. McCormack, Bowling Green.

INDIANA Board of Medical Registration and Examination, Indianapolis, October 23-25. Secretary, W. T. Gott, Indianapolis.

Nebraska May Report.—Dr. George H. Brash, secretary of the Nebraska State Board of Health, reports the written examination, held at Lincoln, May 29-30, 1906. The number of subjects examined in was 8; total number of questions asked, 80; percentage required to pass, 75. The total number of candidates examined was 49, of whom 36 passed and 13 failed. Twenty-eight reciprocal licenses were granted. The following colleges were represented:

PASSED. College.	Year Grad.	Per Cent.
Bennett College, Eclec. Med. and Surg., Chicago	(1906)	87.2
Central Med. Coll., St. Joseph	(1905)	78.3
American Med. Coll., St. Louis	(1906)	79.3
St. Louis University (Marion-Sims-Beaumont Med. Coll.) 78.5.	(1896)	
Lincoln Med. Coll.	(1906)	75.1, 77.8, 81.7, 84.7
University of Nebraska	(1906)	81, 83.8, 84, 85.2, 92.2, 94.2
Creighton Med. Coll., (1905) 77.6; (1906) 76.2, 76.3, 76.4, 76.5, 76.7, 79, 79.7, 80.1, 80.2, 80.5, 80.6, 80.7, 82.2, 82.5, 83, 84, 85.6, 85.6, 85.7, 86.2, 89.5.		

FAILED.		
Central Med. Coll.	(1905)	46.8, 74.3
Creighton Med. Coll. (1905) 72; (1906) 57.7, 63.7, 70.3, 71.1, 72.2, 72.6, 73.8.		
University of Nebraska	(1905)	50.5, 62.1, 70.5

LICENSED THROUGH RECIPROCITY.

College.	Year Grad.	Reciprocity with.
Northwestern University	(1893), (1905)	Illinois
Hahnemann Med. Coll., Chicago	(1878), (1897)	Iowa
Hahnemann Med. Coll., Chicago	(1904)	Illinois
Chicago Homeopathic Med. Coll.	(1889)	Iowa
Rush Med. Coll.	(1904)	Illinois
Bennett Coll. Eclec. Med. and Surg., Chicago	(2, 1906)	Illinois
Jenner Med. Coll., Chicago	(1904)	Illinois
American Coll. of Med. and Surg.	(1906)	Illinois
Hering Med. Coll.	(1906)	Illinois
Illinois Med. Coll.	(1905)	Illinois
University of Iowa	(1905)	Iowa
Sioux City Coll. of Med.	(1905)	Iowa
College of P. and S., Baltimore	(1881)	Iowa
Barnes Med. Coll.	(1906)	Illinois
Ensworth Central Med. Coll.	(1906)	Kansas
Creighton Med. Coll.	(1900), (1902)	Iowa
Lincoln Med. Coll.	(3, 1906)	Kansas
Cincinnati Coll. of Med. and Surg.	(1877)	Iowa
Omaha Med. Coll.	(1902)	Iowa
University of Pennsylvania	(1893)	Iowa
Meharry Med. Coll.	(1895),	Kentucky
Trinity University, Toronto	(1902)	Michigan

Michigan June Report.—Dr. B. D. Harison, secretary of the Michigan State Board of Registration in Medicine, reports the written examination, held at Ann Arbor, June 12-14, 1906. The number of subjects examined in was 14; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 71, of whom 68 passed and 3 failed. The following colleges were represented:

PASSED. College.	Year Grad.	Per Cent.
Howard University	(1905)	81.3
American Med. Miss. Coll	(1906)	85.4
University of Michigan, (1889) 88.8; (1904) 84.5, 87; (1905) 85, 87.7, 90.7; (1906) 82.5, 84.3, 86.3, 87, 87.6, 88, 88.1, 88.2, 88.4, 88.4, 88.6, 88.6, 88.8, 89.3, 89.4, 89.6, 89.6, 89.8, 89.9, 89.9, 89.9, 90.3, 90.4, 90.5, 90.7, 91.3, 91.8, 92.2, 92.2, 92.3, 92.3, 93, 93.1, 95, 97.		
University of Michigan, Homeo. Dept. (1906) 79.7, 81.9, 83, 84.3, 84.7, 86.9, 86.9, 87.1, 87.3, 88.5, 89, 90.2.		
Grand Rapids Med. Coll.	(1906)	76.3, 90.3, 93.2
Saginaw Valley Med. Coll.	(1901)	84.1
Detroit Coll. of Med.	(1903)	81.4
University of Missouri	(1906)	88.7
Dartmouth Med. Coll.	(1906)	84.6
New York Homeo. Med. Coll.	(1906)	83.8
Miami Med. Coll.	(1895)	75.2
Jefferson Med. Coll.	(1904) 94.5; (1906)	87.3
Trinity Med. Coll., Toronto	(1901)	77.2
Royal University, Turin, Italy	(1901)	79.5

FAILED.		
Chicago Med. Coll.*	(1872)	65.6
Meharry Med. Coll.	(1905)	72.5
McGill University, Montreal	(1897)	71.8

* Now the Northwestern University Medical School.

Society Proceedings

COMING MEETINGS.

Colorado State Medical Society, Denver, Denver, Oct. 9-11.
Delaware State Medical Society, Wilmington, Oct. 9.
Medical Society of Virginia, Charlottesville, Oct. 9-11.
Kentucky State Medical Association, Owensboro, Oct. 10-12.
Vermont State Medical Society, Barre, Oct. 11-12.
American Association of Railway Surgeons, Chicago, Oct. 17-19.
Mississippi Valley Medical Association, Hot Springs, Ark., Nov. 7-8.
Southern Surg. and Gyn. Assn., Baltimore, Dec. 11-13.
American Public Health Assn., Mexico City, Dec. 3-7.

AMERICAN ASSOCIATION OF OBSTETRICIANS AND GYNECOLOGISTS.

Nineteenth Annual Meeting, held at Cincinnati, Sept. 20-22, 1906.

(*Continued from page 1045.*)

Peritoneal Adhesions.

DR. ROBERT T. MORRIS, New York City, mentioned as favorite fields for chronic peritoneal adhesions the region of the cecum and appendix, the gall bladder, the sigmoid region, and pelvis. The greatest amount of disturbance calling for attention on the part of the surgeon comes from the region of the gall bladder, because the organs in this region are more movable than those elsewhere, such as the liver and diaphragm, which move with every inspiration and pull on the adhesions and the stomach, which is moving constantly. Next in the order of importance is the group of adhesions in the region of the cecum and appendix. Adhesions in the pelvic region, which, although extremely common, do not call for so much interference on the part of the surgeon as do the other groups of adhesions, for the reason that the viscera involved rest on the pelvic floor, and are subject to such constant and varying degrees of friction. Adhesions about the sigmoid give rise to comparatively little disturbance.

As to treatment, there are certain instances that do not call for much surgical attention. In these cases the minor psychoses should be ruled out: As to the method of treating these cases, he first began by simply separating them. He tried rubbing them with oil for a while, without getting marked results; then he followed the plan of filling the peritoneal cavity with saline solution after operation. But this was not wholly satisfactorily, because the salt solution is absorbed too rapidly.

He then adopted the method of using the aristol film, because he noticed that when raw peritoneal surfaces are exposed to the air there is a tendency for a lymph coagulum to form. An insoluble material like aristol offers a mechanical obstacle to readhesion at that point. The tri-iodid of thymol offers the best mechanical protection. It makes a smooth coagulum with the lymph and remains for a long time. In rabbits it was still present after a year. The Cargile membrane prevents the recurrence of adhesions very regularly, although not completely sometimes. Sometimes the surgeon may have to repeat the operation. Dr. Morris expressed himself as unwilling to state which is the better of the two, the Cargile membrane or the aristol film. Both are distinctly valuable in their proper places.

Porro Cesarean Section for Pregnancy, with Complicating Fibroids.

DR. JAMES F. BALDWIN, of Columbus, Ohio, said statistics show that in cases of pregnancy complicated with fibroids, unless the latter are so small as to be negligible, a maternal mortality of over 30 per cent., and a fetal mortality of probably 50 per cent., is obtained. Porro Cesarean section, with proper surroundings and competent operator, should give a maternal mortality of only about 5 per cent., and practically no fetal mortality whatever. Hence this operation should be uniformly advised in this class of cases.

Uterine Fibroids Complicating Pregnancy.

DR. MARCUS ROSENWASSER, of Cleveland, Ohio, said the recent report of cases of uterine fibroids obstructing delivery, in which the lives of mother and child were seriously endangered in the effort to deliver by the natural channel, justified operators in reporting the cases relieved by Cesarean section for the purpose of establishing the latter as a safer and better method of saving both lives. The report of a Porro Cesarean section successfully terminated was made as an additional contribution to papers previously read before the association and published in its transactions of 1896 and 1899. In this case the pelvis was obstructed by an immovable subperitoneal fibroid located in the posterior wall of the lower uterine segment. The operation had been planned for the onset of labor at term, but owing to rupture of membranes and prolapse of cord, became an emergency operation at the beginning of the ninth month. Mother and child were saved.

DISCUSSION.

DR. E. GUSTAV ZINKE, Cincinnati, Ohio, delivered two women in whom tumor was discovered after delivery. The tumors were intramural, very small, one the size of a walnut, the other the size of a hen's egg. The first case he saw was one of interstitial fibroids which implicated the intrauterine wall. It had been in the hands of a midwife, and when she failed to deliver the woman a physician was called in to assist. This was twelve years ago. As it was impossible to effect delivery in the usual manner, Dr. Zinke was called in and did a Cesarean section. The fetus had been dead for some time, and the woman died within forty-eight hours of sepsis. Where pregnancy is far advanced and a fibroid tumor is recognized, it is an extreme source of danger to the woman, especially if the tumor is subperitoneal. He thinks Cesarean section gave the woman as well as the child the best chance for their lives.

DR. OSCAR H. ELBRECHT, St. Louis, Mo., mentioned a case of fibroid tumor complicating pregnancy at the fourth month. It was subperitoneal, and situated in the anterior uterine wall. He removed the tumor, and the woman went on to full term.

DR. ROBERT T. MORRIS, New York, operated for the removal of a subperitoneal fibroid at the fifth month of pregnancy in a patient who was having a miscarriage. He operated with a desperate chance of trying to save the child. The patient was nearly 50 years of age, her only pregnancy, and a great deal depended on the birth of the child in the family. The labor pains ceased after he had removed a fibroid about as large as his fist; she went on to full term and was delivered of a living child.

DR. EDWARD J. ILL, of Newark, N. J., did not think that every woman who has fibroids ought to have the uterus removed or a Cesarean section done. The indication should be drawn closely. If there is obstruction in labor, then operation is indicated. He has only once done a Cesarean section for fibroids.

DR. JOSEPH PRICE, of Philadelphia, said that these cases, when recognized early, particularly cases of pedunculated fibroids, if they fall into the hands of skilful operators, can be operated on and the fibroids removed, the patients going on to term, and without premature deliveries or abortions.

DR. FREDERICK BLUME, of Pittsburg, cited a case in which he did a supravaginal hysterectomy for a fibroid tumor complicating pregnancy. He mentioned one case in which there was a tumor an inch above the umbilicus, fluctuating, the size of a three months' pregnancy, and simulating an ovarian cyst. He operated and found that it was the uterus, seven months advanced in pregnancy, and the other was a fibroid tumor projecting into the pelvis. He sewed up the wound and subsequently delivered her of a nine-pound child, but took the liberty of removing the uterus, as she was 45 years of age. It was a breech presentation. The child was dead. The woman, however, got along very well. This case shows that fibroid tumors do not disappear after delivery. In this case the tumor grew in six months to such an extent that it became necessary to do a supravaginal hysterectomy. He does not advocate that any woman who has a fibroid complicating pregnancy should undergo a Cesarean section.

DR. HUGO O. PANTZER, of Indianapolis, cited a number of cases of fibroid tumors complicating pregnancy. He was called to see the first ten days after the woman had given birth to a child. She had developed fever, and at this time was passing a fibroid which had become gangrenous. In a second instance he was called to deliver a woman who had been in labor forty-eight hours. A large tumor was found located at the fundus, and within four days this tumor sloughed away. In the first case the sloughing fibroid was removed with forceps; the patient made a good recovery, and has since again become pregnant. In the second case the tumor gave evidence of sloughing on the third day after delivery, and within twenty-four hours he operated per vaginam, removed the fibroid, and the woman made a good recovery.

DR. J. HENRY CARSTENS, of Detroit, Mich., said that if a small fibroid is found in the cervix which causes symptoms, it can be removed per vaginam when the woman is pregnant, which will save her a severe labor. If the fibroid is a large one and situated higher up, and there is likelihood of its interference with labor, the tumor should be removed whether the woman is three or six months pregnant, thus saving her future trouble. If the uterus contains multiple fibroids and there is good reason to suspect considerable trouble on account of their interference with pregnancy, it is well to do either an abdominal or supravaginal hysterectomy, according to the nature of the case. If a Cesarean section is required and there is a very large fibroid to deal with, the fibroid should be removed and the uterus saved.

Abdominal Section for Trauma of Uterus.

DR. CHARLES E. CONGDON, of Buffalo, N. Y., related a case in which there was puncture of the non-puerperal uterus, with prolapse of the bowel; violent seizure and tearing away of sixteen inches of gut. Abdominal section, with intestinal anastomosis, was resorted to promptly, and the uterine laceration repaired and followed by recovery of the patient.

DISCUSSION.

DR. EDWIN WALKER, of Evansville, Ind., reported a case of rupture of the uterus with prolapse of the intestine. The woman had aborted at about the fourth month, and he was called to deliver the placenta. He used the uterine auger, with which he brought away the placenta, and before he realized it he had quite a large mass, which he found to be the intestine. A handful of intestine was presenting at the vulva. Dr. Walker replaced it in the vagina, applied a tight binder, removed the woman to a hospital, opened the abdomen, and found that thirty-one inches, with mesentery, were torn away. He resected the intestine, used a Murphy button, did not employ any sutures in the uterus, as the parts fell together so well, then closed the abdomen, and the patient made a good recovery. He also mentioned a case in which the uterus was punctured during a curettement.

DR. RUFUS B. HALL, of Cincinnati, believes that perforation of the uterus is more frequent than most men are willing to admit, especially in producing abortion. He does not believe that prolapse of the intestine is frequent in perforation of the uterus. He had an experience a few years ago that impressed on his mind forcibly that these cases run in groups. Within eight days he had five patients with perforated uteri who had produced abortions on themselves. These patients were suffering with various stages of infection. All of them were treated, when there was pus present, with vaginal section, and the pus emptied. Three patients recovered and two died.

DR. JAMES F. BALDWIN, of Columbus, related a case of punctured uterus, the result of an attempted abortion. There was an enormous amount of pus discharged through the vagina, and the woman promptly recovered.

DR. WALTER B. DORSETT, of St. Louis, Mo., said the cases of rupture or perforation of the uterus should be classified. If asked to attend a case in which there was perforation of the uterus, produced by an abortionist, he would not hesitate to operate. He has operated on three such cases, cleaning out the pus which was present, and putting in vaginal drainage. He recalled one case of rupture of the uterus in labor in which nothing was done. The intestine was pushed back and the woman made a very good recovery.

DR. JOHN YOUNG BROWN, of St. Louis, said that in spite of the teachings of military surgeons, civil surgeons were beginning to realize the importance of penetrating wounds of the abdomen. It did not matter whether the penetration was caused by the curette, bullet, or by stab wound, the consensus of opinion among civil surgeons is that all such wounds should be explored.

(*To be continued.*)

ASSOCIATION OF MILITARY SURGEONS OF THE UNITED STATES.

Fifteenth Annual Meeting, held in Buffalo, N. Y., Sept. 11-14, 1906.

(*Concluded from page 1047.*)

Technic of the Yellow-Fever Campaign.

ASSISTANT SURGEON WILLIAM C. RUCKER, U.S.P.H.&M.-H. Service, who was on duty in New Orleans last year during the yellow-fever epidemic and conducted a campaign against the disease in that place which was successful, although in his labors he contracted the yellow fever himself, described in detail the methods for suppression of an epidemic of yellow fever, which are based entirely on the mosquito dogma.

The three basic principles are that yellow fever is transmitted only by the *Stegomyia calopus* and not *Stegomyia fasciata*, as has been commonly believed; that this mosquito is infected only by biting a yellow-fever patient during the first three days of the disease, and that the mosquito can not transmit the infection until a period of from 12 to 20 days (usually 14) has elapsed. The fundamental object, therefore, of such a campaign is to prevent the breeding of the stegomyia, to locate and to isolate all persons with yellow fever or with suspicious fever as early as possible in the disease to prevent the stegomyia from biting them and thereby becoming infected, and finally to destroy all infected stegomyia.

Stegomyia calopus is a domestic mosquito that breeds around human habitations. Cisterns, rain barrels or places where there is fresh, clean water are the preferred breeding places. In default of such places, however, it may deposit its eggs in foul or stagnant water. The mosquito is sly and persistent in its attacks on the human subject. It bites preferably just above the shoe tops. Only the female bites. The young mosquitoes bite only in daytime, but the adults bite in a darkened room or at night.

Dr. Rucker described in detail the supplies necessary for the attacks on stegomyia in its breeding places, the materials necessary for screening, etc., and the technic of this procedure. The location of those sick with fevers is not easy. The ignorant are prone to hide their sick in order that they may not be sent to the hospital or that their places of business may not be closed, while the better class act in a similar manner to avoid fumigation of their premises and notoriety. It is necessary, therefore, that the people of an infected city be kept under constant surveillance. The main support in all such cases must be the family physician. Cases should be reported early, as a patient is infective to mosquitoes only during the first three days of the disease. During this period the patient should be screened, or in other words, the mosquito should be protected from the patient. After screening the room, fumigation of the room and the surrounding premises is made. The officer should not treat nor offer advice regarding the treatment of patients. The axiom of the service is: "The patient belongs to his physician, the house belongs to the sanitary officer."

The sick are not isolated after the preliminary fumigation; they may receive visitors, but they are protected from mosquitoes. Funerals may be public. Business is not suspended, but places of public congregation are closed at night. Persons entering an infected town are obliged to give their names and city addresses to the division of train inspection. They are then inspected daily for five days. Persons leaving the city should be required to obtain health certificates from the sanitary bureau.

DISCUSSION.

DR. CHARLES P. WERTENBAKER, U.S.P.H.&M-H. Service, New York, said that every military surgeon may at some time be confronted by the problem of suppressing an outbreak of yellow fever, and he will then fully appreciate the detailed information such as has been furnished.

CAPT. S. C. STANTON, Ill.N.G., presented a resolution that copies of Dr. Rucker's paper be sent to the surgeons general of the various services, recommending that the article be distributed as a governmental publication, and that a copy of the resolution be forwarded to the surgeon general U.S.P.H.& M.-H.S. The resolution was unanimously adopted.

Economical Consumptive Sanatoria.

SURGEON PAUL M. CARRINGTON, U.S.P.H.&M.-H. Service, suggested an economical plan for consumptive sanatoria, with a description of a new tent house, proposed by himself and the architect, J. Ross Thomas, of the same service, which was read in the absence of the authors by Dr. Rucker. The authors appreciated the tendency in the past toward constructing expensive sanatoria, with costly systems of heating and ventilating, and appreciated also, incidentally, the liability of legislative bodies to make niggardly appropriations for such purposes. For this reason they have evolved a scheme for tent houses, inexpensively constructed, whereby the patient may have sunshine or shadow at any time of day, inside or outside of his room. Each tent is 12 by 14 feet in area, and is intended to house two persons. The ceiling is 9 feet high, and the sides are closed for half that distance. The heat is furnished by a small iron stove. The colony of tent houses has, of course, its administrative building, mess hall, etc., and the authors claim for the scheme, which is now in operation at Fort Stanton, N. M., the advantages of convenience of grouping, flexibility, isolation and economy.

Sanitary Questions in the Navy.

MEDICAL DIRECTOR MANLY H. SIMONS, U.S.N., in his paper, entitled "The Medical and Sanitary Questions Met in Everyday Life on a Cruising Ship in the Navy," pointed out the difference between the soldiers of the old Navy and the new, the great divergence in the duties from the old days, when the sailors were needed to handle sails, and the present time, when machinery is in use for practically all purposes. He spoke of the great difficulty in keeping modern ships in clean and sanitary condition, on account of the complexity of construction, and mentioned the changes desirable from a sanitary point of view, and the manner in which the various emergencies aboard the modern cruising ship have been met.

Resuscitation of Persons Apparently Drowned.

ASSISTANT SURGEON JOHN W. TRASK, U.S.P.H.&M.-H. Service, prepared a paper, read by Dr. Rucker, reporting two cases of prolonged submergence under water in which the patients, after 23 and 30 minutes' submergence, respectively, were resuscitated by continuation of artificial respiration for nearly two hours. From these cases the author urges the practice of persistence in artificial respiration for at least two hours, in all cases of the apparently drowned before hope is abandoned, especially when the known submersion has been less than 30 minutes or when the time of the submersion is in doubt.

Portable Rations for Soldiers.

MAJOR LOUIS LIVINGSTON SEAMAN, U.S.V.E., read a paper on "A Portable Ration for Soldiers in Battle and on the Field," which originally appeared in THE JOURNAL, May 26, 1906, page 1606, and to which he had added a number of observations

suggested by his later experiences in Africa, concerning the advisability of an increase in the ration of sugar, and the sustaining properties of the raisin.

DISCUSSION.

COL. W. GRANT MCPHERSON, R.A.M.C., took exception to Dr. Seaman's remarks in regard to the absence of enteric disease in the Japanese army. In a recent conversation with a Japanese officer, said he, he had been informed that there were 27,000 cases of dysentery and typhoid fever during the Russo-Japanese war, with 4,000 deaths from enteric fever alone. He did not agree with the optimistic views of the author and objected to the diet suggested, for the reason that in summer it fermented and in winter it froze.

DR. HAROLD D. CORBUSIER, Denver, spoke of the racial characteristics of the components of armies, which must be considered in the diet of all bodies of troops. An army should have a broad diet list on this account. He attached especial value to the use of bacon.

MAJOR W. H. W. ELLICOTT, Indian Medical Service, gave his experience regarding the diet of troops, especially in the tropics. He considered smoked and jerked meats of great value.

LIEUT.-COL. NATHAN S. JARVIS, N.G.,N.Y., agreed with the essayist in the necessity for sugar in the diet of the soldier, and spoke of his experience while in the United States service, when maple sugar and raisins proved especially valuable to the soldier in long marches over arid plains.

DR. WILLIAM C. RUCKER, U.S.P.H.&M.-H. Service, stated his belief that diet was only the predisposing factor in the causation of beriberi, but had nothing to do with its causation.

MAJOR FLOYD S. CREGO, N.G.,N.Y., doubted the disappearance of beriberi, which the author claimed, and asserted that the acute symptoms disappeared, but that a modified form remained, which had its manifestation in the neuritis and psychoses, which are fast filling up our asylums, penitentiaries and almshouses.

Entertainment.

The entertainment provided for the association included a reception at the Lafayette Hotel on Tuesday evening, a luncheon given by Dr. Lucien Howe, on behalf of the Buffalo Academy of Medicine, at his residence on Wednesday noon; a reception at the Buffalo Club, of which Dr. Roswell Park is president, on Wednesday evening; an excursion on the United States revenue cutter *Morrill* down the Niagara River to Niagara Falls; a trolley excursion down the Canadian side, returning through the gorge, and a luncheon at Niagara Falls, N. Y. The ladies were given luncheons at the various country clubs, automobile rides, receptions, etc.

BRITISH MEDICAL ASSOCIATION.

Seventy-fourth Annual Meeting, held in Toronto, Ontario, Aug. 21-25, 1906.

(*Continued from page 1048.*)

SECTION OF SURGERY.

In the introduction, SIR HECTOR C. CAMERON, M.D., the chairman, acknowledged the great and daily increasing debt that surgery owes to those on the western side of the Atlantic, and looked forward with keen anticipation to the benefits to accrue from intercourse with the Canadian and American surgeons present.

Prostatectomy.

DR. GEORGE A. BINGHAM, Toronto, in his introduction of the discussion on prostatectomy gave a description of the microscopic structure of the gland, showing that it lacks a true capsule and that definite lobes are absent. Embryologically, the prostate has been shown to be purely sexual in origin. The pathologic changes in hypertrophy were then taken up to show the relationship of the newly formed tissues to the remainder of the gland. If the modern prostatic enucleation is performed through the outer part of the gland, a portion of the prostate is left behind. In discussion of the treatment, he mentioned three classes of cases: The early cases, where the only symptom is obstruction. In these enucleation is advised with catheter life as an alternative; the very late cases, in which permanent drainage or Bottini's operation is advised; and the intermediate cases, in which enucleation should be performed. The author holds that neither the perineal nor the suprapubic operation meets all indications.

Ascites.

MR. SINCLAIR WHITE, F.R.C.S., Sheffield, in introducing the discussion on ascites, stated that ascitic effusion was largely passive and directly due to interference with the passage of blood through the hepatic terminals of the portal vein. Proliferation with subsequent contraction of the tissues forming the framework of the liver is the principal cause of obstruction. It may be supplemented by thrombosis of the portal vein and by defects in the general circulation. In cirrhosis of the liver about 50 per cent. of the cases progress to a fatal issue without ascites, and its absence is explained in these cases by the enlargement of the normal anastomotic vessels connecting the systemic and portal veins and by the development of new anastomoses in adhesions formed between the viscera drained by the portal vein and the abdominal walls. The value of drainage as an adjunct to operations is beyond dispute. Epiplopexy is contraindicated when any of the important viscera of the body are defective. It should in all cases be preceded by one or more tappings. Details of the operation vary, but omental fixation is the most important step. The pathologic changes in the liver are permanent and, therefore, incurable, but the ascitic phenomenon is capable of being arrested and the life of the patient prolonged by the operation.

Duodenal Ulcer.

DR. WILLIAM J. MAYO, Rochester, Minn., in his paper, entitled "Surgical Treatment of Ulcer of the Duodenum," declared that in all chronic ulcers of the stomach and duodenum 40 per cent. are situated in the duodenum alone or in connection with the stomach, and that 50 per cent. of all chronic indurated ulcers are also so situated. He then discussed ulcer and its surgical treatment. He thought that gastrojejunostomy has the largest field of usefulness, and excision may sometimes be resorted to.

Acute Septic Peritonitis.

MR. CHARLES JOHN BOND, F.R.C.S., Leicester, introduced the discussion on "Acute Septic Peritonitis." He spoke of the great importance of the diaphragmatic portion of the peritoneum and the peculiar sensitiveness of that portion which covers the small intestines. He described the way in which the peritoneum reacts to infection and the protection of the endothelial layer by the formation of a fibrinous deposit. Chemical peritonitis is not seen clinically. Peritonitis accompanying the intraperitoneal extravasation of blood is generally due to the *Staphylococcus albus*. Gonococcal peritonitis is not highly virulent. In ruptured gastric and duodenal ulcer the infection is not highly virulent, but the necessity for immediate operation is most urgent. The infection may frequently be arrested by irrigation, with or without drainage. Septic peritonitis is due to infection from the alimentary canal below the duodenum. The frequent and early migration into the peritoneum of the *Staphylococcus albus* in septic peritonitis, acts beneficially by stimulating the phagocytosis, and has an important bearing on treatment and the question of irrigation.

Peritonitis due to streptococcus infection is highly virulent and generally fatal. Pneumococcal peritonitis is frequent in female children and is present in primary and secondary varieties. The naked-eye observations, the character of the exudate and the appearance of the inflamed membrane are especially important in this variety of the disease. He next discussed the treatment by drugs, morphin and purgatives, by serum and spoke of the urgent need of a polyvalent anti-bacillus coli serum. In considering the surgical treatment, he dwelt especially on the importance of respecting the diaphragmatic area, and the risk of removing phagocytes by indiscriminate irrigation, and stated that the prime object is to attack the primary focus of invasion and arrest further infection.

The next point is the treatment of peritoneal cavity. In cases of moderate severity he considers the safest course to be the treatment of the primary focus by dry sponging or local irrigation and drainage, combined with the least amount

of interference with the general cavity, unless collections of fluid exudate in the pelvis or loins require drainage. Highly virulent streptococcal infection may require free irrigation with even partial evisceration. The cases of slight virulence are treated best by free irrigation, either with or without subsequent drainage.

He concludes that irrigation is beneficial where the peritoneum contains foreign material, capable of removal by flushing, but that it is harmful in cases of fibrinous sticky exudate and when used to wash away a turbid exudate containing active phagocytes or when instrumental in spreading infection. Free drainage or tamponade is essential in the treatment of local abscesses, necrosis of the bowel, or when treatment of the primary focus of the invasion must be necessarily incomplete. It is generally harmful in the upper peritoneal area unless this is primarily infected. In the area of the small intestine it is of very little use. It is most frequently used in the lateral areas and in the pelvic basin. The efficiency of peritoneal drainage depends on the integrity of the endothelium in the area drained.

(*To be continued.*)

MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA.

Fifty-sixth Annual Meeting, held in Bedford Springs, Sept. 10-13, 1906.

(*Continued from page 1049.*)

Treatment of Ulcer of the Cornea.

Dr. Edward Stieren, Pittsburg, does not believe that cauterization or stimulation of the ulcer should be thought of in the early stages of a corneal ulcer; and it is a question in his mind whether the employment of eserin or pilocarpin ever preserves an iris from prolapsing into a marginal ulcer, when it perforates and is accompanied with a sudden gush of the aqueous humor. He is also confident that too frequent cleansing of the eye has an untoward effect on the reconstructive process of this delicate structure. His plan of treatment is as follows:

First, flushing liberally with saturated boric acid solution; second, filling the sac and keeping the lids covered with bichlorid of mercury ointment, in order to keep the sac as aseptic as possible; third, aiding the cornea in its recuperative process by atrophinizing the eyes, covering them with a cotton dressing, and keeping the patient in a moderately darkened room. Dionin dusted under the lower lid after the eye has been cleansed and before the bichlorid ointment has been used, causes the ulcer to heal more rapidly and renders the patient more comfortable. Indolent ulcers and those showing a tendency to spread are best treated with light applications of tincture of iodin. After using this agent the healed ulcer will show a scar less dense than when stronger chemical agents have been used. Dr. Stieren uses the cautery only in cases of corneal abscess. The liberation of pus caused by the cauterization relieves the excruciating pain usually present. Cases of ulceration of the cornea occurring in gonorrheal ophthalmia or in ophthalmia neonatorum demand especial attention. In such cases it is impossible to obtain even a moderate degree of cleanliness or asepsis of the conjunctival sac. The newer silver salts, although they may not be efficient bactericidal agents, are of value as protective and cleansing agents in gonorrheal ophthalmia. The opacities after their use are less dense than when strong cauterizing agents have been used.

Endogenous Infections.

Dr. Howard F. Hansell, Philadelphia, said that there are two groups of endogenous infections: intestinal intoxication and metabolic autointoxication. Endogenous ocular diseases are those which are caused by a poison created within the body in an organ other than the eye, and conveyed to the eye from the affected organ by means of the circulatory or lymphatic systems. They are distinct and separate diseases from those which involve the eye caused by germs or poisons acquired from sources without the body, or ectogenous diseases. A third class might be made of those which are partly ectogenous and possibly endogenous in causation. A distinction should also be made between autointoxication and metastasis. The former is a lesion induced in a distant organ by an agent created at the original site of the disease; the latter, a conveyance to a distant organ of one or more of the elements that made up the original disease. Endogenous infection of the eye usually starts in the uveal coat, either as a minute thrombosis or as a microscopic collection of bacteria. Next in frequency to the choroid is probably the retina, and finally the vitreous and the aqueous.

New Procedure for Treating a Prolapse of Iris.

Dr. Edward B. Heckel, Pittsburg, said that in a case with simple prolapse of the iris he renders the eye aseptic and instills eserin three times, at intervals of ten minutes. He then waits ten minutes, and then snips off the iris close to the cornea. He uses a horn spatula, shaved down to a millimeter in width, or thereabouts, depending on the size of the corneal wound. He introduces the spatula into the wound, with its long axis parallel to the long axis of the wound; then gives it a slight twist, being careful to allow the iris to withdraw itself gradually from the corneal wound. The lips of the wound will then come close together. A light pressure bandage is then applied. The action of eserin is continued, and the pupil is drawn back to its original position. A good result is secured. Sometimes Dr. Heckel has undertaken the procedure without the use of eserin. The results were sometimes good and sometimes not.

What Is the Safest Operation for Cataract?

Dr. Wendell Reber, Philadelphia, considers that operation the best which insures the greatest safety to the patient. He is convinced that preliminary iridectomy offers the greatest chance of success. So many patients and their family physicians oppose this method, however, that he has made an investigation of the views of the majority of the American operators. He sent circular letters to 160 of these, asking in what conditions they perform preliminary iridectomy, and whether they would do so in a patient who had already lost the sight of one eye. Dr. Reber thinks that one should be governed by the cause of the condition. Those who oppose preliminary iridectomy do so because the cosmetic effect is poorer; it produces more traumatism; the patient's vision is poorer afterward; it requires a longer time to perform; there is more dazzling afterward; the vitreous is not so well retained, and it is not justifiable to subject a patient twice to the risk of infection. The argument for extraction with iridectomy is that it does not require so large an incision; capsulotomy is more readily done; delivery of the lens is easier; fewer secondary operations are necessary; iris prolapse is rare; any glaucomic tendency during the healing may be forestalled; there is less confinement to bed, and less hemorrhage. The argument against two operations are that there is increased risk in opening the eye twice; one must cut through the scar tissue of the first operation; patients do not care to go through a second operation; the chances of success are no better with a preliminary operation entailing needless mutilation, and it wastes the patient's time. The author then gives a list of 14 arguments for preliminary iridectomy. Dr. Reber thinks that a procedure that facilitates not only the diagnosis of cataract, but still more the most important parts of the operation on it, seems to merit the preference to other methods. Extraction of cataract is never simpler, easier or more durable than when performed on an eye in which the iridectomy has been previously made.

Relation of Thyroid and Parathyroid Glands.

Dr. Allen J. Smith, Philadelphia, formulated the following statements: 1. The parathyroids and thyroid glands are structurally distinct and are not in any sense interconvertible. 2. There is probably some relation in their function, and loss of one seems to stimulate the other into special activity (at least, into an apparent hypertrophy). 3. The parathyroids are essential to life, and when lost, are soon followed by death, with previous intense symptoms of a neurotic autointoxication, which can not be averted by the thyroid itself, even if practically intact. 4. The loss of the thyroid is followed by chronic trophic and metabolic disturbances, which are not necessarily fatal, and which in general follow the type of cretinism, myxedema and chronic cachexia strumipriva in

man. While the function of the parathyroid strongly suggests its action in an antitoxic manner, there is reason to believe that in the case of the thyroid a metabolic physiologic secretion is produced, although it is possible that in a limited sense here, too, an antitoxic action is associated. 5. It seems probable that the active product of the thyroid is one of the iodin-organic compounds that have been isolated from it, probably the thyroglobin of Oswald. 6. There is suggestive evidence that, in addition to the indefinite relation believed to exist functionally between the thyroid and parathyroids, there is also a close relation held to the thyroid by the hypophysis cerebri, which may have some degree of compensatory ability. 7. In addition to the foregoing, the thyroid also is concerned in the functions of growth; is involved especially in nitrogenous metabolism, and has some indefinite but real influence on the development and efficiency of the generative apparatus.

Etiology of Diseases of Thyroid Gland.

DR. THEO. J. ELTERICH, Allegheny, classified diseases of the thyroid under the captions of congestion, inflammation (thyroiditis), neoplasms, simple hypertrophy (goiter), exophthalmic goiter, and cretinism and myxedema. In cretinism the administration of thyroid extract results in a return to growth and development approaching the normal. The therapeutic use of thyroid preparations has not been limited to diseases associated with disturbances of the thyroid gland, but has been extended to quite a large number of conditions that have no association with thyroidal perversion. Indications against the use of thyroid preparations are weakness of the cardiac action, albuminuria or glycosuria, tuberculous disease or a suspicion of grave renal or hepatic disease.

Symptomatology, Diagnosis and Medical Treatment of Exophthalmic Goiter.

DR. ALFRED STENGEL, Philadelphia, said that diseases very different from each other are probably now all classed together as exophthalmic goiter, the only distinction now made being between exophthalmic goiter and pseudo-exophthalmic goiter. The latter is sometimes a case in which the system has not the proper resisting power to the thyroid poisoning, and often results from fright at the menstrual period. It is transitory in character, but has some of the symptoms of exophthalmic goiter. In different pathologic conditions there may be hyperthyroidism. The symptoms may be more or less pronounced, nervous symptoms, sometimes very severe, being frequently present. There are also circulatory symptoms, including palpitation, murmurs and sudden flushes of the skin; the thyroid symptom of enlargement of the gland; and the ocular symptoms, including protrusion of the eyes, retraction of the upper lid, a tendency to wink at long intervals, and the staring forward of the eyes. Sometimes there are gastrointestinal symptoms, such as nausea and vomiting, pain in the abdomen and intense emaciation. Exophthalmic goiter is more permanent. The enlargement of the gland is less fluctuating, and in cases that are not exophthalmic, some other symptom is usually more prominent than is the thyroidal condition.

It is impossible to say, in any given case, whether the remedies prescribed or the hygienic regulations attending the giving of the remedies has accomplished the cure. On the other hand, there are some facts leading one to expect useful results from certain kinds of treatment. Electricity and other agents reduce the vascularity of the gland and limit the secretion. Sedatives are used for the nervous manifestations, but they do not have much effect. Cold applications over the thyroid are used from time to time.

Specific treatment is aimed at the hypersecretion of the thyroid gland. The milk of thyroidectomized goats has been used in the treatment, with rather encouraging results, also a substance obtained from this milk.

The *x*-ray has also ben tried with satisfactory results, the gland becoming sclerotic and atrophied. A certain proportion of the cases that might be called exophthalmic goiter will, however, recover in any case; a certain number of the other cases can be reached by the older methods of treatment designed to reduce the circulation in the gland and the glandular activity; but a large proportion of cases can not be reached in such a way. One should then choose between electricity or the *x*-ray and some of the new forms of antithyroidin or the cytolytic serum. If these fail the aid of a surgeon should be invoked.

Relation Between the Thyroid and the Eyes.

DR. JOHN E. WEEKS, New York, drew attention to the fact that diseases of the thyroid and parathyroid are, as yet, inseparable and that in considering the symptoms present in the eye due to thyroid disease, disease of the parathyroid must be induced. He considered the relation of the thyroid to the eye under the following headings:

(1) Conditions of the eye due to pressure of thyroid enlargements; (2) due to local metastasis of malignant thyroid tumors (very rare); (3) due to or associated with absence of thyroid gland; (4) due to compensatory enlargement of the hypophysis cerebri; (5) aggravated by or otherwise associated with goiter—Graves' disease, etc.; (6) due to some form of hyperthyresis.

Oration in Laryngology.

DR. IRA J. DUNN, Erie, delivered this oration, the first delivered before the society in seven years. He reported the progress made in laryngology and in rhinology during this period.

The Value of Skiagraphy in the Surgery of the Nose.

DRS. W. G. B. HARLAND and H. K. PANCOAST, Philadelphia, believe that *x*-ray pictures are of considerable value in giving a definite idea of the shape, size and location of the accessory sinuses, and in indicating the presence or absence of serious pathologic changes. While more accurate than transillumination, skiagraphy is also influenced by thickness of bone and similar factors, and the pictures should be studied in connection with other means of diagnosis. The secret of success in getting a good picture lies in the use of a hard tube and a diaphragm, with plenty of current and a short exposure. For lateral views the plate is held on the diseased side, the tube being distant about eighteen inches. Exposure should last from twenty-eight to thirty-three seconds, and thirty-two to forty-eight amperes of current should be used. For antero-posterior views the plate is held in front of and close to the face. Clothing is removed from the neck and the tube is held well down. The distance of the tube should be sixteen inches; exposure, ten to twenty seconds; and current, sixty amperes of the primary.

DISCUSSION.

DR. WEIDLER asked whether, when the existence of pus is suspected in these sinuses, it is always found there at operation; or whether, just as in transillumination, the presence of pus may be suspected, and none be found on opening the cells. He also inquired whether Dr. Harland had worked out a table of percentage failures in such cases.

Dr. Pyfer said that the skiagraph is very valuable and suggestive, but that the darkening of the cells may mean only a difference in the technic. The plate may be in error, or the conditions may have changed. No one should operate or recommend an operation based on the skiagraphic findings.

DR. JACKSON said that any additional aid in making the diagnosis in these sinus-affections should be welcomed. He referred to the work in skiagraphy done by Dr. Caldwell of New York. The results were beautiful, the difference between the diseased side and the healthy side being very marked. To obtain such results one must not only be skilled in this work, but must also be thoroughly acquainted with the anatomy and pathology of the parts.

DR. RISLEY said that skiagraphy probably would have proved useful in a number of his own cases, in which there was sinus-disease associated with protrusion of the eyeball. In two cases there was no apparent reason for suspecting frontal-sinus disease. The eyeball was pushed very far forward, there was violent pain, optic neuritis was present, and the vision was down to one-fifth. In one of these cases, operation disclosed an enormous pus-pocket back of the eyeball, the ethmoidal sinus practically being gone. Dr. Risley did not suspect the existence of such disease; it was only the

condition of the middle turbinated, which he was about to amputate, that led him to discover the trouble with the ethmoidal sinus.

Intranasal Conditions Bearing on the Etiology of Ear Diseases.

Dr. G. Hudson Makuen, Philadelphia, classified the intranasal conditions giving rise to ear complications as follows: (1) Those causing disturbances of nasal respiration; (2) those attended by suppurative intranasal and sinus inflammation, and (3) any condition which by pressure or otherwise may give rise to reflex disturbances. The first class includes hypertrophic and atrophic rhinitis, intranasal growths, septal deflections and spurs, and naso-pharyngeal hypertrophies and tumors; and the damage to the ear is chiefly mechanical in its origin. The second class includes all catarrhal conditions of the nasal and accessory cavities; and the damage to the ear is usually by continuity of structure. The third class includes those conditions which give rise to irritation of the terminal nerves in the nasal and accessory cavities, and set up ear complications by so-called reflex action.

(To be continued.)

Therapeutics

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulæ and outlines of treatment are answered in these columns.]

Typhoid Fever.

In an abstract in the *Pract. Med.* series Le Fevre states that the ideal diet for typhoid patients should be: 1, Liquid; 2, easily digested; 3, easily absorbed; 4, without solid residue; 5, not easily putrefiable; 6, should contain the requisite ingredients in normal proportions; 7, should be palatable. He states that milk alone does not fulfill these conditions or does so rather imperfectly. He recommends not more than two pints of milk daily, but adds carbohydrates, egg albumin, gelatin, especially in soups. He mentions the fact that gelatin obtained from soup stock is not only a nutriment, but is also a preventer of hemorrhages. This preparation, according to Harbin, serves three purposes: 1. It adds to the relish of various liquids. 2. It lessens nitrogenous waste from the system. 3. It prevents hemorrhage. He recommends a teaspoonful three times a day. Billings states that the effects of gelatin as a nutriment and as a hemostatic may be questioned. It is probable that gelatin which does not contain calcium chlorid will not increase the coagulation of the blood. It has not high nutritive value. In addition to other food preparations as a seasoning substance it may serve a good purpose. McCormick, in the same publication, gives the following outline of treatment of typhoid fever patients: The patient should first be given a bath for cleanliness, and an initial dose of calomel to move the bowels. Guaiacol is then recommended in emulsion or in capsules, in two-minim doses (.12) every two hours. This may be combined as follows:

℞. Guaiacol 3i 4
Eucalyptol 3ii 8

M. Ft. capsules No. xxx. Sig.: One capsule every two hours.

If this capsule is not well borne, he recommends that guaiacol carbonate be substituted, given in three-grain doses every two hours.

The bowels should be kept thoroughly open at first with calomel, followed by magnesium sulphate, sodium sulphate or other laxatives similar to the following:

℞. Podophyllin ..... gr. 1/8 .008
Massæ hydrargyri
Thymol, āā ..... gr. i .06

M. Ft. capsula No. i. Sig.: One such capsule every three hours until bowels move.

The colon should be well washed out once daily with a normal saline solution; if the temperature is 102.5 F. or higher this enema should be given cold; if below that degree it should be given lukewarm. To relieve tympanites he recommends turpentine emulsion in five-minim doses (.30).

Highsmith advises the following to relieve tympanites.

℞. Hydrarg. chlorid mitis
Pulv. ipecacuanhæ
Pulv. opii
Pilocarpinæ muriatis, āā ..... gr. i .06

M. Ft. chartulæ No. xx. Sig.: Take one every hour.

DIARRHEA.

O'Connor states that diarrhea is due to the patient being unable to digest milk, and beef tea also increases the tendency to diarrhea. When diarrhea is present barley water should be added or lime water, and, if necessary, peptonized milk with lime water should be given; beef tea should be stopped and mutton broth added in its stead. If the stools are offensive, small doses of calomel may be added.

CONSTIPATION.

This may be corrected by increasing the broths and reducing the milk.

HEMORRHAGE.

The stools should be constantly examined for evidences of blood. Sometimes sloughs may be found antecedent to the hemorrhages, when turpentine may be given and the diet regulated. When hemorrhage is present he recommends administration of opium and turpentine, a reduction of the stimulants as much as possible and the administration of calcium chlorid.

Yeo states that in cases of hemorrhage the intestinal movements must be arrested and in some cases this inactivity must be prolonged for 14 days in order to avoid the danger of a recurrence, and then to produce a movement by an enema of olive oil. On the occurrence of hemorrhage he recommends the following enema:

℞. Pulv. opii et ipecac ..... gr. v .30
Acidi tannici ..... gr. x .65
Mucil. acaciæ ..... ʒi 30

M. Sig.: This amount to be combined with one or two ounces of warm water, arrow-root water or a thin starch solution and introduced into the bowel through a long rectal tube (8 to 10 inches long). In case of children the amount of Dover's powder must be proportionately reduced.

By the mouth the following combination is recommended:

℞. Acidi gallici ..... gr. lx 4
Alcoholis ..... fʒi 30
Solve et adde
Acidi sulphurici arom f3i 4
Glycerini 3iii 12
Liq. opii sedatavi (B. P.) ..... m. xv 1
Aquæ cinnamomi q. s. ad ..... fʒvi 180

M. Sig.: Two tablespoonfuls every hour for six doses and then every three hours.

HEADACHE.

For the relief of the headache which so constantly accompanies typhoid fever, O'Connor recommends antipyrin in moderate size doses or sodium salicylate with mustard applied locally to the nape of the neck. He speaks of severe headache as indicating a liability to hemorrhage.

McDowell, in the *Dublin Jour. of Med. Sciences*, recommends in the earlier stages of the disease that a mixture containing dilute hydrochloric acid be given, and as the disease progresses he advises the following combination:

℞. Quin. sulphatis 3ss 2
Acidi citrici f3iiss 10
Aquæ q. s. ad ..... fʒiv 120

And:

℞. Ammon. carb ..... gr. lxxx 5
Tinct. senegæ f3iiss 10
Sodii bicarb. 3iiss 10
Tinct. digitalis ..... gtt. lxxx 5
Aquæ q. s. ad ..... fʒvi 180

M. Sig.: Two teaspoonfuls combined with one-half teaspoonful of the alkaline mixture and half a teaspoonful of water in effervescence every three or four hours.

If the patient's heart is weak and a cardiac tonic is indicated, the following combination is recommended:

℞. Tinct. strophanthi f3i 4
Liq. strychniæ (1 per cent.) f3ss 2
Aquæ dest. q. s. ad.....fʒiii 90

M. Sig.: One teaspoonful as necessary.

To relieve the severe headache and the pains throughout the body the following combination is recommended by McDowell as a very efficient one:

℞. Sodii salicylatis
Kalii nitratis, āā.....gr. x 65
Tinct. gelsemii.....m. v 30
Aquæ q. s. ad.....fʒss 15

M. Sig.: To be taken at one dose.

To check hemorrhage the following combination is recommended:

℞. Tinct. camph. co.....f3ss 2
Acidi sulph. arom.....m. x-xx 65-1.20
Spts. chloroformi.....m. x 65
Syr. zingiberis.....f3i 4
Decoct. hematoxyli q. s. ad.....fʒss 15

M. Sig.: This amount to be taken at one dose and repeated after every bowel movement, diminishing the amount as soon as the hemorrhage seems to be under control.

To relieve the persistent vomiting he recommends a mustard leaf to the epigastrium and the following combination in half-ounce doses every four hours:

℞. Bismuthi subnitratis.....gr. viiss 50
Potassii nitratis.....gr. ii 12
Liq. morph. hydrochlor. (1 p. c.) ...m. viiss 50
Acidi hydrocyan dil.....m. iiss 15
Pulv. tragacanthæ co.....gr. viii 50
Aquæ q. s. ad.....fʒ 15

M. Sig.: To be taken at one dose.

The first dose should be preceded by half a teaspoonful of dilute hydrochloric acid. In case of failure he advises nutritive enemata, administering the mixture at intervals to test the irritability of the stomach.

Diarrhea is checked, according to McDowell, by stopping all nitrogenous foods, peptonizing all milk and administering one of the following combinations:

℞. Tinct. camph. co.....f3ss 2
Acidi sulph. arom.....m. xv 1
Spts. chloroformi.....m. x 65
Aquæ q. s. ad.....fʒss 15

M. Sig.: To be taken at one dose and repeated as necessary. Or:

℞. Tinct. camph. co.....f3ss 2
Sodii bicarb.....gr. v 30
Pulv. cretæ co.....gr. xx 1 20
Tinct. opii.....m. v 30
Spts. chloroformi.....m. x 65
Sodii salicylatis
Pulv. tragacanthæ co., āā.....gr. x 65
Aquæ q. s. ad.....fʒi 30

M. Sig.: At one dose.

Moore regards the salicylate of quinin as superior to salol or any other intestinal antiseptic.

Turpentine is regarded by some authorities as the best general remedy in typhoid fever. It may be given in capsules in from 5 to 10-minim doses (.30-.65) or combined as follows:

℞. Spts. terebinthinæ
Spts. etheris nitrosi
Spts. chloroformi, āā.....f3i 4
Syrupi amygdalæ q. s. ad.....fʒiii 90

M. Sig.: Shake the bottle well and take one tablespoonful at a dose. Or:

℞. Spts. terebinthinæ
Tinct. lavendulæ co., āā.....f3iss 6
Saccharī 3iss 6
Pulv. acaciæ 3ii 8
Aquæ q. s. ad.....fʒiii 90

M. Sig.: Two teaspoonfuls every three or four hours.

NERVOUS SYMPTOMS.

Nervous symptoms are best treated by hydrotherapy, such as the ice pack or ice cap. The following combination may have to be employed to allay the nervous manifestations:

℞. Strontii bromidi
Sodii bromidi, āā.....3vi 24
Aquæ menth. pip. q. s. ad.....fʒiii 90

M. Sig.: One tablespoonful every three hours in water. Or:

℞. Ext. opii.....gr. iii 20
Asafetidæ 3ss 2
Ext. hyoscyami.....gr. iii 20
Olei theobrom. q. s.....

M. Ft. suppos. No. vi. Sig.: One suppository every four hours.

Medicolegal

Rights of State Boards to Revoke Licenses.

The Supreme Court of Indiana holds, in Spurgeon and others vs. Rhodes, that it was error to grant a temporary injunction, on the application of the latter-named party, restraining the members of the State Board of Medical Registration and Examination from proceeding to hear and determine charges of "gross immorality" pending against him before said board and from revoking his license to practice medicine. It says, among other things, that the allegation in the complaint to the effect that a certain-named woman was employed to procure evidence in regard to his character was not denied, but this alone would not authorize the granting of a temporary injunction. The gist of the complaint was that the defendants had prejudged his case and had intended to revoke his license without any evidence and without giving him a hearing. The affidavits of five members of the board and their attorneys denied the charge, and said in effect that they intended to and would give him a fair and impartial hearing, and would determine the charges according to the evidence. This was all that he was entitled to demand. The fact that the woman mentioned was not in the state and could not be compelled to attend the hearing of the charges, or that the board would try the charges without her presence or testimony, furnished no ground for enjoining the board from hearing and determining the truth of the charges.

It was insisted that the temporary injunction was properly granted for the reason that section 7322 of Burns' Annotated Statutes of Indiana of 1901, under which the charges in question were presented to the board, so far as it attempted to confer on the board the power to try complainant and determine whether or not he was guilty or not of the gross immorality charged, and to revoke or refuse to revoke his license therefore, was wholly unconstitutional and void, in that it attempted to confer on the board such judicial power; that it was in violation of the fifth amendment of the Constitution of the United States, which provides that "no person shall be held to answer for a capital or other infamous crime unless on a presentment or indictment by a grand jury," and of the sixth amendment, which provides that "in all criminal prosecutions the accused shall enjoy the right . . . to have compulsory process for obtaining witnesses in his favor"; and that it violated the provision of said Constitution that "the trial of all crimes except in cases of impeachment shall be by jury." But the court says that these provisions apply only to proceedings and prosecutions in the courts of the United States and laws enacted by Congress; not to laws enacted by the legislatures of the states.

Statutes prescribing the qualifications of practitioners of medicine and surgery, and otherwise regulating the practice of those professions have been uniformly upheld by the courts as a valid exercise of the police power of the states, infringing no provisions of either federal or state constitutions. Statutes containing a provision like the one in question here, authorizing the board to revoke a license when the holder has been guilty of a felony or of gross immorality, have been held not to violate any provision of the federal or state constitutions, and it has been held that the granting or refusing to grant a license to practice medicine, or the revocation thereof by the board, is not the exercise of judicial power.

Physician Can Not Recover for Street Railway's Damage.

The Supreme Judicial Court of Maine says, in the case of Parsons vs. the Waterville & Oakland Street Railway, an action brought by a physician, that the fact that the plaintiff was hindered, delayed, and inconvenienced, and people desiring to consult him professionally were kept away, because of having to cross the defendant's track, would not give him a right of action against the defendant for a lawful use of the public way. The use of a street by a street railroad is a public servitude imposing no additional burden on the abutter.

Exhibiting Person With Explanations by Physician.

The Kansas City Court of Appeals says, in the personal injury case of Houston vs. Chicago, Rock Island & Pacific Railway Co., where the plaintiff was thrown down, striking his back on an iron coupling, that he was permitted, during the trial, to remove his clothing from the part of his body said to be affected by the injury while a physician stated where the nerve or nerves were located and the course of their location. The court does not discover any error in so doing, or any harm which could result to the defendant therefrom.

Son Not Necessarily Employed—Power of Local Surgeon.

The Court of Civil Appeals of Texas says, in Galveston, Harrisburg and San Antonio Railway Co. vs. Allen, brought by two physicians, father and son, to recover for medical services, that, while it may be that "necessity knows no law," it is certain that the law knows no necessity for a young physician being regarded as employed in a case of surgery because of the employment of his father. It also says that it can no more be said that it is within the scope of the apparent authority of a local surgeon of a railway to employ another surgeon to do his duty than it can be said that it is in the apparent scope of a station agent's authority to employ another man as a station agent to perform the duties intrusted him.

Contagious Disease Hospital Not Deemed a Nuisance.

The Court of Chancery of New Jersey says, in the case of State, on the relation of the Board of Health of Hamilton Township, vs. the Inhabitants of the City of Trenton, that a building used as a hospital for the treatment of diseases contagious and infectious in their nature is not per se a nuisance, and the erection and use of such a building will not be restrained simply because there is an apprehension that it may result in being a nuisance; but the court must be satisfied that there is a well-grounded apprehension.

Waiver of Privilege Under Statute—Cross-Examination.

The Supreme Court of Idaho says, in the case of Trull vs. the Modern Woodmen of America, that section 5958 of the Revised Statutes of that state of 1887 contains the following provision: "There are particular relations in which it is the policy of the law to encourage confidence and to preserve it inviolate; therefore, a person can not be examined as a witness in the following cases: . . . 4. A physician or surgeon can not, without the consent of his patient, be examined in a civil action as to any information acquired in attending the patient which was necessary to enable him to prescribe or act for the patient." This provision of the Idaho statute is to be found in the statutes of many of the states, and especially in California, New York, and Missouri. It has been uniformly held that such a statutory provision disqualifies a physician from testifying concerning any facts learned by him or disclosures made to him in the course of his professional treatment of or attendance on a patient. It has also been held that the privilege accorded the patient by such a statute is a personal privilege and can not be waived for him by any other person, and that the death of the patient makes a waiver impossible, and that the physician can never thereafter be permitted to testify concerning any matter touching his professional employment during the life of the patient. On this point, however, there is great diversity of opinion.

More particularly, the court holds in this case that, where, in an application for life insurance the applicant stipulates and agrees that he waives all provisions of law preventing a physician from testifying as to any information acquired by him while attending his patient or rendering him incompetent as a witness as provided in section 5958 above quoted, such waiver is valid and entitles the beneficiary named in the policy, as well as the insurer, in an action on a policy issued on such application, to call and examine the physician who attended the insured during his last sickness, and have him answer questions which, but for such waiver would be regarded as privileged communications that the witness could not disclose. Since the statute authorizes the patient to waive the privilege of secrecy imposed on his physician, and does not fix any specific time at which such waiver can or must be made, no reason is discovered why the waiver may not equally as well be made by contract and in advance of the relation of physician and patient arising as at the time of the trial. As to whether or not the privilege of secrecy granted by statute is a personal privilege attaching only to the person of the patient or can be waived by his heir or legal representative is a question left, so far as this court is concerned, undecided.

The court finds no error in a physician being permitted to be asked on cross-examination the question: "If a man died of the disease supposed to be smallpox, and the man who nursed him all that time had never been vaccinated, and did not take the smallpox at all from the patient, would you think it smallpox?" The rule, it says, is liberal in allowing a broad range of inquiry on cross-examination, and this rule is especially and particularly applicable when it comes to the cross-examination of that class of witnesses commonly called "experts."

Current Medical Literature

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

Medical Record, New York.

September 22.

1 *Obstruction of the Common Bile Duct. J. F. Erdmann, New York.
2 *Lupulin in the Treatment of Gastrointestinal Diseases. H. Stern, New York.
3 Some of the Factors that Predispose to Phthisis. L. P. Barbour, Boulder, Colo.
4 Tuberculous Peritonitis. J. B. Boucher, Hartford, Conn.
5 *An Urgent Plea for the Use of Larger Doses of Antitetanic Serum for Lockjaw. R. Engelmann, Chicago.
6 *Dipsomania. C. J. Douglas, Boston.

1. **Obstruction of Common Bile Duct.**—Erdmann says that when all medical aid has been given without result, or if the symptoms are so urgent as to demand immediate surgical interference, the condition narrows itself to a question of surgical technic and after treatment. In exposing the duct Erdmann makes the incision over the right rectus muscle, splitting the fibers in the middle and internal, or middle and external thirds, for a distance sufficiently long to explore the duct. If the stone is located or adhesions demand it, the incision is rapidly enlarged to give ample working room. After the stone is removed, a fish-tail rubber tube, with from one to three openings, and from 10 to 12 inches long, is passed into the duct in its proximal direction for its lower three-quarters of an inch, sufficiently to bury the apertures only. The tube is held in place by a suture of chromic catgut.

2. **Lupulin in Gastrointestinal Diseases.**—Stern has found lupulin of special value in the functional disturbances of the stomach, in sensory as well as motor and secretory neuroses, and in neurasthenia gastrica. Lupulin may also be employed with advantage in diseases of the stomach, with an anatomic basis. As in gastric diseases, so in relation to the intestines, lupulin is particularly useful in the treatment of neuroses and functional disorders. In intestinal diseases with an anatomic basis, lupulin is often a symptomatic and sometimes a curative remedy. Stern claims that the use of this drug for protracted periods is never followed by undesirable after effects, which are so common with many remedies employed for similar purposes. He thinks that it is probable that enteric fever, as well as dysentery, will be favorably influenced by it.

5. **Use of Larger Doses of Antitetanic Serum.**—Engelmann believes that the ineffectiveness of antitetanic serum in cases of tetanus is due to insufficient doses. In one case, the his-

tory of which she reports, she administered the serum by both intraspinal and subcutaneous injections to the amount of from 60 c.c. to 80 c.c. daily to begin with, the total amount given being 650 c.c. subdurally, and 45 c.c. directly into the wound. After five days of this treatment the man was comfortable, with flaccid muscles and less rigid jaw. Recovery took place in four weeks and at the end of six weeks the patient was back at work.

6. **Dipsomania.**—Douglas defines dipsomania as an abnormal demand of the nervous system, either constant or periodic, for the drug action of alcohol—a demand so strong that the patient takes the alcohol in spite of his earnest wish and effort to avoid it. Dipsomania partakes of the nature of both a neurosis and a psychosis, the predisposing cause being a nervous system that is peculiarly susceptible to the poisonous or intoxicating action of alcohol. Dipsomania is a curable disease and not a mere habit. The patient should be removed from home, with all its customary surroundings, and devote himself to the business of being cured. In the majority of cases Douglas administers some remedies hypodermically at stated hours. He usually prescribes alcoholic liquors during the first few days of treatment, gradually withdrawing them. Milk and raw eggs are probably the best nutriment. He finds that apomorphin is the most prompt and effective hypnotic.

Boston Medical and Surgical Journal.
September 20.

7 Two Cases of Lymphatic Leukemia. J. L. Whitney, Branford, Conn.
8 Trachoma. B. P. Croft, Greenfield, Mass.
9 *Winter Climate of Tucson, Arizona. I. W. Brewer, Fort Huachuca, Ariz.
10 *Removal of an Enormous Ovarian Tumor. W. A. Smith, Springfield, Mass.

9. **Winter Climate in Tucson.**—Brewer recommends residence in Tucson during the winter to consumptives. The town itself is all that can be desired for residence purposes, he states, both as to its surroundings and social advantages. The temperature from October to March is ideal. Only 6 per cent. of the days are cloudy, and rain falls on an average of only 19 days. There are occasional dust storms. Tucson is a desirable winter resort for persons in the early stages of tuberculosis, but not for advanced cases.

10. **Enormous Ovarian Tumor.**—The tumor removed by Smith weighed 192 pounds. The patient was 42 years of age and had been ill for two or three years. She had been under treatment by a quack for nearly two years, electricity being used in the treatment, but the tumor continued to increase in size. The cyst wall was adherent over the entire front of the abdomen, covering a space of about three square feet, extending to the diaphragm, and involving a portion of it. Beneath the liver was a mass the size of a child's head, consisting of several small cysts. The pedicle was about half an inch in diameter. The patient died 24 hours after the operation from general exhaustion and shock.

New York Medical Journal, New York.
September 22.

11 *Prostatectomy for Prostatic Hypertrophy. R. Guiteras, New York.
12 *Cholecystostomy, an Improved Technic. H. Crouse, El Paso, Texas.
13 *Small Frequent Meals in the Treatment of Certain Biliary Affections. C. Herrmann, New York.
14 Gunshot Wounds of the Spinal Cord. A Plea for Early Myelorrhaphy. (To be concluded.) I. S. Haynes, New York.
15 Surgical Anesthesia, as Produced by Narcotic Alkaloids, with Especial Reference to the Antiquity of the Method. W. W. Babcock, Philadelphia.
16 A Case Illustrating the Effect of Long Continued Pressure on the Interior of the Mastoid by a Fluid of Low Infectivity. J. D. Richards, New York.
17 Dangers That May Lurk in Ordinary Milk, and the Duty of the Physician to Educate the Public and the Authorities in the Necessity of a Pure Milk Supply. D. J. M. Miller, Philadelphia.
18 Danger of Weak Solutions of Carbolic Acid when Used in Surgical Dressings. A Plea for Restricting Their Sale. L. B. Meyer, New York.
19 Case of Angioneurotic Edema. H. Morgenbesser, New York.

11. **Prostatectomy.**—Guiteras reviews the improvements made in the operation of prostatectomy by American surgeons and devotes considerable space to discussing the relative merits of the perineal and suprapubic operations. He favors the latter, although he believes that certain prostates can be removed more easily and safely by the perineal route. He says that suprapubic prostatectomy holds the same relation to the perineal operation that abdominal hysterectomy does to the vaginal, in that it is a better surgical procedure; that the changing of the patient's position simplifies the different steps of the operation; and that in most cases suprapubic prostatectomy is preferable to the perineal on account of the ultimate operative results, the purposes for which the operation is performed.

12. **Cholcystostomy.**—As a substitute for Robson's methods, which he deems faulty, Crouse offers a surgical procedure for which he claims the following advantages: 1. It permits the delivery of the fundus of the gall bladder through the entire abdominal wall, unless the patient is inordinately fleshy. 2. Pericholecystitis frequently binds not alone the gall bladder into a constricted position, but drags on the S-curved cystic duct to the extent of at times inducing all the simulating symptoms of calculi and furthering their cystic development. The method above described removes such restrictions, straightens out the cystic duct, thus favoring more perfect drainage not alone of the cystic, but of common and hepatic ducts as well. 3. It liberates the gall bladder from the usual strain of respiratorily induced hepatic movements, fruitful sources of subsequent pains. 4. The gall bladder's new position does not lay the patient liable to hernial development between liver and gall bladder, owing to the usual anatomic restraint of mesocolon attachments of duodenal hepatic ligament and gastric position. 5. It permits surgical cleanliness, digital exploration and immediate drain of gall bladder. 6. A perfect approximation between gall bladder and parietal surfaces is permitted. 7. It permits all surgical steps to be made safely at one sitting, gives a thoroughness and completeness to the operation not experienced while following the Robson methods.

13. **Treatment of Biliary Affections.**—A member of his own family having had a biliary fistula during the last five years, Herrmann had an unusual opportunity of observing the effect which the ingestion of food had on the relative quantity of bile which flowed into the duodenum by way of the common bile duct, and the amount, which flowed into the cystic duct and out through the fistula. Several facts were noted. First, the amount of fistulous bile was greater during the night than during the day, in the proportion of about two to one. Second, when a meal was taken late at night there was very much less fistulous bile, the daily amount of bile secreted remaining approximately the same. These facts indicated that the ingestion of food had a decided effect on the amount of bile which passed into the duodenum. It was further noted that fruit and other substances which increased intestinal peristalsis, also diminished the amount of fistulous bile. Alcohol seemed to act unfavorably by increasing the amount which escaped. The regular habit of tea drinking gave a disagreeable odor to the bile. If the last meal is taken at 7 o'clock in the evening, at 11 o'clock it has usually passed entirely into the small intestine, and from that time until 7 o'clock the following morning the bile secreted is for the most part stored up in the gall bladder, or if there is a fistula, the greater part escapes through that opening. If a meal is taken at 11 or 12 o'clock, its digestion requires two or three hours; during this time bile flows into the duodenum, and so much less escapes through the fistula. During the day the intervals between meals are shorter, so that there is less bile stored in the gall bladder, and therefore less escapes through the fistula. By adding a small meal at night, Herrmann succeeded in reducing the amount of fistulous bile from 26 to 6 grams.

These results prompted him to employ a similar method in the treatment of catarhal jaundice. The result was a most gratifying one. The treatment consists in giving five or six small meals instead of the usual three daily, an extra one being introduced at 10 o'clock in the morning, at 4 o'clock in the afternoon, and at 11 o'clock at night. These small meals consist of milk, eggs, broth, crackers or bread. If the patient awakes during the night a glass of milk may be taken. The bowels are to be kept open by mild laxatives. A daily rectal

injection of cold water is sometimes very efficacious. Light exercises, especially such as bring into play the diaphragm and the abdominal muscles, are helpful.

Lancet-Clinic, Cincinnati, Ohio.

September 22.

20 Some Atypical Cases of Syphilis. A. J. Markley, Cincinnati.
21 How May Interstate Reciprocity Be Best Accomplished? E. S. M'Kee, Cincinnati.

St. Louis Medical Review.

September 15.

22 *The Circulation Viewed from the Periphery. J. Barr, Liverpool, England.
23 Origin and Heredity of Matter. (To be continued.) J. Wright, New York.

September 22.

24 *Technic of Operations on the Central Nervous System. V. Horsley, London.
25 *Occasion of the Dedication of the New Medical Auditorium. G. Homan, St. Louis.
26 *The St. Louis Medical Society in Its Earlier Years. L. Atwood, Ferguson, Mo.
27 *The Medical Profession of St. Louis To-Day. W. B. Outten, St. Louis.
28 *Future of the Medical Profession of St. Louis. W. G. Moore, St. Louis.
29 Origin and Heredity of Matter. (To be continued). J. Wright, New York.

22, 24.—See The Journal, Sept. 1, 1906, page 706.

25, 26, 27, 28.—See The Journal, Sept. 29, 1906, pages 1045 and 1046.

Pennsylvania Medical Journal, Athens.

September.

30 *Extrauterine Pregnancy. C. P. Noble, Philadelphia.
31 *Clinical Value of Blood Cultures. D. L. Edsall, Philadelphia.
32 *Technic and the Results in the Excision of Cancer of the Head and Neck. G. Crile, Cleveland, Ohio.
33 The Message of the Orient. J. E. Pilcher, Carlisle.
34 Nursing and Care of Our Insane. G. H. Moore, Schuylkill Haven.
35 Clinical Study of Our Insane. G. H. Moore, Schuylkill Haven.
36 *Observations on Conservatism in Connection with Gonorrheal Diseases of Uterine Appendages Based on Records of 195 Patients. K. I. Sanes, Pittsburg.
37 Practical Value of Some Old Remedies—Scopolamin Hydrobromid. J. V. Shoemaker, Philadelphia.

30.—See The Journal, Dec. 16, 1905, page 1906.

31.—See The Journal, Oct. 28, 1905, page 1350.

32.—See The Journal, Nov. 4, 1905, page 1438.

36. Conservatism in Gonorrheal Diseases of Uterine Appendages.—Sanes makes a plea for the conservative treatment of gonorrheal diseases of the uterine appendages, basing his remarks on 195 cases studied by him. Of this number 160 patients, or 82 per cent., were found to be below 30 years of age. Ninety-eight, or 50 per cent., had never been pregnant. Twenty-three, or 11 per cent., had aborted but had no children; fifty-seven, or 29 per cent., had only one child each, making a total of 90 per cent. of the patients each of whom naturally would be anxious to preserve her reproductive function. Sanes states that cases of gonorrheal salpingitis are often cured spontaneously by expectant treatment, some recovering spontaneously even after they develop into pus tubes. He cited a number of instances in which pregnancy took place, followed by the birth of a living child. For a pyosalpinx in its early stages, with the gonococci still active, if an operation is necessary, a vaginal salpingotomy and drainage is, to his mind, the best operative procedure. Abdominal conservative operation at this stage is dangerous. A sterile hydrosalpinx demands a salpingostomy, vaginal or abdominal. For a single sterile pyosalpinx it has been his practice to perform a salpingectomy, vaginal or abdominal. In double sterile pyosalpinx, the patient being young and anxious to preserve her sexual functions, a vaginal salpingostomy with drainage in the better tube is performed. A chronic pyosalpinx of long standing could hardly be expected ever to resume its function if saved, but even in such a tube, Sanes says, conservatism (vaginal salpingotomy) is often of value as a life-saving measure in patients whose general condition does not permit a radical operation. A secondary operation may be necessary later, but not always. With properly applied and repeated pelvic packing we can obliterate the pus sacs by allowing connective tissue formation, and while the tube then is useless it is also harmless, and the patient is saved from the more radical operation. Should complete salpingectomy be absolutely necessary, the ovaries, or part of them, should be preserved for the purpose of menstruation and possible ovarian secretion. To save part of the ovary involved in tubo-ovarian abscesses is neither safe nor advisable. In cases of double tubo-ovarian abscesses, therefore, no conservatism whatever is possible; but in the 141 patients operated on Sanes found only 7, or 5 per cent., of double tubo-ovarian abscesses, leaving 94 per cent. of patients in whom an attempt should be made to save at least a part of one ovary.

The number of conservative operations performed by Sanes for gonorrheal diseases of adnexa is 72. All the patients were discharged from the hospital as cured, there being no deaths. The postoperative histories could be followed up only in 34 cases. Of these 34 patients 9, or 26 per cent., had a secondary operation, 4 following vaginal drainage and 5 following unilateral salpingo-oöphorectomy. In the 5 secondary operations that followed unilateral salpingo-oöphorectomy no pus was found in any one of them. Two were found to be hydrosalpinx, 2 were normal, 1 was a pachysalpingitis. Four ovarian cysts found in connection with the first 4 tubes necessitated the 4 secondary salpingo-oöphorectomies. Thirty-three, or 97 per cent., retained their menstrual function. One patient, or 3 per cent., lost it in spite of the conservative treatment of the ovaries.

Of the 25 patients not reoperated on, 7 show adnexa palpable though not tender; and of these 7, 3 complain of occasional pain in the region of the palpable tubes. Three, or 9 per cent., conceived; one three years after a unilateral salpingo-oöphorectomy came to the office with pregnancy of three months' standing. One after a salpingo-oöphorectomy seven years ago miscarried twice, and one, the most remarkable of all, gave birth to a healthy child without any complications after a right salpingo-oöphorectomy, left salpingectomy, and partial excision of the left ovary.

Northwest Medicine, Seattle, Wash.

September.

38 Diagnosis of Insanity by the General Practitioner and the Consequent Duties which Must Necessarily Devolve on Him. C. E. Doherty, New Westminster, B. C.
39 Movable Artificial Eye. E. A. Hall, Victoria, B. C.
40 Ulceration of the Stomach. R. C. Boyle, Vancouver, B. C.
41 *Phosphatic Calculi Following Suprapubic Prostatectomy. R. E. Walker, New Westminster, B. C.
42 *One Hundred and Seventy-Seven Cases of Typhoid Fever Treated in Alaska. E. M. Rininger, Seattle, Wash.
43 Acute Contagious Diseases of Childhood; Duration of Danger of Contagion and Methods of Disinfection. H. G. Lazelle, Seattle, Wash.
44 Sources of Infection and Manner of Contagion of Acute Contagious Diseases of Childhood. W. N. Hunt, Bellingham, Wash.

41. Phosphatic Calculi Following Suprapubic Prostatectomy.—In the case reported by Walker the bladder wound closed entirely in about six weeks, and the patient's condition was all that could be desired for about three months, when he began to notice that when urinating the urine would cease to flow suddenly and there was pain with pyuria. On examination with a sound a calculus could be felt. The lithrotrite failing to crush the stone, the bladder was opened and two stones were removed. No cause for their formation was discovered.

42. Typhoid in Alaska.—During seven years of practice in Alaska Rininger treated 127 cases of typhoid. Of this number 13 occurred in females and 164 in males, the age ranging from 14 months to 66 years. The largest number of cases occurred in the third decade. Twelve patients had had the disease previously. Intestinal hemorrhage occurred in 10 cases. Fifteen patients developed venous thrombosis. In 12 cases the left leg was affected, in 2 cases the right, and in one case both legs were involved. Thrombosis of the left popliteal artery occurred in one case. This was followed by gangrene, necessitating amputation of the leg. Neuritis occurred in one case, affecting both feet. Severe nephritis occurred in one case, a man, aged 66 years. This patient died of uremic coma. Subacute osteomyelitis occurred in three cases, attacking the sixth rib at the costo-cartilaginous junction in each case. Orchitis and epididymitis developed in one case. Intestinal perforation occurred in three cases, two of which resulted fatally. There were four cases of relapse. No routine method of treatment was employed. There were only seven deaths in this series.

Archives of Otology, New Rochelle, N. Y.
August.

45 *Acute Purulent Otitis and Mastoiditis, Treated by Means of Artificially Induced Hyperemia, According to the Method of Bier. S. J. Kopetzky, New York.
46 Case of Brain Abscess Following Traumatism and Acute Mastoiditis. Case of Hysteria Simulating Brain Abscess After Operation for Secondary Mastoiditis. A. Wiener, New York.
47 *Treatment of Purulent Otitis by Congestive Hyperemia. W. Keppler, Bonn, Germany.
48 Simple and Radical Mastoid Operations Under Local Anesthesia. H. Neumann, Vienna.
49 Disturbances of Speech in Childhood. V. Hammerschlag, Vienna.
50 Objective Tinnitus. C. Friedmann.
51 Four Fatal Cases After Purulent Otitis. Hoelscher, Ulm, Germany.

45. **Bier's Hyperemic Treatment of Mastoiditis.**—Kopetzky summarizes his observations of the Bier method for the treatment of acute otitis media, either with or without mastoiditis, as follows: 1. If used early it will greatly increase the probabilities of curing the condition without resort to major operative measures. 2. In cases cured under its influence the reestablishment of ear function will occur quicker than under the usual line of treatment. 3. Its use by the inexperienced is absolutely dangerous. 4. Its employment should be limited to the young and the otherwise healthy. 5. Finally, when the indications are kept in mind and when properly and intelligently used, induced hyperemia will be found a measure destined, when its scope and limitations are better understood, to find a permanent place in otologic therapeutics.

47. **Congestive Hyperemia in Purulent Otitis.**—Kempler reports the excellent results obtained in the treatment of 10 cases by Bier's method and warmly recommends its employment.

Journal Missouri State Medical Association, St. Louis.
September.

52 Some Questions Concerning the Treatment of Uterine Fibromyomata. H. S. Crossen, St. Louis.
53 *Suprapubic Cystotomy as a Preliminary to, and as a Route for the Performance of a Considerable Number of Prostatectomies. W. T. Elam, St. Joseph.
54 Intestinal Autointoxication. J. B. Norman, California, Mo.
55 Etiology of Accessory Sinus Disease. F. C. Ewing, St. Louis.
56 Diagnosis of Inflammatory Diseases of the Accessory Sinuses of the Nose. G. Sluder, St. Louis.
57 Treatment of Diseases of the Accessory Sinuses. M. A. Goldstein, St. Louis.
58 Ocular Signs and Complications of Accessory Sinus Disease. J. Green, Jr., St. Louis.

53. **Suprapubic Cystotomy Preliminary to Prostatectomies.**—Elam does not claim that the suprapubic is the easier route or even the one of choice for the performance of the larger number of prostatectomies. In many cases, however, the immediate demand is for drainage and vesical rest, and Elam prefers the suprapubic route for this purpose. If conditions are favorable the prostatectomy can be performed at the same time, although he has found but few patients whose interests are not better safeguarded by deferring the prostatectomy until a later date, at which time it can be performed by the route which seems best adapted to the character of the growth. The plea in this paper is for conservatism in the effort to prolong life in the case of the advanced and extreme prostatic.

Interstate Medical Journal, St. Louis, Mo.
September.

59 *Relative Value of the Surgical Procedures Employed for the Relief of Paralyses Following Acute Anterior Poliomyelitis. N. Allison, St. Louis.
60 Case of Double Resection for the Correction of Protrusion of the Lower Jaw. V. P. Blair, St. Louis.
61 When Should We Operate in Appendicitis? R. Hill, St. Louis.
62 Urethrotomy for Ruptured Urethra. R. Harrison, London, England.
63 Angioma of the Upper Lid; Operation. J. W. Charles, St. Louis.

59. **Value of Surgical Procedures for Relief of Paralyses Following Acute Anterior Poliomyelitis.**—Allison says that in extreme forms of infantile paralysis, the wearing of apparatus and the use of crutches is necessary, that the upright position may be maintained. In extreme forms of infantile paralysis the wearing of heavy appliances may be materially lessened by the employment of operations designed to fix the joints. In cases in which there is good muscular power remaining in strong muscles, these muscles may be used to good advantage by transference of their tendons. Care should be taken that the insertion of these tendons is strong and permanent, and that the muscles pull to the best mechanical advantage. In certain cases tendon-transplantation may be supplemented to good advantage by arthrodesis. In slight forms of paralysis the grafting of nerves is a surgical procedure of recognized merit.

Journal of Nervous and Mental Disease, New York.
September.

64 *The Great Psychical Importance of Ear Disease. W. S. Bryant, New York.
65 Ear Affections and Mental Disturbances. E. Amberg, Detroit, Mich.
66 Question of Protopathic and Epicritic Sensibility and the Distribution of the Trigeminus Nerve (Third Branch). C. L. Dana, New York.

64. **Psychical Importance of Ear Disease.**—Bryant reports several cases of auditory hallucinations which are interesting because of their evident dependence on catarrhal conditions of the ears, as shown by the cessation of the hallucinations when the aural conditions were corrected. The evidence points to some connection between ear disease and hallucinations of hearing other than mere coincidence. Bryant thinks it is probable that hallucinations of hearing originate in subjective ear sensations in most cases, and that cure of the coincident ear disease cures or assists the convalescence from the psychoses in a notable number of cases. Some cases of insanity appear to be excited by ear disease and the convalescence of insane patients is delayed by the presence of ear disease. Unilateral hallucinations of hearing, he says, are unquestionably due to unilateral ear disease.

Ohio State Medical Journal, Columbus.
September 15.

67 Surgical Treatment of Intestinal Indigestion. E. Harlan, Cincinnati.
68 Skepticism in Medicine. S. P. Wise, Millersburg.
69 *Methods in the Diagnosis and Treatment of Prostatic Hypertrophy. J. H. Jacobson, Toledo.
70 Visual Results After Cataract Extraction. D. W. Green, Dayton.
71 The Anterior Capsule in the Extraction of Cataract. C. F. Clark, Columbus.
72 Some of the Minor Details Frequently Neglected in Cataract Extractions. R. D. Gibson, Youngstown.
73 Further Observations on the Pathology of General Paralysis of the Insane. J. D. O'Brien, Massillon, Ohio.
74 Typhoid Fever—Treatment and Prevention of Relapses. C. W. Hixson, Cambridge.

69. **Diagnosis of Prostatic Hypertrophy.**—Jacobson has found two methods of value in making a diagnosis of hypertrophy of the prostate. These are (1) cystostomy, and (2) bimanual examination with a suitable sound in the bladder and the finger in the rectum. He has modified his cystoscope by dividing the circumference of the circular hard rubber at the ocular end of the instrument into eight parts by eight lines, and one vertical line placed on the handle or electrical connection of the instrument, so that each of the eight lines of the ocular end are separately brought into alignment with the line on the handle, thus dividing the circumference equally. In order to be able to measure the urethral length as well as to determine the size of an intravesical enlargement, the shaft of the cystoscope, near the ocular end, is ruled in centimeters. He prefers the perineal route for operating.

The Canada Lancet, Toronto.
September.

75 *A New Operation for Extreme Cases of Septal Deflection, with Presentation of a Successful Result in an Adult Case. J. Price-Brown, Toronto.
76 Causes and Treatment of Sterility in the Male. A. Fletcher, Toronto.

75. **New Operation for Septal Deflection.**—To remove the antero-posterior tension Brown makes a cross cut completely through both mucous membranes and cartilage and extending beyond the other two cuts, converting the two straight lines into the letter H. The points to which he draws attention in reference to it are these: First, that as the curvature of the cartilage from above downward gives it a greater width than it would occupy if it were upright in its normal position, the two longitudinal cuts should be so managed as to remove two long slips of the septal cartilage; and at the same time be made at an oblique angle, so that the cut edges can slide over each other. Second, that the cross cut of the H should be very decidedly oblique, cutting through both mucous membranes and cartilage with knife or chisel, so that in replacing the segments the posterior central segment of the septum will slide forward over its fellow and the anterior one backward. It

matters little how these cuts are made if the principle on which they are founded is carried out. The long strips of cartilage might be removed either by drill or swivel saw, or knife or ordinary saw of unusual thickness, or any improved instrument specially constructed for the purpose. The cross cut can be made by either chisel or knife. The immediate result of the combined cuts when made completely through both mucous membranes and cartilage is that all tension is removed, that two rectangular flaps are made by the H incision, the basic blood supply of each being retained, and that they can be pressed with ease into the normal position, their edges sliding over each other. The pieces will bend easily and, sliding over each other, are readily adjusted; they are retained in position by the use of the invaluable rubber splint, a single one on the convex side being the only one needed.

Columbus Medical Journal.

September.

77 *Value of the Leucocyte Count in Cases of Appendicitis. R. P. Daniells, Toledo.
78 Present Position of Radiation in Treatment. G. Sichel.
79 Meeting of American Medical Association and Impressions of Historic Boston. C. P. King, Newark.

77. **Leucocyte Count in Appendicitis.**—Daniells made careful blood counts in 120 cases, all of which came to operation and were proved to be cases of uncomplicated appendicitis. He found that in the beginning of an acute attack of appendicitis there is, as a rule, a leucocytosis, but that in mild cases no leucocytosis may be present. A rapidly increasing leucocytosis in these acute cases means that the inflammation is increasing and extending, and this is true even when other symptoms show no change or perhaps a slight improvement. When cases do not come under observation until late in the attack and an abscess is already present, there is usually an increase in the white blood cells, but this is dependent on the amount of peristalsis which is allowed to take place.

Archives of Pediatrics, New York.

September.

80 *Weights of the Viscera in Infancy and Childhood, with Special Reference to the Weight of the Thymus Gland. D. Bovaird, Jr., and M. Nicoll, Jr., New York.
81 The Blood Changes in Mumps. I. S. Wile, New York.
82 Does the Bacterial Content of City Milk Influence the Infantile Death Rate? G. W. Goler, Rochester, N. Y.
83 Nervous Children. A. Church, Chicago.

80. **Weights of Viscera in Infancy and Childhood.**—A study of the average weights of the viscera in infants and children up to the age of five years showed Bovaird and Nicoll that there is a constant relation between the weights of the more important viscera, thus: The weight of the liver will average seven times that of the heart. The weight of the spleen will average one-tenth that of the liver. The weight of the kidney will average one-ninth that of the liver. The weight of the thymus gland as commonly given is excessive, owing to the acceptance of pathologic glands as the standard for normal conditions. The average weight of the thymus at autopsy is approximately 6 grams. There is no evidence of a growth of the thymus after birth under ordinary conditions, but under special conditions the gland does grow and even hypertrophy enormously.

Virginia Medical Semi-Monthly, Richmond.

September 7.

84 Subpectoral Abscess. J. H. Musser Philadelphia.
85 The Treatment of Acute Nephritis. G. F. Butler, Chicago.
86 Antitoxin in Diphtheria. C. T. St. Clair, Tazewell, Va.
87 *Some New Methods in Skin Grafting. J. E. Cannaday, Paint Creek, W. Va.
88 Analysis of Stomach Contents. E. L. Kellogg, New York.
89 Epistaxis. J. Eliot, Washington, D. C.
90 Conservative Operations on the Ovaries. J. M. Baldy, Philadelphia.

87. **New Methods in Skin Grafting.**—All the practical points in this communication are covered in an article by Dr. Cannaday on the same subject, which appeared in THE JOURNAL, June 2, 1906.

University of Pennsylvania Medical Bulletin, Philadelphia.

September.

91 Premature Separation of the Placenta from Its Normal Position. W. R. Nicholson, Philadelphia.
92 Bone Cysts. G. P. Müller, Philadelphia.
93 *Studies on Phagocytosis. D. H. Bergey, Philadelphia.

93. **Phagocytosis.**—This article appeared in THE JOURNAL, Aug. 25, 1906, page 580.

Cleveland Medical Journal.

September.

94 Factors in the Surgical Physiology of the Circulation. G. Crile, Cleveland.
95 *Treatment of Typhoid. J. Phillips, Cleveland.
96 Management of Prolonged First Stage of Labor. F. S. Clark, Cleveland.
97 *Several Thousand Convulsions in Four-weeks' Old Infant. A. F. Furrer, Cleveland.
98 Case of Malignant Endocarditis. G. S. Smith, Cleveland.

95. **Treatment of Typhoid.**—Phillips outlines the treatment that was employed in 1,070 cases of typhoid admitted to the Lakeside Hospital in Cleveland. The mortality in these cases was 7.9 per cent. The treatment does not differ from that usually employed. The patient is kept on a soft diet for four days, consisting of softened milk toast, eggs, junket, custard and well-cooked rice. The diet is then increased by the gradual addition of cereals, crackers, scraped beef, creamed chicken, bread and butter, and milk pudding. Milk is given between meals and in the evening. The convalescent diet is the same, with the addition of more meat, fish, potatoes, tea and coffee. The tub bath is used. Cholecystitis was present in 12 cases; intestinal hemorrhage occurred in 63 cases; perforation of the intestine in 29 cases; phlebitis in 42 cases; otitis media in 31 cases; cystitis in 9 cases and pyelitis in 2 cases.

97. **Convulsions in an Infant.**—Furrer reports the case of an infant four weeks old that had general convulsions, coming on about every five minutes day and night, since the fourth day after birth. No cause for the convulsions could be discovered. The infant was well developed, and in the best of health. Under treatment with castor oil and sodium bromid, one grain every three hours, and mercurial ointment, the baby recovered.

St. Paul Medical Journal.

September.

99 Prophylaxis and Treatment of Prostitution. D. Lewis, Chicago.
100 Mastoiditis. J. G. Parsons, Brookings, S. D.
101 Recent Investigation and Complications of Diphtheria. W. R. Ramsey, St. Paul.
102 Scarlet Fever. H. T. Pippert, St. Paul.
103 Senile Bronchopneumonia. T. G. Stephens, Sidney, Iowa.

Annals of Gynecology and Pediatry, Boston.

September.

104 Pelvic Abscess and Its Treatment. N. MacPhater, New York.
105 Relation of the Major Gynecologic Postoperative Cures to the Country Doctor. H. Hamilton, Harrisburg, Pa.

Kentucky Medical Journal, Louisville.

September.

106 Appendicitis. J. H. Peak, Louisville.
107 Scarlet Fever. E. N. Hall, Woodburn.
108 The Use of Forceps. O. H. Reynolds, Frankfort.
109 Two Cases of Suppurative Synovitis of the Knee Joint. A. M. Crittenden, Ferguson.
110 Blastomycosis. W. R. Burr, Auburn.
111 Fracture of the Clavicle. C. H. Linn, Kuttawa.
112 Relation of the Physician to Sanitation and Hygiene. H. P. Slghts, Paducah.
113 Treatment of Pneumonia. A. E. Gardner, Morgantown.
114 Postpartum Hemorrhage. M. H. Sutherland, Harrodsburg.
115 Treatment of Acquired Syphilis. C. P. Price, Harrodsburg.

Journal of the Michigan State Medical Society, Detroit.

September.

116 Cesarean Section for Placenta Prævia Centralis. J. G. Lynds, Ann Arbor.
117 Fatal Case of Eclampsia, After the Delivery of Twins, Remarks on the Etiology and Pathology of the Disease. C. G Parnall, Jackson.
118 Iodized Catgut. W. T. Dodge, Big Rapids.
119 Systemic Disturbances Secondary to Pathologic Conditions in the Nose. J. E. Gleason, Detroit.
120 Treatment of Tetanus. W. H. Hutchings, Detroit.

Journal of the Minnesota State Medical Association and the Northwestern Lancet, Minneapolis.

September 1.

121 Pneumonia: Its Present Day Status and Treatment. S. H. Boyer, Duluth.
122 Pulmonary Consumption. L. C. Weeks, Detroit, Minn.
123 State Hospitals for the Insane, their Relation to the Public. E. C. Erieson, Elk Point, S. D.
124 Surgery of the Gall Bladder and Bile Ducts. J. T. Rogers, St. Paul.

Buffalo Medical Journal.

September.

125 Etiology of Functional Nervous Diseases. J. W. Putnam, Buffalo.

Journal of the Medical Society of New Jersey, Newark.

September.

126 Value of Tartar Emetic in the Treatment of Traumatic Tetanus and Cerebrospinal Meningitis. D. St. John, Hackensack, N. J.
127 Etiology of Rachitis, Scorbutus and Cretinism. A. A. Strasser, Arlington, N. J.
128 Diarrhea in Infancy and Early Life. I. H. Hance, Lakewood, N. J.

Journal of the Outdoor Life, Saranac Lake, N. Y.

September.

129 Why Rest Is So Essential in the Treatment of Tuberculosis. D. R. Lyman, Wallingford, Conn.
130 Taking the Open Air Cure in Switzerland. N. McL. Carter.
131 Hints and Helps in the Choice of an Occupation. R. A. Harris, Pleasant Grove, Tex.
132 Heated Table for Winter Work Out-of-Doors. L. R. Perkins, Keytesville, Mo.
133 Pennsylvania's Chance to Provide Outdoor Work for Thousands of Convalescents. J. T. Rothrock, Mont Alto, Pa.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal.

September 8.

1 *President's Address, British Medical Association. R. A. Reeve.
2 Teaching of Anatomy in Universities and Medical Schools. A. Robinson.
3 Dangers to Otology. J. D. Grant.
4 Relation of Gynecology to the Work of the General Practitioner. A. H. F. Barbour.
5 Chairman's Address, Section of Ophthalmology. R. M. Gunn.
6 Proteid Nomenclature. W. D. Halliburton.
7 Chairman's Address, Section of Surgery. H. C. Cameron.
8 An Imperial Pharmacopeia. D. MacAlister.
9 Annual General Meeting, British Medical Association.
10 Report of Work of Sections, British Medical Association..
11 *Ovarian Pregnancy. J. T. Hewetson and J. Lloyd.

1.—See abstract in THE JOURNAL, Sept. 1, 1906, page 705.

11. **Ovarian Pregnancy.**—Hewetson and Lloyd report a case of ectopic gestation which they are satisfied arose within the substance of the ovary. The patient, aged 35, was referred for operation for a supposed subacute appendicitis. Since her last pregnancy menstruation had been quite irregular up to a few weeks of her present illness. She was taken suddenly with severe pain in the lower abdomen, which was followed by symptoms of collapse. Under treatment she improved somewhat and on the following day menstruation began (having been delayed for two weeks) the flow containing many shreds and little pieces. This continued for seven days, the pains recurring from time to time and being most severe in the right lower quadrant of the abdomen. The woman vomited after every meal. On opening the peritoneal cavity about two pints of porter-like fluid escaped, and still more was mopped from the pelvis. A mass of firm clot as large as a fist was removed from the deepest part of the pelvic cavity, being bound by firmer fibrinous clot, which formed the walls of an almost perfect cavity. The uterus was larger than normal, but was otherwise healthy. The right Fallopian tube was normal from end to end; fimbriæ were free and unattached. The right ovary was enlarged, and formed part of the walls of the sac in which the blood clot lay. A ragged opening in its posterior surface toward the pelvic cavity was evidently the source of the bleeding. The ovary and tube were, therefore, tied off with silk close to the uterus and removed. The left ovary and tube were normal. They were not removed. The pelvis was cleaned up with dry sponges and the wound was closed. The patient made an easy recovery. Chorionic villi were found embedded in the fibrin lining of the cavity. These findings, the authors believe, justify them in concluding that this was a case of promary implantation of a fertilized ovum within the substance of the ovary, and that by gradual distension and thinning of the part nearest to the surface rupture of the sac followed with expulsion of the mole into the pouch of Douglas. The adjoining ovarian stroma was intensely vascular, suggesting an intervillous circulation.

The Lancet, London.

September 8.

12 The Evolution of Insanity. R. Jones.
13 *Epidemic Cerebrospinal Fever. J. L. Steven.
14 *The Submucous (or Window) Resection Operation for Correction of Deflections of the Nasal Septum. E. F. Potter.
15 Presence of the Bacillus Typhosus or a Closely Allied Organism in a Sample of Distilled Water Suspected to Have Caused Typhoid Fever. R. W. C. Pierce and J. C. Thresh.
16 The Therapeutic Action of the Iodids. J. Burnet.
17 *Three Cases of Twisted Pedicle. W. G. Sutcliffe.
18 A Presumed Case of Acute Yellow Atrophy of the Liver. W. C. Hayward.
19 Preliminary Note on a New Spirochete Found in a Mouse. A. Breinl and A. Kinghorn.
20 *Case of Intussusception, Illustrating the Fallacies and Dangers of the Inflation Treatment. J. L. Falconer.
20½ First Report of the Expedition to the Amazon, 1905. H. W. Thomas.

13. **Epidemic Cerebrospinal Fever.**—In a lecture on this subject Stevens reviews the clinical history of the disease and emphasizes its specific origin, the diagnosis of lumbar puncture and the frequency of the disease in sporadic form.

14. **Submucous Resection Operation.**—Potter endorses the value of this operation and its superiority over other operations for deflections of the nasal septum.

17. **Twisted Pedicle.**—The three cases reported by Sutcliffe occurred in females, aged 15, 21 and 48 years, respectively. In the first case the diagnosis of appendicitis was made, but at the operation the disturbance was found to have been caused by a thin-walled cystic tumor which sprang from the left broad ligament. The second case also was one of left broad ligament cyst, the pedicle of which was twisted on itself three times. The third case was one of right broad ligament cyst with the pedicle twisted into a knotted ropelike cord. There was also a dermoid tumor of the right broad ligament.

20. **Case of Intussusception.**—In the case reported by Falconer the tumor was made to disappear by water inflation, but reappeared after each treatment. The intussusception was of the ileocecal variety. Falconer states that when an acute intussusception has existed for 30 hours the patient should be subjected to rational and scientific surgery without delay.

Indian Medical Gazette, Calcutta.

July.

21 The Spread of Plague. S. Srowning-Smith.
22 Natural History of Plague. A. F. Stevens.
23 How Plague Is Spread. E. F. G. Tucker.
24 Plague in the City of Madras. T. S. Ross.
25 How Does Plague Spread? A. M. Elliot.
26 Effects of Rat Extermination on the Incidence of Plague in a Selected Area in Azamgarh City. J. W. Walker.
27 How Plague is Spread. C. A. Gill.
28 An Experimental Investigation as to the Potency of Various Disinfectants Against Rat Fleas. W. M. C. Hossack.
29 Rat Killing for Prevention of Plague. G. King.

August.

30 The Supply of Drinking Water in India and Its Connection with the Subsoil Water. A. W. Dawson.
31 Couching of the Lens, as Practiced by Native Practitioners in India. R. H. Elliot.
32 Extraction of Cataract in the Capsule. H. Smith.
33 Cataract Expression (Smith's Operation). F. P. Maynard.
34 Extraction of Cataract in the Capsule versus the Ordinary or Capsule Laceration Method. H. Gidney.

Journal of Tropical Medicine, London.

September 1.

35 The Bacillus of Hamilton Wright, Obtained from Two Cases of Acute Beriberi. L. S. Dudgeon.
36 Beriberi; Mouldy Rice; the Occurrence of Beriberi in the Sokor District. J. D. Gimlette.

Presse Médicale, Paris.

37 (XIV, No. 64.) *Sur la pénétration des poussières minérales et des graisses à travers les parois du tube digestif (penetration of mineral dust and fats through the walls of the digestive tract). P. Vansteenberghe and P. Sonneville.
38 Lean Diabetes as Sequel to Mumps.—Diabète maigre postourlien. Laignel-Lavastine.
39 Bromatologie clinique du pain (of bread). A. Martinet.
40 (No. 65.) A propos de l'appendicite. J. L. Faure.
41 Du tremblement palustre. Jourdran.
42 Traitement de la coqueluche par le chloroforme (whooping cough). H. de Rothschild.
43 Quelques points du traitement médical en gynécologie. A. Martinet.
44 (No. 66.) *L'ulcère peptique du jéjunum. A. Gosset.
45 Du promontoire du bassin (of pelvis). R. Robinson.
46 L'état actuel de la médication phosphatée. S. Posternak.
47 Success of Arsenic in Treatment of 8 Children with Whooping Cough.—Traitement de la coqueluche par l'arsenic. J. de Nittis.
48 (No. 67.) Study of Intoxication from Tobacco.—Sur quelques lésions de l'intoxication tabagique expérimentale. A. Gouget.
49 *Success with Sodium Bicarbonate in Cholera.—Traitement du choléra. A. Thébaud.
50 (No. 68.) Emploi du bromure de potassium dans l'épilepsie. J. and R. Voisin.
51 La flore microbienne de l'ulcère des pays chauds. Boucher.
52 *Le surmenage aigue (overwork). M. Champeaux.

37. **Passage of Mineral Dust Through the Walls of the Digestive Tract.**—This communication from Calmette's Pasteur

Institute at Lille states that fine particles of mineral dust and fats are able to pass through the walls of the digestive tract with such facility that deposits are found in the lungs more extensive than when the same substance is inhaled directly into the lungs. Finely pulverized charcoal, India ink, vermillion and lamp black were fed to laboratory animals. It was invariably found that these insoluble particles insinuated themselves between the epithelial cells and then were incorporated secondarily by the phagocytes which carried them to the lung parenchyma without delay. This occurred without the slightest lesion in the intestinal wall. See summary of previous communications, page 972.

44. **Peptic Ulcer of Jejunum.**—Gosset gives an illustrated description of a case of pyloric stenosis treated by transmesocolic posterior gastroenterostomy. Two years later a peptic ulcer in the jejunum perforated into the transverse colon. The jejunum and transverse colon were isolated and ileosigmoidostomy done, followed by the complete recovery of the patient, a man of 42. The subject is discussed from a number of standpoints, with numerous citations from the literature. The most important conclusion drawn is the necessity for medical treatment, long continued, after gastroenterostomy, in persons inclined to hyperacidity. The anastomosis should be located as far as possible from the pylorus, and a suitable diet and medical treatment should be kept up for years afterward to prevent danger from peptic irritation.

49. **Sodium Bicarbonate in Cholera.**—Thébaud says that he has attended 1,354 cases of cholera during seven years of practice in Indo-China. He had the disease himself once and, tortured by thirst, he drank copiously of Vichy water notwithstanding his incessant vomiting. From that moment his condition notably improved. This fact, and Auerbach's assertions in regard to the pronounced bactericidal action of sodium bicarbonate in his laboratory tests at Kharkoff, encouraged Thébaud to try an alkaline treatment. The 8 patients thus treated all recovered, although the prognosis had been absolutely bad. At the first serous stool during an epidemic he gives 50 gm. of rum, believing that alcohol favors the defensive reactions of the organism. He then gives a dessertspoonful every hour of a mixture of 20 drops of laudanum in 250 gm. water. Larger doses depress. When the symptoms show signs of aggravation he makes a subcutaneous injection of 2 gm. of sodium bicarbonate in 20 gm. of distilled water. Two hours afterward the patient is given a 3 per 1,000 solution of sodium bicarbonate to drink freely, up to three quarts a day, regardless of the persistence of the vomiting. If the condition has not improved in 15 hours he gives another subcutaneous injection of the sodium bicarbonate. The patients are kept warm by a native method of two or three charcoal braziers under the bed, with a blanket reaching to the floor all around, but held up away from the patient by three hoops fastened to the sides of the bed. Warm air, heated to about 45 C., is thus constantly circulating around the body. The 8 patients thus treated all recovered without a mishap, while the epidemic had been constantly fatal up to this time.

52. **Signs of Overwork.**—Champeaux defines the word he uses—"surmenage"—as the result of the loss of balance between the cellular nourishment and functional production. It occurs when the food is sufficient for normal work, but the amount of work is above normal; when the work is normal, but the nourishment is below what is required under these conditions; when the work is normal, but the supply of food is overabundant. The minor signs of the condition are "fatigue fever," and irresistible desire to sleep at times during the day, and much thirst with loss of appetite. A condition of autointoxication is aggravated sometimes and serious symptoms follow exposure to extremes of temperature, either very high or very low. He has found the blood unduly thick under these conditions. When work makes one hungry the physiologic limits have not been passed, but this may be assumed when the organism demands large amounts of water to wash out toxic accumulations while the cells refuse to take up more nourishment, as they are already clogged with waste, and the patient is very thirsty, with no appetite.

Berliner klinische Wochenschrift.

53 (XLIII, No. 27.) *Ueber Hyperämiebehandlung der Lungentuberkulose. H. Leo.
54 Blood Pressure and Influence of Food in Experimental Nephritis.—Experimentelle Untersuchungen ueber das Verhalten des Blutdrucks bei Urannephritis und ueber den Einfluss der Nahrung bei verschiedenen Nephritisarten. J. Brodzki.
55 *Zur Pathologie der Basedow'schen Krankheit. M. Bernhardt.
56 Fälle chronischer Ruhr unter dem Bilde eines Mastdarmcarcinoms verlaufend (dysentery simulating rectal cancer). C. A. Ewald.
57 The Seashore for Scrofulous Children.—Therapie der Skrophulose. B. Salge.
58 (No. 28.) *Bedeutung der Jackson'schen Epilepsie für die topische Hirn-Diagnostik (diagnosis of focal lesions). K. Bonhoeffer.
59 *Radiograms After Injection of Oxygen Into a Joint.—Ueber Röntgenbilder nach Sauerstoffeinblasung in das Kniegelenk. A. Hoffa.
60 Ueber das Verhalten von Organ-Rezeptoren bei der Autolyse, speziell der tetanusbindenden Substanz des Gehirns. A. Wolff-Eisner and A. Rosenbaum.
61 *Retrograde Current in Esophagus as Cause for Coated Tongue.—Rückläufige Strömung in der Speiseröhre als Erklärung der belegten Zunge. L. Kast.
62 *Heilbarkeit der chronischen Gastritis (curability). P. Rodari (Zurich).
63 Injuries from Firearms of Small Caliber.—Ueber Kleinkaliberschussverletzungen. Kettner.

53. **Hyperemia in Treatment of Pulmonary Tuberculosis.**—Leo has been experimenting for nearly three years with hyperemia in the treatment of pulmonary tuberculosis. Theoretically, he says, everything is in favor of striving to influence the disease by inducing hyperemia artificially. This can be accomplished only, he thinks, by passive congestion. The best means of obtaining this is by having the patient recline with the chest lower than the rest of the body, the legs raised, and also the head. This mode of reclining should be systematically applied every day, gradually lengthening the time each day and having the patient sleep with merely the head slightly raised. It still remains to be decided whether more active measures, suction apparatus or tuberculin treatment can be successfully combined with this method. It seems rational, he says, to suppose that the action of tuberculin would be enhanced by this passive congestion. He has applied this method of treatment in 30 cases, and the results encourage him to advocate its more general use. Jacoby, Weicker and Link have previously called attention to the advantages of this means of influencing tuberculous pulmonary processes. A tendency to hemoptysis is an absolute contraindication.

55. **Pathology of Exophthalmic Goiter.**—Bernhardt reports a case in which exophthalmic goiter was observed in a patient with cervical ribs. In another case exophthalmic goiter was followed by tabes in a man who had worked up a large business as a baker, and frequently had to pass from his work in the baking rooms to the cold store where the goods were sold, and who was always overworked. His wife worked with him, and after seven years of marriage and the birth of two children, she also began to exhibit symptoms of exophthalmic goiter which at present, two years later, is pronounced.

58. **Jacksonian Epilepsy as Guide to Focal Affections.**—Bonhoeffer reviews his experiences with Jacksonian epilepsy in respect to topical diagnosis of cerebral affections, describing 4 cases in which the autopsy findings did not correspond with the diagnosis based on the epilepsy. He has become convinced that Jacksonian epilepsy must be regarded as a frequent symptom of organic affections of the central convolutions. Also as a symptom of a focus in the same hemisphere but remote from the motor cortex. Cortical epilepsy from foci on the opposite side seems to be more frequent with affections of the cerebellum. In this case the spasm is on the side of the brain focus, and the irritation is transmitted by the cerebellar tracts passing to the cortex. In case of a general predisposition to epileptic seizures, owing to genuine epilepsy or chronic alcohol or other intoxication, unilateral spasms occur in case some old focus is located somewhere in the corresponding half of the brain. These unilateral spasms frequently show their connection with genuine or alcoholic epilepsy by the coincident unconsciousness. Jacksonian epilepsy may exist without a discoverable anatomic foundation. Cortical epilepsy may be the expression of internal hydrocephalus. Repeated cortical seizures in connection with other focal and general brain symp-

toms may impose the clinical diagnosis of an abscess or tumor in the brain and yet the autopsy findings may be negative.

59. **Radiograms After Injection of Oxygen into a Joint.**—Hoffa reproduces a number of very instructive radiograms taken after oxygen had been forced into the interior of the joint. The oxygen casts no shadow and the parts stand out in relief against this white background while the distension from the oxygen differentiates the various parts. Hoffa has modified the Woilenberg apparatus somewhat to adapt it for clinical use. The oxygen is generated in a tank by catalysis of peroxid of hydrogen under pressure, small tablets of potassium permanganate serving as a catalyzer. He regards the method as a distinct and valuable progress in the recognition and treatment of joint affections. Aseptic injection of oxygen is harmless and in certain cases even beneficial.

61. **Retrograde Current in Esophagus.**—Kast noticed that lycopodium seeds introduced into the stomach found their way into the mouth again. Experimental research and tests on various persons have confirmed the existence of a retrograde current in the esophagus. He thinks that this is probably the cause of the coated tongue. Pyrosis in some cases may be merely the reaction of the esophagus to the acid gastric juice finding its way upward. Study of the coated tongue may prove instructive for diagnosis.

62. **Curability of Chronic Gastritis.**—Rodari reports cases of chronic gastritis cured by appropriate diet and individualized drugs. He has found that bitters and stomachics are of little use, but has obtained excellent results from a combination of papain with peroxid of magnesium, with or without benzonaphthol and sodium bicarbonate. He relates details showing the benefits of appropriate treatment and the injury that may result from prolonged use of astringents or salines. Pepsin he found useful only when sufficient hydrochloric acid is present at the same time; it thus does no good in case of achylia. Papain answers the indications here, 1 gm. of papain being able to peptonize 200 gm. of albumin. His experience has shown, he claims, that most forms of chronic gastritis, if they are not complicated by extreme atony or gastrectasia, can be cured in a comparatively short time.

Centralblatt f. Chirurgie, Leipsic.

Last indexed, page 78.

64 (XXXIII, No. 22.) *Zur Behandlung der paralytischen Hüftgelenks-Luxation mittels Arthrodese (carbolic treatment of hip joint). S. Kofmann (Odessa).
65 Exstirpation des Penis mit Resektion des Skrotum. P. Janssen.
66 (No. 23.) Eine neue Metbode der Gastrostomie. E. Tavel (Berne).
67 *Zur Technik der Darmvereinigung (union of stumps of intestine after resection). Wendel (Magdeburg).
68 (No. 24.) *Significance of Cracked Pot Sound in Abdomen.—Bedeutung des Bruit de pot félé am Abdomen. F. v. Mangoldt.
69 Plastic Operations of Pelvis and Perineum.—Der Unterschied zwischen Beckenbodenplastik und der Dammplastik mit Rücksicht auf den Rektal-Prolaps. C. Hofmann.
70 (No. 25.) Wund-Behandlung nach Transplantationen (treatment after transplantation) A. Weischer.
71 Treatment of Old Fractures of Neck of Femur.—Zur Behandlung veralteter Schenkelhalsbrüche. M. Herz.
72 (No. 26.) *High Hemorrhoids as Cause for Occult Hemorrhage.—Ueber hochsitzende Hämorrhoiden als Ursache von okkulten Darmblutungen. E. E. Goldmann.
73 Eine neue Klemme zur Gastroenterostomie und Enteroanastomie (new clamp forceps). Linnartz (Cologne).
74 (No. 27.) *Zur Behandlung mit Bier'scher Stauungs-Hyperämie. Tomaschewski (St. Petersburg).
75 (No. 28.) *Zur Behandlung der tuberkulösen Fistela mit der Bier'schen Saug-Glocke (suction vessels). K. Gaugele.
76 Report of XXXV German Congress of Surgery, April 4-7, 1906, Berlin.
77 (No. 29.) Zur offenen Wundbehandlung von Haut-Transplantationen (open treatment). E. Goldmann.
78 Pharyngotomia suprahyoidea. J. K. Spisharny (Moscow).
79 (No. 30.) *Exposure of Heart in Case of Injury.—Die Freilegung des Herzens bei Herzverletzungen. Wilms.
80 Ein einfacher Ligatur-Träger (ligature holder). O. Ehrhardt (Königsberg).

64. **Treatment of Paralytic Dislocation of Hip with Carbolic Arthrodesis.**—Kofmann has been applying Mencier's method of "phenarthrodesis" in 6 cases of paralytic dislocation of the hip, and has been much pleased with the results. This method insures the head of the femur remaining in its place without entirely inhibiting all movement, as the parts are held in place by a more or less yielding connective tissue fixation while the relaxed and overstretched muscles become contracted. The joint is opened, the cartilaginous cover of the head of the femur is removed, and the acetabulum is scraped with partial removal of the synovial membrane and the ligamentum teres. The head of the femur and the acetabulum are then swabbed out with carbolic acid. The tissues treated with the phenol are copiously flushed with 90 or 96 per cent. alcohol, and then rinsed with physiologic salt solution. The wound is then sutured without drainage and the limb immobilized in slight abduction with outward rotation. There was elevation of temperature for a day or so in all his cases, after which the wound healed rapidly and smoothly by primary union with a shortening of 2 or 3 cm. in the limb. The results a year later confirm the excellent results obtained by this fibrous arthrodesis.

67. **Button for Intestinal Anastomosis.**—Wendel describes and illustrates a modification of the Murphy button which does away with the necessity for crowding so much of the intestine on the button. He avoids this by having the space between the inner and outer cylinders somewhat wider than usual, and having a wide ring with two grooves slide over the innermost cylinder. The intestine is tied in the lower groove, and any superfluous intestinal tissue is cut off by running the knife around in the groove above. The cut end of the intestine is thus brought into the space between the male and female parts of the button.

68. **Cracked-Pot Sound in the Abdomen.**—Mangoldt remarks that whenever the cracked-pot sound is heard over the abdomen it signifies abnormal accumulation of fluids and of air and compression, or constriction of the intestines. In 5 cases he discovered this cracked-pot sound two or three weeks after inflammation of the cecum. It was accompanied by a return of temperature. He assumed that the sound came from an abscess in front of the cecum, but the operation in every instance showed that the abscess was located behind the cecum and extended behind the ascending colon. In case of abscess formation in front of the cecum this cracked-pot sound was never detected. It may be regarded, therefore, as a differential sign of a retrocecal abscess, especially when heard regularly at the same spot, generally the outer margin of the rectus muscle toward the anterior superior spine. This sound was observed further in case of constriction of the intestine from kinking, with a sarcoma of the intestine and with cicatricial stenosis. The sound indicates narrowing or constriction of the gut and may point directly to the site of the constriction. He has also heard it temporarily over the sigmoid flexure after an enema, also when the abdominal walls were relaxed over a dilated and downward displaced stomach, and, finally, in case of diastasis of the abdominal walls after a laparotomy.

70. **Treatment After Thiersch Transplantation.**—Weischer states that open treatment has not given him good results except in cases in which the secretion was minimal. When the granulating surfaces show strips of yellow indicating the presence of pus corpuscles, he slices off the upper stratum of the granulations, after application of an Esmarch tourniquet. After removal of the tourniquet he checks possible hemorrnage by applying mull compresses dripping with physiologic salt solution and bound firmly on the wound. As the heat subsides he pours hot water on the dressings to keep them at the same temperature. He has never had to wait more than 10 or 15 minutes before he could proceed with the transplantation. When this is completed he covers the surface with mull and cotton, both dipped in warm 0.8 per cent. salt solution. A wire frame is placed over the limb or the body to keep the bed clothes from touching the parts. Every two or three hours fresh warm salt solution is poured over the dressings until the patient feels the warmth. The secretions dissolve in the salt solution and are absorbed by the dressings, while the moisture keeps the edges of the flaps from drying and sticking before the healing from the center outward has reached them.

72. **Anemia from High Hemorrhoids.**—Goldmann reports some cases to confirm the danger of anemia from hemorrhoids located so high in the rectum that they escape casual examination. In one case they were 10 and in another 18 cm. above the anus.

74. **Bier's Passive Congestion.**—This communication states that the technic of passive congestion induced with a con-

stricting band has been applied in 86 cases of furuncles, carbuncles, abscesses, defective consolidation after fracture, and postoperative suppuration. The results are said to have been brilliant in every instance.

75. Passive Congestion in Treatment of Tuberculous Fistulæ.—Gaugele has combined passive congestion with suction therapy in treatment of tuberculous fistulæ, with excellent results. In one case a weakly lad with three long rebellious fistulæ was promptly cured by the application of suction vessels. When a fistula healed over he examined if there were a trace of secretion below the new skin. If so, he punctured the new skin and applied the suction vessel with very weak suction. In this way he was able to keep the fistula clean, and it then rapidly healed.

79. Exposure of Heart After Injury.—Wilms recently had occasion to operate in a case of bullet wound of the heart. Two hours after the injury he sutured the holes, taking three stitches in each. Considerably more than a liter of blood was found in the chest, but the patient recovered without reaction. Wilms gained access to the heart through an intercostal incision without attempting to cut an extensive flap. It allowed ample access to the front and rear of the heart while the whole operation was so rapid, simple and free from hemorrhage, that he advocates an incision in the fourth or fifth interspace as the standard procedure in such cases.

Centralblatt f. Gynäkologie, Leipsic.

Last indexed, page 78.

81 (XXX, No. 18.) Ueber die Bossi'sche Dilatation bei vorzeitiger Losung der Placenta (premature detachment). R. Jolly.
82 *Erster Fall von späterer Geburt nach subkutaner Pubiotomie (first case of subsequent childbirth). K. Reifferscheid.
83 Fall von Gangraena phlegmonosa vulvae bei einer Schwangeren (in a pregnant woman). L. Goth.
84 (No. 22.) *Pelvioplastik. B. Credé (Dresden). Criticism in No. 30 by R. Klien.
85 Simplification of Pelvic Measurement.—Eine Vereinfachung der v. Bylicki'schen Beckenmessmethode. J. Faust.
86 *To Detect Fetal Heart Sounds Before End of First Half of Pregnancy.—Ein Handgriff zum leichteren Auffinden der kindlichen Herztöne vor Ende der ersten Schwangerschaftshälfte. M. Schwab.
87 *Ueber Röntgen-Bestrahlung der Ovarien in der Gravidität. O. O. Fellner and F. Neumann.
88 (No. 23.) *Ueber Lumbal-Punktion bei Eklampsie. J. Thies.
89 *Ueber Indikationen zum künstlichen Abort. G. Ahlfeld.
90 Vaginaler Sectio cesarea bei Retroflexio uteri gravidi cum Incarceratione. A. Bennecke.
91 (No. 24.) *To Enhance Resisting Powers of Peritoneum.—Resistenz-Erhöhung des Peritoneums gegen Infektiou mittels Nuklein-Säure, eine prophylaktische Massnahme um die Morbidität und Mortalität nach der abdominalen Radikal-Operation des Gebärmutterkrebses herabzusetzen. W. Hannes.
92 *Zur Aetiologie und Therapie der Eklampsie im Puerperium. W. Liepmann.

82. Childbirth After Pubiotomy.—The patient with extremely contracted pelvis on whom Reifferscheid first performed extramedian symphyseotomy or pubiotomy, was recently delivered of another living child without the necessity for further enlargement of the pelvis. A fibrous cicatrix had formed at the point of section, and this loosened during the pregnancy and stretched during delivery.

84. Plastic Operation on Pelvis.—Credé aims to enlarge the pelvis permanently, not merely during delivery. He has worked out a technic on the cadaver and has recently applied it with gratifying success in a clinical case. He advocates performing the operation at the beginning of pregnancy or even before conception, in case of a very contracted pelvis, or when much depends on bringing healthy children into the world, even if the pelvis is not very much deformed. His technic includes sawing the pubic bone at two points, the first section passing downward through the body and the second through the horizontal ramus. The part between is completely detached by a third, nearly horizontal, section slanting from the center of the first section to the obturator foramen. The part thus detached is transplanted forward between the halves of the severed body of the pubic bone, thus holding them permanently apart at a distance of 2 cm. The article is illustrated. In the case in which he operated to facilitate delivery the wound healed without reaction or temperature.

86. To Detect Fetal Heart Sounds Early.—Schwab advises pushing the contents of the uterus up, forcing them against the roof of the fundus. This he accomplishes by placing the right hand at a right angle to the body, just above the symphysis, and pressing gently downward vertically and then upward toward the fundus. He then applies the stethoscope to the most bulging portion of the abdomen, a little above the umbilicus. The fetal heart sounds become distinctly audible with this technic, even before the middle of the fourth month.

87. Roentgen Exposure of Ovaries During Pregnancy.—The researches on rabbits described demonstrate that Roentgen exposures of the ovaries induce degeneration of the ovary and arrest the growth of the fetus. The phenomena observed indicate that the functional activity of the ovary, especially its internal secretion, is not without significance for the continuance of the pregnancy during its first half at least.

88. Lumbar Puncture in Eclampsia.—Thies states that 7 of the 15 patients treated by lumbar puncture died, a mortality of over 42 per cent. The pressure of the cerebrospinal fluid was unusually high in all but one case. The prognosis seemed to be better in the cases with lowest pressure. An effect from the lumbar puncture was evident in only a few of the cases. Profound coma was apparently relieved in some instances.

89. Indications for Artificial Abortion.—Ahlfeld urges general practitioners to be careful about telling their patients that artificial interruption of the pregnancy is necessary. Careful study of the case and treatment in a hospital of the underlying trouble suggesting abortion may frequently render it unnecessary. In any event, he says, when referring the patient to a specialist, write the particulars instead of telling the patient what to ask for.

91. To Enhance Resisting Powers of Peritoneum in Cancer Operations.—Hannes reports from Küstner's clinic that in 51 cases he injected 50 c.c. of a 2 per cent. solution of nucleic acid, in the form of sodium nucleiate, about 13 hours before an abdominal operation for carcinoma of the cervix. The results, on the whole, were gratifying, and he is convinced that these injections will prove a valuable aid in enhancing the resistance of the peritoneum to infections. The reaction was always striking; the temperature rose one or two degrees C., with a chill in three cases. Marked hyperleucocytosis was evident in blood drawn from the lobe of the ear in nearly every case. He does not think that much can be anticipated from the injections when the resisting powers are at a low ebb. In case of cachexia or existing infection it may prove possible to immunize the patients by preliminary injection of killed cultures of streptococci, according to Polano's technic. He is now testing this, sometimes combining it with the nucleic acid injections.

92. Treatment of Eclampsia.—Liepmann ascribes eclampsia to retention in the liver of toxins generated in the placenta. The liver, for some reason, is unable to neutralize them. During the lowering of the vitality by the birth process, these unneutralized toxins pass into the circulation and, in case of a predisposition, affect the brain, kidneys or both, and induce the syndrome of eclampsia. If the toxin injures principally the kidneys, then the symptoms will be scanty urine, with albumin and casts. From 2,000 to 4,000 c.c. of physiologic salt solution should be injected, he states, with venesection in case of plethora, and three times a day a powder should be given containing diuretin (theobromin sodium salicylate) 1 gm., and pulv. digitalis leaves and trit. camphor, each 0.1 gm. If the toxin affects the heart, the pulse will be rapid and fluttering, and caffein and camphorated oil should be injected subcutaneously. If the toxin affects the brain there will be coma, superficial respiration from paralysis of the respiration center, edema of the lungs and convulsions. Treatment of this group of symptoms should include artificial respiration kept up for days with half-hour intervals, and during the pauses slapping with cold water and cold packs. Narcotics should be given as little as possible; the best, he states, is an enema of 3 gm. chloral at a dose, with morphin only in case of the greatest agitation, 0.03 gm. at a dose. In his experience the artificial respiration and slapping with cold water have saved many patients who were apparently moribund. The details of symptoms and treatment in two such cases are given in tabulated form.

Münchener medizinische Wochenschrift.

93 (LIII, No. 26.) *Foreign Bodies and Roentgen Rays.—Fremdkörper und Rontgenstrahlen. R. Grashey (Munich).
94 Measurement of Diastolic Blood Pressure.—Ueber die Messung des diastolischen Blutdruckes beim Menschen. A. Bingel.
95 *Action of Coffee and Cocoa on Secretion of Gastric Juice.—Die Wirkung des Kaffees und des Kakaos auf die Magensaftsekretion. L. Pincussohn.
96 Zur Kasuistik der Pollomyelitis anterior acuta adultorum. O. Bruns.
97 Die Anwendung des Tuberkulin neu bei der Behandlung von Lungen-Schwindsucht (phthisis). F. Kruger.
98 Zur Opium-Behandlung der Larynx-Stenose im Kindesalter. A. Hecht.
99 *Relocation of Special Points in Microscopic Preparations.—Ein einfacher Apparat zur Wiederauffindung bestimmter Stellen in mikroskopischen Präparaten. Sachs.
100 Specialists and Specialties.—Ueber aerztliche Spezialitäten und Spezialærzte. H. Quincke (Kiel).
101 (No. 27.) *Symptome der Stirnhirnerkrankung (affections of frontal lobe). G. Anton.
102 *Zur Kenntnis der Achylie des Magens. H. Leo.
103 *Zur Therapie der Oesophagus-Stenosen. D. Gerhardt.
104 Zur Frage der Katgut-Sterilisation (comparative tests). O. v. Herff.
105 Simplified Measurement of Pelvis.—Eine einfachte Messung. C. J. Gauss.
106 Ueber den Nachweis der Spirochæta pallida bei tertiärer Syphilis. E. Tomaszewski.
107 Ueber den diagnostischen Wert des Spirochäten-Nachweises bei Lues congenita. M. Simmonds.
108 Ganglion Cell and Nerve Fiber.—Ganglienzelle und Nervenfaser. A. Kohn.
109 *Das Chromo-Saccharometer, ein neuer Apparat zur quantitativen Zuckerbestimmung im Urin. E. Bendix and A. Schittenhelm.
110 *Special Clinical Features of Mental Affections in Inhabitants of Cities.—Die klinischen Besonderheiten der Seelenstörungen unserer Grossstadtbevölkerung. R. Gaupp. (Concluded.)

93. **Foreign Bodies and Roentgen Examination.**—Grashey describes a number of devices that have aided him in locating foreign bodies with the Roentgen rays. He says that a needle that has been in the body for several years gradually becomes liquefied and the process can be watched with the rays.

95. **Action of Coffee and Cocoa on Secretion of Gastric Juice.**—Pincussohn gives a number of curves showing the abrupt increase in the amount of gastric juice secreted after ingestion of coffee or cocoa deprived of its fat. The tests were made on dogs with a Pawlow fistula and confirm the empiric findings. Tea has an opposite effect, tending to reduce the secretion.

99. **To Locate Special Points in Microscopic Preparations.**—Sachs-Müke has devised an appliance with which it is possible to center a specimen for microscopic examination, bringing always the same spot at any time within the field. His appliance fits permanently on the microscope, and marks three points on the specimen, which can then be taken out and replaced in the microscope at any time, fixing the points previously marked, which brings the desired part of the specimen directly under the eye.

101. **Symptoms of Affections of Frontal Lobe.**—Anton comments on the frequency of traumatic affections and of infectious processes in the frontal lobes and the necessity for early recognition of the symptoms by the general practitioner. The frontal part of the brain is a paired organ, and the various parts are again connected with a paired organ, the cerebellum. In these organs substitution and compensation for a focal affection are frequently observed. For this reason the symptoms of impaired functioning are less sharply defined than in other parts of the brain. Among the most prominent symptoms are the disturbances in the balancing of the body in standing and walking, the same as in a cerebellar affection, and also changes in gait and attitude. The "higher coördination" of the arms is also liable to be disturbed. The vicinity of the motor region frequently entails complications with paresis, spasms or motor aphasia. In a focal affection of the orbital frontal brain, loss of the sense of smell on one or both sides is important for the local diagnosis. An affection of the septum lucidum does not seem to be accompanied by this symptom. Unilateral disturbance in the frontal lobe does not entail any special mental symptoms, but bilateral disturbance, with involvement of the corpus callosum, induces a syndrome not unlike that of progressive paralysis. In many cases, Anton states, diagnosis is only possible by combination of the above physical symptoms with various psychic disturbances. The latter do not depend on the localization alone, but also on the nature, course and intensity of the focal affection.

102. **Gastric Achylia.**—Leo declares that functional testing of the stomach is too much neglected. He regards Sahli's desmoid test as a valuable aid in examination to supplement other tests, and he has found that the little bags can be kept indefinitely in glycerin, which is a great convenience. In regard to his experience with gastric achylia and the means to detect it, he remarks that there is no evidence to date that achylia can occur without some anatomic changes in the stomach. The pains in the stomach are generally mild, merely a sensation of burning or pressure, or there may be no pains at all. In other cases they may occur with great severity and even after eating, simulating the findings with hyperacidity. The stools may be regular or there may be severe chronic diarrhea or constipation. The combination of agar-agar and minute doses of cascara have proved effectual in the severe constipation in these cases, although it must be kept up indefinitely as it has only a symptomatic action. He knows of no drug that will restore the missing gastric secretion in achylia; the only way to relieve it is to supply the lacking pepsin and HCl. His formula is 10 gm. dilute hydrochloric acid with 10 gm. dry pepsin and 50 gm. distilled water. The dose is a teaspoonful in water at each meal, and some of his patients say that they could not now exist without it. The Sahli desmoid reaction gives positive findings under this medication when always negative before.

103. **Morphin in Treatment of Stenosis of Esophagus.**—Gerhardt reports a number of cases of traumatic or cancerous stenosis of the esophagus in which the patients were relieved to a remarkable extent by small doses of morphin, about 15 drops of a 1 per cent. solution before meals, and a liquid diet. In one of the cases described, the esophagus was completely closed and any attempt to introduce a sound induced hemorrhage. Under the morphin the ability to swallow fluids was restored and the pain during the swallowing was abolished. The morphin, of course, can do no good when the esophagus is closed absolutely by tissue growth, but the presence even of a comparatively small new growth or stricture is liable to induce spasmodic closure of the lumen, and it is in such cases that the morphin proves useful.

109. **Colorimetric Determination of Sugar in Urine.**—The urine is first tested for the presence of grape sugar. Equal parts of the urine and of 10 to 15 per cent. solution of potassium or sodium are then boiled for one or two minutes and set aside to cool. The mixture is then poured into a graduated tube to a certain mark and the color is compared with that of a standard tube containing a brown fluid of the exact shade of the urine containing 1 per cent. of sugar, boiled with soda solution. If the tint of the urine to be tested is lighter than that of the standard tube there is less than 1 per cent. sugar in the urine. If the tint is darker the urine is diluted until the tint is like that in the standard tube. Comparison of the findings with this simple test, which only requires three or four minutes in practiced hands, shows that the technic is as delicate and reliable as other technics in vogue, while its simplicity and rapidity commend it, especially for the general practitioner. The test does not require over three or four minutes in all.

110. **Mental Affections in Inhabitants of Cities.**—This review of extensive personal experience in psychiatry at Munich concludes with the statement that only from 20 to 25 per cent. of the patients were brought up in a large city, while the remainder came from the country. This suggests the possibility that city life is particularly trying for those not brought up in it from childhood. The mental affections of city people do not differ essentially from those of country people. In treatment prolonged baths have been found very useful. He calls attention to the frequency of the combination of traumatic neurosis with premature arteriosclerosis, and the evidence he has accumulated in regard to intolerance of alcohol as a consequence of trauma.

Hygiea, Stockholm.

Last indexed, page 903.

111 (LXVIII, No. 4.) *Bidrag till kännedomen om sinnessjukdomarnas familiära uppträdande. E. Vestberg. (Concluded in No. 6.)
112 Om förekomsten af tuberkulos på anstalter för sinnessjuka och åtgärder för dess bekämpande. H. Lundborg.

113 Statistics in regard to Consumptives.—Huru stort är antalet lungsotspatienter inom Västernorrlands län? F. Kaijser.
114 (No. 5.) *Om mesenterial-cystor. J. H. Akerman.
115 Intra-abdominal Hernia.—Ett fall af intra-abd. bråck. E. S. Perman.
116. (No. 6.) *Om diafragmabråck jämte beskrifning af ett sådant (hernia of diaphragm). E. G. Johnson.
117 (No. 7.) Den medicinska doktorsgraden. E. Müller.
118 *Elektrokemisk terapi. G. Heüman.

111. **Family Groups of Mental Affections.**—Vestberg gives the detailed pathologic history of 26 families containing several members with mental disorders. He compares these statistics with those published by Vorster, Krauss and Geiser—a total of 112 families presenting several cases of mental disease of the same type, and 44 with mental disease of various types in the same family. Alcoholic cases and those with progressive paralysis are not included in these lists. The largest number of groups including parents and children or brothers and sisters are those of cases of maniaco-depression or dementia præcox. This is probably owing to the fact that such cases are brought to the hospitals and asylums more frequently than the milder forms of mental disorder. In 18 cases of dementia præcox in brothers and sisters there was no history—so far as could be ascertained—of mental disturbance in parents or grandparents. In 17 others the father or mother had presented evidence of some mental affection. As a rule, maniaco-depression and dementia præcox seem to display a like heredity, that is, appear in like form in the descendants. The article is an exhaustive study of the subject and material examined, especially of the details of the psychoses.

114. **Cysts in the Mesentery.**—Three cases of cysts in the mesentery are reported, with a historical sketch of the subject. The points useful in differentiating are reviewed in detail. The cysts generally induce dyspeptic symptoms early, but otherwise have no characteristic signs, the local symptoms being most diverse in different cases, owing to surrounding inflammation and adhesions.

116. **Hernia of the Diaphragm.**—The patient was a woman of 47, who had exhibited symptoms of a stomach affection for about a year, suggesting gastric catarrh and ulcer. Nothing to indicate acute incarceration had ever been observed or anything to suggest a pulmonary lesion, but the heart sounds were weak. The stomach was much dilated—owing to the hindrance to its evacuation—and 2 or 3 quarts of an ill-smelling fluid were withdrawn the day before the operation. Exploratory puncture in such a case, he states, could be done without risk, and it might afford valuable information. In the present case the persistence of the severe symptoms under medical treatment of the supposed ulcer suggested the necessity for surgical measures. The comparatively slow and gradual development of the symptoms and the absence of any history of traumatism are interesting features of the case. The pylorus region was found fixed, with adhesions, in the hernia in the left diaphragm, and an outlet for the stomach contents was provided by a gastroenterostomy. The result of the operation was disturbed by a coincident ulcerous intestinal affection and nephritis, to which the patient succumbed about five months later. The stomach functions had been restored to approximately normal by the gastroenterostomy. If it were possible in such a case to reduce the hernia, he would not hesitate to resect a rib to obtain better access. The patient's rapid improvement after the anastomosis between the cardia and the intestine showed the great benefit of the intervention.

118. **Electro-Chemical Therapy.**—Heüman's experiences with electro-chemical treatment of exophthalmic goiter encourage further work in this line, he thinks. He applies the cathode over the goiter with the continuous current, 25 to 40 milliamperes, similar to Bordier's technic, except that he uses a cathode which contains potassium iodid. In one case, for instance, he applied a current of 20 milliamperes for about twenty minutes a day, the positive electrode on the back, and the negative on the neck. The cathode was placed on a thin sheet of lead, shaped to the neck, over several layers of sterile gauze impregnated with a concentrated solution of potassium iodid, covering the entire goiter. The current was turned on and off very gradually. After a week of this treatment all the symptoms of the exophthalmic goiter had disappeared, and the size of the neck had been reduced from 39.5 cm. to 38 cm. The patient felt perfectly well and has continued in good health since that time—November, 1905. The improvement in another case described was almost equally striking, and in this case iodid was found in the urine five days after the last application. He also detected iodin in gauze under the anode on the back. Other cases from his experience are described and some of the laws of electro-chemistry are cited to explain the phenomena observed.

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

ESSAYS IN PASTORAL MEDICINE. By A. O'Malley, M.D., Ph.D., LL.D., Pathologist and Ophthalmologist to Saint Agnes's Hospital, Philadelphia, and J. J. Walsh, M.D., Ph.D., LL.D., Adjunct Professor of Medicine at the New York Polyclinic School for Graduates in Medicine; etc. Cloth. Pp. 363. Price, $2.50, net. New York: Longmans, Green & Co., 1906.

EATING TO LIVE, with Some Advice to the Gouty, the Rheumatic, and the Diabetic; a Book for Everybody. By J. J. Black, M.D., Member of the College of Physicians of Philadelphia; Member of the Delaware State Medical Society; etc. Cloth. Pp. 412. Price, $1.50. Philadelphia: J. B. Lippincott Company, 1906.

TRANSACTIONS OF THE SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION. Edited by W. D. Haggard, M.D., vol. xviii. Eighteenth Session, held at Louisville, Kentucky, December 12-14, 1905. Cloth. Pp. 456. Published by the Association, 1906.

REPORT OF THE STATE CHILDREN RELIEF BOARD. By the President, the Hon. C. K. MacKellar, M.B., C.M., M.L.C., etc., for the Year Ending April 5, 1906. Paper. Pp. 55. Sydney: William Applegate Gullick, Government Printer, 1906.

THE DOCTOR'S SPEAKING TUBE, AND OTHER POEMS. By Katherine Dooris-Sharp. Paper. Pp. 30. Price, 50c. Boston: Richard C. Badger, 1904.

NEW PATENTS.

Recent Patents of Interest to Physicians:

829364. Antiseptic shaving brush. A. Braunstein and A. Rattiner, New York.
829059. Adjustable sick-bed cuspidor. Willard B. Campbell, Jackson, Mich.
828891. Water bottle. Caroline Krueger, Buffalo, N. Y.
829220. Extracting suprarenalin. A. G. Manns and F. C. Koch, Chicago.
829232. Spirometer. Edwin A. Reeves, New Haven, Conn.
829300. Making vanillin. Edward C. Spurge, Niagara Falls, N. Y.
828987. Therapeutic vibrator. Francis H. Vollery, Mount Clemens, Mich.
828908. Bromin-substituted tannin urea derivatives and making same. Arnold Voswinkel and R. Lauch, Berlin, Germany.
829577. Containing vessel for chemicals. August Elmer, New York.
829584. Fumigating system for sleeping cars. Loule Harris, New York.
829790. Apparatus for ozonizing atmospheric air. Edward L. Joseph, London, Eng.
829923. Package for surgical dressings. John E. Lee, Conshohocken, Pa.
829409. Artery and vein expander. John W. Manning, Louisville, Ky.
829481. Invalid-bed. Frederick W. Mitchell, Fort Smith, Ark.
829422. Microscope. Harvey N. Ott, Buffalo, N. Y.
829742. Massage instrument. Wm. G. Shelton, Chicago.
830044. Aromatic ketone and making same. Henry S. Blackmore, Mount Vernon, N. Y.
830416. Invalid knee-rest. Lily H. Cowan, Durham, N. C.
830213. Manufacture of certain aldehydes. Georges Darzens, Paris, France.
829952. Syringe. Walter M. Dean, Chicago.
829986. Medical compound. Jesus M. Mendez, Delrio, Texas.
830761. Drier for casein curd. Lucius Axtell, Rockroyal, N. Y.
830889. Atomizer. Charles J. Davol, Providence, R. I.
830975. Apparatus for producing highly-ozonized air or oxygen. Auguste Dechaux, Paris, France.
830894. Ankle brace and supporter. Albert R. Garrod, New York.
830506. Ferment and producing same. Grove Johnson and P. R. Hare, Bromley, England.
831004. Inhaler. Flora E. and A. D. Jousset, New York.
830608. Fountain eye-bath cup. Francis A. Magill, Tacoma, Wash.
830909. Manufacture of glycerin nitrates. Anton Mikolajczak, Kastrop, Germany.
830626. Vaporizer. James E. Van Ness, Chicago.
830757. Catamenical protector. Clara L. Williams, Chicago.
830552. Water softening and clarifying apparatus. John L. Zeigler, Los Angeles, Cal.
38233. Design. Holder for soda-water tumblers. George C. Lyon, Providence, R. I.
831275. Apparatus for humidifying and cleansing air. John W. Fries, Winston Salem, N. C.
831427. Manufacture of ferrophosphorus. John J. Gray, Jr., Rockdale, Tenn.
831125. Ear-drum. George P. Way, Detroit.

The Journal of the American Medical Association

Published under the Auspices of the Board of Trustees.

Vol. XLVII. CHICAGO, ILLINOIS, OCTOBER 13, 1906. No. 15.

Original Articles

HEMORRHAGE IN THE NEWBORN.*

H. McCLANAHAN, M.D.
OMAHA.

Hemorrhage in the newborn is either traumatic or spontaneous.

Traumatic Hemorrhage.—When hemorrhage occurs during the first twenty-four hours after delivery it is usually traumatic. In the class of traumatic hemorrhages are to be included the following: Cephalohematoma, hematoma of the sternocleidomastoid muscle, hemorrhage beneath the skin, intracranial, intra-abdominal and intrathoracic. Intracranial hemorrhage, if extensive, causes death at birth, or the infant may breathe feebly for a few moments and die. If less extensive, there are no immediate symptoms, but paralysis later. Intra-abdominal hemorrhage can usually only be surmised, and in an infant large and strong at birth, dying within a few hours, with evidences of shock, intra-abdominal hemorrhage should be suspected; but the diagnosis can be confirmed only by autopsy. Hemorrhage of the lungs is certainly rare, but I have one case, reported herewith (Case 6).

Spontaneous Hemorrhage.—In spontaneous hemorrhage the blood may be from any mucous surface or beneath the skin. By combining the statistics of Ritter of Prague, Townsend of Boston, Abt of Chicago and those herein reported, the source of the hemorrhage is as follows: Umbilical, 161; intestinal, 66; mouth, 49; stomach, 37; conjunctiva, 20; ears, 10; nose, 16; ecchymosis, 27; lungs, 1; vagina, 2. It should be understood that in many of these statistics the hemorrhage was from more than one point, but that the chief source of hemorrhage is mentioned.

Duration.—Almost all cases begin within the first ten days of life. Of 75 cases reported by Dusser, the hemorrhage began on the first day in 24, on the second in 22, on the third in 9, and from the ninth to the twelfth day in 10 cases. In the majority of cases nothing is noted as abnormal about the infant until hemorrhage appears. As a rule, the amount of blood is not large, but the danger to life resides in the fact that the hemorrhage is continuous.

In reported cases the temperature varies. It should be remembered, however, as pointed out by Holt, that the temperature varies greatly in the first days of life in the normal child.

Hemorrhage from the umbilicus usually begins later than hemorrhage from other sources. Almost all cases from this source occur from the fourth to the seventh day, and nearly always after separation of the cord. Cases of hemorrhage from the slipping of the cord during the first day of life are not included. Hemorrhage from the umbilicus is almost always parenchymatous; very few cases of gush of blood being reported. Cases may terminate fatally within twenty-four hours, and patients seldom live more than two or three days. Roch, in the first edition of his text-book, however, reports one case where the oozing continued for 18 days, the child recovering. This same infant was later on circumcised without undue hemorrhage occurring.

Hemorrhage from intestinal canal usually occurs early, that is, within the first three days. The blood, whether from the mouth, stomach or bowels, may be either dark or light in color.

Hemorrhage beneath the skin consists of petechial purpuric spots or, in a few cases, of large hemorrhagic areas. Hemorrhages from the bladder, as will be noted in the statistics, are very rare. Slight hemorrhage from the kidneys, due to uric-acid infarctions, occurs in a few cases. Hemorrhage from the ears is either from the external meatus or the middle ear. Hemorrhage from the female genitals, when occurring alone, is not serious. Cullingham has collected 32 cases of hemorrhage from this source with no deaths.

Prognosis.—Prognosis in hemorrhages of the newborn is very grave. Townsend of Boston has collected 709 cases, with a mortality of 79 per cent. In private practice each case should be a law unto itself and no case should be looked on as absolutely hopeless while life endures.

Hemorrhage and Hemophilia.—Hemorrhage in the newborn does not appear to bear any relation to hemophilia. Grandidier has collected a series of 576 hemophiliacs, and in but 12 of these cases was there a history of bleeding in early infancy, so that patients that recover show no tendency to bleeding in later life.

Hemorrhage in the newborn is a comparatively rare disease. In the Boston Lying-in Hospital there were 32 cases out of a total number of 5,225 births, or 6/10 of 1 per cent. In the Lying-in Asylum of Prague, in 13,000 births, there were 190 cases of hemorrhage, or 1.4 per cent. In the Foundling Asylum of Prague, reported by Epstein, there were 8 cases out of a total of 740 births.

Etiology.—The etiology is obscure, and hereditary syphilis is considered an important predisposing cause. In 132 cases of syphilis reported by Mracek, hemorrhage occurred in 17, or 14 per cent. In 13 cases carefully studied by Abt, there was a history of syphilis in only 2, and the last several years at the Child's Saving Institute I have seen a number of cases of hereditary syphilis, but have not seen a case of hemorrhage in any of them.

Hemorrhage in the newborn is probably due to some change in the blood or in the blood vessels. That it is a specific condition seems entirely probable from the fact that it is more frequent in lying-in institutions than in private practice, that it is a self-limited condition, ter-

* Read in the Section on Diseases of Children of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

minating in death or a complete recovery, and that it does not tend to recur. In hemorrhage in infants, after the first ten days of life, it seems entirely probable that septic infection is the usual cause.

Treatment.—The important principles of treatment in these cases are: 1. To control the hemorrhage as far as this is possible. 2. To aid the nutrition of the child in every way. 3. To maintain body heat. Details of treatment will appear in the report of the cases.

Under the head of traumatic hemorrhage I report the following cases: Cephalohematoma, 5 cases. Three of these were seen in consultation. The diagnosis is usually simple, and is based on the location of the tumor, the bony ring that forms around the periphery of the mass, and the absence of pulsation. In one of these cases considerable deformity remained owing to the proliferation of bone cells. In one of the cases seen last July an incision was made and the clot turned out. This case made a prompt and rapid recovery. I suggest the propriety of this treatment in this class of cases. I have seen four cases of hematoma of the sternocleidomastoid muscle. In one of these cases there remained for several months a slight torticollis due, as I believe, to the shortening of the muscle. One case of cutaneous hemorrhage occurred in the left gluteal region and occupied an area of about four inches in diameter. The mass of blood was gradually absorbed. It was a slow breech presentation.

CASE REPORTS.

I report the following cases of spontaneous hemorrhage:

CASE 1.—Referred by Dr. Ewing Brown, and was seen Sept. 18, 1898. Child normal at birth. Hemorrhage began at the umbilicus the sixth day of life after separation of the cord. When I saw the child there was constant oozing. I applied a piece of absorbent cotton dipped in Monsel's solution; over the entire abdomen I placed a mass of dough, held in place by means of roller bandage. The oozing continued and the child died the following day from exhaustion. In this case the temperature was subnormal and there was no evidence of sepsis.

CASE 2.—In this case umbilical hemorrhage began on the fifth day of life after separation of the cord. When I saw the child the bandages of the body on which it was lying were soaked with blood. I adopted the following treatment: A piece of cotton saturated in a 1 to 5,000 adrenalin-chlorid solution. This was packed in the umbilical fossa. A thick piece of gauze 4 inches in diameter was dipped into a gelatin solution made by boiling Cox's gelatin in water until the solution was about the consistency of glycerin. The gauze was thoroughly soaked in this solution and applied over the cotton. This was retained in place by a roller bandage applied a number of times around the abdomen. While this dressing all became saturated in the course of a few hours, the hemorrhage seemed to cease. The dressing was left in place 36 hours and then removed. There was no further hemorrhage and the child recovered.

CASE 3.—Patient was seen Aug. 16, 1901, in consultation with Dr. W. L. Curtis. The child was normal at birth and nothing unusual was noted until it was 30 hours old, when, as the child was taken from the mother's breast, she noted a large clot of blood lying below the mammary gland.

Examination.—Examination revealed that this came from the child's mouth and not the mother's nipple. I saw the child on the evening of the second day. There had been some further oozing from the mouth and also two bowel movements containing blood. The shock was not extreme. The lips were fairly good color and we gave the parents some encouragement.

Treatment.—Patient was given adrenalin extract, one-fourth grain every three hours. Warm water bottles were placed to the extremities. The mother's milk was drawn from the breast and fed to the infant with spoon, as we feared the act of suction might increase the hemorrhage from the mouth.

There was one bowel movement the following morning containing a considerable amount of dark, clotted blood, but from the third day on the child continued to improve. At the end of a week it began to gain in weight. In its second summer this child had a protracted course of bowel trouble from which it slowly recovered. At the present time it is living and well.

CASE 4.—This child was seen at Fort Crook, and I quote as follows from the nurse's report: "Infant, female, born Oct. 6, 1904; weight, 9 pounds; healthy and vigorous. When 24 hours old there were signs of prostration and the child gave occasional sharp cries. When 30 hours old there was a profuse hemorrhage from the bowels containing some large clots of blood. The feet were elevated, small doses of ergot given by mouth, adrenalin chlorid with salt solution by the rectum, plenty of water and nourishment given by the mouth. Twenty-four hours later another profound hemorrhage occurred with shock. Pulse could not be felt. Fontanels depressed. Respiration distinctly Cheyne and Stokes. Small doses of bismuth with hydrastis were given by the mouth. Normal salt solution was given by hypodermoclysis. There was no temperature at any time, no tympany, no further hemorrhage. The child made a rapid recovery." This patient is now in my care for an umbilical hernia and has never had any hemorrhage and is in every way a normal child.

CASE 5.—This child was born prematurely. The mother had been under my care for some months before confinement. She went into labor on the morning of Jan. 5, 1905, and as it was not possible for me to be with her during the day, Dr. Ellis very kindly took charge of the case. He reported to me late in the afternoon that the cervix was well dilated and the head down on the perineum. We met at the patient's house at 5 o'clock and decided to apply the forceps. Delivery was accomplished with very little difficulty.

I left the patient in charge of Dr. Ellis and did not see her again. Dr. Ellis reported to me as follows: "The child, a male, was born at 5:30 p. m., Jan. 5, 1905; normal presentation, forceps delivery; weight, 8 pounds. The child cried lustily and appeared in every way normal. There was great difficulty in controlling the hemorrhage from the cord, as it had to be tied several times during the first hour. I saw the child again at 10 p. m. of the same night and found it bleeding profusely from the mouth, death occurring within half an hour from the time the bleeding started from the mouth. I can not say absolutely whether the hemorrhage was from the lungs, stomach or mouth. The blood was a bright color, however." This case illustrates the fact that a child may simply die from loss of blood within a very short time.

CASE 6.—The following case (twins) was reported to me by Paul H. Luddington, Omaha, Neb.

Family History.—One child living in good health, aged 4. There has been no miscarriage. Husband is apparently in perfect health. No specific history was obtainable.

The case was uneventful except for the large amount of liquor-amnii. Labor began at 11 p. m., June 23, 1904. Progress was normal. At 3:45 a. m. a child was born, normal presentation, cord very thick. In 15 minutes the second child was born in foot presentation. This child was slightly asphyxiated but easily revived. A single placenta, usual delivery. This patient did not expect to be confined until six weeks later, although the date was uncertain. Children were both males, weighing about 6 pounds each, perfectly formed.

The following day both children were seen by me and appeared normal except weak and puny. Seventy hours after birth the aunt of the children noticed one of them looking cold and picked it up. The child gasped, spit up a mouthful of bright red blood and died.

Autopsy.—Twelve hours after death. Abdominal cavity normal. Head not examined. Left lung entirely filled with blood. No blood in pleural cavity. One section of lung filled with blood and very little air escaped. Left lung normal.

In this case it does not seem probable that the hemorrhage could have been due to traumatism, but was spontaneous due to inherent weakness of vascular supply to lung.

DISCUSSION.

DR. ISAAC A. ABT, Chicago, agreed with Dr. McClanahan in his examination of cases. It is pretty well established that all young infants have a tendency to bleed on rather slight provocation. It can hardly be gainsaid that hereditary syphilis plays a certain rôle in the etiology of these hemorrhages. Another etiologic factor is infection, either of the ordinary pyogenic microörganisms, the streptococcus, staphylococcus or even the colon bacillus. This is particularly shown in clinics abroad. The traumatic cases do not belong to the same class as those of spontaneous hemorrhage in which the hemorrhage is under the skin. In his own cases he doubted whether the loss of blood was sufficient to cause death. It seemed that the children died rather from the attending sepsis than from loss of blood. In no case was loss of blood very marked, being more of an oozing of the mucous membranes, kidneys and bowels.

DR. J. C. LITZENBERG, Minneapolis, reported a case of hemorrhage from the mouth and bowels 36 hours after birth and showing symptoms of extreme prostration which he did not think due to the amount of hemorrhage. The child died when 50 hours old. A postmortem was held and careful bacteriologic examination made. From the cardiac opening of the stomach to the rectum were small submucous hemorrhages gradually growing larger as the small and large intestines were dissected through into the rectum. The bowel itself contained a quantity of blood, and the bacteriologic findings of cultures taken from the hemorrhagic spots showed a pure culture of the bacillus of Friedlander. He thought the real cause of death, as the last speaker said is often the case, was not the amount of hemorrhage, but the sepsis, because a lobular pneumonia was found in which was a pure culture of the bacillus of Friedlander.

DR. MALINDA K. GERMANN, Quincy, Ill., reported a case of fatal hemorrhage in a child. The delivery was slow, but there was nothing abnormal about the labor. Immediately after birth, however, the child had a profuse hemorrhage of the nose and mouth. The cause was probably in some inherent abnormality of the vascular system of the lungs, for Dr. Germann believed death was caused by the hemorrhage.

DR. EFFA DAVIS, Chicago, called attention to toxemia in the mother as a cause of hemorrhages in the new born. The toxemias of pregnancy are so varied and often of such mild degree that a careful inquiry must be made to ascertain their presence previous to the delivery, but knowing how profoundly the child may be affected by such a condition, even to the point of death *in utero*, it is worth while to inquire along this line in otherwise puzzling cases. Dr. Davis has seen several which she attributed to such a condition.

DR. MCCLANAHAN believed that the majority of the deaths are not due to the loss of blood, but to the septic condition which induces hemorrhage, although in two cases he had reported that death was due to the hemorrhage. Unfortunately, bacteriologic tests were not made and he, therefore, did not allude to that subject. He is rather inclined to limit the cases of hemorrhage in the new born in which death is due to the loss of blood. Again, while the loss of blood may not seem dangerous to life, yet the condition may be exceedingly dangerous because of the probably infectious nature of that which produced or induced the hemorrhage.

Submucous Septal Resection.—Mouret and Joubert, in their report on the treatment of septal deviations to the French Society of Laryngology (*Arch. Internat. de Laryngologie, etc.*, xxi, No. 3, suppl., May-June, 1906), hold that among all the operative methods only one is adaptable to all cases, namely, the submucous resection. If not done too timidly and if all the deviated portions are removed, it gives invariably an excellent result, and it is the only procedure applicable to deep osseous deviations. They consider the operation delicate and laborious, but they say that it is easily borne by the patient and gives a perfect result as regards nasal permeability. It also corrects in an esthetic point of view certain external deformities and is generally as well adapted as any other method.

BENIGN CYSTIC EPITHELIOMA.

JOHN V. SHOEMAKER, M.D., LL.D.

Professor of Materia Medica; Therapeutics; Clinical Medicine and Diseases of the Skin in the Medico-Chirurgical College and Hospital.

AND

L. NAPOLEON BOSTON, A.M., M.D.

Adjunct Professor of Medicine, Medico-Chirurgical College; Director of Laboratories of Research in the American Hospital for Diseases of the Stomach; Physician to the Philadelphia Hospital.

PHILADELPHIA.

Benign cystic epithelioma has been reported under a variety of titles, all of which were designed to describe, more or less closely, the pathologic changes of the individual case under consideration, or to describe the views held by the individual making the report. Cases of cutaneous epithelium have been described under a variety of captions, and among these titles are to be found hydradenoma, hemangio-endothelioma, syringocystoma, epithelioma adenoid cystium (Brooke[1]), tricho-epithelioma (Jarisch[2]), akanthoma adenoides cystium (Unna) and benign cystic epithelioma (Hartzell[3]). Following the suggestions of these writers, White,[4] Balzer and Ménétrier,[5] Balzer and Grandhomme,[6] Phillippson,[7] Wolters[8] and Hartzell[3] have added examples of this clinically benign form of epithelioma. From the literature[9] we have been able to collect references to but twenty-four reported cases and special articles discussing benign cystic epithelioma.

Patient.—Miss J. E., aged 22, American, complained of no subjective symptoms; her appetite had always been good and the bowels regular. She first menstruated when 13 years of age and her menstrual periods have been regular since, not painful, and of the 28-day type.

---

1. Brooke: "Epithelioma adenoides cystium," Monats. f. prakt. Derm., 1892, vol. xv, p. 589.
2. Jarisch: "Zur Lehre von den Hautgeschwulsten," Archiv. f. Derm. u. Syph., vol. xxviii, p. 163.
3. Hartzell: "Benign Cystic Epithelioma," Amer. Jour. of Med. Sci., Philadelphia, September, 1902.
4. White: Jour. of Cutaneous and Genitourinary Diseases, 1894, p. 477.
5. Balzer and Ménétrier: Archiv. de physiol., 1885.
6. Balzer and Grandhomme: ibid., 1886.
7. Phillippson: "Die Beziehungen des Kolloidoiliums (M. Wagner), der kolloiden Degeneration der Cutis (Besnier) und des Hydradenoms (Darier-Jacques) zu einander," Monats. f. prakt. Derm., vol. xi, 1890, No. 1.
8. Wolters: "Epithelioma adenoides cystium," Archiv. f. Derm. u. Syph., vol. ivi, 1901, p. 90.
9. In addition to the authors cited in the article other references may be consulted as follows: Jaquet de Darier: Annal. de Derm. et Syph., 1887, vol. xi, No. 8, p. 317; Quinquand: Congrès international de dermatologie de Paris, 1889, and Monats. f. prakt. Derm., vol. ix, p. 20; Török: "Das Syringocystadenom," Monats. f. prakt. Derm., vol. viii, p. 116. Hoggan: "Zur pathologischen Histologie der schmerzhaften subcutanen Geschwulst," Virchow's Archiv., vol. lxxxii, p. 233, and Jour. of Anat. and Phys., 1884. Petersen: "Ein Fall von multiplen Knäueldrüsengeschwulsten unter dem Bilde eines Nävus verrucosus unius lateris," Archiv. f. Derm. u. Syph., 1892, vol. xxiv, p. 919 and "Beiträge zur Kenntniss der Schweissdrüsenerkrankungen," ibid., 1893, p. 441; Bernard; "Contribution à l'étude du syringocystadénome," Thèse de Paris, 1897; Knauss: "Eine Geschwulst der Schweissdrüsen (Cylinderepitheliom)," Virchow's Archiv., vol. cxxvi, p. 561; Bartel: "Ein Fall von Cystadenoma papilliferum der Schweissdrüsenausführungsgänge mit Hypertrophie and cystenbildung der Schweissdrüsen selbst," Zeitft. f. Heilk., 1900, vol. xxi, (new series, vol. i), Division for Pathologic Anatomy, p. 200; Wolters: "Haemangioendothelioma tuberosum multiplex n. s. w." Archiv. f. Dermat. u. Syph., vol. liii, 1900; Fordyce: "Multiple Benign Cystic Epithelioma of the Skin," Jour. of Cutaneous and Genito-urinary Diseases, 1892, p. 459; Verneuil: "Etudes sur les tumeurs de la peau et quelques maladies des glandes sudoipares," Archiv. gén. d méd., 1854, vol. iii, pp. 447 and 693; Lotzbeck: Virchow's Archiv., vol. xvi, p. 160; Thierfelder; "Ein Fall von Schweissdrüsen-Adenom," Archiv. f. Heilk. vol. xi, 1870, p. 401; Lücke: "Handbuch der Chirurgie von Pitha-Billroth," vol. ii, part 1, p. 276; Perry: "Adenomata of the Sweat Glands," Atlas of Rare Cutaneous Diseases, iii, 1890, vol. i.

Family History.—Her parents and brother and sister are living and in good health. Her maternal grandparents are both living and well, and are about 80 years old. The paternal grandparents both died at 80 years of age, cause of death, senility. Her uncles and aunts are all living and well. A second cousin died of phthisis. The family history is negative so far as carcinoma is concerned.

Previous Personal History.—As a child she had measles, whooping cough, and varicella; she has always enjoyed good health since until her present trouble.

Social History.—She is single and lives with her parents. In June, 1905, she graduated from a woman's college, since which date she has spent her time in reading and doing some housework. Her habits are good.

Present Illness.—This illness dates back about four years when she first noticed a pigmentation in the right infraclavicular region, and but slight pigmentation on the right arm, which has noticeably increased during the past two years. She is uncertain as to whether or not the nodules were present at first. At times, especially after violent exercise, she has had a slight itching sensation along the courses of the pigmentation. The skin overlying these pigmented areas is hypersensitive.

Physical Signs on Admission.—An examination shows a female fairly well developed, five feet four inches tall; weight 115 pounds. The skin over her body is warm and moist. In the right infraclavicular region is a congregation of nodules which extend like a chain of enlarged lymphatic glands to the shoulder, and down the arm and forearm. These nodules on the arm feel hard and are of the size of a pea; and the skin along this area is pigmented, the color being dark red or purplish. There is also a similar spot of pigmentation in the infrascapular region of the same side, but no nodules are palpable. Otherwise, the glands are normal except in the postcervical region of the left side where there is one gland the size of a marble.

Chest: Inspection, palpation, percussion and auscultation revealed no additional abnormalities except that the heart's second pulmonic sound is short and sharp in character.

Abdomen: Nothing abnormal could be elicited.

Clinical Laboratory Findings.—The urine was of high color, specific gravity 1022, moderately acid in reaction, and gave evidence of a trace of indican, and contained a small number of cylindroids. There was no evidence of disease of the kidneys, nor of imperfect elimination through these organs.

First Blood Examination: Hemoglobin, 75 per cent.; red cells, 3,800,000 per c.mm.; white cells, 8,600 per c.mm.

Stained Blood: All red cells stained feebly and were deficient in hemoglobin. Few red cells were distorted (poikilocytes). Many red cells were under size (microcytes). A few red cells appeared as shadows except for a marginal band of stained tissue. There was no basic or other degeneration of red cells. Leucocytes stained normally.

Differential count showed the following percentages: Polynuclears, 66 per cent.; lymphocytes, 30; eosinophiles, 0.5; large mononuclear, 2.5; transitionals, 1.0.

Second Examination.—Blood examination made three weeks later gave: Hemoglobin, 75 per cent.; red cells, 3,100,000 per c.mm.; white cells, 10,600 per c.mm.

Living blood showed rouleaux formation feeble, and the viscosity greatly reduced. The red cells were disseminated throughout the plasma, many of them swollen, pale and at times distorted.

The stained blood revealed a faint staining with eosin, many of the red cells stained as mere shadows, while some of the larger erythrocytes displayed a central area surrounded by a peripheral band of well-stained protoplasm. The central pale spot was enlarged in all the red cells. Few of the red cells showed punctate areas of degeneration (punctate basophilia). Poikilocytosis was well marked.

Differential leucocyte count showed the following percentages: Polynuclear cells, 67; lymphocytes, 24; large mononuclear, 1.5; eosinophiles, 2.0; transitional, 5.5.

Third Examination.—An examination of the blood six weeks after treatment was established showed: Hemoglobin, 86 per cent.; red cells, 3,800,000; white cells, 4,600. Rouleaux formation was slightly below the normal. Red cells were somewhat pale, and showed but slight abnormalities in size and shape.

Stained Blood: The red cells stained feebly as a rule, and different portions of their protoplasm stained irregularly, but there were no over-stained cells. A differential count showed the leucocytes to be normal both as to staining properties and varieties.

The general features of the blood were that of a moderate grade of secondary anemia. At the first examination it was found to concern mostly the hemoglobin, yet the red cells suffered some reduction. The third examination of the blood, which was made six weeks after the institution of treatment, showed a decided improvement in the general blood condition.

Histologic Examination of Growths.—A tumor about the size of a hazel nut was taken from the skin of the anterior surface of the right chest. Microscopic examination of the tumor disclosed the fact that the surface displayed the usual characteristics of epidermis, except that it was slightly hypertrophied. The corium presented decided deviation from that of normal skin, and this condition involved both the reticular and subcutaneous layers. There were to be seen numerous small, irregular and at times oval aggregations of deeply stained cells (tumor cells), many of which were small round cells; others contained spindle cells. These masses of deeply stained cells were found to vary greatly in both size and form, some being oval, nearly round, elongated, while those situated near the hair follicle showed this feature to a less marked degree. Often these cells were seen to extend for some distance along the septa of connective tissue, and in some of the growths these slender tracts of epithelial cells extended out in finger-like projections through the fibrous stroma. In a few of the masses the marginal epithelium appeared to be more or less imperfectly columnar, although this feature was never prominent.

Source of Growth.—Study of these epithelial cells under a 1/12 oil-immersion objective showed them to be indistinguishable from the cells of the deeper layers of the epidermis. In many of the sections studied hair follicles showing abnormal growths were demonstrable. At times this growth of epithelium was seen to branch directly from the sides of the hair follicle, this branching taking place near the junction of the upper with the lower two-thirds of the follicle; and it was common to find a direct communication between finger-like projections of the epithelial cells and other portions of the hair follicle. At the bulbar portion of the hair follicles there were often decided proliferations of the epithelium of the follicle, and there were to be seen finger-like projections which appeared to be formed of the younger cells.

In the immediate vicinity of the follicles showing proliferation of their epithelium were older growths. These masses of epithelium at times encroached on the sebaceous glands, but it was impossible to demonstrate any connection between the new growths of epithelium and the glandular tissue.

Second Study of Growths.—In view of the great rarity of epithelial growths originating from the hair follicles it was deemed advisable to remove a second small tumor from the skin and to study it in serial sections and this was accordingly done, forty sections being studied. Through this latter method of study it was possible to follow growths of epithelium to the hair follicles. This second study revealed several small cysts and in one instance a cyst apparently expanded the bulbar extremity of the hair follicle. Other findings were corroborative of those described in the first specimen. This tumor showed the aggregations of epithelium to be larger than did the first specimen examined, and the columnar arrangement of the cells was less apparent.

Deductions.—From the above findings it appears self-evident that these neoplasms originated from the hair follicles and exemplify what has previously been described as tricho-epithelioma. These benign tumors of the skin have received but little study by general pathologists.

DISCUSSION.

In most of the cases furnished by the literature, small cysts have formed a prominent feature of the tumor masses, but in our case only few cysts were detected, and this may be explained through the fact that these growths were extremely young, having existed but a few months.

In Hartzell's case[10] more extensive cyst formation appears as the only striking difference between the findings he describes and those presented by our case.

The microscopic findings in our case were practically identical with those described by the other writers. In discussing the subject of benign epithelioma Hartzell[10] states:

> Either neoplasms differing widely in origin and nature may resemble one another so closely histologically as to be practically indistinguishable, which is unlikely; or those who believed that they were able to trace the origin of these growths to the sweat gland ducts or to the blood vessels based their conclusions on insufficient evidence.

We desire to thank Dr. Hartzell for making an examination of some of the sections from the case herein reported.

Perthes[11] has described, both clinically and histologically, two cases, each of benign cystic epithelioma of the lip in the Chinese. It has been also demonstrated that clinically benign neoplasms of the skin orginate both from the deeper layers of the cutaneous epithelium and from the hair follicles.

A STUDY OF THE BLOOD IN BANTI'S DISEASE BEFORE AND AFTER SPLENECTOMY.*

WALTER L. BIERRING, M.D.
Professor of Medicine, State University of Iowa.
AND
ENFIN EGDAHL, M.D.
Instructor in Pathology, State University of Iowa.
IOWA CITY, IOWA.

The patient on whose case this study is based was admitted to the University Hospital, Nov. 15, 1904, and presented the following history:

Patient.—Mr. C. F. H., aged 38, traveling man, married, having 3 children in good health, was referred by Dr. W. E. Patterson and entered the hospital complaining of feeling of heaviness in abdomen with bloating after meals.

History.—Father died at age of 72 years from hernia; mother aged 72, alive and well; three sisters alive and well; one brother died, aged 44, of typhoid fever.

Patient used alcohol moderately until beginning of present illness; tea and coffee moderately. He has had gonorrhea a number of times; denies lues; had common diseases of childhood. He had spinal meningitis at 7 years of age. While in the South, at the age of 21, he had malarial fever, paroxysms ocurring, as he claims, only once a week. These symptoms persisted for 3 or 4 years, or until patient moved to Colorado, when they soon ceased and have not recurred. There was no history of ague-cake spleen. Patient was jaundiced at the time. In 1890 an abscess developed on the left side of chest, which was opened, and failed to close for one year, healing and breaking out in different points on the surrounding area.

History of Present Trouble.—In 1902 patient began to feel depressed, had aching and heavy feeling in the left side, with a sharp pain under the ribs on exertion; continued to work, but nearly fainted a number of times. At Christmas, 1902, his wife first noticed a tumor on the left side of the abdomen. Soon after this the patient consulted Dr. Gilchrist of Iowa City, who made a diagnosis of splenic tumor. In September, 1902, the patient went to Chicago and received several *x*-ray treatments, but without help, and developed a painful burn on left side of the abdomen over enlarged spleen area, which has not yet healed, but is no longer painful. During the last two years patient had done no work and, except for burn, has felt fairly well. His appetite is good, bowels are regular and he sleeps fairly well. On exertion he tires easily and suffers with dyspnea. There is no hematemesis, but he has frequent attacks of nosebleed, although these have been present more or less since youth. In April, 1904, he had a marked distension of the abdomen for 3 days, for which paracentesis abdominis was advised but not carried out.

Present Condition.—Nov. 15, 1904: Patient is moderately emaciated, has some cachexia, skin is slightly yellow, sclera is jaundiced; pulse 94, regular; fair tension, vessels soft and elastic, systolic pressure 110; heart's area not increased; soft systolic murmur heard over entire pericardium, otherwise sounds are normal. Lungs are normal.

Abdomen is distended, especially in left upper quadrant. There is a diffuse scar on left side, the center of which is unhealed; palpation reveals a large tumor on left side of abdomen which corresponds to the spleen, the lower border of which extends 10.5 cm. below umbilicus level and the right border 8.5 cm. beyond the midline. The surface is smooth except the right border, which is deeply notched. The liver is distinctly palpable, surface not tender but irregular. Small amount of free fluid in the abdomen. Kidneys are not palpable; urine is negative. There are no enlarged lymph nodes.

Blood: Hemoglobin, 65 per cent. (v. Fleischl); red cells, 2,798,800; whites, 3,689. Differential count of leucocytes: Polymorphonuclear neutrophiles, 75.5 per cent; small mononuclears, 16 per cent.; large mononuclears, 3.3 per cent.; eosinophiles, 2.63 per cent.; transitionals, 1.12 per cent.; mast cells, .37 per cent.; indeterminates, .93 per cent. Daily examinations of the blood were made for 12 days without disclosing any marked change.

Diagnosis.—The splenomegaly, leucopenia and secondary anemia permitted a diagnosis of splenic anemia, but the mild icterus, suspicion of ascites and hepatic cirrhosis, which was subsequently corroborated at the operation for splenectomy, made a diagnosis of so-called Banti's disease seem more applicable.

Operation.—On Nov. 28, 1904, a splenectomy was performed by Dr. William Jepson. At the operation the liver was found to be enlarged, surface granular and marked by deep, irregular scars. About 500 c.c. of clear serous fluid was removed from the abdominal cavity. Recovery from the operation was uneventful.

Postoperative History.—The blood changes following the operation were closely followed. Five days after operation there was a total white count of 15,400, and from this time until December 10, 12 days after operation, there was a steady increase except for two slight variations in the white blood count, which reached 24,000 on December 10. It fell suddenly to 10,200 on December 14. On December 17 there was a slight increase in the count, showing 14,000. From then on there was a steady decrease. On the day of discharge, Jan. 4, 1905, the total white count was 6,000.

Red Blood Corpuscles: Immediately following the operation there was a sudden fall, reaching 3,120,000 on December 3, 5 days after operation. From this time on there was a steady uniform increase up to December 21, when the count was 4,200,000, higher by 1,500,000 than on admission. On January 4, the day of discharge, the count was a trifle less than on December 21, but still over 4,000,000.

Hemoglobin: The hemoglobin on admission was 65 per cent., estimated by the v. Fleischl instrument. It ran a course parallel with the erythrocytes, and the day of discharge showed 85 per cent.

Differential Counts: Five days after operation a count showed the following: Polymorphonuclear neutrophiles, 72 per cent.; small mononuclears, 11.4 per cent.; large mononuclears, 15 per cent.; eosinophiles, 1 per cent. This count is of interest as it shows the great increase in relative numbers of the large mononuclears from 3.3 per cent. before operation to

---

10. Hartzell: "Benign Cystic Epithelioma and Its Relationship to So-called Syringocystadenoma, Syringocystoma and Hemangio-Endothelioma." Brit. Jour. of Dermatology, October, 1904, p. 361.

11. Perthes: "Ueber gutartige Epitheliome, wahrscheinlich congenitalen ursprungs," Deuts. Zeitft. f. Chir., 1905-1906, p. 283.

* Read in the Section on Pathology and Physiology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

15 per cent. 5 days after operation. There is a falling per cent. in the number of small mononuclears and polymorphonuclears.

December 6 a count revealed: Polymorphonuclear neutrophiles, 65.4 per cent.; large mononuclears, 15.7 per cent.; small mononuclears, 12.7 per cent.; polymorphonuclear eosinophiles, 3.5 per cent.; transitionals, 2.1 per cent.; mast cells, 0; indeterminates, .43 per cent.; 697 cells counted. This count shows a marked increase in large mononuclears, a slight increase in eosinophiles and transitionals, and a decrease in polymorphonuclear neutrophiles and small mononuclears, with total absence of mast cells.

On December 10, the day of the highest leucocytosis, a strange phenomenon was noticed. The small mononuclears suddenly increased from 12.6 per cent. in the previous blood count to 23.5 per cent.; the large mononuclears fell from 15.7 per cent. to 8.1 per cent., the count being as follows: Polymorphonuclear neutrophiles, 65.4 per cent.; polymorphonuclear eosinophiles, 3.5 per cent.; small mononuclears, 23.5 per cent.; large mononuclears, 8.1 per cent.; mast cells, 0; indeterminates, 0; 429 cells counted. The subsequent changes in the different blood elements are revealed in the table.

Table of Blood Examinations.

Date	Hemoglobin %	Red	White	Polymorphonuclears %	Small mononuclears %	Large mononuclears %	Eosin %	Transit. %	Mast. %	Nucl. red	No. of white cells counted
11/15, '04..	65	2,789,000	3,689	75.5	16.	3.3	2.63	1.12	.37	1	420
11/26, '04..	65	3,416,000	4,800	75.5	16.	3.3	2.63	1.12	....	1	560
11/28, '04..	Splenectomy										
11/30, '04..	60	2,820,000	13,200	56.1	12.6	9.8	1.15	1.	....	1	620
12/2, '04...	65	3,120,000	15,400	72.	11.4	15.	1.	....	....	1	540
12/6, '04...	75	3,645,000	18,600	65.4	12.7	15.7	3.5	2.1	....	1	697
12/10, '04..	75	3,520,000	24,000	65.5	23.5	8.1	3.4	....	....	1	429
12/14, '04..	70	3,632,000	10,200	60.6	20.6	11.8	4.4	1.6	.46	1	432
12/17, '04..	75	3,864,000	14,000	65.	21.1	10.7	1.2	.25	.12	1	789
12/21, '04..	80	4,300,000	12,120	63.2	19.6	11.2	2.1	.32	....	1	560
12/28, '04..	80	4,180,000	48,600	64.8	20.	11.6	1.8	.48	.18	1	480
1/2, '05....	85	4,165,000	7,100	63.6	26.2	9.4	2.4	1.2	.24	1	450
1/4, '05....	85	4,120,000	6,000	60.2	24.6	10.8	2.9	.42	....	1	510
9/25, '05...	75	3,820,000	6,800	64.4	22.4	10.4	2.8	....	....	..	420
9/28, '05...	75	3,910,000	7,100	61.8	24.8	9.2	3.2	....	....	1	620
5/5, '06....	65	4,288,000	12,000	46.7	36.1	8.2	2.1	....	1.	1	304
5/8, '06....	70	4,608,000	11,000	47.1	38.5	8.07	4.9	.45	.9	..	223

When he appeared at the hospital for examination, in September, 1905, his general condition was much improved, but he was distressed by a discharging fistula at the site of a drain placed in the left side of the abdomen at the time of the operation. After receiving surgical treatment for this condition he returned home.

He was readmitted May 2, 1906, at which time his general health appeared good, but he was troubled by a marked distension of the abdomen. Examination revealed a high degree of ascites present, and 1,400 c.c. of clear serous fluid was removed May 8, 1906. Although the number of white cells in the last count has increased to 11,000, the lymphocytosis still prevails. At no time has an enlargement of the lymph nodes or changes in the thyroid gland been observed.

REMARKS.

Summarizing the results obtained in the study of the blood of our patient, we have, first, before operation, blood characterized by anemia of secondary type, low per cent. of hemoglobin and leucopenia; second, after splenectomy a slight fall in red cells, then a rise, a leucocytosis reaching its maximum twelve days after operation and characterized by a relative increase in the mononuclear leucocytes, especially the large mononuclears; third, the absence of myelocytes and the scarcity of nucleated reds, both before and after sphlenectomy.

The blood examination in the case under consideration having been described, it may be of interest to make comparison with the findings of others. Most observers have noticed a decrease in erythrocytes immediately after operation, but Jordan[1] states they may increase as frequently as decrease. What the factors are that bring about the change can not be definitely stated. White says that, as a rule, after laparotomy of any kind, there is a slight increase of white blood cells and a decrease in the red cells, apparently due to ether.

LITERATURE.

The reported cases of splenectomy, as a rule, show a leucocytosis following the operation. Although there is a general increase of all the different kinds of white elements normally present in the blood, most of the cases show a relatively larger increase in the lymphocytes. In this case the large mononuclear leucocytes showed relatively the greatest increase. A number of observers have noted that a year or two after splenectomy the eosinophiles will show an increase in numbers. The hemoglobin follows the variation in reds very closely. Splenectomy is followed by an increase in size of the lymphatic glands, and this may possibly explain the lymphocytosis so frequently seen. Some report enlargement of the thyroid gland and hyperemia of the bone marrow.

The blood findings in our case, before splenectomy, of 3,796,000 red cells, 3,680 whites and hemoglobin 65 per cent., is typical of those usually described in connection with splenic anemia. In Osler's[2] series of cases the average was 3,425,000 red cells, 4,250 whites and 47 per cent. hemoglobin, nucleated reds and myelocytes being rare. The differential counts of uncomplicated cases in Lossen's[3] summary show nothing of significance. Of the 20 cases of Banti's disease reported as such by Banti,[4] Osler,[2] Cohen and Rosenberger,[5] Taylor,[6] Bessel-Hagen,[7] Umber,[8] Kausch,[9] Pribram,[10] Chiari,[11] Moor,[12] Roger,[13] Kast,[14] Galvagni[15] and Lossen[3] the blood findings are typical of those of splenic anemia.

The more interesting blood findings seen after splenectomy are also essentially the same in the two disease conditions. Umber[8] has reported one of the most typical cases of Banti's disease, having had the opportunity of observing the patient a long time, while it presented the characters of a splenic anemia, and then with the symptom complex of Banti before and after splenectomy, noted a blood finding before splenectomy of hemoglobin 45 per cent., red cells 2,483,000, white cells 8,000, leucocytes proportionally normal. Soon after the operation an increase occurred in the number of red and white cells and hemoglobin percentage. Three months following the splenectomy the hemoglobin was 90 per cent., red cells 4,578,000, white cells 11,700, the polymorphonuclear leucocytes remained about the same, the lymphocytes diminished at first, then increased beyond the normal, after which they gradually dropped to normal proportions. The eosinophile polymorphonuclears varied from 1.4 per cent. to 5 per cent., and at the

1. Jordan: Grengeb. d. Med. u. Chir., 1903, vol. xi.
2. Osler: Am. Jour. Med. Sci., 1900, January; also Edin. Med. Jour., 1899, p. 441.
3. Lossen: Grenzgeb. der Med. u. Chir., xiii, 1904.
4. Banti: "L'Anæmia Solenica," Florence, 1882; also, Ziegler's Beitr. z. path. Anat., vol. xxiv, 1898.
5. Solis-Cohen and Rosenberger, R. L.: Trans. Coll. Phys., Philadelphia, vol. xxvi.
6. Taylor: Lumleian Lectures, 1904.
7. Bessel-Hagen: Archiv. f. klin. Chir., vol. lxii, p. 168.
8. Umber: Ztschr. f. klin. Med., vol. xxv, 1904.
9. Kausch: Jahresber. d. schles. Gesell. f. vaterl. Kult., 1902, p. 286.
10. Pribram: Prager. med. Wochschr., 1902, No. 9.
11. Chiari: Prager med. Wochschr., 1902, No. 24.
12. Mohr: Berl. klin. Wochschr., 1903, No. 46.
13. Roger: Presse Méd., 1904, No. 57.
14. Kast: Wien. med. Wochschr., 1903.
15. Galvagni: Clin. Med., vol. xviii, No. 17.

last count .66 per cent. The late eosinophilia noted in our case and usually observed after splenectomy is no more characteristic of splenic anemia than Banti's disease and is not necessarily always a postsplenectomy phenomenon.

v. Decatella and Hoffbauer[16] report a case of splenic anemia with marked leucopenia and an eosinophilia of 4.3 per cent. Pribram[10] notes in a case of Banti's disease in which splenectomy was not performed 3 per cent. of eosinophiles, and Lossen[3] reports as high as 10 per cent. in a case before splenectomy.

As to the significance of these various blood changes one is mindful of the fact that in hypertrophy of the spleen from whatever cause a decrease in hemoglobin, in erythrocytes, and in many cases in the white corpuscles is very likely to follow. How this leucopenia is produced is difficult to explain from our present knowledge of the hematopoetic function of the spleen.

The explanation for the secondary anemia accompanying splenic hyperplasia rests as yet more or less on a hypothetical basis. Harris and Herzog[17] advanced the explanation that the great increase in endothelium in the venous capillaries is associated with destruction of the erythrocytes, possibly by means of the production of a chemical substance. These histologic changes have been observed only in a few instances, so that they can not be regarded as typical of the diseased condition.

The favorable results following splenectomy in both splenic anemia and Banti's disease speak in favor of the spleen being in some way the cause of the poor blood condition seen in these diseases.

The lymphocytosis noted following splenectomy must be regarded as an attempt at compensation. In making a summary of all splenectomies recorded Stachelin[18] found in spleen disease reports, but very few cases in which it did not appear either sooner or later.

Eosinophilia is usually noted sooner or later in human splenectomies. A high grade eosinophilia has been produced experimentally by Ehrlich and Lazarus[19] in splenectomizing guinea-pigs.

If the eosinophiles are to be regarded as having their source in bone marrow, the scarcity of myelocytes and nucleated red cells rather points against any great compensatory activity on the part of the marrow in the disease in question.

In considering the blood findings of the two diseases, splenic anemia and Banti's disease, before and after splenectomy, one is led to the conclusion that, whatever the nature of the disease process or the causative influence, the blood-forming organs are not particularly concerned. The more likely points of attack are the vascular channels and tissues of the spleen and in time also those of the liver.

DISCUSSION.

DR. MAXIMILIAN HERZOG, Manila, P. I., said that for several years he had a chance to examine the blood of a patient in whom a splenectomy had been performed for splenic anemia. In this case the eosinophilia became very marked after the splenectomy, and persisted for years. Dr. Herzog does not know what finally became of the patient. A typical eosinophilia is not always produced in animals after splenectomy. Dr. Herzog said that during the last two or three years he has splenectomized the white rats of three successive generations. The object of this work was to produce certain well-characterized blood changes and to find out whether or not such an acquired change could be inherited by the offspring. One of the most important questions in biology is whether or not acquired properties can be inherited. Since the blood changes in the splenectomized rats were not very constant and characteristic, nothing came of this work. Physicians, he said, are still in the dark as to Banti's disease. Dr. Herzog called attention to the fact that splenomegaly, with or without cirrhosis of the liver, is very common in the tropics, and he has seen many cases among his postmortem material encountered during the last two or three years in Manila. He referred, he said, only to cases in which there was neither a malarial nor any other well-defined basis explaining the condition of the spleen or liver. After ruling out such well-understood cases, there still remain many of splenomegaly for which no etiologic explanation can yet be offered. The etiology of Banti's disease remains as mysterious to-day as it has ever been.

16. v. Decatella and Hofbauer: Ztschr. f. klin. Med., vol. xxxix, 1900.
17. Harris and Herzog: Deutsch. Ztschr. f. Chir., vol. lix, p. 567.
18. Stachelin: Deutsch. Arch. f. klin. Med., 1903.
19. Ehrlich and Lazarus: Nothnagel's "Specialia Path. u. Therap.," vol. viii.

VITAL POINTS IN THE TECHNIC OF SUPRAPUBIC ENUCLEATION OF THE PROSTATE FOR BENIGN ENLARGEMENT OF THAT GLAND.*

E. HURRY FENWICK, F.R.C.S. (ENG.)
Surgeon to, and a Lecturer on Clinical Surgery at, the London Hospital.
LONDON, ENG.

It is generally conceded that, step by step, the operation of enucleation of the prostate from its capsule, whether performed suprapubically or perineally, has justly attained the recognized rank of a curative procedure for that urinary obstruction and destruction which is caused by benign enlargement of the gland.

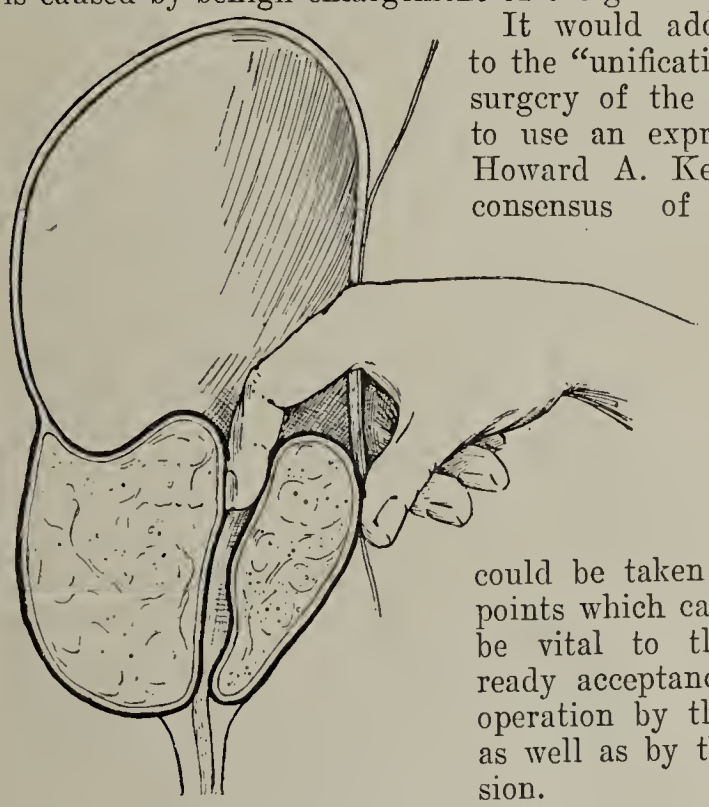


Fig. 1.—Finger entering prostatic urethra.

It would add greatly to the "unification of the surgery of the world"—to use an expression of Howard A. Kelly—if a consensus of opinion could be taken on three points which can not but be vital to the future ready acceptance of this operation by the patient as well as by the profession.

My own experience, which, I may state, is both large and varied and dates from the time when I was taught prostatectomy by McGill of Leeds, in 1890, forces me to the conclusion that our suprapubic technic for prostatic enucleation is faulty in three directions, and these form the three points, I venture to suggest, should be carefully discussed and pronounced on by the surgical section of this association. I submit that our present technic tends (1) to the destruction of the vesical orificial ring; (2) to the wholesale destruction of

* Read in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

the prostatic urethra with its afferent seminal ducts; (3) to the rough manipulation of the membranous urethra.

1. I submit that, no matter how the operation of removal is carried out, whether from above or below, the original vesical orifice must be left intact and covered with its own mucous membrane. I assert that, in a certain proportion of cases, a neglect of this simple axiom will inevitably lead the patient with a narrowed or warped vesical orifice due to cicatricial contraction with its attendant miseries and perhaps dangers.

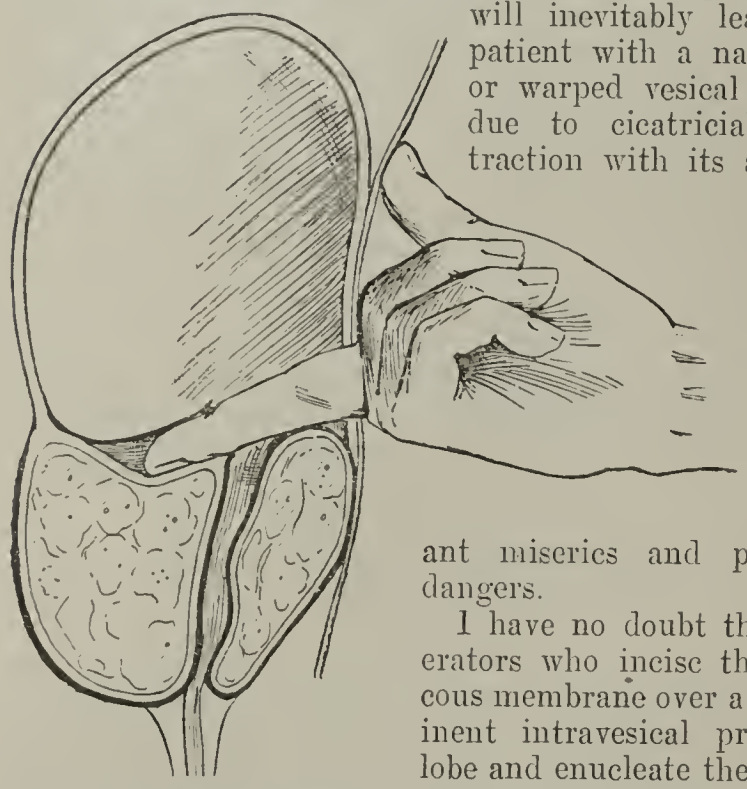


Fig. 2.—Finger pushed sideways through wall of prostatic urethra.

I have no doubt that operators who incise the mucous membrane over a prominent intravesical prostatic lobe and enucleate the gland *en masse* through this incision remove the entire vesical ring, ablate the prostatic urethra and pull out or destroy the ejaculatory ducts in a very large proportion of cases. They assert that this is not so, and point to the permanent urinary success of the procedure. But I submit that in successful cases the operator has been dealing with large intravesical projections, covered by a stretched and redundant mucous membrane, and that a big flap of this detached mucous membrane drops into the prostatic cavity and does duty as the prostatic urethral mucous membrane, and but little harm is done to the vesical orifice.

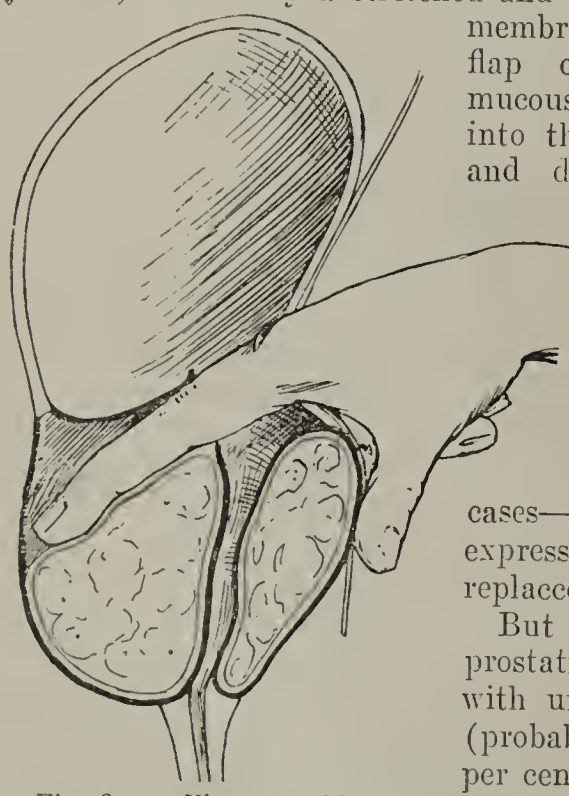


Fig. 3. — Finger pushing between capsule and gland.

In such cases—to use a golfing expression—"the turf is replaced."

But there is a class of prostatic enlargements with urinary obstruction (probably forming 30 per cent. in the 50 to 60 decade) in which there is little or no intravesical projection, and, therfore, no redundant mucous mebrane at the base. There is, therefore, "no turf to replace." To merely incise the mucous membrane over the trigone in such a case and shell out the prostate as a whole, leaves a ragged orifice to the bladder. This contracts and ultimately forms a strictured vesical orifice.

The most striking example I can give is the following:

An old gentleman had the prostate removed suprapubically in the usual way by a surgeon of acknowledged worth and repute. Three months later the suprapubic wound closed and the patient at once found himself unable to micturate, nor could his physician pass a catheter further than the membranous urethra.

After prolonged retention and fever the suprapubic wound opened. I was then asked to see him, and on opening up the bladder I could not discover any urethral orifice at all, either with a powerful headlight or with the finger. Its position seemed to be taken by a dense knob of cicatricial tissue at the apex of the trigone, nor could I pass an instrument beyond the bulbous urethra.

Fig. 4.—Finger pushed still further.

Under these difficulties I obtained several sheeps' urethras, gradually dilated the stricture at the membranous urethra, ploughed a new passage toward the base of the bladder, pressed the steel bougie against the trigone and cut through the dense cicatrix until I had made a free, fresh vesical orifice. I then lined this new passage and orifice with strips of the sheep's urethra and so far the result has been successful in affording the patient fair urination and passage to a sound.

I may digress to say that I obtained the idea of a sheep's urethral graft from my brother, Clennell Fenwick, of Wanganui, N. Z., in 1896; also that five years ago I successfully inserted a goat's urethra into a big perineal gap of a boy's urethra. The wound healed by

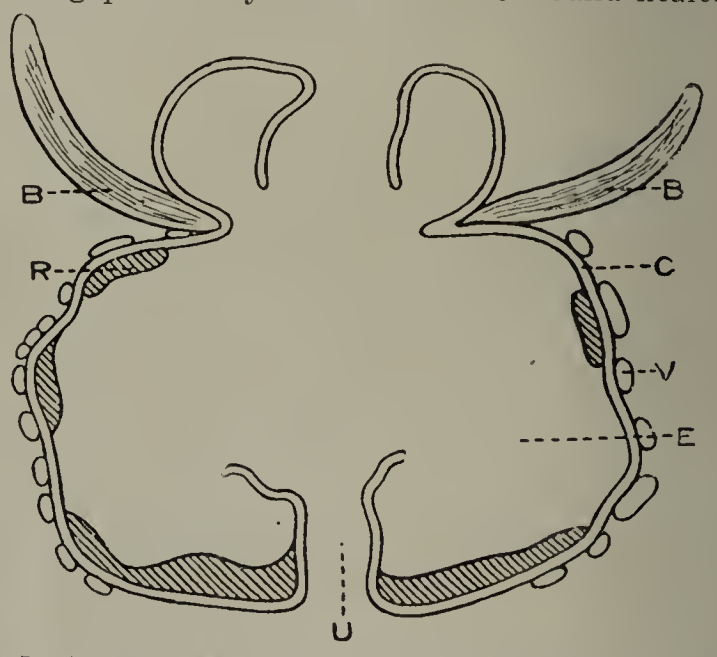


Fig. 5.—Prostatic capsule emptied of its contents with torn ends of prostatic urethra above and below. B, Bladder base.

first intention and the patient is well to-day, so that the idea is practical. A bullock's urethra, however, will be found more easy to manipulate.

I suggest that if a median or a large projecting lateral lobe be present that it be separately enucleated by an antero-posterior incision, and that the remainder of the

prostate be removed by a method which I have always used,[1] which consists in starting the separation from the prostatic urethra. Thus: The forefinger is inserted into the prostatic urethra up to the first joint (Fig. 1), the point of the finger is then bent and plunged sideways through the mucous membrane (Fig. 2), which in the soft elastic prostates gives readily before the pressure. At once the finger finds itself between the tough capsule of the prostate and the contained adenomatous masses (Fig. 3); traveling on without much opposition, the entire lobe is enucleated (Fig. 4), and generally stripped off the urethra. Especial care is taken with the floor of the urethra and with the opening of the ejaculatory ducts to leave the former intact and attached to its bed. Usually the adhesions between the lateral walls of the urethra and the lateral lobe are very dense, that part of the canal comes away with the lobe, but the floor is preserved. The lobe is now very gently detached from the triangular ligament, so as not to tear or bruise the membranous urethra, and, the lobe being free, it is pushed or pulled into the bladder; the opposite lobe is removed in a similar way. The finger finally smooths down the mucous membrane in the prostatic urethra, leaving the vesical ring quite clear and free from any projecting tags (Fig. 5). It heals (Fig. 6) by the structure being lined with part of the original prostatic urethra.

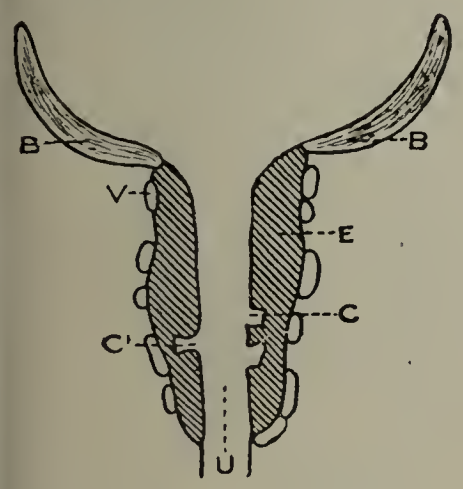


Fig. 6.—The same healed. Ends lining shrunken prostatic capsule and fusing at CC'.

I invariably work in very thick rubber gloves and never employ any instrument after incising the bladder, except in old-standing hemorrhage from prostatic ulcers. These ulcers I cut out with a knife under the control of the head lamp and caisson before I start enucleation.

The second and third vital points hinge on the technic I have just described.

2. The destruction of the ejaculatory ducts. Very many patients immediately and absolutely refuse the suprapubic operation because they can not be promised that they will retain sexual power. I am convinced of the enormous tonic value of the male sexual function in maintaining arterial health and even longevity, and I contend that ruthless destruction of the secretion of these glands will not only bring the operation into disrepute, but that it will greatly minimize the excellent future results obtainable by the procedure.

3. I think members of the profession little realize how readily the membranous urethra is damaged by the separation of the anterior face of the prostate from the face of the triangular ligament. It is astonishing how easily the mucous membrane is bruised and its muscle lacerated. As this is the future reinforcing sphincter of the bladder after prostatic enucleation, it should be very gently and cautiously handled.

1. This is a method of which I published a description in 1904.

To Reduce Obesity.—Von Basch advises graduated exercises and walking, short of exhaustion; restriction of carbohydrates and liquors; mineral waters containing Glauber's salts; and carbonated brine and vapor baths.—*Denver Medical Times.*

INDICATIONS FOR PROSTATECTOMY AND THE RESULTS OF THE OPERATION.*

ALEXANDER HUGH FERGUSON, M.B., M.D., C.M., F.T.M.S.
Professor of Clinical Surgery, Medical Department, University of Illinois.
CHICAGO.

The indications for removal of the prostate are based on the pathologic conditions present in the gland as manifested by symptoms and signs relative to obstruction to urination. The endeavor should be to learn the cause of the obstruction to the urinary outflow by studying the clinical evidence presented in each case. Inasmuch as an accurate opinion of the pathologic changes in the prostate cannot be formed without an antemortem or a postmortem section, we are forced to divide the indications for prostatectomy into two great classes: First, clinical; second, pathologic.

CLINICAL INDICATIONS.

The clinical features of the disease may develop slowly or quickly, run an intermittent or a continuous, but usually a chronic course, with or without complications, until complete retention of urine occurs. The function of the bladder is interfered with first. It begins to empty itself more frequently, both day and night, and the act of urination becomes difficult and prolonged. The stream starts slowly, flows less forcibly, sometimes intermits, and ceases in an involuntary dribble. The more the patient hurries to complete the act, the more time it requires to perform it. The frequent and difficult urination is followed by a general vesical distress, which eventually becomes quite painful; and when cystitis ensues, an additional train of symptoms is added to make up what is designated "prostatism." These symptoms are present in nearly every case of prostatic obstruction. Frequent and painful urination may be the most prominent symptom in chronic nephritis, but the difficulty of urination and the dribbling of urine are absent. It is probably too dogmatic to say that "nocturnal frequent urination is almost pathognomonic of hypertrophy of the prostate." In order that the clinical indications for prostatectomy may be of any practical value, some classification of the cases is desirable. I select the following:

I. Cases Manifesting Genitourinary Functional Disturbances.—Cases with functional disturbances may last for months or years, and still not give sufficient cause to remove the offending organ. Besides frequent, difficult, and prolonged urination, other symptoms, such as sexual irritability, too frequent erections, premature orgasms, and unsatisfactory coitus may appear early, much to the discomfort and annoyance of the patient. A feeling of fulness in the bladder and perineum is present during the daytime and on awakening after the first sleep at night there is pain. With all his hurried calls to urinate, and slow and imperfect accomplishments, the man of 50 or 60 years, of continued health and prowess, conceited in his powers of enduring, resisting and conquering things generally, does not consult a surgeon until his better judgment, sorely tried, comes to the rescue; not until he finds that prescribed, recommended or suggested bladder and kidney medicines, rest at home and at hot springs, and restricted diet, are of but little avail. And, furthermore, that exposure, local and general excitement, and alcoholic stimulants increase his difficulties.

* Read in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

Fig. 1.

Fig. 2.

Fig. 3.

Fig. 4.

Fig. 5.

Fig. 6

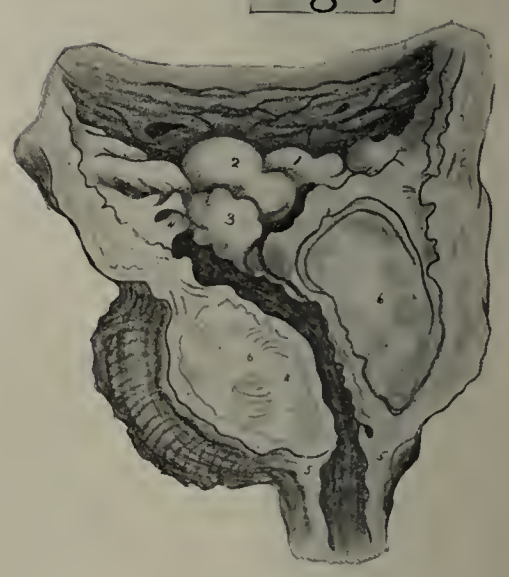


Fig. 7.

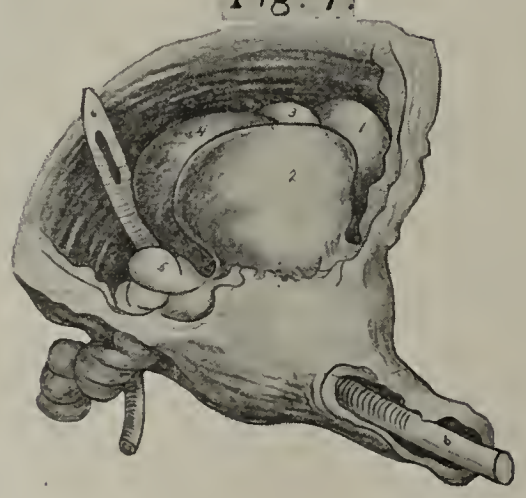


Fig. 8.

PATHOLOGIC DEFORMITIES OF THE PROSTATE.

Fig. 1.—Lobes 1, 2 and 3 are equally enlarged and protrude into the bladder.

Fig. 2.—Crescentic meatus; 1, middle lobe; 2, ring; 5, bougie.

Fig. 3.—1. Cyst.

Fig. 4.—1. Lateral lobe.

Fig. 5.—1. Central lobe; 2 and 3, lateral lobe; 4, calcareous deposit.

Fig. 6.—1, 2 and 3, middle lobes; 6, lateral lobe.

Fig. 7.—1, 2, 3 and 4, from lateral lobe; 5, central lobe.

Fig. 8.—1, Central lobe; 2, lateral lobe.

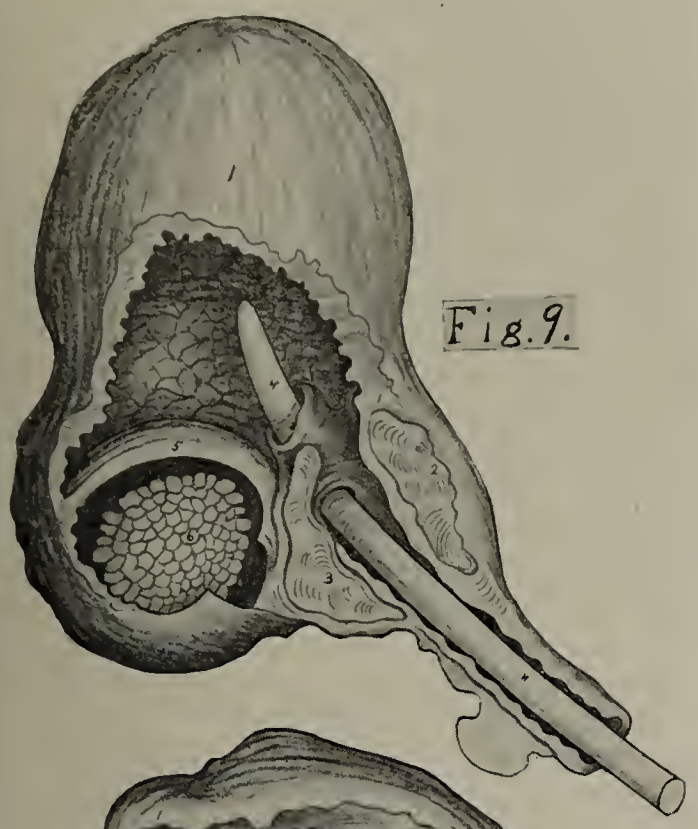


Fig. 9.

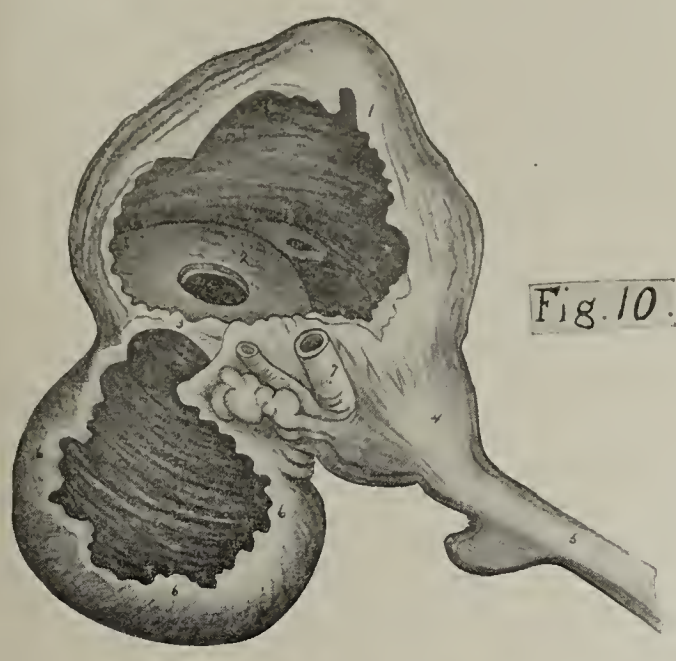


Fig. 10.

Fig. 11.

Fig. 12.

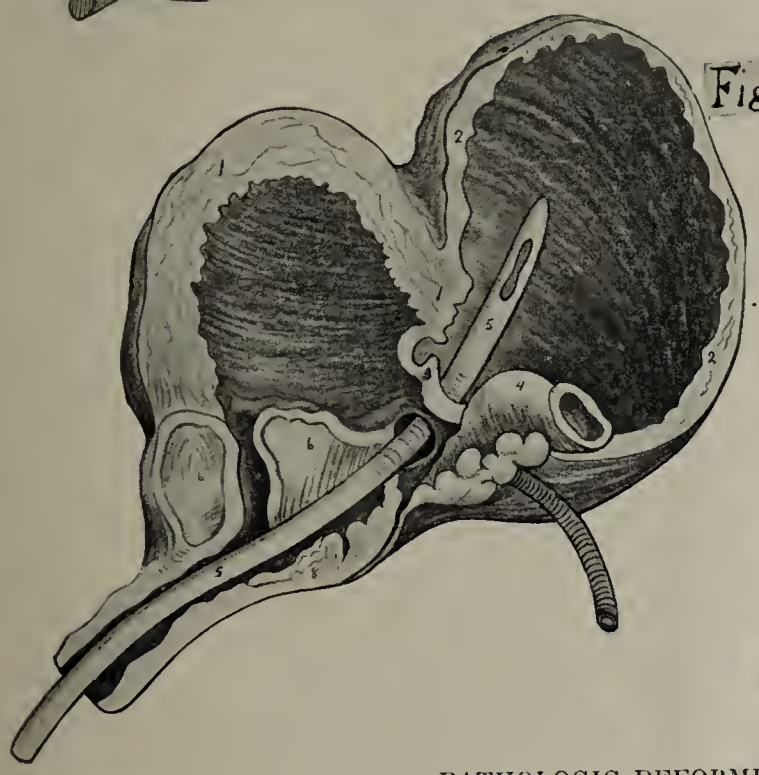


Fig. 13.

Fig. 14.

Copied from Maclise
by A.S. Cleaveland.

PATHOLOGIC DEFORMITIES OF THE PROSTATE.

Fig. 9.—Bladder thickened; 5, sac; 6, stone in sac.
Fig. 11.—Stone in the bladder; 7, sac empties into urethra.
Fig. 13.—1. Bladder; 2, sac; 4, ureter; 5, bougie; 7, vesical orifice.

Fig. 10.—2. Opening between bladder and sac; 6, sac.
Fig. 12.—1. Bladder; 2 and 3, prostate gland; 4, ureter.
Fig. 14.—1. Bladder; 2, dilated ureter; 4, two calculi in prostatic urethra; 5, vas deferens.

In such a case no residual urine is found by the catheter, and no positive enlargement of the prostate can be detected by a rectal or bimanual examination, aided by a sound in the bladder; but the bladder is intolerant to the sound and the prostate is tender to manipulations. The urine is normal. The cystoscope may reveal a congestion of the internal vesical meatus and of the surrounding bladder mucosa, with some prominence in the latter. The diagnosis of a congestion of the prostate is now made. This is the first stage of prostatic hypertrophy. So long as there is no marked obstruction to the flow of urine, even though the gland is felt *per rectum,* to be prominent, prostatectomy is not yet indicated. In the absence of other causes of congestion, the fact that urination is prolonged is rather conclusive that the prostate is slightly hypertrophied. In this class of cases the genitourinary specialist finds a field for great usefulness, and by proper hygienic and local treatment prostatectomy may, in some individuals, be controverted.

The percentage of cases that remains rebellious to treatment and becomes worse must be high. It is self-evident that these patients should be operated on early before residual urine forms or infection occurs. It is unfortunate that many physicians do not associate early functional annoyances of the genitourinary organs, in men past middle life, with prostatic hypertrophy; for patients suffering from these symptoms either go on suffering or drift into the hands of public sinners in the profession, the advertising specialists. Finally, as a last resort, they come under the care of a competent surgeon at a time when they are defunctioned and on the verge of eternity through complications that at one time would have been avoidable, and through advanced pathology that should have been forestalled.

II. Cases with Partial Retention.—A man whose *bas fond* has formed so insidiously as not to interfere with his daily work or rest at night, other than a slight interference with urination, is likely to have acute retention of urine on exposure to cold, or as an after-dinner surprise. Relief is obtained spontaneously by antispasmodics, or by the use of a catheter, but almost ever afterward the catheter draws off residual urine after micturition. To avoid a return of his acute suffering from retention, he has to obey promptly Nature's call to empty the bladder, and avoid wine, exposure to cold and wet, as well as over-indulgence of any kind. A sagging of the bladder behind the prostate to hold residual urine, forms slowly, the process usually being manifested by an exaggeration of the symptoms and the signs already pointed out as characteristic of cases of the first class. There are two forms of partial retention, acute and chronic.

Acute: On determining the existence of prostatic dysuria and partial retention in any case, the dangers following permanent catheterization should be explained clearly to the patient. The habitual or daily use of the catheter must be denounced, whether in the hands of the nurse, patient, or physician. Even when the comparative comfort of the patient requires catheterization, cystitis is almost sure to develop in spite of all precautions. I impress on the patient the nature of his malady, explain that it is only a temporary relief that is afforded by the catheter, point out its dangers to life, and also the great results obtained by prostatectomy. Harrison, Lydston and others have shown that the expectation of life while using the catheter is only about four or five years.

Repeated hemorrhages into the bladder of a prostatic patient are sometimes profuse and dangerous. Instead of this sign being a contraindication for prostatectomy, as some operators aver, I have found that the sooner the gland is removed and the bleeding is checked, the safer it is for the patient. In this connection it must be remembered that erosions and ulcers due to catheter traumatisms are not prone to heal when the mucous membrane is chronically congested, as it is in all these cases. When the bladder becomes inflamed, whether the catheter has been used or not, the patient should be ordered to bed, preferably in a hospital, starved, purged and his bladder systematically irrigated for a week or more until the acute symptoms have subsided. Then the prostate should be removed before he resumes his work.

The cases that are difficult to treat successfully are those that are complicated with chronic cystitis. It is admitted by authorities on this subject that if the bladder is once chronically inflamed, it remains inflamed until the prostatic obstruction is removed. The sufferer should know the permanent damage that is sure to be done to the bladder, such as contraction, trabeculation, and formation of diverticula and stone. He should also be informed that ultimately ascending infection to his kidneys will prove fatal.

Chronic: In the chronic form of partial retention the quantity of residual urine gradually increases until eventually the bladder becomes distended to its utmost capacity, when some relief is often obtained by the urine forcing open the vesical meatus, causing an overflow in little intermittent streams or drop by drop.

Cases of the second class develop into cases of the third class in the manner just described.

III. Cases with Complete Retention.—In complete chronic retention the bladder is full all the time; every five, ten, or fifteen minutes during the day, involuntary urination occurs, while at night almost a constant dribble is noticed. Atony or contraction of the bladder is more or less extreme, depending on the length of time the retention has been complete, or on the duration of the cystitis.

The passing of a sound through the penis and the insertion of the finger into the rectum may reveal prostatic obstruction in the urethra on the one hand, and hypertrophy of the prostate on the other. Shall we recommend prostatectomy for members of this class? Yes. If, however, advanced age, feebleness, or disease of the kidneys or heart forbid an anesthetic, the operation is contraindicated; but neither the age of the patient nor the prostatic enlargement *per se* is a bar to prostatectomy. If the person is able to survive the operation, experience has taught that the kidneys will be benefited, the atony will subside wonderfully, and the bladder, oftener than not, will be able to contract and empty itself of its contents. Acute and partial retention usually repeats itself many times and then becomes chronic, and chronic retention may at any time become acute and complete.

IV. Cases of Absolute Incontinence and No Residual Urine.—In all cases of marked prostatic enlargement causing urinary disturbances, except in those of this class, there is residual urine; the prostatic urethra is elongated, enlarged, often tortuous, and its curve is increased. These conditions are detected by the catheter, the sound, and the cystoscope. In this class, however, there is not frequent urination, no dysuria, no residual urine, no elongation of the prostatic urethra, and no fulness or pain in the bladder or perineum.

On passing a catheter the bladder is found empty. The patient probably has been treated for months or years for paralysis. It is in this class of cases that the prostatic enlargement is in front and protrudes into the bladder anterior to the vesical orifice (Fig. 18). Since the sphincter cannot close the vesicle meatus, the urine no sooner enters the bladder than it flows away. If there be an overhanging enucleated development of prostatic tissue, as is here also represented, the vesical meatus may become blocked by it and retention follows. The enlargement may be felt above and behind the symphysis pubis. Cystoscopy may show the site, shape, and probable size of the prostatic hypertrophy. In this class of cases there is no posterior, pathologic middle lobe, no bar, and no vesical meatal pouting or stricture. Prostatectomy offers the only relief. I have encountered two of these pathologic conditions and removed the prostates successfully. The bladder regained perfect control of the urine in both cases.

Prostatectomy is not always called for on account of the large size of the gland; for it may be very large and still offer no obstruction to micturition. Obstruction is the *sine qua non* for the operation. In one case of acute prostatis,[1] I found the rectum partially obstructed by the great size of the lateral lobes, and still the man had control of his urine and emptied his bladder completely. There was no abscess in the gland.

PATHOLOGIC INDICATIONS.

The prostatic urethra may be obstructed in any part of its course by hypertrophy of the prostate gland so as to prevent the free exit of urine from the bladder. When this takes place to the extent of disabling and endangering a man's life, there is a pathologic indication for prostatectomy.

I. Removal of the hypertrophied prostate is recommended because it interferes with the function of the vesical meatus while at rest and during activity. How? In many ways:

1. The hypertrophy raises the vesical meatus above the level of the base of the bladder like a nipple (Fig. 17), or like a cervix uteri, so high that the bladder can not empty itself.

2. The vesical meatus is held open by the hypertrophied gland, causing constant leakage of urine (Fig. 18).

3. Congestion or inflammation of the mucous membrane causes obstruction and retention.

4. The vesical meatus may be flattened from one side or both, and from in front or from behind, or both, forming a straight or crescentic slit, or, according to the direction and manner of prostatic pressure, the meatal opening may be left small, oval, star-shaped, Y-shaped, or even spiral (Figs. 1 to 18).

5. A pedunculated growth arising in front of, but oftener from behind, the urethra, may obstruct the meatus by a ball-valve-action, giving rise to a sudden stoppage of the flow of the urine while the man is micturating, simulating stone in the bladder. At other times the polypus-like growth causes complete retention (Figs. 2, 18, and 19).

6. A bar of tissue and mucous membrane occasionally becomes stretched across the vesical meatus between two enlargements of the lateral lobes and offers obstruction to the urinary flow (Fig. 20). These conditions, interfering with the neck of the bladder, functionally and anatomically, have no tendency to clear away spontaneously, and in order to prevent further distress and pathologic changes, the removal of the prostate is indicated both for comfort and to save life. It is not often that a bar alone exists.

II. The second pathologic indication for prostatectomy is when the hypertrophy obstructs the flow of urine from the bladder, in any part of the prostatic urethra, from the vesical meatus to the membranous urethra.

1. The entire enlarged gland may surround the prostatic urethra and obstruct the flow of urine through it by circumferential pressure.

2. Both lateral lobes may compress the urethra in one or more places.

3. One lateral lobe or a nodule in it not infrequently obstructs the urethra. The size of the prostatic growth, and the degree of obstruction, bear no exact relationship to each other; for a small nodule may more thoroughly obstruct the urethra than a large one.

III. A third indication is found in a condition of contraction and cicatrization of the prostate from chronic inflammation. In the case of one patient operated on by me, the prostatic infection was first a mixed one; then mostly streptococcic, and, finally, only the colon bacillus was found. While chronic inflammation is occasionally a pathologic indication for prostatectomy, it does not belong to the senile prostatic class.

IV. The fourth pathologic indication for prostatectomy is the deleterious effect prostatic obstruction has on the bladder, kidneys, and rectum.

For the purpose of demonstrating the gross pathologic conditions found in the cadaver in cases of senile prostatic hypertrophy, fifty years ago, Mr. Maclise,[2] F.R.C.S., London, published a book in which one chapter is devoted to this subject. He states that he made the drawings himself from prostates and bladders examined in the hospitals and museums of London, Paris, and elsewhere. They are the best I have seen. Some of his drawings are reproduced in Figures 1 to 14, which need no description other than the labels attached thereto. The term "middle lobe" is used to indicate a lobulated mass of hypertrophied prostatic tissue situated in the middle at the neck of the bladder.

LITERATURE BEARING ON COMPLICATIONS, SEQUELÆ AND MORTALITY.

Hugh H. Young[3] reports 50 cases of perineal prostatectomy without any deaths. The ages of the patients ranged between 80 plus and 50 plus, two being over 80 years old, and thirteen being between 50 and 60. One man, aged 72, was in excellent condition two weeks after the operation, when, after an enema, he died very suddenly. The autopsy showed pulmonary embolism. A second death occurred one month after the operation in a patient aged 82. He did well for two weeks after the operation, but then gradually grew weaker and died apparently as much from old age as anything else. Of the 50 patients, 22 claimed to have normal sexual powers; 10 patients reported the sexual powers impaired before the operation. There were 4 cases of rectal fistula and 1 case of slight incontinence of urine. Epididymitis occurred in two weeks in 2 cases, in three weeks in 3 cases, and after two months in 1 case. The epididymis was involved on one side only. The bladder was infected in every case.

George E. Whiteside[4] reports a critical study of 238

1. Occurring in the practice of Dr. A. R. Elliott of Chicago.

2. "Surgical Anatomy," 1856.
3. THE JOURNAL A. M. A., Feb. 4, 1905.
4. Am. Jour. Urology, August, 1905.

cases, collected from many sources. He says that perineal prostatectomy is considered by the majority of surgeons as the best operation in most cases. Immediate death results from sepsis, shock, cardiac disease, pneumonia, and uremia. Remote death occurs from cancer, cachexia, pyelonephritis, embolism, and may be the result of secondary operations done to overcome defects left by the first. Absolutely good results occur in about 30 per cent. of all patients operated on. Sequelæ are numerous and troublesome. They include rectal fistula, urinary sinus abscess, stricture at the bladder neck, incontinence, frequent micturition, residual urine, epididymitis, sexual impotence, cystitis, vesical calculus, and urinary tuberculosis. Carcinoma, sarcoma, and syphilis have all proved stumbling blocks for the diagnostician.

J. L. Thomas[5] reports 15 prostatectomies, 13 suprapubic and 2 perineal, with 2 deaths, one the result of the operation, occurring 48 hours afterward, and the other due to pneumonia, occurring about 9 days after operation. The ages of his patients ranged from 56 to 77. The two who died were operated on by the suprapubic method. No complications or sequelæ are reported.

J. E. Moore[6] in a critical article on the subject of prostatectomy, points out its inconveniences and dangers. He thinks it is too grave an operation to be resorted to as a routine treatment, and that it is applicable only in properly selected cases. The ever-present danger of uremia in kidney disease or sepsis, the various complications, such as injury to important blood vessels, peritoneum and nerves, hemorrhage, which, however, is not a very serious danger, the possibility of permanent damage to the urethra and of extensive injury to the bladder in case of the suprapubic operation, and in the perineal operation of injury to the rectum, must all be taken into consideration. Moreover, under the present technic the seminal ducts are not preserved, and this is a grave complication. Other unfortunate sequelæ are epididymitis, incontinence or dribbling of urine, and the possibility of perineal fistula. He says that it is a mistake to fill the large space in the perineum with gauze because it delays union and leads to complications.

Fig. 15.—Three lobes enlarged, obstructing the vesical orifice, bladder sacculated, contracted and containing calculi; A, median lobe; B, lateral lobes; C, prostatic urethra; D, bladder; E, calculi embedded in pouches.

J. W. Thompson Walker[7] refers to 73 cases operated on by Freyer up to December, 1903, many of which were complicated by cystitis, either chronic or in recurrent attacks. Four patients who had stone died. In the case of two of these the stone had been removed some time previous to the operation on the prostate, and in the remaining two the stone was removed at the time of the prostatectomy. In none of these cases could the fatal result be attributed directly to the condition of the bladder. In three of the fatal cases renal disease was noted or suspected. One patient died of uremia, and a dilated renal pelvis and ureters were found. In the case of another patient, whose death was ascribed to bronchitis, a few granular casts and albumin had been found in the urine. Three patients died of pneumonia, and it was noted that there was probably advanced renal disease. In none of the fatal cases was death ascribed to failure of the circulation. One patient whose death was charged to uremia was very stout and suffered from emphysema and bronchitis. One patient died of bronchitis.

The same author[8] also reports a series of 111 cases, with 20 deaths, 13 of which occurred in patients who were obviously at the point of death when operated on. The long-standing cystitis disappeared or was greatly lessened in more than half the cases, and distinct amelioration of the most troublesome symptoms occurred in over 80 per cent. of the cases, with a return to conditions not very far removed from normal in 46 per cent. of those operated on.

P. J. Freyer[5] reports 60 cases of total enucleation of the prostate, with 5 deaths, one from chronic disease of the liver, probably malignant; two from uremia; one from bronchitis, and one from unknown cause. The fatal cases were in patients aged 59, 67, 73, 70, and 69, respectively.

Alexander B. Johnson,[9] New York, reports 4 cases operated on by the perineal route, and consequent abdominal incision having been used to afford access to the prevesical space. There was neither cystitis nor residual urine in two cases three years and two years after operation, respectively. The urine of the third case, after one and a half years, contained a faint mucous cloud, with slight residual urine. In the fourth case, five months after operation, urination was said to be normal in frequency, with a clear urine.

Archibald MacLaren[10] reports 13 prostatectomies, with only one death. The patient was suffering from a suppuration of both testicles and an acute cystitis. Postmortem showed a double pyelonephritis. One man died nine months after the operation from cancer of the

5. Brit. Med. Jour., May 20, 1905.
6. Annals of Surgery, March, 1904.
7. Practitioner, August, 1904.
8. Practitioner, July, 1905.
9. Med. News, Aug. 1, 1903.
10. St. Paul Med. Jour., August, 1904.

pelvis. He had full control of his urine till his death. One man had total incontinence. In his case the prostatic urethra was removed with a hard inflamed prostate. He is now wearing a urinal and his condition is better than it was before the operation. The remaining patients are alive and well, passing urine not oftener than once at night and five times during the day. The oldest patient was 82, the youngest 46; the average age was 64. In five of these cases there were stones in the bladder as a result of the prostatic obstruction. In three there has been secondary stone formation after the operation, necessitating a secondary removal. One of the patients has had considerable incontinence from a urethral fistula.

George M. Phillips published a small handbook in November, 1903, giving the experience of 40 American surgeons with prostatectomy. Ten of these report 199 perineal prostatectomies, with 21 deaths, and the following after-results or complications, 9; recto-urethral fistula, 9; secondary hemorrhages, 2; urethral fistula, 6; dribbling of urine, 7; stricture, 1; calculus, 1; epididymitis, 5.

H. H. Martin[11] reports ten cases operated on by the perineal method of Bryson, with two deaths, one due to septic absorption, chiefly from the suprapubic wound six days after the operation, and the other ten days after the operation from an acute nephritis. One case was complicated by vesical calculus. One case demonstrated the difficulty which may be encountered in enucleating the prostate when a Bottini operation has been done previously. Most of the cases were desperate, ranging in age from 62 to 74. Two patients were obliged to use the catheter subsequently, on account of residual urine, but both patients had had complete retention before the operation, and now can pass some urine. They are not troubled with frequent urination, and are perfectly comfortable. The remaining five patients were relieved entirely, and do not require the further use of the catheter.

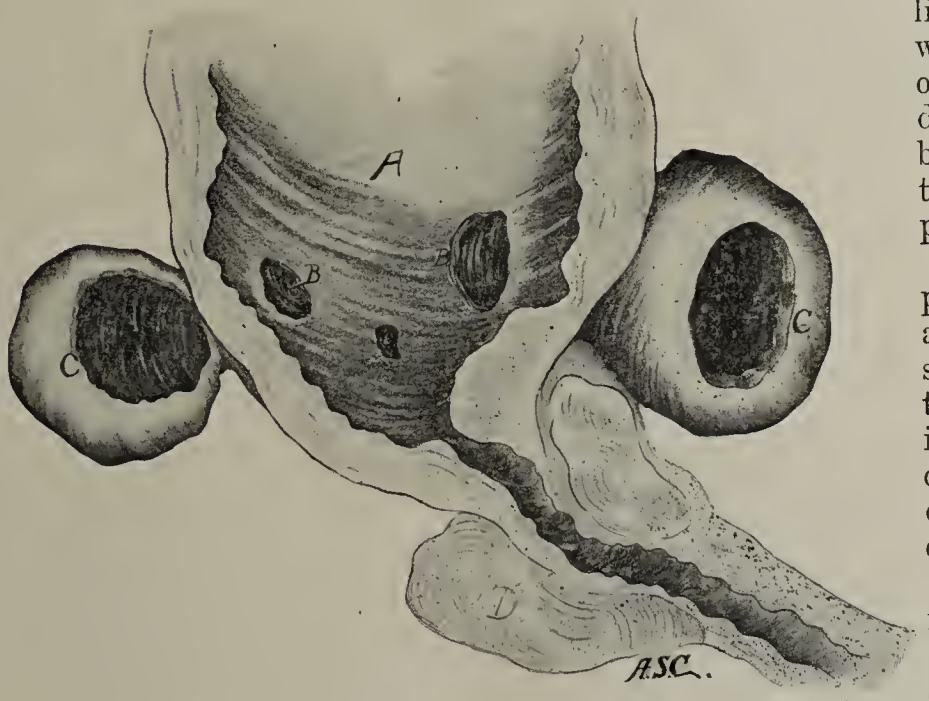


Fig. 16.—A, bladder; B, mouth of diverticulum; C, diverticulum cut open; D, site of prostate (removed).

F. S. Watson[12] says that following the Bottini operation 30.4 per cent. of the patients are cured, and in 84.4 per cent. good results are obtained. Following perineal operations 60 per cent. are cured, and in 88 per cent. good results are obtained. Following suprapubic operations 66 per cent. are cured, and in 90 per cent. good results are obtained. In a series of 267 Bottini operations there were 11 per cent. of failures, and incontinence of urine resulted in seven cases, or 2.6 per cent. In 59 other cases operated on by the Bottini method and reported by Willy Meyer, epididymitis occurred in six and orchitis occurred in two cases. In one each of these cases suppuration ensued, and in another case there was gangrene of the testicle. Perineal abscess and urinary infiltration occurred in four cases, owing to the membranous urethra having been injured. In another case the rectum was injured and a recto-urethral fistula resulted. Altogether, there were more or less serious complications in 22 per cent. of the cases. In 245 cases of perineal operation, there were two in which the peritoneum was opened; seven in which recto-urethral fistula resulted, and nine in which incontinence followed; 7.2 per cent. of accidents. A small proportion of incontinence and persistent fistula ensued following the suprapubic operation, this altogether amounted to about 6 per cent.

Hugh Cabot[12] reports 53 operations performed at the Massachusetts General Hospital from January, 1892, to July, 1893. The average age of the patients was 63 years, with 9 deaths, a mortality of 17 per cent. Eight Bottini operations, average age 61 years; no deaths. Thirty-four cases of castration, average age 66.7 years; five deaths, 14.7 per cent. mortality. Of 25 patients since heard from, operated on by the cutting method, eleven are well; six are relieved, and eight are the same or worse. Of the perineal operations, 57 per cent. of the patients were well or relieved, and 43 per cent. were worse. Of the complete operation, 83 per cent. of the patients were well or relieved, and 17 per cent. were worse. The complete operations were largely done either by the combined method or by one of the modifications of the perineal method.

Arthur L. Chute[13] reports a case occurring in a man, 72 years of age, showing the condition of the bladder and surrounding structures in a fatal case, death taking place 23 days after a suprapubic enucleation.

Escat[14] presented the results of 410 cases of perineal prostatectomy; death followed in 47 cases, 1.3 per cent.; a urethro-perineal fistula or rectal fistula in 8 per cent., and permanent incontinence of urine in 3 per cent. He favors perineal prostatectomy because the mortality of the suprapubic operation is higher, 10 to 15 per cent. He also considers the partial removal more dangerous than the complete removal. Proust[14] collected 813 cases of perineal prostatectomy, with a mortality of 7.13 per cent. Albarran[14] lost two cases out of 66 (3 per cent.) operated on by the perineal method. Of 34 cases of chronic complete retention before operation, followed for a year thereafter, 32 were completely successful; in two cases there was residual urine amounting to a few ounces, which he thinks was due to the existence of a sclerosis of the vesical walls consecutive to a chronic cystitis. Of 23 operations for incomplete retention, there were 12 complete successes and three failures. These latter were chronic cases of hypertrophic prostatis. He says that the results of complete transvesical prostatectomy are remarkable; in almost all the published cases the pa-

11. Med. Record, Oct. 8, 1904.
12. Boston Med. and Surg. Jour., April 28, 1904.
13. Boston Med. and Surg. Jour., Aug. 3, 1905.
14. Ann. des Mal. des Org., G. U., 1905, p. 1634.

tients urinate easily and completely, being able to empty the bladder spontaneously. Furthermore, there are no permanent fistulæ, no cicatricial contractions of the vesical neck, no injuries of the rectum, no loss of sexual power. The greater mortality, however, constitutes a barrier that must be considered. In 12 cases of suprapubic cystotomy for various purposes, in men over 60, he has not had any mortality. He ascribed his low mortality to his great care in determining the contraindications to operation. Of 44 cases operated on by the perineal method, more than a year before, and 15 cases operated on from three to four and a half years earlier, there were 55 complete successes, 4 partial successes, and 3 complete failures. Nicholich[14] performed 12 perineal prostatectomies with two deaths; 12 Freyer's operations with one death.

Freyer[15] reports 195 cases of suprapubic prostatectomy. In the first 110 cases his mortality was 10 per cent.; in the second 85 cases the mortality was 5.8 per cent. Nine of the patients were over 80 years old, and one 79. All recovered; nine are alive, with good urinary control; one died from cancer of the prostate. In a paper read before the British Medical Association, July, 1904, Freyer related his experience with 110 cases of suprapubic prostatectomy, the patients ranging in age from 53 to 84 years. In three cases the enlarged prostate was cancerous; two patients made operative recoveries; the third died three weeks after operation. Of the remaining 107 cases, 10 patients died from various causes; 2 from mania after the wounds were practically healed; 1 from pneumonia seven days after operation; 2 from exhaustion a few hours later, and 2 from septic infection. Complete success resulted in 97 cases, the patients regaining completely the power of voiding and retaining the urine, without fistulæ or incontinence.

Moynihan[16] reports 12 cases of suprapubic prostatectomy with one death. Baithing[17] reports 10 cases, and Stoker[17] reports three cases without a fatality. Goodfellow[18] reports 73 cases of perineal prostatectomies, with 2 deaths, one after seven hours, the other from sepsis after eleven days. There have been no permanent fistulæ. In several cases partial incontinence of urine has lasted two to four months in men over 70 years of age.

Freyer[19] reports 31 cases of extirpation through a suprapubic cystotomy, with four deaths; 22 recovered from the urinary troubles. Albarran[20] reports 42 perineal prostatectomies, with only one death. There were 35 complete cures, two distinct improvements, and three patients were not followed. Murphy[21] reports 34 cases, with one death. Young[22] reports 12 cases without a mortality. Goodfellow[23] reports 26 cases with one death. MacGowan[24] reports 28 cases with four deaths.

Delfis[25] reports 30 cases with only two deaths, the perineal route having been used. Syms[26] reports 20 cases operated on by perineal enucleation without a death. Fuller[26] lost only one out of 18 perineal prostatectomies. Freudenberg[27] reports 318 cases of the Bottini operation collected from the literature, alleging success in 77.75 per cent., failure in 13.75 per cent., and a mortality of 8.5 per cent. Horwitz[28] reports on 161 cases of various operations for the relief of prostatic hypertrophy, including 28 of vasectomy, 31 double castration with two deaths, 11 suprapubic prostatectomy with 3 deaths, 7 perineal prostatectomies with 3 deaths, 33 Bottini without mortality.

15. London Lancet, 1905, p. 1268.
16. Ann. of Surgery, January, 1904.
17. Brit. Med. Jour., Jan. 30, 1904.
18. The Journal A. M. A., July 16, 1904.
19. Brit. Med. Jour., April 18, 1903.
20. Ann. des Mal. G. U., December, 1902.
21. Chicago Med. Recorder, August, 1903.
22. Am. Med., 1903, p. 813.
23. Before the Cal. Acad. of Med., April 29, 1902.
24. N. Y. Med. Jour., June 27, 1903.
25. Ann. des Mal. G. U., October, 1902.
26. The Journal A. M. A., Oct. 25, 1902.
27. Centrbl. f. krankh. d. Harn. u. Sex.-Org., 1901, p. 571.

MORTALITY AFTER PROSTATECTOMY.

M. Tuffier[29] believes that the suprapubic operation is easier and quicker to perform than the perineal. When the gland is very small and the abdomen very fat, he selects the perineal route. He points out that the mortality is lower by the perineal operation, and quotes from Proust, Watson, Horwitz, Lequc, Hartman, Pauchet, Rafin, Young and Albarran, to the effect that there were 2,227 cases, the average mortality being 6.23 per cent., out of the total number of cases operated on by a large number of different operators. He says that renal insufficiency is the cause of death in about the same number of cases in both operations (35 per cent. perineal and 33 per cent. suprapubic). Shock is given as the cause of death in 17.8 per cent. operated on by the perineal method, and 22 per cent. in those operated on by the suprapubic method.

The general mortality is about 4 per cent. in perineal prostatectomy. Re-establishment of spontaneous urination and relief of vesical infection are the rule. The genital loss is habitual. The age of the patient and the lesions are not contraindications. The relative integrity of renal activity is necessary. Patients with grave organic deficiency, such as diabetes and albuminuria, succumb to pretended shock. The two methods have their advantages and disadvantages.

Mortality after prostatectomy is the subject of a paper by Drs. Tenney and Chase,[30] in which they accept as possibly due to the operation every death reported as occurring within six weeks. From their table we find that 2,342 patients were operated on through the perineum, and 667 suprapubically. It will be seen that the average mortality by the perineal route is 7.9 plus. The average mortality by the suprapubic operation is 13.2 plus, nearly twice the mortality of the operation through the perineum.

In my own cases I had no deaths in the first series of 21. Following that I lost three cases, one from renal insufficiency in 48 hours. This was considered a very unfavorable case for any operation. Another patient died in twelve hours from an overdose of morphin; and a third succumbed on the ninth day, an unfavorable case because of old age and emaciation. This makes my mortality between 3 and 4 per cent. in 103 cases, and does not include five deaths following prostatectomy, three from carcinoma and two from acute tuberculosis.

There have been no permanent fistula even in those with pus-furnishing bladders, which were inflamed, trabeculated and with stones, pouched, or diverticulated (Figs. 15 and 16). The natural tendency of the perineum is to close spontaneously, but so long as pus emits, a fistula is likely to persist or to recur. I had two of these cases. Injury to the rectum during operation is more of a blunder than an accident, and secondary rectal fistulæ are caused most frequently by rough treatment from the eighth to the twelfth day, when granulation is

28. Phila. Med. Jour., June 8, 1901.
29. "Treatment de l'Hypertrophie de la Prostate." Report au XV Congrès International de Medicine, 1905.
30. The Journal A. M. A., May 12, 1906.

profuse. This latter has occurred in the case of two of my patients in whom the after-treatment was not carried out by myself. Three patients were wearing urinals on account of partial incontinence, which was more acceptable to them and their relatives than death. One of these, 70 years of age, accepted the operation only when life became intolerable from pain due to cystitis, etc. Considerable sloughing at the seat of operation from the skin inward occurred. There was one man, with impotence following, who avers he proved his vigor

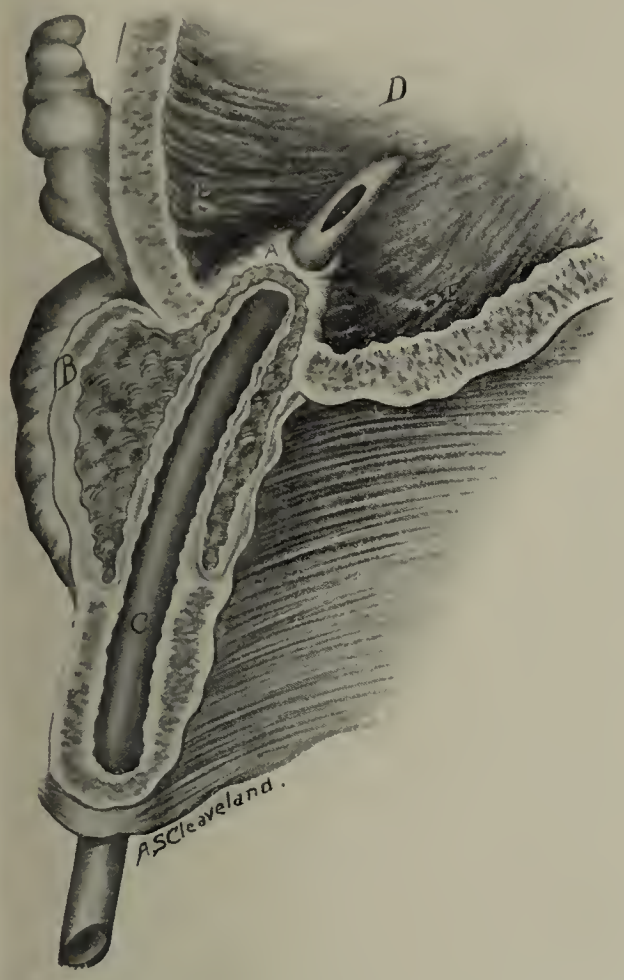


Fig. 17.—Prostatic ring, with nipple-like vesical orifice; A, vesical orifice, contracted fibrous-like and protruding into the bladder; B, lateral lobes enlarged but not causing obstruction; C, bougie in prostatic urethra; D, bladder; E, ureters.

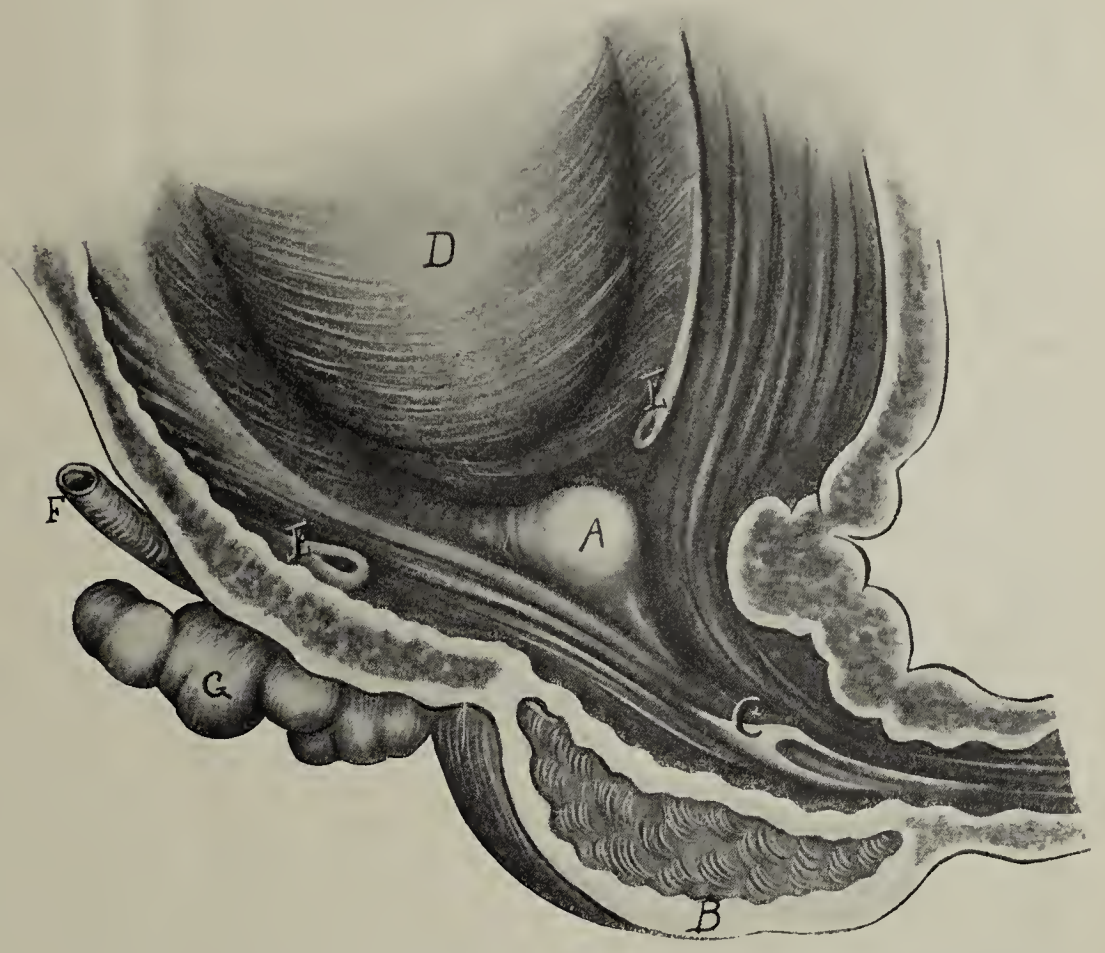


Fig. 19.—Central lobe pathologic (tumor-like). A, central lobe; B, lateral lobe; C, prostatic urethra; D, bladder; E, ureters; F, vas deferens; G, vesicula seminalis.

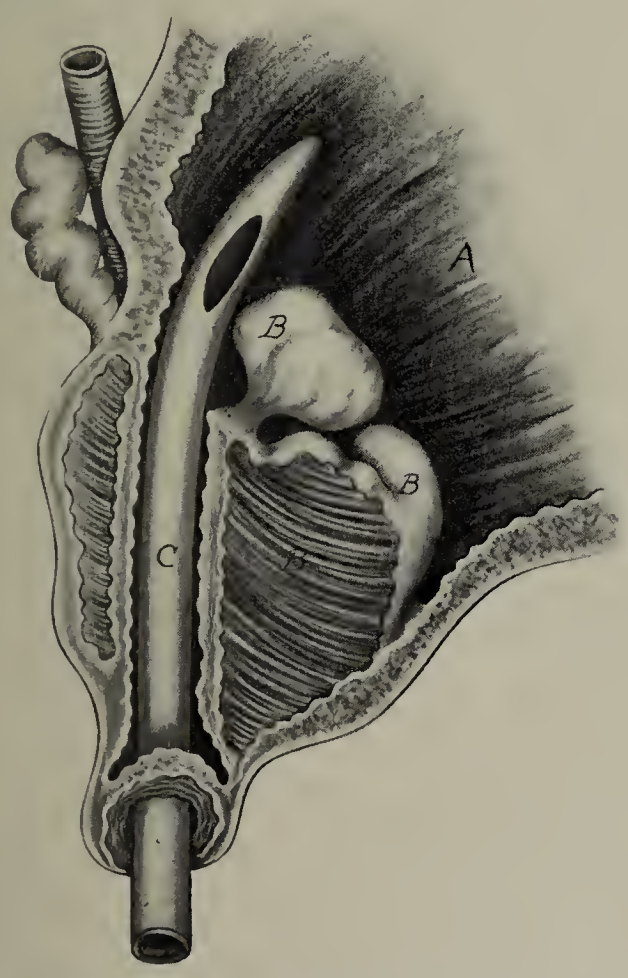


Fig. 18.—Hypertrophy of anterior portion of the lateral lobes; A, bladder; B, anterior portion of the lateral lobes enlarged projecting into bladder, causing obstruction; C, bougie in prostatic urethra which is straighter than normal.

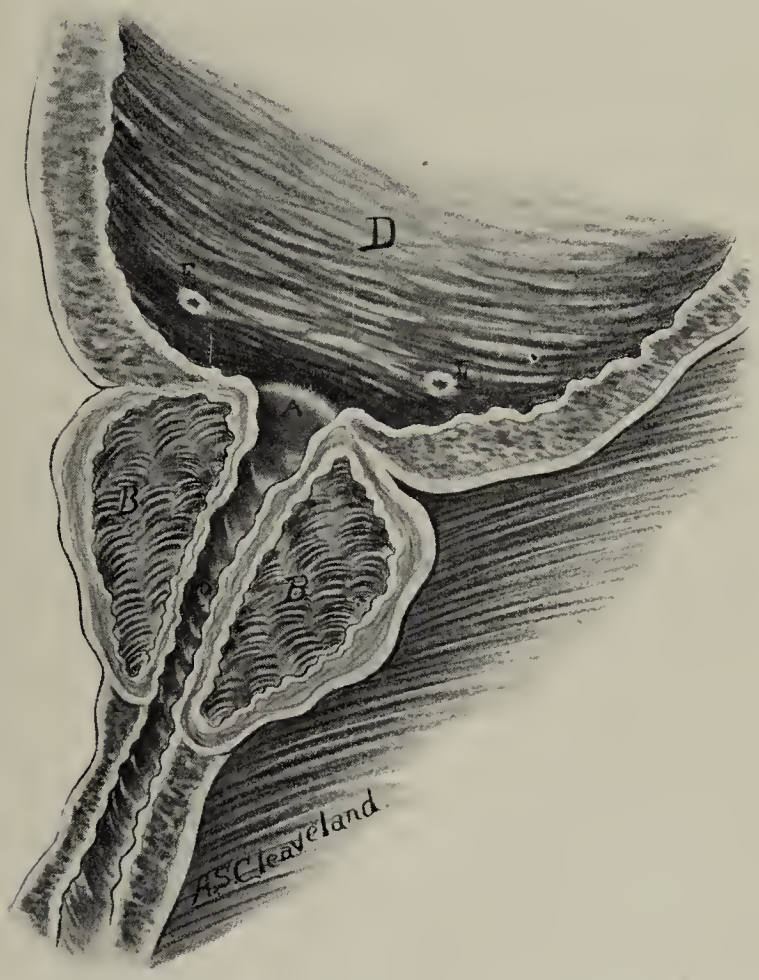


Fig. 20.—Lateral section. A, central lobe forming a transverse bar; B, lateral lobes; C, prostatic urethra; D, bladder; E, ureters.

two nights before operation. One case of stricture secondary to operation was cured by perineal section. Five patients had epididymitis. One had unilateral (left) intranephritic and extranephritic abscess developing three weeks after operation. I cured him by incision and drainage. Stone in the bladder was present in six cases.

OPERATION.

Before closing, I wish to say a few words regarding the operation through the perineum. It is not always necessary to pass a grooved staff through the penis, a sound will do, and I have performed the operation without any guide *per vias naturales*. The preferable position in which to hold the patient is that known as the extralithotomy position. While I prefer to open the membranous urethra and proceed down to the sinus pocularis at the point in the prostatic urethra where the ejaculatory ducts open (this sinus, although small in the normal, is not infrequently enlarged in those suffering from prostatic hypertrophy), still I have frequently removed the prostate without any injury whatever to the membranous urethra. After splitting the capsule laterally it is best to enucleate the lateral lobes first, carefully dissecting them away from the prostatic urethra without injuring the ejaculatory ducts. This procedure is more difficult in some cases than in others, depending on the fibrous attachments between the prostate and its urethra. The finger is pressed into the prostatic urethra and acts as a guide while these attachments are cut or taken away piece by piece by biting or cutting forceps. So long as the fibrous partition which protects the ejaculatory ducts is not torn through nor injured, these ducts are not destroyed. When the ejaculatory ducts are pushed to one or both sides of the prostate and the hypertrophy raises into the bladder like a plateau, then I use the depressor and insert it into the bladder through the perineum to aid the finger in accomplishing the enucleation.

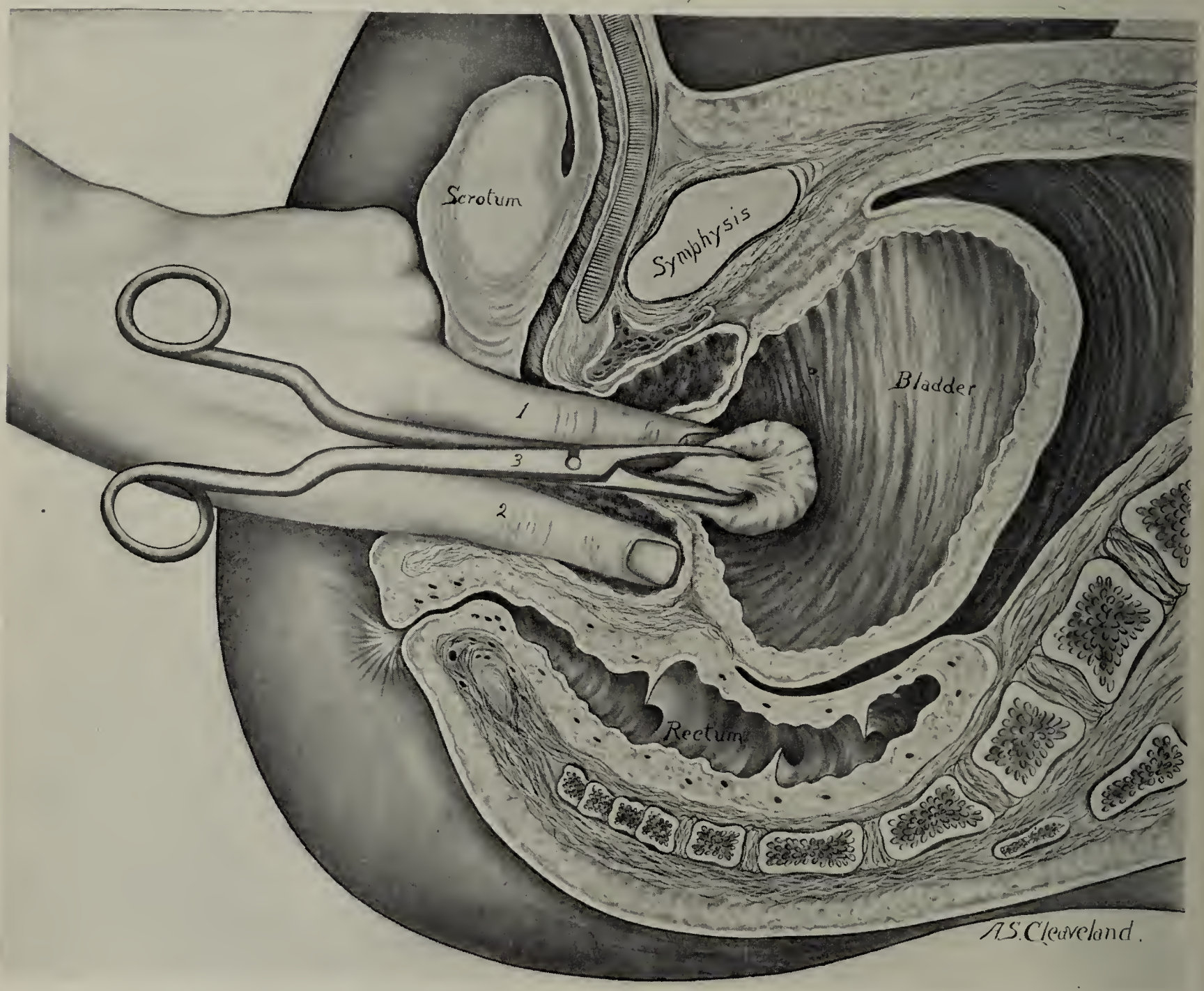


Fig. 21.—1, Middle finger in the bladder; 2, index finger in space from which prostate gland was removed; 3, prostatic forceps grasping the middle lobe.

It may be necessary to follow prostatic nodules in more than one direction behind the bladder, and in their removal care should be taken not to injure the vesical sphincter. It is not wise to tear them out forcibly with the finger, but rather remove these nodules, piece by piece, with the biting forceps. In a certain percentage of cases the so-called pathologic middle lobe (and what else can we call it when it is in the middle), whether projecting into the bladder anteriorly or posteriorly, is followed and removed as described above when it has broad attachments to the lateral lobes (Figure 22). On the other hand, it is frequently pedunculated and

the hypertrophied prostatic tissue is found within the bladder like a polypus. The pedicle may be without any prostatic tissue in it whatever, and it would be utterly impossible to follow it by its original route on account of its being shut off by fibrous tissue. Then it must be removed by way of the internal vesical orifice. The finger is passed into the bladder, the polypoid prostatic tissue is detected and seized by the forceps as represented in Figure 21. In cases in which it is not necessary to preserve the procreative power the ejaculatory ducts are deliberately severed and this expedites and facilitates the performance of the operation.

I admit that it is sometimes impossible to save the upper portion of the prostatic urethra, especially when the prostatic enlargement completely encircles it. Still, it is not necessary to remove the entire prostatic urethra as is done by the suprapubic route. It is possible to remove the entire gland in one piece without injury to the bladder, ejaculatory ducts, or prostatic urethra in suitable cases. Large forceps materially aid in seizing and holding large masses of tissue. When the prostate is a bar of tissue at the neck of the bladder, or is a stricture at the internal vesical meatus, with or without a protrusion, these conditions are usually noticed early in the operation and treated by dilation or removal by the cutting forceps.

To refer again to the ejaculatory ducts, if the person treated is young and vigorous and it is very desirable for him to retain his procreative functions, then another expedient may be resorted to which aids as a guide to save the ducts. The inguinal region is opened, the vas deferens is sought and opened at the internal ring, and a fine probe is passed through the vas deferens to the sinus pocularis in the prostatic urethra. The best material that I have found for catheterizing the vas deferens and ejaculatory ducts from without inward, is very fine aluminum bronze wire, 36 in. long and doubled on itself. The doubled end will readily pass through the seminal duct and can be felt in the prostatic urethra. Some of these cases have an oblique inguinal hernia, and this affords an opportunity and also an additional excuse to perform this catheterization in suitable cases.

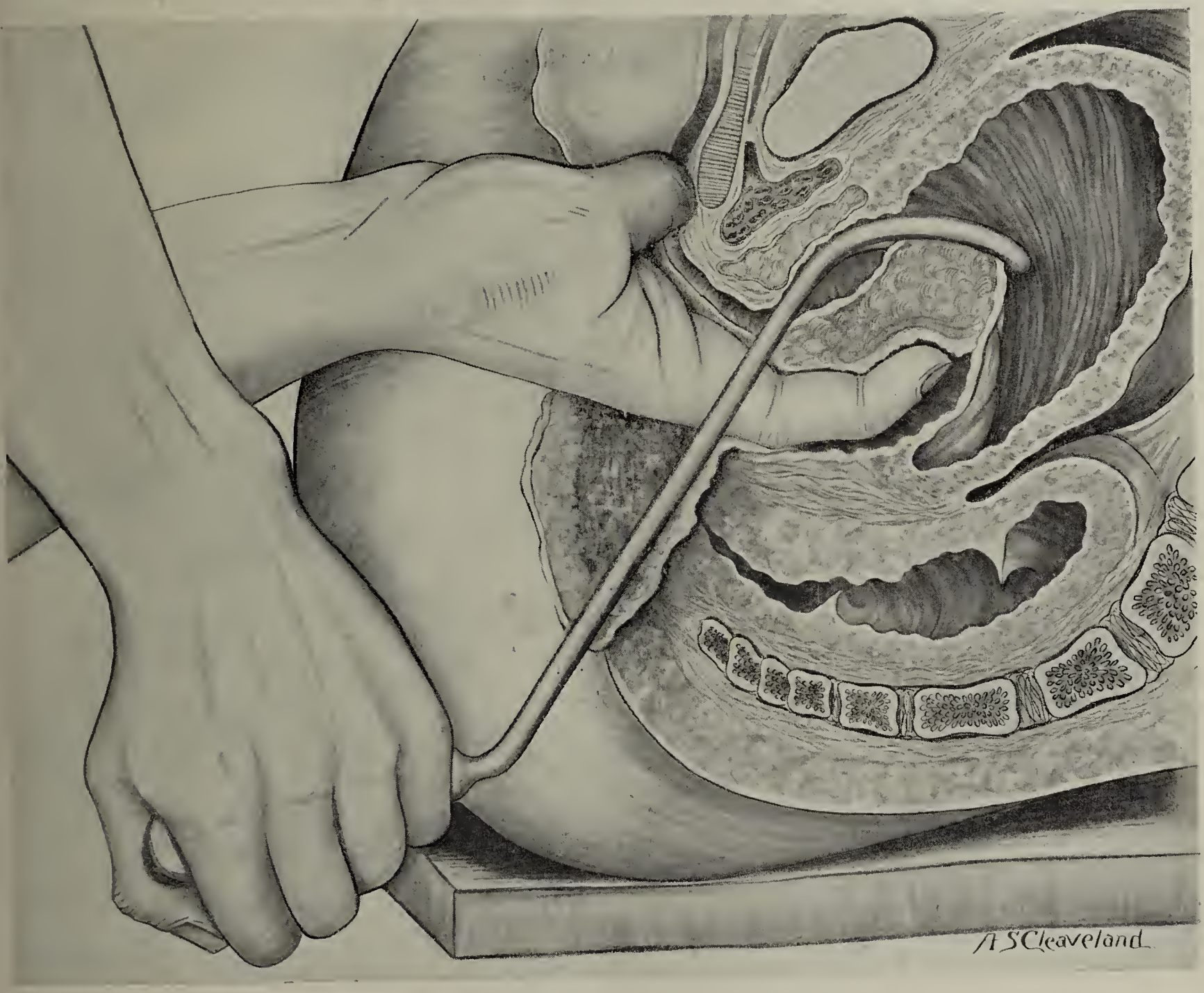


Fig. 22.—Extravesical enucleation of the pathologic middle lobe.

Should it be impossible to catheterize the ejaculatory ducts from without inward then a solution of methylene blue can be forced through into the prostatic urethra which stains the mucous membrane of the ejaculatory ducts and prostatic urethra. This, however, does not act as a guide to prevent their injury, but it indicates when they are injured because the stained tissue is noticed when it is removed, and then examined with the microscope. I make it a practice to stain the mucous membrane of the prostatic urethra and bladder in all

cases subjected to prostatectomy. Care must be exercised to wash the methylene blue out of the bladder before beginning to operate and in its place leave a solution of boric acid sufficient to distend the bladder to its utmost.

DRAINAGE.

Nearly all my patients were drained through the perineum. I am convinced that the technic is improved and convalescence is shortened by drainage through the penis by an ordinary retention catheter, No. 23, American. The membranous and prostatic portion of the urethra are closed by a few stitches of No. 1 chromic catgut, and the deep wound is drained by gauze alone at the most dependent part, and all the

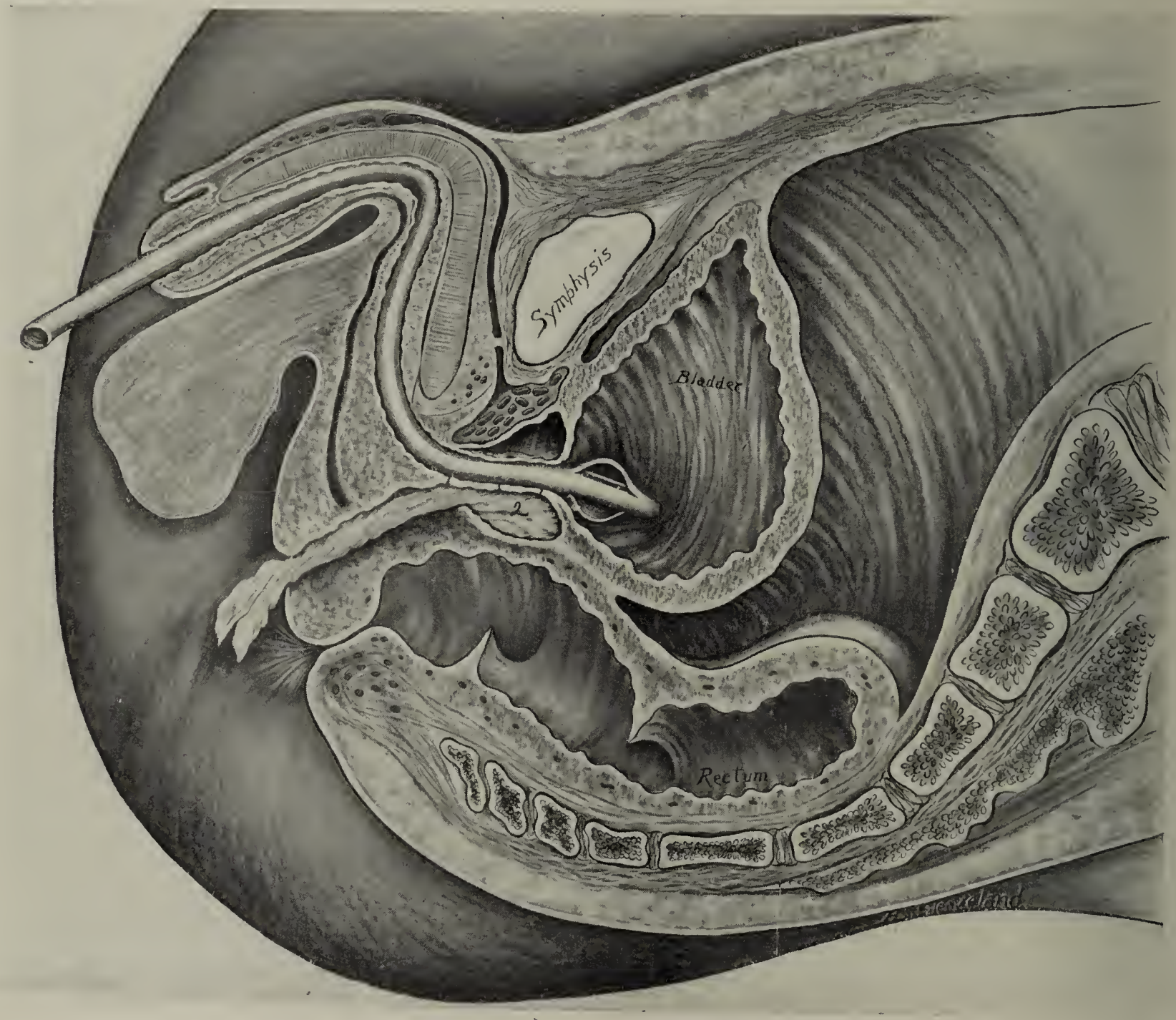


Fig. 23.—1, Drainage in place; 2, gauze packing.

structures of the perineum are coapted by an interrupted suture of silkworm gut. The gauze drainage in the perineum is removed on the third day and replaced; in a couple of days this gauze is withdrawn, but the retention catheter is left in the bladder and external urinary tract for a week. During this time should temperature develop or vesical tenesmus arise, it is well to wash out the bladder three or four times a day with a mild antiseptic solution. I have obtained perfect results by the above technic.

After the catheter is removed, retention of urine is likely to ensue from spasmodic contraction of the neck of the bladder. This is rather a good sign, for it indicates that the sphincter of that viscus has not been injured and the retention is easily rectified by the use of the catheter. I have seen men become greatly discouraged and even melancholic after prostatectomy, especially when temporary control of the urine is partly or wholly absent. But just as soon as the bladder again performs its function properly, they become bright, cheerful and hopeful. After prostatectomy the patient should be kept under supervision for about three months, because repair is not complete until about that time. Should the patient not be bougied occasionally, at least once a week while repair is going on, stricture at the neck of the bladder or at the junction of the membranous and prostatic urethra is likely to occur. I have found it necessary to perform a secondary perineal section in two cases for stricture following prostatectomy; one at the neck of the bladder and the other at the junction of the membranous and prostatic urethra. For the latter I blame the perineal drainage alone.

It is remarkable that atony of the bladder subsides completely in the vast majority of cases, but some bladders never become capable of emptying themselves after prostatectomy without considerable delay and difficulty. There is also a tendency to cystitis.

It must be remembered that patients with prostatic hypertrophy are usually more or less pathologic specimens of humanity in their entirety, and that prostatectomy, although a great boon to them, is not an elixir of life.

DISCUSSION.

DR. HUGH H. YOUNG, Baltimore, did not agree with Dr. Ferguson as regards technic, although he said that technic is rather a minor affair, as most surgeons do better work with the methods they are used to employing than with other methods. The operation as carried out by numerous English surgeons is outrageous, he said, destroying the urethra, ejaculatory ducts, etc. Dr. Ferguson's operation has two or three grave defects. First, that median incision. It does not give as great a field of exposure as is gotten with the inverted V or the curved incision. Also by means of a different form of tractor it is possible to do more than that. Dr. Young thinks that Dr. Ferguson is correct in saying that the perineal route is the better of the two, having a lower mortality and a better convalescence.

Dr. Young is now preparing a report of 150 cases of prostatectomy. Among these there were 145 cases of benign prostate. Of these, 24 patients were between 60 and 70; 16 between 75 and 79; 4 between 80 and 84; and 1 patient was 87 years of age. Among these 150 cases there were seven deaths. One patient had a vesical ulcer and a severe stricture and died on the ninth day of vesical hemorrhage. The second man was uremic. He was put on prophylactic treatment, but died at the end of fifteen days. The autopsy showed a double pyonephrosis. The third man was very old. He died on the twentieth day of hypostatic congestion of the lung. The fourth was a man 72 years of age, delirious, uremic. He was put on prophylactic treatment and drained with a catheter. It was thought that operation might help him. Perineal drainage was instituted and it helped for a while. He lived for twenty-one days. He undoubtedly had a double pyonephrosis. The fifth patient was in excellent shape and he ought to have gotten well. A day or two before he left the hospital he became constipated. He was given an enema and died. The autopsy showed a pulmonary thrombosis. The sixth patient was 81 years of age. He was in very bad shape. The bladder was distended up over the umbilicus with 2.000 c.c. of residual urine. He died five weeks after the operation. Another man, 87 years of age, died of pneumonia contracted twenty-four days after the operation. In the last year Dr. Young had fifty cases with only one death. The autopsy showed pyonephrosis. Therefore, he offers these cases as showing conclusively that perineal prostatectomy is practically a benign operation, and any patient in anything like fair shape ought to get well, except that pulmonary thrombosis must always be borne in mind.

DR. JOHN B. DEAVER, Philadelphia, said that he had taught anatomy for many years, and he has since seen many prostates in the living as well as in the dead subject, but he has yet to see a middle lobe. Normally the prostate consists of two lateral lobes and the supposed middle lobe is only an elongation of the right or left lateral lobe.

As to the operation. Both Dr. Young and Dr. Ferguson said that the infrapubic operation is vastly superior to the suprapubic. Dr. Deaver said he had taken out many prostates by the latter method in three and a half minutes and the patients got well. The mortality is about equal. The destruction of the neck of the bladder is by far greater in the infrapubic method than in the suprapubic. Dr. Young talks about leaving the prostatic urethra. With all due respects to both Dr. Ferguson and Dr. Young, Dr. Deaver did not believe that they do what they think they do. He has not succeeded in leaving the prostatic urethra. He removes it in every instance and his patients recover and remain well. The perineal operation has its place for the removal of small, hard, fibrous prostates; but the large, juicy, adenomatous prostates should be enucleated from above. Those are the cases in which the gland can be enucleated without any instruments except the fingers.

So far as destruction of the neck of the bladder is concerned, nothing is done to the vesical orifice in suprapubic prostatectomy. What is done by the perineal route? What is the result? Incontinence, injury to the rectum, perineal fistulas. He has yet to see any of these accidents occur in a suprapubic prostatectomy, and he has patients walking around who are 80 years of age. Men recover the urinary function in a short time after the suprapubic operation.

DR. J. E. MOORE, Minneapolis, said there are two primary objects in operating on the prostate promptly in these early cases. One object is to relieve the obstruction. Dr. Moore thought that the profession has arrived at a stage in prostatic surgery when it is wise to educate the medical man, the general practitioner, just as it did in the matter of appendicitis. Surgeons ought to dwell a little on the early symptoms, as pointed out by Dr. Ferguson. Often, particularly in the rural districts, the first symptom that calls attention to the fact that a middle-aged man has something wrong with his prostate is the sudden suppression of urine, and many times the treatment prescribed then is what gives him his infected bladder and kidneys, giving rise to one of those septic cases from which surgeons get their mortality. The treatment at the beginning is very essential. If the general practitioner will learn that when a man gives a history of dribbling of urine or frequent urination, suppression or full bladder, that that man has a prostate that needs looking after. He should think of consulting a surgeon in the matter and get at the bottom of the trouble. He will do his patient much good by refraining from infecting his bladder by improper treatment.

The next danger point is the catheter. The catheter is infinitely more dangerous to the prostatic than is the operation. All surgeons agree on that. The technic is still a bone of contention. Dr. Moore said he was one of the first in this country to advocate the perineal route earnestly, and that still is his operation of choice; but it does seem to him that it is wise to go at most of these things in a level-headed way. A man can not do his best if he makes the case fit the operation rather than to make the operation fit the case. Since he has learned to do the suprapubic operation, he has felt it his duty several times to operate by that route, where the prostate was very large and projected into the bladder. So that now, while the perineal operation is the operation of choice with him, he also does the other operation when it is necessary, and he finds it more frequently indicated every day. If the general practitioner can be educated up to the dangers of obstruction, surgeons will get these cases earlier and have a comparatively low mortality because the mortality comes from neglected or infected cases. A certain number of these patients are impotent after operation, but Dr. Moore is sure that it is better to have these men in the fifth to seventh decade of life without procreative powers and live than to have them in the cemetery.

DR. A. H. FERGUSON, Chicago, said that he had no deaths in the first twenty-one cases. Then he had three deaths, one from renal insufficiency, within forty-eight hours. This he would now look on as an unfavorable case for operation. Another patient died in twelve hours from an overdose of morphin given during his absence from the city by a careless nurse. The third patient died practically from old age and from being too emaciated to be operated on. There are no permanent fistulas in any of his cases, although there were some temporary fistulas extending over a period of from three months to a year and a half. Injury to the rectum during operation, he said, is more of a blunder than an accident. There were two cases of secondary fistulas through the rectum, the result of bad postoperative treatment not carried out by him. This list does not include two deaths where he was consulted in the operating room and finally took part in finishing the operation. Nor does it include five other deaths, three from carcinoma and two from acute tuberculosis.

Dr. Ferguson said he was amazed at the stand Dr. Deaver took in this matter, because he can prove to Dr. Deaver the correctness of every statement he made. In a certain per cent. of the cases he can save the ejaculatory ducts and remove the prostate through the perineum. It is a marvelous thing, he said, that obstruction of the bladder takes place after a

perineal prostatectomy after removing the mucous membrane, but it is an extraordinary thing to open the bladder, pass in the hand and rip out everything and then expect nothing wrong to happen. He saw one case operated on suprapubieally, and there was absolute stricture at the neck of the bladder, admitting only a filiform bougie.

The mortality is the point on which the whole thing should hinge. These old people should not be treated for the sake of usefulness to the surgeon, but because he wants to make them bless him as long as they live. Dr. Ferguson said he would rather have 5 per cent. of perineal fistulas than have 5 per eent. of his patients in the grave. Tuffier collected 2,227 cases with only 6 per cent. of mortality by the perineal route. Tenney and Chase of Boston collected 2,342 cases operated on by the perineal route and 667 operated on by the suprapubie route, with a mortality of 7 per eent. on the one hand and 13.2 per cent. on the other.

GANGOSA.

O. J. MINK, M.D. and N. T. McLEAN, M.D.
Assistant Surgeons, U. S. Army.
U. S. NAVAL STATION, GUAM.

Definition.—Gangosa, a Spanish word meaning muffled voice, is the name employed by the Spaniards in the Ladrone and Caroline Islands to describe a disease characterized by a destructive ulceration, usually beginning on the soft palate, pillars or uvula, and extending by continuity to the hard palate and nasal cavity, larynx, and even to the face. Active ulceration is followed after a variable period by cicatrization or chronic ulceration. Mutilation always results. Constitutional symptoms are either slight or absent.

Synonyms.—*Rhinopharyngitis mutilans* (Leys). *Ogo* (Chamorro).

HISTORY AND GEOGRAPHY.

There is absolute proof that gangosa has existed in the Island of Guam for at least 150 years, and probably much longer. In 1828 the Spanish Royal Commission sent to investigate conditions in the Ladrone Islands reported gangosa as being prevalent and recommended that these cases and cases of leprosy and large ulcerations be isolated on one of the smaller islands of the group. This is the earliest official recognition of the existence of the disease and the name gangosa. From these sources it is evident that the disease showed the same characteristics as at the present time. The known distribution of gangosa is somewhat indefinite. It exists throughout the Ladrone and Caroline islands. The case from Panama, recently reported by Fordyce and confirmed by Arnold, is undoubtedly true gangosa.[1]

Surgeon J. F. Leys,[2] United States Navy, has carefully studied the bibliography and mentions reports of rhinopharyngeal ulcerations in Fiji, British Guiana, Jamaica, Italy, Dominica and Nevis. Inasmuch as Dr. Leys, who is familiar with the disease as it exists in Guam, has recently discussed the cases found in Dominica and Nevis with Dr. J. Numa Rat, the recorder of these cases, the disease undoubtedly exists in the West Indies as well as in Polynesia.

ETIOLOGY.

General Prevalence.—During the past year 125 cases have been examined. Many of these were brought under compulsion by the authorities. It is certain that the work of the past year did not include all the cases, as many not yet apprehended are known to exist in various parts of the island. A conservative estimate places the total number between 200 and 250. The population of the island being about 11,000, the ratio is 18 to 22 per 1.000. As the natives of the various parts of the island are intimately associated by religious, marital and commercial relations, no topographic distinctions can be made.

Season.—The limited number of cases seen during the period of invasion makes it impossible to give any definite statement concerning the effect of season.

Age.—In a series of 80 cases the ages at the time of invasion were as follows:

First decade	2
Second decade	38
Third decade	23
Fourth decade	13
Fifth decade	2
Sixth decade	2

The youngest ages at invasion were 3 and 9 years; the oldest were 54 and 59 years. From these figures it appears that the majority of the cases start during the second and third decade.

Sex.—In the above series of 80 cases, 49 were in females and 31 in males.

Immunity.—No cases have been observed or recorded in whites. Cases in persons of mixed white and native blood are infrequent. The great majority of all cases appear in the pure-blood native. The absolute and relative immunity in the white and mixed races respectively may be explained by the superior hygienic and dietetic surroundings of these races.

Heredity.—There is no evidence showing that heredity plays any part in the transmission of the disease.

Food.—The native theory and that held by the Spaniards gives food a prominent place in the causation of the disease. They believe that such foods as decomposed or very salty fish, especially if eaten raw, uncooked taro and native pepper are the direct causes of the disease. This theory seems improbable. The eating of tainted fish is not more frequent than in any other fish-eating community, and when eating the usual symptoms of ptomain poisoning occur. Cases of gangosa rarely give a history of such poisoning. The eating of very salty fish, raw taro and native pepper is not sufficiently frequent to explain the large number of cases. Furthermore, cases are seen in natives eating the same food as the whites.

A Manifestation of Syphilis.—The disease has been considered a late manifestation of syphilis. During the past year we have not seen syphilis of any type among the native population and do not believe it exists. Our observations agree with those of Leys,[3] who states:

> It (gangosa) appears in healthy and well-developed persons of all ages, with no signs of hereditary syphilis in their own persons or in their brothers and sisters; and with no signs of syphilis in their parents. . . . Acquired syphilis is a common disease in most races over nearly the whole world. It is an extremely rare disease here, and neither primary nor secondary syphilis has been seen in a native during the past year, among thousands of persons treated for other diseases, including several prostitutes. This disease is common here, and rare or unknown where syphilis is common. Dr. Daniels, who was in Fiji for years, states that there was no syphilis in Fiji at a time when the lesions in this disease were common. The appearance of the primary lesion of this disease in otherwise healthy children of healthy parents, at 3, 4 and 9 years of age, excludes acquired syphilis.

A Sequel of Yaws.—Gangosa has been described as a sequel of yaws. Only one of our cases gave a history of this disease. While gangosa is limited to a few localities, yaws is a common disease in most tropical countries. We see no reason to consider it as an etiologic factor.

Specific Infecting Agent.—Our observations lead us to believe that there is a specific infecting agent, the nature of which is as yet undetermined. It is believed

1. Fordyce: Jour. Cut. Dis., January, 1906.
2. Leys: Jour. Trop. Med., London, Feb. 15, 1906.
3. Leys: Report of the Surgeon-General, U. S. Navy, 1905, p. 93.

that in the transmission of the disease flies are an important factor. The lesions of gangosa are so exposed that flies are attracted in great numbers, and, while feeding on the exudations, their legs, wings and bodies are contaminated. They in turn may infect the patient directly or indirectly through the food. The use in common by all members of the family of such articles as towels, clothing, pipes, cigars and betel-nut, with absence of dietetic hygiene, renders direct infection probable. The individual vital resistance is lowered by overcrowding, 15 to 20 persons, as a rule, sleeping in a small, unventilated hut. The resistance being lowered by such environment, the disease is easily transferred.

Inoculation.—No experiments have been made or cases seen which would indicate that infection by inoculation occurs.

MORBID ANATOMY.

As the disease is not fatal, autopsy is only possible when death results from intercurrent diseases. We have had but one case for autopsy:

Autopsy.—A male of 18 years. Clinical diagnosis; native epidemic asthma. Well developed and nourished, small muscular build. Nose and upper lip were entirely destroyed and replaced by triangular opening leading to the pharynx. Bony parts forming roof of mouth absent. Cuticle between eyes and inferior maxilla was a mass of superficial scar tissue. Tongue was normal. Tonsils and pillars were replaced by scar tissue. Larynx was normal. Eyes were normal. Brain was not examined. Heart was hypertrophied. Pericardium was normal. Pleura firm, adhesions right apex and left base and apex.

Lungs: Right upper lobe firmly adherent, middle and lower lobes dark in color; bronchioles contain thin purulent fluid. Left lung firmly adherent at apex and base, lower lobe dark in color, bronchioles contained thin purulent fluid. Left pneumothorax. Liver: Large, pale and mottled in appearance (a condition frequently seen at autopsy here). Gall bladder filled with dark bile. Kidneys normal. Stomach distended but normal. Intestines normal, contained large numbers of ascaris, hook and whip worms. Pancreas in consistency increased.

Cause of death: Native epidemic asthma. Sections of gangotic area were sent to the United States for examination.

PATHOLOGIC HISTOLOGY.

Fordyce states that the lesion was a granuloma, the nature of which could not be determined by the methods employed. It could be differentiated from others of this class, like blastomycosis, actinomycosis, rhinoscleroma and lepra, by the absence of their specific microörganisms; from mycosis fungoides by the character of the infiltrate and the absence of fragmentation. The histologic picture could be readily mistaken for tuberculosis, as the giant cells were numerous, with nuclei arranged peripherally. Many independent foci containing three or four cells were encountered deep in the corium.

SYMPTOMS.

Onset.—Only three cases have been observed from the earliest stages of the disease. The majority of patients present themselves for treatment only after mutilation is marked. In the three cases above mentioned the initial symptoms led to a diagnosis of tonsillitis, pharyngitis and laryngitis of mild degree. The patients were between the ages of 12 and 15 years and were in good physical condition. Prostration was slight or absent. All showed a slight rise of temperature and complained of soreness in the posterior nares and pharynx, with stiffness of the muscles of deglutition. In one case a typical acute coryza was present. Inspection at this time showed mild congestion of tonsils, pillars, soft palate and uvula. During the first week the general condition was practically unchanged.

Local Symptoms.—The throat symptoms became localized, and on the third day a patch of yellowish-gray membrane was observed on the soft palate in the first case, the uvula in the second and the right pillar in the third case. The membrane was elevated, thick and extremely tenacious. On removal the denuded surfaces bled freely. Within twenty-four hours of the appearance of the membrane the typical ulceration was established. On the area covered by the membrane a number of small depressions appeared. The ridges between the depressions and the membrane were rapidly absorbed. The ulcer, now about one-half inch in diameter, had a punched-out appearance, with undermined edges and a deep, uneven floor, covered with a yellowish-white, very offensive discharge. It was surrounded by a zone of inflammation about one-fourth inch in width. The depth of the ulcer rapidly increased until, in the case of the uvula and soft palate, the tissues were perforated by the seventh day. These cases are still under observation.

Course of the Disease.—After the first week no marked changes occur in the character of the ulcer. It progresses steadily, the rapidity varying with the individual case, destroying the bony and soft parts with equal ease. This active stage may continue indefinitely or may become arrested at any period. The average duration in those cases of our series, which later became quiescent, was about two years. The active stage in those cases varied from one to seven years in duration.

In seven cases, which have never been quiescent, the disease has progressed slowly, but steadily, the shortest having continued for ten and the longest for thirty-five years. At any time during quiescence the disease may again become active. This activity may continue indefinitely or pass into a second stage of quiescence. These alternate periods of activity or quiescence may occur repeatedly. When inactive the zone of inflammation is replaced by a more or less perfectly scarred area, from which an abundant and very offensive discharge pours. At no time during either stage is the patient's general health materially affected.

Fulminating Gangosa.—This type occurs in children under 5 years of age, and all cases seen have been in gangotic families. In some instances two or three children in the same family have been attacked. The sudden onset, extreme prostration, extensive membrane, marked cervical adenitis and rapidly developing toxemia and dyspnea give a picture closely resembling diphtheria. Surgeon C. P. Bagg, United States Navy, states that cultures from the throats were negative for Klebs-Loeffler bacilli. Death occurs from toxemia rather than from dyspnea. The great majority of these cases prove fatal within forty-eight hours, but if the patient survives this period the typical mutilation rapidly develops and the case follows the usual course.

COMPLICATIONS AND SEQUELÆ.

All complications result from the direct extension of the disease and vary in severity with the extent of ulceration. The principal parts which may be involved are the nose, hard palate and superior maxillæ, larynx, eyes, face and teeth.

Nose.—The extensive destruction of the deeper parts may totally destroy this organ. The septum and turbinates are early attacked. The supporting structure is destroyed, the external soft parts sink and later may be

TABLE OF CASES.

No.	General History. Age and Sex.	Family History.	History of Disease. (Years.) Duration.	Active.	Quiescent.	Present Condition. Tonsils and Pillars.	Uvula and Soft Palate.	Hard Palate.	Larynx.	Nose.	Eyes.	General Condition.
1	95F.	Good. Only case.	30	20	10	Destroyed.	Destroyed.	Perforated.	Unaffected.	Flattened and septum perforated.	Unaffected.	Excellent.
2	83F.	Good. Only case.	2	1½	½	Unaffected.	Very slightly affected.	Unaffected.	Unaffected.	Flattened and septum perforated.	Unaffected.	Excellent.
3	46F.	Good. Only case.	13	13	.....	Slightly affected.	Unaffected.	Unaffected	Unaffected.	Destroyed.	Unaffected.	Excellent. Deaf 13 years.
4	45M.	Good. Only case.	8	8	.....	Destroyed.	Destroyed.	Badly necrosed.	Badly ulcerated.	Destroyed.	Destroyed.	Excellent. Voice hoarse and totally blind.
5	36M.	Good. Only case.	10	¼	9¾	Slightly affected.	Destroyed	Perforated.	Badly ulcerated.	Septum destroyed	Unaffected.	Excellent. Voice hoarse.
6	42M.	Good. Only case	22	20	20	Destroyed.	Destroyed.	Badly scarred, perforated.	Unaffected.	Flattened.	Unaffected.	Excellent.
7	47M.	Bad. Other cases.	29	2	27	Destroyed.	Destroyed.	Badly scarred, perforated.	Unaffected.	Partially destroyed	Unaffected.	General muscular paralysis.
8	35M.	Bad. Father, tbc.; mother, gangosa.	4	2	2	Slightly affected.	Uv. destroyed. S. P. v. s. affected.	Perforated.	Badly ulcerated.	Flattened.	Unaffected.	Excellent. Voice absent.
9	22F.	Only case. Father. tbc.	5	2	3	Destroyed.	Destroyed.	Perforated.	Unaffected.	Flattened.	Unaffected.	Excellent.
10	42M.	One other case. Sister, tbc.	27	1	26	Destroyed.	Destroyed.	Perforated.	Unaffected.	Flattened.	Unaffected.	Fair. Cervical adenitis.
11	37F.	Bad. Other cases	17	1	16	Unaffected.	Unaffected.	Unaffected.	Unaffected.	Destroyed.	Unaffected.	Fair. Large ulcer L. F. A.
12	19M.	Only case. Father, tbc.	1/12	1/12	.....	Unaffected.	Very active ulceration.	Slight active ulceration,	Unaffected.	Unaffected,	Unaffected.	Excellent.
13	28F.	Bad. Mother, tbc.; father. gangosa.	7	5	2	Slightly affected.	Unaffected.	Unaffected.	Slight ulceration.	Flattened.	Unaffected.	Excellent. Voice hoarse.
14	62M.	Good. Only case.	23	3	20	R. destroyed	Right side destroyed.	Right side perforated.	Voe. cords scarred	Unaffected	Unaffected	Excellent. Voice absent.
15	40M.	Good. Only case.	12	1	11	Destroyed.	Destroyed.	Perforated.	Slight ulceration.	Destroyed.	Right eye destroyed.	Fair. Healed lupus sears.
16	19F.	Unobtainable.	8	?	?	Destroyed.	Uv. destroyed S. P. v. s. affected.	Unaffected.	Unaffected.	Unaffected.	Left eye destroyed.	A leper.
17	19F.	Good. Only case.	9	1½	7½	Destroyed.	Destroyed.	Perforated.	Slight ulceration.	Septum destroyed	Active destruction.	Poor. Lupus neck, face and chest.
18	57F.	Good. Only case.	34	10	24	Destroyed.	Destroyed.	Perforated.	Slight ulceration.	Destroyed.	Active destruction.	Excellent.
19	24F.	Good. Only case.	14	7	7	Unaffected.	Partially destroyed.	Unaffected.	Unaffected.	Unaffected	Unaffected.	Excellent.
20	46F.	Bad. All affected.	35	35	.....	Destroyed.	Destroyed.	Extensive necrosis.	Badly ulcerated.	Totally destroyed.	L. destroyed. R. ulcerated.	Good, except asthma. Voice hoarse.
21	22M.	Bad. All affeeted.	5	5	.....	Destroyed	Destroyed.	Perforated.	Badly ulcerated.	Totally destroyed.	Unaffected.	Excellent. Voice hoarse.
22	25F.	Only case. Father, tbc.	13	13	.....	Destroyed.	S. P. unaffeeted. Uv. destroyed.	Unaffected.	Badly ulcerated.	Posterior ulceration.	Unaffected.	Excellent.
23	17F.	Uncle, gangosa.	7	4	3	Badly scarred.	Uv. destroyed. S. P. perforated.	Unaffeeted.	Unaffeeted.	Destroyed	Unaffeeted.	Excellent.
24	21F.	Good. Only case.	11	11	.....	Destroyed.	Destroyed.	Extensive necrosis.	Badly ulcerated.	Entirely destroyed.	Lower lids destroyed.	Poor. Large ulcers L. F. A.
25	30M.	Bad. All affected.	14	2	12	Destroyed.	Partially destroyed	Extensive necrosis.	Unaffected.	Flattened.	R. lower lid destroyed.	Geod.
26	24M.	Bad. All affeeted.	6	6	.....	Destroyed.	Destroyed.	Extensive necrosis.	Slight ulceration.	Destroyed.	Unaffeeted	Good. Voice hoarse.
27	21M.	Only case. Cousin, tbc.	2	2	.....	Destroyed.	Uv. destroyed. S P, perforated.	Unaffeeted.	Badly ulcerated	Unaffected.	Unaffected.	Excellent. Voice almost gone.
28	56M.	Fair. Cousin, gangosa.	40	2	38	Destroyed.	Uv. destroyed S. P. perforated.	Perforated.	Badly ulcerated.	Partially destroyed.	Unaffected.	Excellent. Voice absent. Deaf 26 years.
29	20F.	Only case. Father and brother, lepers.	10	4	6	Destroyed.	Slightly affected.	Perforated.	Slight ulceration	Flattened.	Unaffeeted.	Fair. A leper.
30	37F.	Mother, gangosa.	7	2	5	Destroyed.	Partially destroyed.	Perforated.	Slight ulceration.	Partially destroyed.	Unaffected.	Fair. A leper.
31	62M.	Good. Only case.	50	2	48	Destroyed.	Destroyed.	Perforated.	Slight ulceration.	Partially destroyed.	Unaffeeted.	Excellent.
32	34F.	Mother, tbc.; father, gangosa.	28	1	27	Destroyed.	Destroyed.	Perforated.	Unaffected.	Partially destroyed	Unaffected.	Excellent.
33	38F.	Good Only case	10	¼	9¾	L. T. destroyed.	Slightly ulcerated.	Perforated.	Unaffected.	Partially destroyed.	Unaffected.	Excellent.
34	40F.	Good. Only case	7	7	.....	Destroyed.	Slight ulcerations.	Unaffeeted.	Unaffected.	Very slight ulceration	Unaffeeted.	Excellent.
35	46F.	Good. Only case.	21	21	.....	Destroyed.	Destroyed.	Perforated.	Slight ulceration.	Septum destroyed.	Unaffected.	Excellent. Voice hoarse.
36	38F.	Good. Only case.	22	1	21	Destroyed.	Destroyed.	Perforated.	Slight ulceration.	Unaffected.	Unaffected.	Excellent. Voice hoarse.
37	15F.	Good. Only case	6	6	.....	Unaffeeted.	Uv. slightly ule.	Unaffeeted.	Slight ulceration.	Unaffected	Unaffeeted.	Excellent. Voice hoarse.
38	66F.	Good. Only case.	12	1	11	Unaffeeted.	Unaffeeted.	Unaffected.	Unaffected.	Partially destroyed.	Unaffected.	Excellent.
39	21F.	Poor. Father, tbc.; mother, gangosa.	9	2	7	Slightly affected.	Slightly affeeted.	Perforated.	Unaffected.	Flattened and septum destroyed.	Unaffeeted.	Good. Scars of old ulcer, large joints, chest and neck.
40	37F.	Good. Only case.	24	14	10	Destroyed.	Destroyed.	Perforated.	Unaffected.	Flattened.	Unaffeeted.	Fair. Many scars of old ulcers.
41	41F.	Fair. Mo her, tbc.	12	2	10	Destroyed.	Destroyed.	Perforated.	Unaffeeted.	Destroyed	L. destroyed. R. lids destroyed.	Poor. A leper.

TABLE OF CASES—Continued.

No.	General History. Age and Sex.	Family History.	History of Disease. (Years.) Duration.	Active.	Quiescent.	Present Condition. Tonsils and Pillars.	Uvula and Soft Palate.	Hard Palate.	Larynx.	Nose.	Eyes.	General Condition.
42	18F.	Good. Only case. Mother a leper.	2	1	1	Destroyed.	Destroyed.	Perforated.	Slight ulceration.	Flattened.	R. lower lid ulcerated.	Good. Voice hoarse.
43	15F.	Good. Only case.	4	2	2	Destroyed.	Destroyed.	Scarred.	Unaffected.	Destroyed.	R. lower lid ulcerated.	Excellent.
44	42F.	Good. Only case.	2	1	1	Destroyed.	Destroyed.	Perforated.	Unaffected.	Destroyed.	L. lower lid ulcerated.	Excellent.
45	40M.	Good. Only case.	24	9	15	Destroyed.	Destroyed.	Destroyed.	Unaffected.	Destroyed.	L. destroyed. R. unaffected.	Excellent. Feeds through nasal opening.
46	21M.	Good. Only case.	6	1	5	Unaffected.	Unaffected.	Unaffected.	Unaffected.	Destroyed.	Unaffected.	Excellent.
47	29M.	Good. Only case.	9	4	5	Destroyed.	Uvula destroyed. S. P. unaffected.	Perforated.	Unaffected.	Destroyed.	Unaffected.	Excellent.
48	48M.	Good. Only case.	22	1	21	Destroyed.	Destroyed.	Perforated.	Unaffected.	Flattened.	Unaffected.	Excellent.
49	39F.	Good. Only case.	6	1	5	Destroyed.	Destroyed.	Perforated.	Unaffected.	Destroyed.	Destroyed.	Excellent.
50	14F.	Good. Only case.	4	1	3	Unaffected.	Uvula unaffected. S. P. perforated.	Unaffected.	Unaffected.	Unaffected.	Unaffected.	Excellent.
51	59M.	Good. Only case.	22	13	9	Scarred.	Destroyed.	Perforated.	Unaffected.	Destroyed.	Destroyed.	Poor. A leper.
52	11F.	Bad. Four other cases.	4	3	1	Destroyed.	Destroyed.	Perforated.	Unaffected.	Active ulceration.	Unaffected.	Excellent.
53	33F.	Bad. Four other cases.	8	1	7	Destroyed.	Uvula unaffected. S. P. perforated.	Perforated.	Slight ulceration.	Destroyed.	Unaffected.	Excellent. Voice hoarse.
54	14M.	Bad. Three other cases.	1	1	.....	Destroyed.	Destroyed.	Perforated.	Unaffected.	Unaffected.	Unaffected.	Excellent.
55	38F.	Fair. Only case. Two cases of leprosy.	1	1	.....	Destroyed.	Uvula unaffected. S. P. scarred.	Scarred.	Slight ulceration.	Flattened.	R. lower lid ulcerated.	Good.
56	30F.	Good. Only case.	1	1	.....	Destroyed.	Destroyed.	Scarred.	Unaffected.	Filled with adenoid growth.	Unaffected.	Fair. Mass of adenoid tissue protrudes from nose to right cheek.
57	30F.	Good. Only case.	12	2	10	Destroyed.	Destroyed.	Perforated.	Unaffected.	Flattened.	Both l. lids ulcerated.	Good.
58	48F.	Bad. Two other cases.	10	2	8	Destroyed.	Destroyed.	L. side destroyed. R. side scarred.	Slight ulceration.	Unaffected.	Unaffected.	Excellent. Voice hoarse.
59	22M.	Bad. Mother gangosa.	4	2	2	Destroyed.	Scarred.	Perforated.	Unaffected.	Flattened.	Unaffected.	Excellent.
60	60F.	Good. Only case.	1	1	.....	Destroyed.	Destroyed.	Active ulceration.	Slight ulceration.	Unaffected.	Unaffected.	Excellent. Voice hoarse. Very active.
61	13M.	Bad. Mother dead of gangosa.	2	1	1	Destroyed.	Active ulceration.	Active ulceration.	Unaffected.	Flattened. Ulcer on right side.	Unaffected.	Good.
62	20M.	Good. Only case.	2	1	1	Destroyed.	Destroyed.	Destroyed.	Unaffected.	Sunken. Three-lobed anterior opening.	Unaffected.	Good. Large ulcer on left leg.
63	12M.	Bad. Uncle, gangosa.	2	1	1	Destroyed.	Destroyed.	Perforated and scarred.	Slight ulceration.	Sunken. Two-lobed.	Unaffected.	Good. Voice hoarse.
64	21M.	Good. Only case.	1	1	.....	Unaffected.	Unaffected.	Unaffected.	Unaffected.	Septum destroyed.	Unaffected.	Good. All internal nasal structure destroyed. Nose inflamed.
65	57M.	Good. Only case.	12	1	11	Destroyed.	Destroyed.	Scarred.	Unaffected.	Partially destroyed.	Unaffected.	Excellent.
66	26M.	Good. Only case.	1	1	.....	Scarred.	Scarred.	Scarred.	Unaffected.	Unaffected.	Unaffected.	Excellent.
67	26F.	Bad. Brother, gangosa.	1	1	.....	Unaffected.	Destroyed.	Destroyed.	Slight ulceration.	Unaffected.	Unaffected.	Excellent. Voice hoarse.
68	15M.	Bad. Sister, gangosa.	1	1	.....	Destroyed.	Destroyed.	Perforated.	Unaffected.	Flattened and softened.	Unaffected.	Excellent.
69	29M.	Good. Only case.	5	1	4	Destroyed.	Destroyed.	Destroyed.	Slight ulceration.	Destroyed.	Unaffected.	Excellent. Voice hoarse.
70	47M.	Bad. Two other cases.	27	1	26	Destroyed.	Destroyed.	Almost destroyed.	Unaffected.	Destroyed.	Lower lids destroyed.	Good. Upper lip absent. Face badly scarred.
71	49F.	Good. Only case.	25	1	24	Destroyed.	Destroyed.	Perforated.	Slight ulceration.	Flattened and sunken.	Unaffected.	Good. Voice hoarse.
72	24F.	Good. Only case.	1	1	.....	Destroyed.	Scarred.	Scarred.	Slight ulceration.	Scarred, flattened and drawn to the right.	Unaffected.	Good. Mouth badly scarred. Voice hoarse.
73	27M.	Good. Only case.	3	1	2	Destroyed.	Right side of S. P. destroyed	Perforated.	Unaffected.	Flattened; l. nostril partially destroyed.	Unaffected.	Good.
74	47F.	Good. Only case.	16	1	15	Destroyed.	Destroyed.	Scarred and perforated.	Unaffected.	Sunken, tip turned upward.	L. lower lid destroyed.	Good. Face badly scarred.
75	18M.	Good. Only case.	6	1	5	Destroyed.	Destroyed.	Scarred.	Unaffected.	Destroyed.	L. lower lid destroyed.	A leper. Face badly scarred.
76	13F.	Bad. Three other cases.	1	1	.....	Pillars scarred. L. T. perf.	Scarred.	Scarred.	Extensive ulceration.	Unaffected.	Unaffected.	Good. Very hoarse voice.
77	12F.	Only case. Mother, tbc.	2/12	2/12	.....	Unaffected.	Destroyed.	Perforated.	Extensive ulceration.	Unaffected.	Unaffected.	Fair Leper. Very hoarse voice.
78	20F.	Good. Only case.	1	1	.....	Scarred.	Scarred.	Scarred.	Unaffected.	Destroyed. Active ulceration	Unaffected.	A leper. Face badly scarred.
79	44F.	Good. Only case.	6	½	5½	Destroyed.	Destroyed.	Destroyed.	Unaffected.	Destroyed.	Both lids destroyed. L. staphyloma.	A leper. Face badly scarred.
80	41F.	Good. Only case.	1	1	.....	Scarred.	Scarred and contracted.	Slightly scarred.	Unaffected.	Scarred externally.	Unaffected.	Good. Face badly scarred.
81	19M.	Good. Only case.	2/12	1/12	1/12	Unaffected.	S. P. perforated to post-nares.	Unaffected.	Unaffected.	Unaffected.	Unaffected.	Excellent. (New case.)

absorbed, the organ being replaced by an opening. The sense of smell is destroyed early in the course of the disease.

Hard Palate and Superior Maxillæ.—The hard palate may be perforated or entirely destroyed. The central portions of the superior alveolar arches are frequently destroyed. This causes loss and deformity of the upper teeth. This deformity produces the typical "cleft palate voice" from which the disease takes its name.

Larynx.—In 81 cases the larynx was involved in 33. Involvement varies from slight ulceration to total destruction, and as a result the voice is husky or absent.

Face.—Ulceration extends peripherally from the oral and nasal openings or from the common opening when the upper lip is destroyed.

Eyes.—These become involved when facial ulceration destroys the lids. The eyes were involved in 21 cases. The sequence in destruction is conjunctivitis, corneal opacity, staphylomata and finally blindness.

Tongue.—The tongue and muscles of deglutition are unaffected.

Hearing.—Hearing was affected in only 2 cases. No sequelæ have been observed.

Fig. 1.—Case 52. Extensive involvement with no external mutilation.

Fig. 2.—Case 62. Flattened nose.

Fig. 3.—Case 35. Notice extensive scarring of upper lip.

DIAGNOSIS.

To those who have ever seen a case of gangosa, diagnosis offers no difficulty. The primary rapid ulceration, consequent mutilation and subsequent chronic ulceration produce a picture seen during the active stage. During the quiescent stage the ulceration is replaced by scar tissue.

Differential Diagnosis.—Gangosa is differentiated from (1) leprosy, by the sudden onset with immediate localization, absence of fatal termination and absence of *B. lepræ.* (2) Lupus of the mucous membranes, by the sudden onset, local appearance of the throat symptoms, absence of tubercle bacilli and absence of tuberculosis elsewhere. (3) Syphilis, by the absence of history and symptoms and the failure of specific treatment. The disease bears no clinical resemblance to blastomycosis, actinomycosis, rhinoscleroma or mycosis fungoides.

Fulminating gangosa is diagnosed from diphtheria by the absence of Klebs Loeffler bacilli and by the typical mutilation in those cases which survive.

PROGNOSIS.

Except in the fulminating type, the disease *per se* is never fatal. The mutilations and complications are permanent and cause corresponding disability. Intercurrent diseases follow a typical course and are not severer than in those unaffected with gangosa.

PROPHYLAXIS.

The contagiousness of the disease has been recognized by the Spaniards in Guam for almost a century. They established a colony for the segregation of these cases, which was discontinued at the time of the American occupation. There is good evidence showing that this abandonment of segregation has increased the prevalence of the disease in Guam. In view of this fact, the governor of Guam, on April 9, 1906, issued the following order:

Fig. 4.—Case 38. Old scarring with labial destruction.

EXECUTIVE GENERAL ORDER NO. 111.

In view of the existence in this island of an infectious and contagious disease known as *Gangosa,* it is of paramount neces-

sity, in the interest of humanity and for the protection of society, to adopt proper measures to arrest the spread of that loathsome and dangerous malady. Less rigorous methods being either futile or of doubtful efficacy, it is hereby ordered and decreed that:

1. All persons within the Island of Guam who, on examination before a board consisting of all the medical officers of the Naval Station of the island ordered by the governor, are found to be suffering from *Gangosa*, shall, on the unanimous recommendation of said board, be segregated in the same manner and under the same conditions, rules and regulations as are now provided by General Order No. 43, in the case of lepers.

2. The place of segregation shall be a tract of land in the locality of Ypao, district of Agna, to be known as the Ypao Colony, having an area of about six (6) hectares, the boundaries of which shall be constructed of convenient and suitable material and bear the sign Ypao Colony.

3. This order shall take effect on the eighteenth day of April, 1906. T. M. POTTS, U. S. N., *Governor.*

Fig. 5.—Case 45. Extensive skin involvement has destroyed left eye.

Fig. 6.—Case 42. Notice beginning of total destruction of nose.

Fig. 7.—Case 20. Very severe scarring: left eye destroyed.

Fig. 8.—Case 75. Notice co-existence of leprosy and gangosa.

In the fulminating type rigid quarantine should be established, the unaffected members of the family being removed and kept under observation.

TREATMENT.

There is little doubt that treatment in the early stages limits the progress of the disease. The treatment is essentially local and should aim to destroy the affected area. Tincture of iodin applied freely appears to be the best agent for this purpose. Lunar caustic, phenol and chromic acid have been used. It is believed that in some cases the actual cautery would be the most effective agent. An antiseptic mouth wash should also be used. Tonic treatment when indicated should be used. Potassium iodid even in large doses and long continued appears to have no effect on the disease. In chronic cases deodorants should be used. Potassium permanganate, in 1 per cent. solution has proved the most advantageous. When possible, complications should receive their appropriate treatment. It seems reasonable to believe that the *x*-ray, Finsen light and radiotherapy would be of service in the treatment of this disease, more especially in the chronic external ulcerations. In the fulminating type, treatment should be symptomatic, combined with active local disinfection.

We desire to express our thanks to Surgeon C. P. Bagg, United States Navy, for valuable suggestions and assistance in the preparation of this article, and to K. S. Hart, United States Navy, for careful photographic work.

THE BACTERIA IN SCARLATINAL AND NORMAL THROATS.*

GUSTAV F. RUEDIGER, M.D.
CHICAGO.

INTRODUCTION.

It is a well established fact that streptococci are constantly found in great abundance on the tonsils of scarlet fever patients. This was shown very clearly by the investigations of Weaver, Baginsky and Sommerfeld, Charlton, Charbade, Booker, Taugl, Klein, Kurth and

* Read in the Section on Pathology and Physiology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

* This article is from the Memorial Institute for Infectious Diseases and describes work which was aided by a grant from the American Medical Association.

others. It is also well known that these organisms are frequently found on the tonsils of healthy persons, although not in such great abundance as on the tonsils of scarlet fever patients. Hilbert, Tunnicliff, Dungern, Schweighofer and Widal and Bezancon state that they found them in all normal throats which they examined. Others, however, did not find them so constantly. Black found them on only 30 per cent. of the normal tonsils which he examined. Netter found them in 5.5 per cent.; Kurth in 8 per cent.; Podbielsky in 2 per cent. and Dornberger in 45 per cent. of the normal throats examined by them. In most of these investigations no detailed study was made of the streptococci that were found. In some investigations glucose-broth tubes were inoculated with material from the tonsils, and if cocci were found in chains after incubation of the tubes it was concluded that streptococci were present. Apparently no further study was made of the cultures. In consideration of this fact it was thought worth while to take up this question again and make a more detailed study of the different strains of streptococci and diplococci which may be isolated from scarlatinal and normal throats.

METHOD OF STUDY.

Through the researches of Schottmüller[1] and of Rosenow[2] we know that pneumococci produce green colonies in blood-agar plates while *Streptococcus pyogenes* produces small grayish colonies which are surrounded by a perfectly clear area of hemolysis. Schottmüller also pointed out the fact that there are streptococci which produce green colonies in blood-agar plates, very similar to the pneumococcus colonies. In this study I have made use of these facts in isolating *Streptococcus pyogenes* from material obtained from the tonsils. A sterile cotton swab was rubbed against the tonsils in such a manner as to avoid the tongue as much as possible. The swab was then rinsed in 1-1.5 c.c. of sterile broth and the latter was used immediately to inoculate three or four blood-agar tubes, and the same number of litmus inulin-agar[3] tubes, which were poured into plates and incubated for 24 to 48 hours at 36° C. Blood-agar was prepared by melting plain agar tubes, cooling to 45° C. and adding .5 c.c. of sterile defibrinated rabbit blood or human blood to each tube.

After 24 hours' incubation it is possible to pick out the *Streptococcus pyogenes* colonies in the blood-agar plates, as they are small gray colonies which are surrounded by a perfectly clear area of hemolysis. It must be remembered, however, that diphtheria bacilli and pseudodiphtheria bacilli may produce hemolyzing colonies which may closely resemble the streptococcus colonies. Furthermore, I have occasionally found colonies of pneumococci and closely related organisms which produce considerable hemolysis and may therefore be mistaken for *Streptococcus pyogenes* colonies. The pneumococcus colonies are not easily recognized in these plates as there are always found in the throat many chain-forming cocci which form green colonies like the typical pneumococcus colonies. In all instances subcultures were made from 4 to 8 hemolyzing colonies and the same number of green colonies. These cultures were studied morphologically and culturally and their fermentative power was tested in Hiss'[4] inulin serum-water medium or in a slightly modified medium which was prepared as follows: Dissolve 5 grams of NaCl, 20 grams of peptone (Witte) and 20 grams of pure inulin in 1,000 c.c. of distilled water. Add 20 c.c. of a 5 per cent solution of pure litmus and tube, putting 2 c.c. of the mixture into each tube, and sterilize in the autoclave. After sterilization, add (with a sterile pipette) 2 c.c. of sterile heated ascites fluid[5] or preferably heated beef serum, to each tube and incubate for 24 hours before using. The beef serum was collected without taking any special precautions, but was diluted with an equal volume of water and passed through a large Berkefeld filter, drawn off into 50 to 100 c.c. tubes and heated to 65° C. for one-half hour on two successive days This medium was preferred to Hiss' serum-water because it was found that some pneumococci and some streptococci which have been recently obtained from blood cultures do not grow well in the latter.

In the early part of this work no litmus inulin-agar plates were used but pneumococci were looked for among the green colonies in blood-agar plates. In those cases subcultures were made and studied from 10 to 12 green colonies. Organisms were classed as typical pneumococci only when they were found to be: 1. Gram-positive cocci which grew chiefly in pairs on blood-agar or serum-agar slants; and 2, which fermented inulin; and 3, produced green or slightly hemolyzing greenish colonies in blood-agar plates.

In the litmus inulin-agar plates most pneumococci produce red colonies which are easily recognized on the blue background, and as practically no other mouth bacteria produce red colonies in this medium[6] it is easy to isolate pneumococci from the mouth and throat with the aid of these plates. Subcultures were, however, always made from 2 or 3 red colonies, and the organisms positively identified. In no instance have I isolated an organism by this method which could not be classed as a pneumococcus, although some of these organisms form chains of considerable length in some liquid media and do not seem to have a well formed capsule.

RESULTS.

A total of 154 throat cultures were made and examined as follows: Normal, 51; scarlatina, 75; measles, 14; tonsillitis, 5; pneumonia, 5, and pharyngitis, 4. The findings differ very widely and must be considered under separate heads.

Scarlatina.—All the blood-agar plates inoculated with material from scarlatinal throats contained many *Streptococcus pyogenes* colonies and varying numbers of green colonies. This is shown by Figure 1 which is a photograph of one of these plates. The cases may be roughly divided into three great groups: 1. Those from which the plates contained mostly (60 to 95 per cent.) *Streptococcus pyogenes* colonies—31 cases. Two sets of plates contained only *Streptococcus pyogenes* colonies. 2. Those from which the plates contained about as many *Streptococcus pyogenes* colonies as green colonies—23 cases. 3. Those from which the plates contained fewer *Streptococcus pyogenes* colonies (15 to 40 per cent.) than green colonies—21 cases. As a rule, the *Streptococcus pyogenes* colonies greatly predominate over the other colonies when the inflammation of the throat is pronounced, and they rapidly decrease in number with the subsidence of the throat symptoms. When the throat symptoms are mild the proportion of *Streptococcus pyogenes*

1. Münch. med. Wochft., 1903, vol. L, p. 909.
2. Journal of Infectious Diseases, 1904, vol. i, p. 308.
3. Prepared as described in the Journal of Infectious Diseases, 1906, vol. iii, p. 183.
4. Jour. Exper. Med., 1905, vol. vi, p. 317.
5. Great care must be observed not to use ascites fluid which contains fermentable carbohydrates. Each lot must be tested with organisms that are known to have great fermentative powers and if acid is produced it must not be used.
6. See Journal of Infectious Diseases, 1906, vol. iii, p. 183.

colonies to the other colonies is often very small. I have met with one exception to this rule in the case of a small girl who had a very bad throat, but the plates inoculated with material from it contained far more green colonies than *Streptococcus pyogenes* colonies. A large proportion of the green colonies in this set of plates were typical pneumococci which proved to be highly virulent for rabbits.

Pneumococci were not looked for in 4 cases, but were found in 64 of the 71 throats that were examined for them—91.4 per cent. Diphtheria bacilli were found four times and *B. mucosus* and *B. influenzæ* once. *Staphylococcus aureus* and *citreus* and *Micrococcus tetragenus* were found occasionally, but these were probably contaminations from the tongue. Gram-negative diplococci which form small brownish colonies were found quite frequently. These were not always studied in detail, but some were identified as *Micrococcus catarrhalis.*

Normal Throats.—All blood-agar plates inoculated with material from normal throats contained many green and slightly hemolysing, often greenish, colonies. *Streptococcus pyogenes* colonies were found in 30 of 51 throats which were studied, but were never present in large numbers (Fig. 2), and were entirely absent in 21 cases. In only 5 sets of plates did I find more than 10 per cent. of *Streptococcus pyogenes* colonies, and in 18 sets there were only 1 per cent. or less of these colonies. Not infrequently one finds hemolyzing colonies in blood-agar plates which, on closer study, are found to be organisms that produce greenish colonies in subsequent plates. Great care must, therefore, be exercised in deciding on the presence or absence of *Streptococcus pyogenes* colonies. The small, slightly hemolyzing, often greenish, colonies of organisms other than *Streptococcus pyogenes* also are very puzzling and will be described more fully in a later publication. It may be mentioned here that sugar fermentation tests were frequently used in classifying these organisms. Pneumococci were found 45 times (90 per cent.), and diphtheria bacilli 3 times. Gram-negative diplococci and staphyloecocci were found frequently and *B. mucosus* and *B. influenzæ* once.

Measles Throats.—The findings in the throats of measles patients correspond closely to those of normal throats. *Streptococcus pyogenes* was found in 9 of 14 throats which were examined (65 per cent.) and pneumococci were found in 12 (85.7 per cent.).

Tonsillitis.—Streptococcus pyogenes colonies always predominated in these plates, but green colonies also were present. Pneumoecocci were found in 4 of the 5 cases examined, but were not specially looked for in the other case. In one case influenza bacilli were found in great abundance.

Pharyngitis.—Four cases of so-called pharyngitis were examined, but none of the blood-agar plates inoculated with material from these throats contained *Streptococcus pyogenes* colonies. All plates contained many green colonies and some contained small brownish colonies. The latter were chiefly Gram-negative coeci, but in one case they were influenza bacilli. Pneumoecocci were isolated from all of these cases. The finding of pneumococci in such a larger per cent. of throats of persons not afflicted with pneumonia is in agreement with the work of the Commission for the Investigation of Acute Respiratory Diseases of the Health Department of the city of New York.[7]

Pneumonia.—Three of the five sets of plates inoculated with material from the tonsils of pneumonia patients contained very few *Streptococcus pyogenes* colonies and the other two sets did not contain any. All blood-agar plates contained many green colonies and the litmus inulin-agar plates contained many red colonies. Typical pneumococci were easily isolated from all plates.

It will be noticed that green colonies were found in all blood-agar plates, except two sets, which were inoculated with material from scarlatinal throats. Only a small proportion of these colonies are pneumococci and the remainder form a large group of organisms between the typical pneumococci and streptococci. Some of these organisms seem to correspond to Schottmüller's *Streptococcus viridans,* but others are very closely related to the pneumococcus. The organisms of this large group have very little virulence for rabbits and seem to be normal inhabitants of the throat, especially the pharynx.[8]

VIRULENCE OF STREPTOCOCCI AND PNEUMOCOCCI ISOLATED FROM THROATS.

Most hemolysing streptococci and some pneumococci isolated from scarlatinal and normal throats have some virulence for rabbits, but *Streptococcus viridans* has practically no virulence for these animals. Thirty-one rabbits weighing from 900 to 1,200 grams were injected intraperitoneally with *Streptococcus pyogenes* cultures as follows: Four rabbits with a suspension of two forty-eight-hour blood-agar slant cultures of organisms isolated from normal throats. Three of these animals died and one remained well. Twelve rabbits with the same amount of suspension of organisms isolated from scarlatinal throats. Eight of these animals died and four remained well: Eight rabbits with a suspension of one blood-agar slant culture of organisms isolated from normal throats. Five of these animals died and three remained well. Seven rabbits with a suspension of one blood-agar slant culture of organisms isolated from scarlatinal throats. One of these animals died and six remained well.

These results indicate that streptoecocci isolated from normal throats are slightly more virulent for animals than those isolated from scarlatinal throats. This is in perfect agreement with the results obtained by Hilbert[9] and Tunnicliff.[10]

Streptococcus viridans has a lower virulence for rabbits than *Streptococcus pyogenes,* as has already been indicated. Nine rabbits weighing from 900 to 1,200 grams were injected into the peritoneum with two blood-agar slant cultures of different strains of these organisms, but only one of these animals died.

Ten rabbits were injected with two blood-agar slant cultures of different strains of pneumococci isolated from normal and scarlatinal throats. Four of these animals died and the other six remained well. Fourteen rabbits were then injected with larger doses, but only five of these died. There are no indications that pneumocoeci in scarlatinal throats are more virulent than those in normal throats, with the one exception referred to above.

CONCLUSIONS.

Streptococcus pyogenes is constantly found in great abundance on the tonsils of patients suffering from tonsillitis and scarlet fever before the inflammation of the throat has subsided. These organisms rapidly decrease in numbers with the subsidence of the throat symptoms.

7. Journal of Exper. Med., 1905, vol. vii, No. 5.

8. A more detailed description of these organisms and of different strains of *Streptococcus pyogenes* will be given in the Journal of Infectious Diseases.

9. Zeitschr. f. Hyg., 1899, vol. xxxi, p. 381.

10. Trans. Chicago Path. Soc., 1904, vol. vi, p. 175.

Streptococcus pyogenes can not be considered a normal inhabitant of all healthy throats, although it was found in small numbers in 58 per cent. of the normal throats in this series.

Pneumococci of low virulence were found in 135 of this series of 154 throats.

A large group of organisms which lies between the typical *Streptococcus pyogenes* and pneumococcus was found in all normal throats and in nearly all diseased throats. These organisms have very little virulence for rabbits, and, as they are found in great abundance in practically all throats, they appear to be normal inhabitants of the throat.

Streptococcus pyogenes from normal throats appears to have a slightly greater virulence for rabbits than these organisms from scarlatinal throats.

I am indebted to Professor Hektoen for many suggestions and to Dr. W. L. Baum for the privilege of getting throat cultures from patients under his care at the Cook County Hospital.

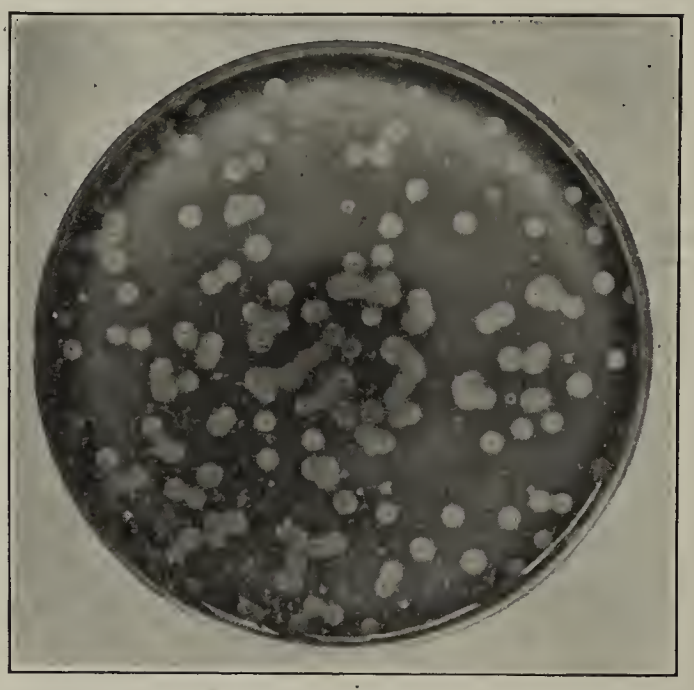


Fig. 1.—Photograph of a blood-agar plate inoculated with material from a scarlet fever tonsil. Many *Streptococcus pyogenes* colonies (hemolysing) and few small green colonies.

Fig. 2.—Photograph of a blood-agar plate inoculated with material from a normal tonsil. Many small green and slightly hemolysing colonies and 5 *Streptococcus pyogenes* colonies.

DISCUSSION.

DR. M. J. ROSENAU, Washington, asked Dr. Ruediger why he considers this hemolysis? It is commonly understood that in hemolysis, while there is a destruction of the red corpuscles and liberation of the hemoglobin, there is no alteration of the coloring matter. In the plates shown by Dr. Ruediger there is apparently a destruction of the hemoglobin indicated by the clear bleached areas. Perhaps this phenomenon is due more to a proteolytic ferment than to hemolysis.

DR. HENRY A. CHRISTIAN, Boston, asked if the amount of carbohydrates affect the growth of these bacteria, and what methods should be used in detecting the presence of carbohydrate and in proving that it is the carbohydrate that inhibits.

DR. G. W. MCCASKEY, Fort Wayne, Ind., said that the presence of streptococci in the various secretions and exudates is of the highest importance, as they furnish possible foci for active local or general infections. He has made many routine examinations of the feces in the study of gastro-intestinal disease and has found these organisms in a considerable proportion of cases. Their number in the lower segments of the digestive tube is small in proportion to the great mass of colon bacilli, but if the search is sufficiently thorough they will be found more often. In several cases he has had good reason to believe that intestinal streptococci were points of departure for serious infections. In one such case previously published there was a fatal general streptococcus infection. He found the streptococcus in the cerebrospinal fluid obtained by lumbar puncture, in the blood drawn from a vein in a sterile syringe and transferred immediately to 100 c.c. of bouillon at the bedside, while this organism instead of the colon bacillus was found to be the predominant one in the feces.

DR. GUSTAV F. RUEDIGER, Chicago, said he considered it hemolysis because it is a destruction of the corpuscles rendering the medium transparent. The opacity due to the corpuscles is destroyed, but there is not a total destruction of the hemoglobin. In regard to Dr. Christian's question concerning the carbohydrates in ascites fluid, he had made tests with bacteria having a high fermentative power and not with copper test solutions. Mixtures of equal volumes of sterile peptone solution and ascites fluid were inoculated with an organism that he knew would ferment inulin and if acid was produced the ascites fluid was discarded.

In regard to the presence of diphtheria bacilli in the throats of scarlet fever patients, his percentage of cases giving positive results may be too low. About one-fourth of his cultures were made from the throats of patients who were known not to have diphtheria, because he was chiefly interested in the streptococci. The other three-fourths were made from patients as they came to the hospital. He does not believe that typical diphtheria bacilli are present as frequently as they are diagnosed by the internes, because in a number of cases he did not find them, although they were recorded on the history chart. The bacteriology of peritonitis is an interesting question and requires further study to ascertain whether the streptococci found are *Streptococcus pyogenes* or *Streptococcus viridans*. He has had only one occasion to study the bacteriology of a fatal case of peritonitis and the streptococcus in that case produced green colonies in blood-agar plates. Schottmueller speaks of finding *Streptococcus viridans* in cases of peritonitis resulting from perforation of the appendix; also in perityphlitic abscesses, lung abscess, bronchitis, otitis media and various other infections of regions so connected with the pharynx and respiratory tract that the infection might well be caused by organisms that normally inhabit the throat.

Writer's Cramp Cured by Elastic Ligature.—Hartenberg relates that he was consulted by a clerk who had suffered for fifteen years from intermittent writer's cramp. He was ordered to apply an elastic ligature to the arm, above the biceps, according to Bier's technic, for twenty minutes morning and evening, not altering his habits otherwise. The results were surprisingly good, as Hartenberg shows by specimens of the handwriting before and after, reproduced in the *Archives de Neurologie* for July, 1906.

THE SYSTEM OF PERSONAL IDENTIFICATION BY FINGER PRINTS RECENTLY ADOPTED FOR THE U. S. ARMY.

J. R. KEAN, M.D.
Major and Surgeon, U. S. Army.
WASHINGTON, D. C.

Some system of personal identification is a necessity in armies, and is of special importance in this country, not only for convenience of military administration to purge the Army of criminals, repeaters and other undesirable characters who may have gained admission to it by fraudulent enlistment, but also to protect the interest alike of the government and the individual in cases of claims against the former, based on the fact of military service. It may also assist under some circumstances in the identification of the dead.

MODIFIED BERTILLON SYSTEM.

The system first adopted in the U. S. Army was an adaptation of the pathologic division of the Bertillon system, viz., description of moles, scars, tattoos, blemishes, etc., together with certain simple measurements and physical characteristics, such as height, color of hair, eyes and skin. The complete Bertillon system was not adopted because it required the use of bulky and expensive instruments for exact measurements, and considerable practice and skill in their manipulation to avoid a degree of inexactness which would defeat the system, and also because of its disagreeable association with police methods of detecting criminals.

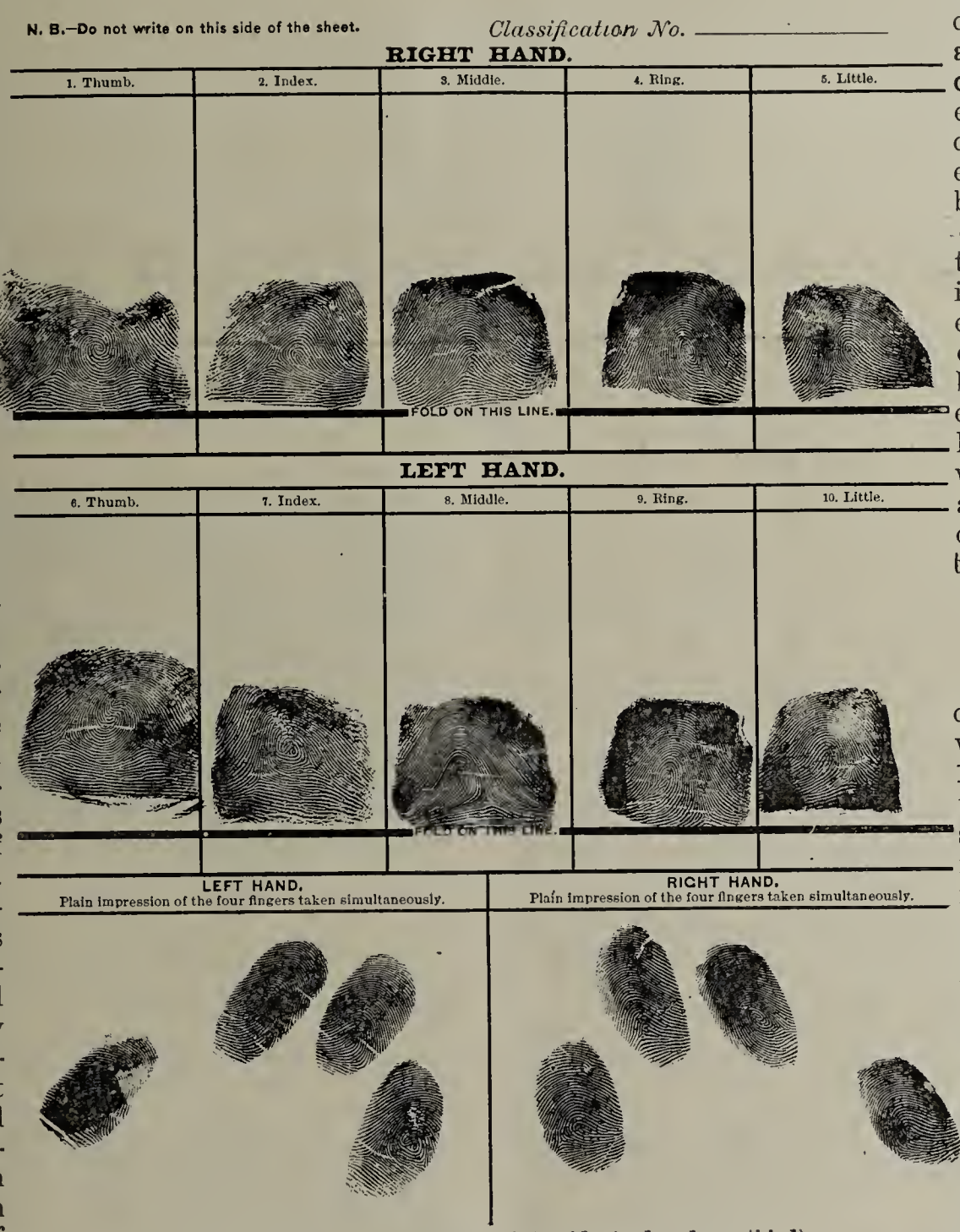


Fig. 1.—Sample record, finger prints side (reduced one-third).

This system, adopted in 1889, fulfilled very satisfactorily for our small Army during a decade the special purpose for which it was introduced, namely, to check the custom of "repeating," by which is meant the fraudulent reënlistment, usually under an assumed name, of deserters and dishonorably discharged men. Besides ridding the Army of undesirable material which injured its discipline, lowered its moral standard and discredited its uniform, this system was found in the first seven years of its operation to have reduced desertions to the extent of an average of 1,300 a year as compared with the seven years preceding its adoption. As the estimated loss to the government by each desertion for clothing, transportation, pay, etc., is $260, this represented a money saving of $338,000 a year.

In the course of fifteen years, and especially subsequent to the Spanish War, when the Army was increased in size, although its use was not extended to volunteer troops, this system broke down because, after the number of cards became large, no system could be found of devising a method of extending the limited classification with any degree of accuracy. On March 31, 1901, over 200,000 transcript cards were on file, and the number of cards with which each outline figure card of an original enlistment had to be compared became so great that the labor and time involved in the operation became excessive, so that it became inoperative even as to the delinquent class, while it was not adapted to the other uses mentioned above.

FINGER-PRINT SYSTEM.

Under these circumstances a board was appointed Oct. 11, 1905, to investigate the various systems of personal identification now in use, and, after an exhaustive study of the subject, it recommended the adoption of the finger-print system, supplemented by a photograph and brief personal description. For the latter the outline figure card used heretofore is to be employed, but with fewer entries.

The reasons given by the board for preferring the finger-print system of Galton, as improved by Henry, to the anthropometric system of Bertillon are: 1. Its greater simplicity of operation. 2. The small cost of the apparatus required. 3. The fact that all the skilled work required is transferred to the central office, and so it is only there that experts are required. 4. Greater rapidity of operation. 5. Greater certainty of results.

Galton has shown that the papillary ridges on the palms of the hands and the soles of the feet, in which are situated the mouths of the sweat glands, are clearly de-

veloped in the newborn child and are permanent throughout life, and as long after death as the epidermal structure remains undestroyed by putrefaction or other causes. Also, the patterns made by these lines on the finger bulbs are unique and characteristic for each individual. says Galton:[1]

> There appear to be no bodily characteristics other than deep scars and tattoo marks, comparable in their persistence to these markings; at the same time they are out of all proportion more numerous than any other measurable features. The dimensions of the limbs and body alter in the course of growth and decay; the color, quantity and quality of the hair, the tint and quality of the skin, the number and set of the teeth, the expression of the features, the gestures, the handwriting, even the eye color, change after many years. There seems no persistence in the visible parts of the body except in these minute and hitherto disregarded ridges.

As their persistence is thus co-equal with somatic existence, and their variety of pattern infinite, so as to exclude possibility of identity in different individuals, it is evident that in them we have a perfect basis for a system of personal identification, if only a practical method of classification can be devised which admits of extensive subclassification. E. R. Henry, commissioner of police of the metropolis of London, at that time inspector-general of the Lower Provinces, India, has succeeded in doing this in a way which is both simple and satisfactory, and which has been widely adopted by the police departments in India, England, many cities of the United States, throughout Australasia and for the registration of native and Chinese laborers in South Africa. The apparatus used is simple and inexpensive, ordinary white paper, not too highly glazed, printer's ink, a piece of flat tin fastened on a board, and a roller for spreading the ink thereon. In our Army there is also a form holder to hold the card in which the impressions are taken (Fig. 1). Although the impression of any one finger is sufficient for identification, the impressions of all ten are taken for the purpose of classification.

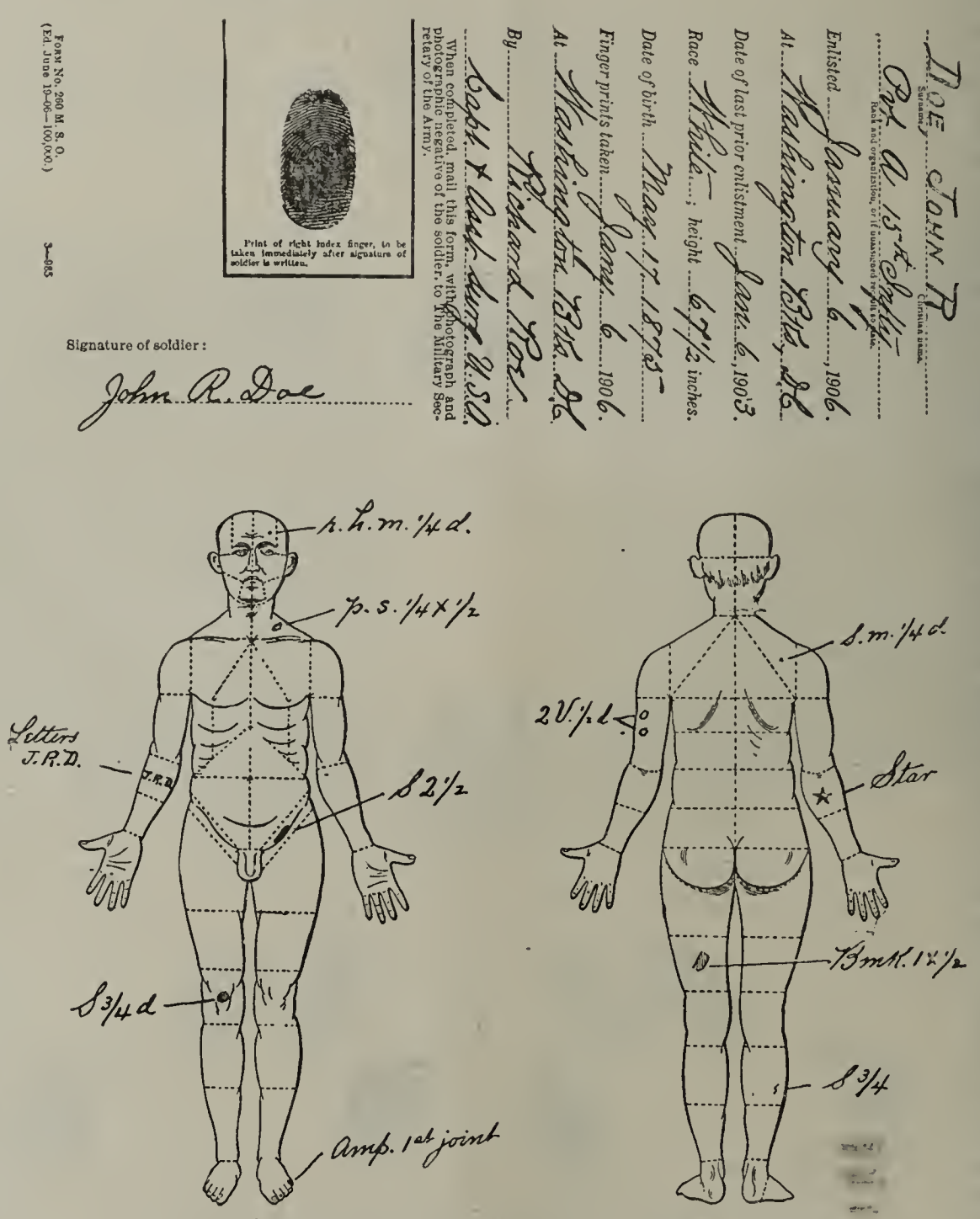


Fig. 2.—Sample record, skin markings side (reduced one-third).

PROCEDURE.

The process is as follows: A few drops of printer's ink are placed on the tin and spread in a thin even film by means of the roller. The operator then takes the right hand of the person whose finger print is to be taken and turning it palm out in a position of extreme pronation, places the thumb on the tin and turns the hand until the palm faces inward, thus applying a thin coating of ink to the palmar surface of the last joint of the thumb. He then places the thumb on the paper in the upper right-hand compartment, with palm of the hand out (away from the body), and rolls the thumb until the palm is inward and the whole palmar surface of the last joint of the digit has been applied to the paper. The same process is then gone through with for each finger of both hands. This is called the rolled print, and is that used for identification. Then the four fingers of each hand, held together, are touched to the ink film and then to the paper simultaneously without any turning movement. These are called plain impressions and are useful to verify the sequence of the rolled impressions. Thus, if, by error, the latter should not be taken in proper sequence the fact can be discovered and the error corrected from the plain impressions. Finally, on the briefing fold on the back of the blank (Fig. 2) the plain impression of the right index finger is taken just above the soldier's signature. His conspicuous scars, tattoos and other marks are then noted on the outline figures, front and back, his height taken, the entries on the briefing fold filled in and the form is complete. A photograph taken at a fixed distance of 54 inches with a standard lens, both of full face and profile, is then taken (Fig. 3), and a print made from the negative. This print and the negative, together with the

1. Henry, E. R.: "Classification and Uses of Finger Prints," p. 18.

finger prints, are then sent by mail to the War Department, Washington for file.

CLASSIFICATION.

The method of classification and file of the finger prints is, briefly stated, as follows: The patterns of finger prints are divided into two general classes, loops and whorls. In the former are included the arches and in the latter the composites. Each of the ten prints will be there, either a loop or a whorl, designated L or W, respectively, and the ten digits, being taken in pairs, there will be four possible combinations of each pair, which are written as a key thus:

LL	LW
WL	WW

Since we have the same number of combinations for the second pair, each of which can be combined with each arrangement of the first pair, the total number of combinations will be 16 for the two pairs; 64 for three and 1,024 for the five. This number being the square of 32, a cabinet containing 32 sets of 32 pigeon holes each will be necessary for all combinations of the loops and whorls of the ten digits taken in pairs. This cabinet is divided into four quarters by a vertical and a horizontal bisecting line, each containing 256 pigeon holes, each quarter in the same way into 4 eighths, each eighth into 4 sixteenths, and each sixteenth into 4 thirty-seconds, containing 4 pigeon holes apiece.

Fig. 3.—Form of photograph adopted as part of the identification record system (reduced in size).

If a finger print is received for file in which, for example, the right thumb is a loop, the index a whorl, the middle finger a whorl, the ring finger a loop, the little finger a loop, the left thumb a loop, the left index a loop, and so on, the formula for the print would be LW, WL, LL, WW, LW. By reference to the key above given, the first pair of letters, LW, would be seen to be in the upper right quarter of the key, which would locate the card in the upper right quarter of the cabinet. The second pair, WL, would further locate it in the lower left sixteenth; the third pair, LL, in the upper left sixty-fourth division; the fourth pair, WW, in the lower right two hundred and fifty-sixth division, and the fifth pair, LW, in the upper right pigeon hole of that division.

To subclassify the cards in a pigeon hole from each other and break up large accumulations in one compartment of the above primary classification, a secondary system of classification is made based on the occurrence of arches and loops which are radial or ulnar in position with reference to the index finger or fulcrum.

A still further differentiation is made by counting the number of ridges which intervenes between characteristic fixed points in the impression of a finger, known as the inner and outer terminus, and by noting other characteristics of the ridges with reference to them. For the details of this method the reader is referred to the little book by Henry.[1]

BENEFITS OF THE SYSTEM.

An expert in searching for a duplicate by these methods can find it in five or six minutes if it exists in a record of 100,000 cards.

This system will be very valuable in obviating the necessity of much correspondence and collection of evidence at present required to prove identity in cases coming before the War Department and the Pension Bureau. After the introduction of this system, any man who has had service in the Regular Army, can at once establish his identity by placing his right forefinger on the ink pad of an ordinary rubber stamp and making a finger print below his name. Unknown dead, brought from battle fields into field hospitals, or who die there, can in this way give a record which will lead to their identification; and a copy of the finger print buried in a vial with the body will be a permanent and certain identification of it. It is expected that the new system will be put in operation soon after Oct. 1, 1906.

THE TREATMENT OF FRACTURES OF THE PATELLA.*

JOSEPH RANSOHOFF, M.D., F. R. C. S.
CINCINNATI.

This theme certainly lacks the element of novelty, since Barton gave the impulse toward its solution by operation, in 1834. Nor is there any dearth of numerical data to shed light on it. Seven years after the report of the first successful cases of the antiseptic period by Cameron and Lister, Jalaguier, in 1884, was already enabled to collect ninety-four cases of patellar suture with five deaths from infection, not to mention a few disasters like ankylosis, amputation, etc. Eight years ago Powers collected over seven hundred additional cases from literature and from personal reports. The surgeon who is fond of figures, can find few richer fields for statistical deduction than is afforded by the enormous literature at his command. The harvest may be rich. I gladly leave it to another, for farming of this sort is little to my taste.

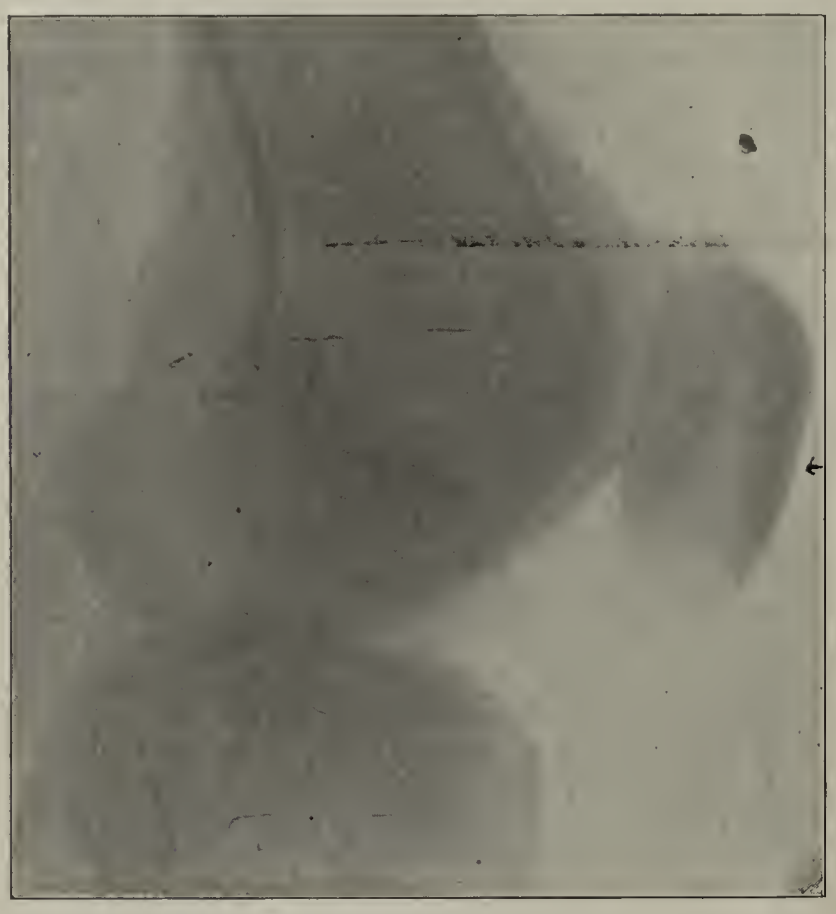
The fact that the entire question is brought before this tribunal at this seemingly late day, by request, is proof of the unsettled state of some of its features, and perhaps in an irrelevant way, of the slowness of the surgical mind to determine definitely that any one thing is the right thing to do, if another that is not very far wrong can be done.

This brings us at once to the meaty feature in the contention between conservatism and operation in the treatment of fractures of the knee cap. Good and even excellent results can be obtained by conservative measures in many cases, even if a restitution to the normal is not thereby attainable. Operation is, therefore, always one of expediency only. Many years ago, it is said, Malgaigne offered a large monetary prize to him who would show him a bony union of a broken patella. In his classical brochure, published in 1880, embodying a study of one hundred and twenty-seven cases, Hamilton concludes that under any plan of treatment a fibrous

* Read in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

union of the fragments is all that can be expected, and that probably a fibrous union with a separation of half or three-quarters of an inch is as useful as a bony union.

To understand the varying, functional limitations which may follow fractures of the patella, there must be a clear understanding of the physiologic value of the patella as constituting only a part of the extension apparatus of the leg. The subperiosteal removal of the patella in the cadaver does not annul the extensibility of the leg at the knee when traction is made on the quadriceps. This experiment is easily verified in the dissecting room. In a few cases in which the entire patella was removed *intra vitam* for tuberculosis, for example, there was little impairment of the power of extension. Complementary to the patellar ligament are the lateral expansions of the quadriceps tendon, the wings or "ailerons" of French anatomists, the fibers of which springing chiefly from the Vasti strengthen the joint capsule and are in part inserted into the enveloping fascia of the leg. Tillaux depicts the lateral patellar ligament as running as far back as the origin of the gastrocnemius.



Fracture in posterior surface of patella.

These anatomic data, far from new, explain the comparatively little limitation of motion at the knee, when even wide diastasis of the fragments exists. In two patients, whom I have been enabled to follow for long periods, in one of whom there was a fracture of each patella, I have seen the power of extension remain stationary in the face of a growing disastasis of the patellar fragments. The chief inconvenience of fibrous union in fractures nearly limited to the patella itself is the insecurity of the joint in extension. These patients fall easily, and it is a matter of common experience that with the laying aside of some protecting knee cap the patient sustains a refracture, or, more properly speaking, a tear through the uniting fibrous bands. In these refractures, if the appellation is justified by long usage, the rent of the parapatellar expansions of the quadriceps is of necessity more extensive than after the original injury. Every surgeon who has operated often for patellar fracture has operated after the recurrence of the second fracture because of the greater disability it entailed.

A logical conclusion of the foregoing considerations is the reserving of conservative treatment to cases in which the damage is largely limited to the patella. The absence of large diastasis and crepitus as indicating the approachability of the fragments without intervening fascial shreds would speak for non-interference. Fortunately, also, the etiology of the injury and at least one symptom helps us to recognize these cases. Direct fractures from falls or blows on the knee cap are of commoner occurrence than the pure indirect fracture from muscle strain. So far as I can make out from an examination of the histories of fifty-one cases observed in the Cincinnati Hospital twenty-six, or nearly 50 per cent., are clearly of this type of direct fracture. In only fourteen of the cases, or 27 per cent., was it fairly assumable that a cross strain produced the fracture. In this connection it is of importance to bear in mind that even direct fractures of the patella are almost always transverse. This I have demonstrated on the cadaver in over twenty subjects when the blow was delivered with the knee in forcible flexion. As might be expected, there is often no perceptible separation of the fragments and none is possible by most forcible traction on the quadriceps until the tear is made to extend into the parapatellar extensions. In experimental work along this line I have produced direct subperiosteal fractures, which could only have been demonstrated *intra vitam* by an *x*-ray exposure, or by the linear tenderness so characteristic of subperiosteal fractures in general. A study of the plates of fractures so produced shows that, contrary to every expectation, they often start from within, and that the gap is widest on the joint surface of the patella (see ilustration). In some plates it appears that the fracture, when incomplete, leaves the cutaneous surface intact. I have no data to explain this, but the phenomenon may explain the hemarthros, which so often follows injuries of the knee, in which a fracture is not even suspected. Perhaps most frequent *x*-ray examinations of this kind will reveal fractures of the patella to be of commoner occurrence than they now seem. A longitudinal fracture could only be produced on the cadaver by a blow delivered on the lateral margin of the bone and did not show in the radiograms taken.

Although there is often considerable comminution in these direct fractures, the main line is transverse or nearly so. Here, however extensive the bone comminution may be, there is no great separation of the fragments until, as often doubtless happens, the lateral expansions of the tendon give way in the effort of the patient to save himself from falling after the bone has given way.

There is one way in which to ascertain the integrity of the parapatellar wings as proven in fracture of the patella. It is by the ability of the patient to extend his leg or to lift it with some little assistance, and that within a few days of the accident. This symptom might, in my judgment, be invested with the dignity of a sign pathognomonic of an intact capsule. Its presence should for many patients and most surgeons militate against operative interference, unless this be limited to the aspiration of the joint exudates.

Surely the words of Lister uttered thirty years ago in regard to the general question of operation for fracture of the patella are applicable now to the class of cases

under consideration. "No man is justified in performing this operation unless he could say with a clear conscience that he considers himself morally certain to avoid the entrance of any septic mischief into the wound."

It is beyond the scope of this paper to discuss any of the scores of methods of treatment by splints, adhesive dressings, elastic extension, plaster of paris and the many mechanical devices. They may all be good, but they certainly all are bad if continued in use too long or if they are made the chief factor of the treatment. The intra-articular hemorrhage, if at all extensive, not only by pressure tends to keep apart the patellar fragments and to tilt them outwards, as has been shown in innumerable radiograms, but by aseptic irritation leads, after its slow absorption, to a shrinking of the synovial sac and to adhesions, which to a large extent account for the restriction of joint movements. Where, therefore, non-operative measures are to be adopted, two factors are essential to good functional result. First, aspirate the joint as soon as feasible; second, within ten days or two weeks, massage and passive movements should be made, and retentive dressings used only while the patient is permitted to go about on crutches. There is no other way to forestall the atrophy of the thigh, which is an almost constant sequel of a broken cap and a menace to the other patella.

The thought is uppermost that if the conservative treatment fails an operation may be beneficial if performed later as it is in other ununited fractures. While my personal experience is limited, it has been sufficient to satisfy me that a hope based on such a thought will be frustrated. The most difficult operations I have had have been in delayed cases with wide diastasis. The approximation is so difficult that I have decided in such a case in the future to entirely extirpate the patella. Indeed, one of the most satisfactory results I have had has been in compound, badly comminuted fracture, in which suturing was impossible, and in which practically all of the patella was excised. If conservatism is to be practiced, it should not be as an expedient to be supplemented by a later suture, but on the assumption of the integrity of the patellar anatomic complement.

At this juncture I would invoke the exercise of that common sense which regards not only the fracture of the patella, but considers as well the age, the occupation and the station in life of the subject of that fracture. Manifestly, in functional value a fibrous union can never equal complete anatomic restitution, so that if there is any doubt as to the indication for either conservatism or operation the decision should be for the latter. In young persons and in those of the middle decades of life, particularly of the working classes, the taking of some risk is justified, as it would not be in older persons and in those who do not need their legs to live. Of the fifty-one cases tabulated for me treated at the Cincinnati Hospital, the average age was 39. Of the thirty-three non-operated cases, it was 40 years, and of eighteen operated cases, 35 years. Only five of the total number of patients were over 50, and twelve were 30 years of age or under. The entailment of some risk is justified when the indications for operation are clear, particularly in view of the fact that even non-operated cases occasionally succumb. Of our non-operative cases, two died —one of sepsis and the other of alcoholic leptomeningitis. Of 223 cases investigated by Thiem, six died. They were all subcutaneous fractures and were treated without operation.

Of the fifty-one cases admitted into the City Hospital ward, eighteen, or over 35 per cent., were subjected to operation. These figures do not reflect accurately the view point of the surgical staff, since nine of the non-operated cases either refused operation or left the hospital within the first week. In fact, 45 per cent. of the cases completely under control had some form of patellar suture made.

I believe this fairly reflects the trend of surgical practice, since the statistical contribution of Powers was published eight years ago and discussed by the American Surgical Association. It is that, if soon after the accident there is a diastasis of a third of an inch or more, a decided eversion of the fragments, where elevation of the limb is impossible and where there is a marked hemarthros, the indications seem clear that the patellar-capsular appendages are torn, and demand operative repair if even a fair result is to be attained. Of the seventy-five surgeons who responded to Powers' inquiries, no less than seventeen expressed themselves as opposed to operation in any case. Of those of the seventeen who were accessible and responsive to inquiries, Weir and Lilienthal have modified their views in favor of an operation in properly selected cases. A. T. Cabot at first confined operation to compound fractures. In a personal communication he assures me that in workingmen he now operates invariably. Dr. F. Tilden Brown would to-day operate in all cases unless some unusual condition presented. This swaying toward operation for fractures on the part of surgeons meets with an occasional exception. Thus Mueller recently claims that the postoperative results are not as good nor as quickly obtained as those from conservative methods.

It almost goes without saying that the only tenable objection to operation in suitable cases is the increased risk to limb and life. That this exists can hardly be questioned by the warmest advocates of operation. Of our own eighteen operations, one was followed by death from infection. Of 711 cases collected by Powers, there were only three deaths from sepsis, with no amputations. Powers himself does not believe that this represents the true mortality, and few are they who do not share his belief. I know of no way in which to estimate the mortality of suturing the patella. After looking over many series of hospital reports without finding more than an occasional death after patellar suture, I ought to be struck with the innocuousness of the procedure. But I am not, and fear that I never shall be. Twenty, even ten years ago, the statement of Kocher seemed justified (Schmidt) that the technic of asepsis would have to make many advances before the indications for patellar suture should be much extended. It can be stated, I think, that such advances have been made. Certainly, mishaps do not come as often in the last decade as they did in the first two after the publication of Lister's cases. To bear this out, the bad results, which are found in every large series, belong to the earlier years from which they are gathered. Nevertheless the opening of the knee will always be attended with danger. Therefore, no surgeon should operate for patellar fracture, even when it is plainly indicated, except under conditions insuring the greatest measure of safety. With these conditions in doubt, the peritoneum is confessedly a less dangerous field for operation than the knee joint. Let him who would venture an operation bear in mind that the man with a fractured patella may die, but the operation as one of expediency increases that danger somewhat.

With proper regard to environment and skilled assistants, I am convinced that operation is not only justified, but positively demanded when the conditions point to extensive involvement of the capsular expansions beyond the patella. The question at once arises. When shall the suture be made? Even ten years ago the doctrine was current that the safest time for operation is after from fifteen to thirty days. In the eighteen cases of our series operated on, the operation was performed twice on the second day, once on the third, twice on the fourth, and in the remainder, with the exceptions to be noted, before the fifteenth day. The average day of the early operations was the seventh day after the accident. In two it was twenty-eight and thirty days, respectively; in another three months, and in yet another seventy-nine days. The only fatality occurred in the patient operated on seventy-nine days after the accident.

This experience has convinced me that the dread of early interference in fracture of the patella is now unwarranted, as it has been shown to be in most surgical conditions calling for operation. Although by reason of the large joint opened there is no absolute likeness between the patellar and other subcutaneous fractures, I am sure that few surgeons would hesitate to open a recent fracture of a long bone, if there were no other way of keeping the fragments in apposition than by bone suture.

The average of stay in the hospital of the early operations was thirty-nine days, of the average non-operative cases it was sixty days. Of the late cases it was eighty-four days. The greater length of time and extent of dissection required in cases of longer standing than two or three weeks reduces the probability of an undisturbed postoperative course. From the more recent literature it is apparent that postoperative mishaps occur oftenest in cases of long standing and where the suture is made for so-called refracture. Nor can the end-results be as good, for the reasons above given when considering the results of conservative treatment. The difficulties encountered in the few late cases with wide diastasis I have seen have led me to abandon suture altogether in this class of cases. If I should find an operation at all indicated, I should, instead of endeavoring to overcome the great separation of the fragments, remove these fragments altogether and attempt a tendon plasty. The suggestion of Bergman and Pucet might in some cases be practicable. After dividing the patellar ligament at its attachment, it is moved upward as far as possible and fixed there with a metallic pin. It is certainly an ingenious way of approximating the fragments. The division of the quadriceps tendon transversely or in Y-shape has given good results to some operators.

It is manifestly improper to compare in a general way the end-results of operated cases with those conservatively treated. The comparison to be just must be made between fractures of the same degrees of severity, some of which have been treated one way and the rest by another. Of the difference in results there can be, in my judgment, no question to the unbiased investigator. Bony union along the length of the fracture, or at least along part of it, is the rule after suture, the proportion of such unions depending altogether on the methods of retaining them employed. As a compromise between conservative treatment and suture, many plans have been devised to hold the fragments in position by means of sutures of wire or catgut introduced circularly around or behind and in front of the patella. The various procedures of Barker, Ceci, Kocher, Berger and the purse-string suture of Roberts come in this category of compromise operations and are of about equal worth. They are based on the dread of free exposure of the joint. Not having had much personal experience of them, my judgment is worth little. I, nevertheless, venture the opinion that in the very simple cases when they might do good they all are superfluous, and in the severer ones they fail of three essentials to a good result, namely, cleansing the joint of exudates, the removal of tendinous and periosteal fringes from between the fragments and close approximation of the torn parapatellar, tendinous expansions and of the bone fragments. These indications can only be met by an open operation, which allows full inspection of the damage done by the trauma and a clean method of repairing it. How to do this is a matter of technic, the details of which vary with different surgeons and should vary according to the conditions found.

In the eighteen operations above alluded to, suture with silver wire was done five times, with kangaroo tendon or chromicized catgut nine times and circumferential or tobacco pouch suture was used in four cases. In a number of cases, it is difficult to state how many, the bone suture was followed by periosteal catgut suture. From the record of our cases it does not appear that those sutured with wire fared better than those treated with animal suture material. Of course, we have met the tribulation of having the wire break. In one of the cases it was necessary to remove the wires after the patient left the hospital. Since most of our cases could not be followed, it is impossible to state what became of the wires in the remainder. From a rather extensive investigation of the literature I am inclined to believe that the use of properly prepared absorbable suture material is displacing the wire, although in some of the more recent series of case reports, such as Hamilton of Edinborough, Körte and Mikulicz, wire was almost exclusively used.

As very considerable difficulty is encountered when the fracture is near the apex of the patella and when it is stellate, the purse-string suture of whatever material used is more applicable than an attempt to use the interrupted suture after the ordinary way. I have been impressed with the method of Perarresi, who, after making a periosteal suture as carefully as possible, reflects a square flap from the anterior fibers of the quadriceps tendon over the broken patella, and sews it to the patellar ligament below. By this teno-plasty the eversion of the upper fragment is easily overcome. Furthermore, since there is no drilling of the fragments, the danger of necrosis is avoided.

In my operations for fractured patella I have used the transverse incision in my earlier work. More recently I have used the curvilinear incision with convexity above or below. When the separation of the fragments is wide, the best access to the parts can be obtained by an incision with an upward convexity. It is almost needless to add that the success of the operation depends on the repair of the parapatellar expansions of the extensor aponeurosis.

In two of the cases remaining longest in the hospital, a considerable degree of ankylosis remained. I believe the result was more satisfactory than if they had been discharged with a wide gap. Although an ankylosis can hardly be called a success, it is a matter of common observation that a locked knee, if in good position, does not materially lessen the capacity of the individual for

even the hardest kind of work. Between the serviceability of the locked knee and the flail joint there can be no question. In properly selected cases the indications for an arthrodesis seem to me perfectly clear.

To secure the best results after operation, the retentive dressing should be tentatively removed after two weeks and passive and some active movements encouraged by the end of the third week, at the latest the fourth week.

In conclusion, I submit the following theses for your consideration:

First.—Fractures of the patella are often partial and subperiosteal and require no operative treatment even if recognized.

Second.—A master of aseptic surgery may operate in every case of patellar fracture where separation of the fragments can easily be recognized.

Third.—Where the diastasis indicates the involvement of the lateral expansions of the quadriceps, the indications for operation are plain, unless the valid contraindications alluded to in the body of the paper are present.

Fourth.—The proper time for operation is the first week.

Fifth.—The operation ordinarily indicated is the open operation with suture of the lateral tears and fixation of the fragments with one or other method.

Sixth.—In old standing cases with very wide diastasis of the fragments, excision of the latter and suitable tendon plastic will probably give better results than bone suture.

Seventh.—The knee joint will always remain for him who occasionally does surgery a most dangerous field for operative interference. For him a fracture of the patella should remain a *"noli me tangere."*

DISCUSSION.

Dr. Robert F. Weir, New York, stated that, seeing the dangers that have followed in the wake of these operations for fracture of the patella for a long time, kept him from surgical intervention in their treatment. Since other surgeons, however, have shown such good results, and especially now that no finger or instrument is allowed to enter the joint, and since he has seen the brilliant results which have followed this careful procedure, he has resorted to the operation in certain cases. He found, however, that some things are yet to be said. An *x*-ray of their best cases showed that in a large proportion of them there was not a bony union of the fragments, but only a fibrous union. Furthermore, Dr. Weir believes that only masters of surgery should operate in these cases of fracture of the patella, because it is the most risky operation we have to do to-day. He would rather have his abdomen cut open than his knee joint. He has found that one surgeon had an amputation following a fracture of the patella and another had an ankylosis and a third a fatal result. At the Roosevelt Hospital, in New York, these patients are only operated on when there is good reason to believe that the tear runs into the fibrous tissues on both sides; but in cases in which the rent is only on one side, they are very apt to treat the case by the conservative method. Dr. Weir declared, however, that notwithstanding that he does not resort to the operation in a restricted manner, if he were to sustain a fracture of the patella he would not want the knee joint opened.

Dr. Charles A. Powers, Denver, said that in the operative management of recent fractures of the patella there should be no contradiction on the part of the patient to the operation itself. It should be definitely restricted to patients of suitable age, patients with healthy viscera and vessels, and patients, who, after the pros and cons of the operation have been carefully explained to them, request the operation. Some twenty or twenty-five years ago Dr. Weir said that antiseptic surgery was not "cock-sure" surgery. That may be said to-day of a septic surgery. No man can open a knee joint and repair a patella with an absolute certainty that the patient will escape infection. He expects that he will escape infection, the patient will probably have no trouble; but there is always an element of risk, and the patient himself must take it. Dr. Powers believes that it is better in recent cases to wait five or seven, or, perhaps, ten days before operating. As to the operation itself, he advised the curved incision as recommended by Dr. Ransohoff, the removal of the interposed aponeurosis from between the fragments, washing out of the blood clots, and such suture as the surgeon may see fit to apply; the open operation, as Dr. Ransohoff says, should always be done. The results after the operative management in cases with a wide diastasis Dr. Powers believes are better than in cases treated without operation, but the patient is the one to decide and to take the risk. In old cases in which there is a wide separation and the fragments can not be approximated, scoring of the quadriceps extensor or its tendon or transplantation upward of the tubercle of the tibia will greatly permit the fragments to come together and a good suture can be made. Dr. Powers has never found it necessary to remove the patella.

Dr. Arthur T. Cabot, Boston, stated that he began in this work by wiring only in compound fracture. Since then he has acquired the habit of wiring the patella in all cases that come to the hospital when they occur in laboring men, in whom it is necessary to get a quick result. These men can not afford to lay up for six or eight or ten months to limber out a stiff knee. When the patient is in good circumstances, and can give the time to limbering out the knee afterward, Dr. Cabot frequently treats the case on the expectant plan by bringing the fragments together as closely as possible; but in those cases he thinks it is very important to put off passive motion for some six or eight weeks in order to allow the fibrous union to become as firm as possible. Patients treated in that way get a very good limb, but it takes a long time. He has not yet had an unsuccessful wiring, nor a case of sepsis. He appreciates, however, the danger of which Dr. Powers speaks. Dr. Cabot tells his house surgeons that he wants them to take more pains in disinfecting a knee than in disinfecting the abdomen for laparotomy, because the danger of infection is greater. The absorption from the knee joint is not nearly so good as from the peritoneum, and sepsis in the knee joint is more likely to occur than in the peritoneum. By taking excessive care the very great majority of wiring of knees can be done with perfect success. He has not yet had his unlucky case.

Dr. F. D. Gray, Jersey City, has had an experience within the last year which leads him to make some exception regarding the advisability of attempting late suture. The patient, a woman, had been operated on successfully for fracture of the patella about ten months before Dr. Gray first saw her. The operation had been performed very carefully by the surgeon in charge of the case and the result was a good one. The patient left the hospital at the end of four or five weeks. While under subsequent care of her family physician, a fracture took place, either through the carelessness of the physician or of the patient. Nothing was done to correct the trouble. After nine months the patient consulted Dr. Gray with a separation of the fragments of about two and a half inches. He told her that he would not promise anything in the way of results, but that inasmuch as her condition was so bad, he would do what he could by performing a secondary operation. He succeeded better than he expected in bringing the fragments together. The upper fragment was softened somewhat. He introduced two wire sutures, but one tore a little. He sutured the adjoining fibrous tissue with catgut and then put on a plaster splint which he kept on for two months. During the next four months gradual mobilization of the joint was effected, and to-day the patient walks with barely a limp. She can flex the knee to a right angle with the thigh and she can raise the foot from four to six inches from the floor, while sitting. The quadriceps extensor, of course, is still considerably atrophical.

Dr. J. Ransohoff, said that he wished to emphasize the desirability of taking as many *x*-ray pictures as possible in every case of hemarthrosis, in order to see whether the experimental findings which he reported can be confirmed by practical clinical experience.

THE OPEN-AIR TREATMENT OF PNEUMONIA.*

W. P. NORTHRUP, M.D.
NEW YORK CITY.

For more than eleven years I have been treating pneumonia patients in cool fresh air, gradually placing their beds nearer and nearer the open window. Last winter I put them out on the roof. It is not always practicable to make use of a roof, but what I have to say about the beneficial effects of open-air treatment is founded mainly on last year's experience at the Presbyterian Hospital, New York City. It comprises experience in all months of the winter.

Our systematic practice was to put all pneumonia patients during the day, for six hours, on the roof, in the open air, in all weather in which harsh high winds, rain and snow did not prohibit. Indeed, the patients were not always brought in for little sprinkling rains or trivial snowfalls, and many times were out when high snow banks formed a corral about the space in which the beds were grouped. A permanent wind-break formed by the sun room on the west and a built-up screen on the north protected them somewhat. Much of the time, however, the wind was in the south, and more often in the east. In this case a very inefficient canvass awning partially screened the patients, until one night in December high winds wrecked the canvas.

The practice of placing severely sick pneumonia patients in the open air in midwinter was not adopted without much observation and some self-education. Gradually, after most careful precautions and constant watching, it became the firm conviction of all observers that such patients were decidedly benefited thereby. At last it was decided on as a routine treatment.

No one is convinced by others' experience or by statistics. I am not going into figures, for the cases are too limited in number. I am not going to convince any one that they should adopt the routine treatment. I am only attempting to get some few to try it for themselves. If it seems to them to give a very sick patient the best chance for life, the method will survive criticism and be adopted. If it does not, it will deservedly fail.

Primary pneumonia in previously healthy infants and young children allows of good prognosis in over 90 per cent. of cases under any and all treatment. Even the worst treatment seldom kills them. They can survive constricting poultices, hot unventilated rooms, and coal tar antipyretics. It is the remaining percentage which we wish to save. We wish to support the patient in the fight, to give the blood, the organs and the body cells every aid in our power to counteract the deleterious effects of the infecting agent. I would not underestimate drugs, I would only magnify the therapeutic value of hygienic measures, especially water and fresh air. I would say that the two most important aids are plenty of water inside and outside and fresh air everywhere. The latter, as the title indicates, is the therapeutic agent here under discussion.

CASE SUMMARIES.

By way of illustrating, a few cases will be briefly outlined. In these cases, which everyone present will probably admit were serious cases, the body cells would seem to have been materially aided by open-air (on the roof) treatment.

Case 1.—A little girl, aged 3, came into the Presbyterian Hospital with frank lobar pneumonia. One large lower lobe was solid.

From examining the mouth the house physician suspected the possibility of developing measles. For this reason the child was moved temporarily into a small room adjoining the ward, and a screen bent around the bed. I happened in shortly after and found the child climbing about the crib, whining and worrying. The fever was high, the face dusky, the child evidently delirious.

On the arrival of the house physician he was amazed at the change in the child. While in the ward, where the air was fairly fresh and cool, the child was quiet and sleeping. It seemed that simply putting it into the small room behind the screen (and the air was not particularly warm or stale), had developed this duskiness and delirium. The child proved not to be developing measles, and was sent at once to join the others on the roof. It was wheeled to the elevator and thence into the open air. Shortly after its arrival there the mother came to pay it a visit. We may well imagine her state of mind, knowing our diagnosis. She was making known her feelings on the subject when I arrived for my second observation on the child during the same morning. The mother was standing beside the crib, scantily wrapped, and was nearly frozen. The crib was exposed to the full flood of east wind, though it was not 20 feet to carry the crib to place it behind an angle of the sun-room. I said to the mother in an interval between her remarks: "How does the child seem to you?" This took her unawares, and she ended by admitting that though she herself was rapidly chilling and beginning to shiver, the child semed much better. It had fallen into a quiet sleep, its color was normal, its face wore a tranquil look such as it had not before shown. The mother and I parted friends, and we are still such.

This case is mentioned in detail to show how even the mother approved when once she saw the demonstration of the favorable effects. The child might possibly have recovered under any treatment, but the quieting effect of the December open air was most favorably shown.

A second case was one in which there is doubt whether the patient would have recovered if treated continuously in the ward.

Case 2.—A boy, aged 6, after operation for foreign body in the esophagus, developed double septic bronchopneumonia and recovered. The foreign body had been in the esophagus 13 days, had rendered feeding for that time almost impossible, one-half to one pint of milk a day being all the food that he could pass into his stomach. He was under observation for another week, in which time *x*-ray photographs were taken. At the operation the surgeon remarked that in most cases of late operation on the esophagus, whether the wound be closed or left open, the patients develop sepsis and die.

In this case there were extensive sloughs, the wound was left open, feeding without vomiting was fairly successful. For four weeks then the nourishment had been very imperfect, and the child was much reduced. At this juncture the temperature mounted and double bronchopneumonia developed. The child appeared to be in a most critical condition; its color was metallic and sallow, it sank in relaxation deep down in the bed, its respirations were rapid and shallow. It seldom opened its eyes.

The surgeon asked me whether I would recommend that this patient go on the roof. Thus far it seemed too much of a journey for so prostrated a child, and it had remained in the ward. Our judgment was that whatever was done for the child, it would not live three days. The house surgeon took the matter in his own hands, superintending the transportation, and put the patient on the roof for six hours a day. I heard the patient had not died, but forgot about it later.

On a chance visit to the surgical cases, the nurse, in a most cheerful voice, asked me if I was coming to the birthday party. I said of course I was, but asked whose party it was. "Theodore's party," she replied. After explanation I realized that the boy who had had double septic bronchopneumonia, who

* Read in the Section on Diseases of Children of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

had been operated on for foreign body of the esophagus, was celebrating his birthday with the other convalescents. The cake bore six candles.

Truly, I do not believe this patient would have recovered under old ward conditions and constant rest in the same air and environment. I could cite a few more cases in which the determining factor toward recovery was the cold, bracing, open winter air on the roof.

As I said at the outset, I expect no one to be convinced by this paper. I only hope some will be induced to try the treatment. Begin with a case so bad you believe it has no chance for life, one that is delirious, husky, restless, gasping for breath, respirations shallow and rapid, temperature high, the poisoning so profound that delirium alternates with that dull, sodden mental state so well named "dopey." I only ask you to observe whether or not every superficial symptom is improved by it. Note, first of all, whether patients are quieted, are of better color, take their food better, have cleaner tongues, better assimilation. If they show no improvement when entirely surrounded with cold streaming fresh air, then I have nothing to say. Do not take another's word for it, try it.

SUMMARY.

1. The cases most favorably affected by open-air treatment are those with severe poisoning, with delirium, partial cyanosis or deep stupor ("dopey"). In my experience all cases fare better in cool fresh air. Open air may be secured by screening off the bed and a portion of the room next the window.

2. In my experience no cases of pneumonia have been injured, and a few have been much aided, possibly saved, by the cold fresh air treatment.

3. If pneumonia, due to an infecting agent, is benefited by the treatment, one may be easily led to try it for other infectious diseases. As a matter of fact, I have tried it for many others, including typhoid with severe bronchitis, whooping cough with bronchitis and convulsions, with excellent results. It seems to me the ideal treatment for all forms of "septic fever."

4. The only regulaton is to make the patients comfortable, keeping their feet warm especially. The ears, nose and hands may get cold without harm.

Finally, the Presbyterian Hospital is so convinced of the permanent usefulness of open-air treatment for all infectious fevers that it has built a roof garden for the children's ward and is about to build on the main roof of the medical side of the hospital a colossal roof garden. One-half of this has a "horse shed" structure, the shed open to the south, and a liberal space in front is enclosed, like a paddock, for a roof garden. In bad weather the beds of the fever patients are to be wheeled back into the depths of the shed. In good weather they will be advanced more and more to the opening or even out into the garden. They will remain there, night and day, so long as their fever is high. It is to be an open-air ward.

DISCUSSION.

DR. JOHN LOVETT MORSE, Boston, said he claimed to be a humble disciple of Dr. Northrup in the matter of fresh air. In the last two years he had been treating all his pneumonia patients both in private and hospital practice, with the windows wide open without regard to the temperature of the air outside. As far as possible he kept them by the window. In no case had he seen any harm done, and in many cases there was a great deal of benefit. He had not been able, at any rate in hospital practice, to get the percentage of recoveries from pneumonia which Dr. Northrup gave.

DR. ISAAC A. ABT, Chicago, said he did not exactly agree with Dr. Northrup's view, but he believed that Dr. Northrup's position in regard to the treatment of pneumonia among children will bear valuable fruit. It will awaken the entire profession to the importance of securing fresh air and well ventilated rooms for the little patients ill with pneumonia. Dr. Abt would hesitate to expose pneumonia patients to the extreme cold of the winter until further proof is brought forth. So little is known about the physiology of the heat regulating apparatus of the infant. It has been taught that premature and delicate infants can only survive if they are kept warm. Surgeons declare that children stand operations much better if the operating table is kept warm. Now, it is proposed, to go to the other extreme and treat our pneumonia patients out-of-doors in the extreme cold weather. It will require a larger experience, careful clinical study of the cases thus treated and some physiologic observations before this plan of treatment should be commended for universal adoption.

DR. EDWIN E. GRAHAM, Philadelphia, narrated his experience with this treatment during the first three months of this year in Philadelphia. He went on duty in the Children's Hospital and in the Philadelphia Hospital and found possibly forty or fifty children under the age of one year. Nearly all were foundlings and most of them were feeding. The treatment of these cases in his hands was most unsatisfactory. He first started three years ago to put them on the fire-escapes. The cribs would be more or less covered with towels and the babies bundled in blankets and it did them good. Two years ago he dispensed with the towels over the cribs, simply rolling them in the blankets. This year he obtained the coöperation of the resident physicians and nurses, and from almost the very first day these children, bundled up in blankets as if they were bags of meal, with nothing but their heads outside, and these covered with very warm caps, were taken out to the porch, which was covered with glass and open at the front and sides. The results have been surprising. Those cases which had been almost worrying the life out of the resident physician and giving him much anxiety during previous years almost invariably began to improve. The records cover a great many children, some of them only for a period of a few weeks and others for a period of three months. Unless the children were ill with some condition like tuberculosis in which improvement was almost impossible they stopped losing weight and gradually gained. The results of these three months have convinced him that even in hospital work where formerly he was not able to get satisfactory results these results have been quite possible.

DR. C. F. WAHRER, Fort Madison, Iowa, said that less than ten years ago it was advised to treat pneumonia cases by opening all the windows and letting the cold air blow on them. None of the men who have advocated this treatment have given the rationale of their procedure. Dr. Northrup says "Try it." This is somewhat in the nature of empiricism. In view of the fact that we all consider pneumonia an entirely infectious disease, Dr. Wahrer would like to know what is the *modus operandi* on the bacillus of pneumonia. Dr. Northrup's method is the very opposite of the popular method so long followed by the profession; namely, to keep the patient warm, use of warm poultices, affusions and other warm and even hot applications still recommended by many of our most recent text-books. On the whole it is rather a sad comment on the treatment of pneumonia, to flounder from some of the most active opposite methods; to the most nihilistic *laissez-faire* or the let-the-patient-get-well-system.

DR. W. C. BREWER,, Columbus, Miss., approved of Dr. Northrup's paper, having treated a number of cases of pneumonia by the open-air method and finds it gives excellent results. In the last five years he had not kept as careful statistics as he might, but he believes the treatment is a good one for pneumonia. The worst thing in pneumonia, especially in children, is over medication; the best thing is plenty of fresh air.

Dr. Abt seems to think that there is some great difference in the temperature of the air. Dr. Brewer thinks that the temperature of the air is of great consequence: what is desired in these cases is oxygen. In his cases the heart and kid-

neys seemed to do their work with less strain or effort, depression after the crisis was not so marked, and the recovery was more rapid.

Dr. F. S. Churchill, Chicago, said he did not see how any one who has ever tried the method can doubt its value, he having treated pneumonia in this way for several years. A patient is well exposed to the fresh air and the effect is very refreshing and beneficial. If any one would but give it a trial for a few of his cases he would continue to use it and expose his patients to plenty of good fresh air.

Dr. H. McClanahan, Omaha, Neb., said that the paper will be of great and decided benefit to all of us in giving us more courage in insisting on thorough ventilation of our patients' rooms. He had always been confronted with that fear of mothers that fresh air might be injurious to a sick child. For a number of years he adopted the treatment in pneumonia of having two rooms, if necessary utilizing the dining room, to secure entire change of air, and he has so taught his classes. He would like to know how Dr. Northrup keeps his patients warm with the temperature approaching zero and what instructions he gives the nurse about observing the body temperature. In view of Dr. Northrup's statement that the hands and ears might become cold, Dr. McClanahan wondered whether driving of the blood from the large surface capillaries might not be injurious. He would like to know more definitely of the technic of the method.

Dr. George N. Acker, Washington, D. C., said that one point overlooked was in reference to the advisability of leaving off the pneumonia jackets, which he thinks do more harm than good. He believes also that too much medicine is given in pneumonia. Strychnia at the end of the disease is indicated.

Dr. D. E. English, Mill Burn, N. J. asked Dr. Northrup whether he gets good nursing under these low temperatures, whether he can get nurses to give proper care to the children when they are cold themselves.

Dr. H. C. Worthington, Oak Park, Ill., said he had saved several lives by the treatment and with profound gratitude that he accepted Dr. Northrup's views.

Dr. R. B. Gilbert, Louisville, Ky., asked Dr. Northrup whether he gives any other treatment. Is nothing else done except to put the patients out of doors? Dr. Gilbert believes in the oxygen treatment.

Dr. B. B. Simms, Talladega, Ala., said he believed in the treatment. Last winter he had a child two years of age with bronchopneumonia in which the crisis appeared in about five days. The child did not improve after the crisis and seemed to have some chronic trouble, but not tuberculosis. It went home but did not improve. After awhile he felt satisfied that it would die if the mother did not allow him to put it out on the porch. Consent was given and improvement was noticed in the first twenty-four hours. Some six years ago he noticed Dr. Seibert treating cases of pneumonia in children in a carriage out on the sidewalk.

Dr. W. P. Northrup,, New York City, said that by explaining the treatment its acceptance is made possible. He makes but limited use of drugs in pneumonia, not having much use for them since he adopted this treatment. In regard to nursing, he insists that the baby's feet must be kept warm. Very great care is to be taken of the digestive tract in order to prevent flatus which would make breathing difficult. He can not explain how the treatment gives the good results. The cold fresh air acts in a certain beneficial way. Some say it is oxygen and not the cold. But the cold is important; the colder the day, the better the patients do. It does something toward quieting them. A German physician has adopted this plan and has published his views that are quite in accord with those of Dr. Northrup and quite as radical. The plan is not anybody's method; it is a hygienic method. He does not think it is quite the element of oxygen alone that does the good; there is something about the coldness and freshness of the air that braces people up. In the spring, a little change in the temperature and moisture causes people to say they have the "Spring fever;" the wind changes and they are all braced up. About the traditions too much had better not be said, for some have been pretty bad. A child entirely outdoors is absolutely safe. Dr. Northrup has never known one threatening thing to happen to such a child, well wrapped up. They should be made comfortable and hot water bottles, if necessary, put to their feet. If the air comes only on the face it is not so favorable, but if the child is wholly bathed in the cold air there is no danger. He could give many instances of benefit. In one child with a temperature of 106, and dopey, improvement promptly followed removal to the air. From the outdoor treatment of tuberculosis it has been learned that infectious fevers with temperature should have the benefit of the open air. If the time is ripe to try the plan, try it. Do not call it anybody's method. Fresh air was not discovered to-day, yesterday or the day before. The method is radical, but it works.

ACUTE NON-SUPPURATIVE ENCEPHALITIS IN CHILDREN.*

ISAAC A. ABT, M.D.
CHICAGO.

Acute non-suppurative encephalitis is neither a rare nor new disease among children. Striking cases, however, are of interest. Attention was first called to this class of cases by Strümpell[1] in 1884:

> Cerebral palsies in children depend on inflammation of the gray substance of the motor cortex. There is, therefore, an acute polioencephalitis analogous to acute poliomyelitis. Both depend on the same infection which sometimes becomes localized in the brain, sometimes in the cord.

Strümpell's publication aroused much interest and subsequent investigations were made by Bernhardt, Wollenberg, Krast and Möbius in Germany; Marie in France; Ross, Abercrombie, Gowers and Ashby in England; Sachs, Peterson and Osler in the United States.

With the evolution of the subject, it became evident that Strümpell was not entirely correct in the assumption that cerebral palsy in children was due to a single process, but several pathologic changes, such as cerebral hemorrhage, embolism, and thrombosis, with sclerosis, cyst formation or porencephaly. Hence polioencephalitis was responsible for the cerebral palsies in only a proportion of the cases. Sachs states that the disease, polioencephalitis, is open to question. He doubts the existence of such a morbid entity. During the last few years, however, many contributions have been made to the subject, and there remains no doubt that Strumpell's position was essentially correct, that acute encephalitis is responsible for a proportion of the cases of hemiplegia in young life, Freud[2] estimates that one-third of all the cases of hemiplegia in children are infectious in origin.

In looking over a large number of histories of this disease one cannot fail to be impressed with the fact that it has several clinical types. Batten[3] believes that acute poliomyelitis and encephalitis are often associated and suggests as a classification: 1. Acute polioencephalitis superior, including those cases of paralysis in which the frontal, motor and occipital regions of the cortex are affected. 2. Acute polioencephalitis inferior. in which the neuclei of the cranial nerves are involved. 3. Acute poliomyelitis anterior, in which the gray matter of the anterior horns below the medulla is affected. It is thought that the cord and the brain may be affected at the same time, thus constituting a polioencephalo-

---

* Read in the Section on Diseases of Children of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

1. Strümpell: "Lehrbuch für Specielien Pathologies und Therapie," 1893.
2. Freud: "Infantile Cerebrale Lämungen," 1897.
3. Batten: The Lancet, Dec. 20, 1902.

myelitis. Aldrich[4] says that there is occasionally a disseminated encephalomyelitis complicating smallpox.

Two cases constitute the subject of this clinical report:

CASE 1.—E. V., female child, aged 5, came under my observation July 31, 1905. She was born under normal circumstances; was breast-fed, progressed favorably during her infancy and never had any severe illness.

Present Illness.—The mother had taken the family away for a visit in Ohio. On July 25 the child fell ill with a severe headache. The mother thought the child was feverish. The pain in the head, which at first was slight, became more and more severe. During the first night of the illness the mother was of the opinion that the headache was intense. The child cried piteously; the mother carried her in her arms all night in an endeavor to quiet her. On the following day there was less restlessness and she did not speak to those around her. During the night of the second day, the mother states that the child's head was thrown back and the arms were stiffened at frequent intervals. It was noticed that these rigidities of the neck and extremities seemed painful to the child. On the next day, Thursday, she became still more quiet, although there were paroxysms of pain during which she cried out loud. The father, who had come to take charge of her, was alarmed by the condition and concluded to bring her to Chicago, arriving July 31. The child was at once taken to the hospital.

Examination.—The child was semi-conscious; too stuporous to speak or take notice of anything Temperature was 102.6; pulse, 138; respirations, 30. Examination of the skull and scalp was negative. The pupils were equal and reacted both to light and distance; there was no paresis of the lids; a slight nystagmus, but no strabismus, was noted. The mouth and pharynx were negative. There was slight facial asymmetry due to paresis of the right side. The examination of the heart and lungs proved negative. The muscles of the upper extremities were tense and somewhat retracted. Palpation of the abdomen elicited some rigidity of the muscles, with a slight retraction of the abdominal wall. The tendon reflexes were all increased, yet more markedly on the right side. The Babinski toe sign was present, also more markedly on the right side. The Kernig sign was not present. The child was having involuntary evacuations from the bowel and bladder. The examination of the urine was negative. Blood examination showed a moderate leucocytosis.

Clinical History.—There was not much change in her condition for a number of days after her admission into the hospital. At times, particularly at night, she was slightly restless, though for the most part she lay in a stupor. She took a moderate amount of food. There were occasional twitchings in the right arm and leg, though voluntary movements were not noted. The pulse was sometimes irregular. The temperature varied from 99 in the morning to 103 in the evening and followed no regular type. After she had been in the hospital about a week the temperature showed a tendency to fall, and on the ninth day was practically normal. At this time she began to cry out, but did not appear brighter.

On August 14 (twentieth day), however, she seemed to recognize her baby brother. On August 18 (twenty-fourth day) her mind was clearer and she took considerable food. She cried out at times, seemed to recognize those who entered the room, but did not speak. On August 19 (twenty-fifth day) for the first time she moved her left leg, but neither her head nor hands. She recognized her mother by signs, but did not speak. On August 22 (twenty-eighth day) she gave evidence of general improvement. She smiled and nodded to those who came into her room. Her pulse was slow, but of good quality. On August 23 (twenty-ninth day) movement was noted in her left foot and leg. She seemed greatly pleased about this and laughed out loud.

Recent History.—On August 26 (thirty-first day) she was removed from the hospital to her home. She seemed very happy, moved her left arm and leg, relished her food, but was still unable to speak. On August 31 (thirty-sixth day) for the first time movement appeared in the fingers of her right hand. During this interval she used her left arm and leg with ease, participated somewhat with her brother and sister in their play, and they endeavored to teach her the deaf and dumb language, in which they partly succeeded. She enjoyed this idea and made finger signs in return, thereby indicating her wants. The mother states that on September 5 (forty-first day) she tried to talk, but describes the attempt made as pitiful. A few days later she ventured the remark, "Take me." It was a very great effort. Improvement was slow. The use of her left arm and leg returned only after a protracted time. The paresis of the right side of the face improved only slightly.

Her speech improved gradually, though even now she talks with some difficulty. She hesitates and stammers, and her speaking vocabulary is not large. The upper extremity of the right side is used with some difficulty. There is some contracture in the hands and fingers. The elbow joints are movable. She is awkward in the use of the arm and hand. The patellar reflex of the right side is more active than the left. Ankle clonus is present. There is no considerable atrophy of the right leg or arm; the foot hangs in equino-varus position; the gait is decidedly of a hemiplegic type. She is irritable and extremely shy in the presence of strangers. Sensation everywhere is normal.

The points in this case may be summed up briefly as follows: A previously healthy child was taken suddenly ill with headache, fever and increasing unconsciousness, a condition which continued for about ten days, when she awoke from the stupor and was found to be suffering from a generalized paralysis. The use of the left side recovered itself in a few days. She was and is now suffering from a complete right-sided hemiplegia. Her intelligence does not seem to have suffered to any marked degree. As I saw the child on the first day, it impressed me much as would a case of tuberculous meningitis, and I am free to confess that this impression was retained throughout the first days of the illness. Respecting the wishes of the father, I did not make a lumbar puncture. It was only when the child aroused somewhat from the stupor that we began to suspect the true nature of the disease, which suspicion grew to a conviction with the appearance of the hemiplegia.

CASE 2.—Male child, aged 5; was without serious illness until the present attack.

Family History.—The maternal grandfather died at the age of 66 years from heat prostration. The maternal grandmother met with an accidental death at the age of 31. The paternal grandparents lived to be very old. The little patient's father lost two sisters from tuberculosis. The father himself has always been well. In appearance the mother is a very large, robust woman. She says she never had any serious illness, although all her life she lacked in endurance.

Present Illness.—The boy became ill on the first day of September, 1905. At the dinner table he did not seem himself. He appeared exhausted, his face became pale, he was listless, and had to be carried to bed. Although this was unusual, nevertheless the mother attributed it to hard play. The next morning he vomited several times, but did not create the impression of being seriously ill. The pulse was 120 and the temperature 101 F. He was drowsy, though he could be readily aroused. The mother thought he did not act differently from any child suffering from fever. On this day the parents were invited to a friend's farm in the country. Notwithstanding the little fellow's indisposition, they took him along. He continued to be drowsy, refused food for the most part, and vomited occasionally. This was the third day of his illness. In the evening the boy did not seem any better and the parents returned with him to the city. He acted excessively nervous, was very irritable and fretful, and it was noticed by the mother that the left side of the face was slightly drawn and a slight tremor appeared in the right hand. His condition was not considered worse on the night of arrival home,

4. C. T. Aldrich: Am. Jour. Med. Sciences, February 1904.

since he slept nearly all night. On Monday at 5 o'clock p. m. he seemed decidedly worse. His temperature was 104; his pulse very rapid. He lay in bed in dorsal position, unconscious, though he gave an occasional cry. There were involuntary passages from the bowels and the bladder.

Examination.—I saw him for the first time on the fourth day of his illness, and noted a well-developed, well-nourished boy in a state of unconsciousness and with considerable fever, varying from 102 to 104. The examination of the head and scalp was negative. Inspection of the ears by a specialist showed them to be normal. The pupils were regular, reacted readily to light and accommodation. The examination of the eye grounds proved negative. The left half of the face was drawn slightly. The tendon reflexes of the arm and leg on the right side were somewhat more brisk than those on the left. The urine was excessively acid and showed slight traces of albumin.

Clinical History.—On Tuesday (the fifth day) he was unable to speak, but was stuporous. He vomited occasionally and threw himself about. At this time it was observed that he had a paresis on the left side of the face, and it was suspected that the right arm and leg were paralyzed. He lay in this condition of stupor until Thursday (the seventh day), when he awakened for an hour. On Friday he became brighter, taking notice of some figures on the bedspread and calling attention to them. From this day on he was without fever. His recovery was gradual. He shortly regained his speech, and in three weeks more was able to walk. The mother called attention to the fact that although improved and up and about, he nevertheless remained extremely nervous. He became greatly excited in the presence of a company of people or when taken downtown among large crowds. The slightest physical effort seemed to prostrate him.

Present Condition.—There is now a very evident paralysis of the left half of the face. If he smiles or attempts to whistle, or even to speak, left facial paresis is unmistakable. The hand and arm on the right side have recovered to a very considerable degree. There is a slight flexion of the fingers, though he uses his hand with great facility. There is some limp when he walks, though there seems to be very litle spasticity of the right leg. He sometimes complains of a pain in the right foot and hand, probably the so-called post-hemiplegic pain. He is a bright little fellow, quick and nervous in his actions, talks about almost every subject in a very intelligent way. He makes the impression of being mentally normal.

This case presented difficulties in diagnosis, such as confront one in the incipient stages of this disease. During the first forty-eight hours, one would have thought of some acute infectious process; for example, an obscure pneumonia or almost any infectious disease in process of development. The case is of additional interest in that it shows the lesion located in the pons, and belonging to that variety already spoken of as poioencephalitis inferior.

ETIOLOGY.

The cause of acute non-suppurative encephalitis may be summed up briefly in the words infection and intoxication. Acute alcoholism possibly plays a rôle in adults and older children. In one of Wernicke's cases, poisoning with sulphuric acid was suspected. In other cases, nicotine has been thought of as a factor. The infective source is the most frequent of all in the encephalitis of children. It is well known that an encephalitis may develop during the course of a cerebro-spinal meningitis. In nearly a third of all the cases of hemiplegia in young life, it has followed one of the acute infectious diseases, occuring either at the height, or defervesence of the disease.[2] There is probably no infectious disease known which has not been reported at one time or another as having been followed by cerebral hemiplegia.

Measles and scarlet fever, according to Freud,[2] head the list. Next in order come smallpox, German measles, whooping-cough, diphtheria, croup, follicular tonsillitis, morbus maculosis, dysentery, pneumonia, typhoid fever, mumps, intermittent fever, chorea with endocarditis; even vaccination is said to have caused hemiplegia in several cases. Perhaps the best known and the best studied of all the various infections producing encephalitis is influenza. The question is not altogether settled whether the influenza bacillus itself or its toxin produces the cerebral inflammation.

Pfuhl[5] succeeded in finding influenza bacilli in the central nervous system of patients dying of a severe nervous form of influenza. Nauwerck[6] succeeded in finding the Pfeiffer bacillus in a case of influenzal encephalitis in the brain and in the ventricles. Cantani[7] has injected cultures of influenza bacillus beneath the dura of rabbits, and succeeded in producing meningitis and encephalitis. He found, too, that the same result could be produced by the injection of dead cultures as well as living cultures. The inference, therefore, is, that encephalitis is due to the action of a toxin produced by the bacilli on the brain substance. There is a large number of cases in which encephalitis occurs as a primary infection. In the two cases which I have cited, evidence of any pre-existing infectious disease is absolutely lacking.

All authors mention trauma, such as a blow on the head or a fall, as having some direct remote relation to disease. Heubner[8] finds that it is much more frequent during the first and third years of life, though it does occur at almost any age during childhood. In some of the cases, syphilis is a predisposing, if not an exciting cause, by giving rise to an endarteritis, or some other lesion of syphilitic degeneration, which might become secondarily infected. An ulcerative endocarditis may cause an embolic process infectious in character.

PATHOLOGIC ANATOMY AND HISTOLOGY.

Any portion of the brain may be infected, though, as it has already been stated, the cortex, or encephalitis superior (Strümpell's variety), the basal ganglia and the region of the medulla, or encephalitis inferior (Wernicke's variety) are selected areas. The cerebellum is seldom affected, although Batten[3] recently reports a case typical in its clinical findings and verified by autopsy. The disease is usually focal in character, though the foci are multiple and disseminated. The most striking point in examining an area of inflammation is the change of color apparent in the gray substance. It is grayish-red or violet or brownish-red, or the white substance is streaked with red. Sometimes there is a uniform discoloration, or the brain substance appears streaked or spotted. On section of the brain red or yellow points may be seen which have been compared to flea bites by older authors and described as being surrounded by zones of swelling and softening. When the lesion is in the cortex, the neighboring pia is usually injected and may be adherent.

The results of acute encephalitis may terminate in local necrosis or formation of scar tissue. Glia cells are proliferated and connective tissue is formed. This results in a local induration, referred to by the older writers as brain sclerosis. The process may be very extensive and lead to atrophy of a part or even an entire cerebral hemisphere. In other organs, lesions are some-

5. Pfuhl: Deutsch. med. Wochschr. No. 6, 1896; also Deutsch. med. Wochschr. No. 29, 1895; Berlin. klin. Wochschr. No. 39, 1892.
6. Nauwerck: Deutsch. med. Wochschr. No. 25, 1895.
7. Cantani.
8. Heubner: "Kinderheilkunde," 1906.

times found as the result of the general infection. The spleen is at times enlarged; hemorrhages occur into intestines and mesentery, while a parenchymatous degeneration of myocardium and acute nephritis may be present.

SYMPTOMATOLOGY.

Strümpell[1] speaks of acute encephalitis as occurring in children between 1 and 4. The disease is marked by sudden onset, with feeling of illness and fever. Shortly nausea and vomiting or general cerebral disturbance in the form of coma and convulsions may occur. This condition may last one or two days or one to three weeks. The children may recover from the disease gradually, but paralysis in some form will remain.

After the paralysis has existed a while, examination usually shows that both extremities of one side are affected, the arm more than the leg. There are no sensory disturbances. The growth is, to a certain extent, retarded. The muscles are somewhat atrophied. There is no reaction of degeneration, but almost always more or less muscular contraction. Variations from this course sometimes occur. Children occasionally die suddenly before the diagnosis can be positively made. Chronic forms sometimes occur. In these cases the initial symptoms may last one or two months. Convulsions occur frequently, resulting from the new inflammatory areas. Strümpell[1] believes this disease is analogous to acute poliomyelitis; the initial symptoms are so similar that in a given case it might be difficult to decide whether a cerebral or spinal paralysis would ensue. In another group of cases, which belongs more particularly to the inferior polioencephalitis group, the acute infectious diseases very often precede the onset of the encephalitis. One of Leyden's cases of this type is of interest:

A 15-year-old boy fell suddenly ill with headache, nausea and dizziness, and on the third day these symptoms were augmented by fever, vomiting, difficulty in swallowing; the symptoms progressed, and on the sixth day of his illness, in addition to the headache and dizziness, he developed rigidity of the neck, ataxia, paralysis of both facial nerves, paralysis of the hypoglossal, of the soft palate and vocal cords. He also had a mild fever. His pulse was slow; there was no involvement of the eye muscles at first; later on he showed paralysis of the abducens. He died on the elcventh day of his sickness, and the autopsy showed a pneumonia with an encephalitis in the region of the medulla.

Oppenheim[9] reported another casc of encephalitis located in the pons:

A girl, aged 12, suffered from a swollen face, with pain on the left side. She also suffered from headache. Very soon she became mentally dull. There was no fever; there were no changes in the eye grounds. Some time later, however, the left facial nerve became entirely paralyzed, with a hemiparesis and incoördination of both arms, though most marked in the left arm. The tendon reflexes became increased; the soft palate was paretic; articulation was difficult. All of these symptoms pointed to a focal lesion involving the pons in the region of the left facial nerve, and extending so as to involve the sensory and left pyramidal tracts.

In the majority of cases, the disease begins in the midst of perfect health, like an acute infection, and in the manner already referred to. Convulsions may occur, of the Jacksonian type, or may be general. The vomiting may be persistent, and the child remain in a febrile, stuporous or comatose condition for several days. The temperature is variable; the coma rarely complete. At first sight, one is inclined to think of meningitis or perhaps some other acute infectious disease which is in process of development, with decided nervous symptoms; but in a few days the fever declines; the child becomes more quiet, and thus, on the fourth or fifth or perhaps the tenth day of the disease, the paralysis becomes evident. There may be an arm involved, a complete hemiplegia, or a crossed paralysis due to a lesion in the pons, as has already been referred to.

At the very onset the reflexes may be diminished, and a generalized paralysis of all of the extremities seems to be present. In several days, however, the unaffected extremities begin to regain their motor function, and later on the child begins to move to some extent the affected arm or leg. At this time the reflexes on the involved side are usually increased, and the Babinski toe sign becomes manifest.

In addition to the nervous symptoms already enumerated, symptoms indicating vasomotor disturbances are not infrequent; for example, the nutrition of the skin is affected. It is likely to appear blue on account of capillary and venous stasis in the hand and foot of the affected side. Such an extremity is cyanotic; sometimes slightly edematous, and not infrequently cooler than the limb of the other side. The skin is dry; the sweat glands less active on the unaffected side. Very often, and particularly in the milder cases, the intellect of the child remains practically unimpaired. At other times where the lesion is extensive, more or less permanent mental deficiency supervenes even to the production of idiocy. Such a disturbance of motor speech may persist in varying degree. In many cases epileptic convulsions develop from which recovery is impossible.

Schultze[8] first called attention to the fact that deaf-mutism may result from acute encephalitis. He cites the following case:

A 2½-year-old child, healthy, received a blow on the head. The same evening it cried for several hours, and on the following night had convulsions with slight fever. For two days thereafter it was stupid, restless and refused food. On the fourth day it showed some improvement. Ten days after the beginning of the disease it was found that the child was deaf; also that it had slight strabismus; no other paralysis existed. The deafness continued although the middle ear was normal.

In some of the milder cases the paralytic symptoms may entirely disappear, and Medin reports a recovery without permanent paralysis. Comby also reports a case in a 7-year-old girl cured without a trace of paralysis.

Complete recoveries have been reported after slight attacks, usually slight paralysis remaining. The terminal of the cases may be summarized thus:

1. A small proportion of the cases do not survive, death occurring in the second or third week or as early as the first day.

2. If the encephalitis occurs during acute infectious disease, death may result from cerebral conditions or from the original disease.

3. Some cases improve within a few days, without any signs of disease after six or eight weeks. There is always a liability to hemiparesis of one side of the body or to epilepsy.

4. The majority of cases with initial flaccidity give rise later to the spastic type of hemiplegia.

The diagnosis during the acute stage is nearly always difficult. One is liable to think of an acute infectious disease, on the one hand, or a meningitis, on the other. The diagnosis may be confused with that of a tubercu-

9. Oppenheim: "Enceph. Specielle Pathologie und Therapie," Nothnagel, 1897.

lous meningitis. Spinal puncture in these cases is of but little assistance. If hemiplegia exists or cranial nerve paralysis, with returning consciousness, the diagnosis is rendered comparatively easy.

In short, if in the midst of absolute health, or in connection with an acute febrile disease, the child during the first years of life is seized with recurring convulsions, or vomiting, if a hemiplegia results, or if, later, psychic disturbances, contractures, postparalytic hemichorea, epilepsy or idiocy develop, the diagnosis of encephalitis can be made with reasonable certainty.

DISCUSSION.

DR. J. ROSS SNYDER, Birmingham, Ala., said that he was much impressed with the closeness of Dr. Abt's clinical observations in the cases of acute encephalitis presented because the differentiation of the disease depends more on the closer findings than on the large and glaring symptoms.

DR. WILLIAM J. BUTLER, Chicago, said that few subjects in pediatrics admit of more speculation as to their etiology than the acute cerebral palsies of early childhood. This is chiefly due to the fact that these patients seldom die in the acute stage. As a consequence pathologic information is rather scant and the cases usually come to postmortem months or years after the actual disease when secondary changes have occurred which render a determination of the primary condition impossible. This has given rise to the hypothesis which, he believed, was originated by Benedict, and reviewed by Strümpell (who employed the term polioencephalitis), of acute encephalitis, being responsible for a large number of the spastic hemiplegias of childhood. The acute cases that have come to postmortem early are usually dependent on vascular changes, whether it is a thrombus, embolism or hemorrhage. In the vast number that fail to come to postmortem the assumption of an encephalitis frequently prevails. In recent years some cases at postmortem have disclosed changes of an encephalitis similar to those which occur in the adult as described by Oppenheim and others. The cases are interesting from more than one standpoint; for instance, Strümpell first spoke of the onset of encephalitis as being characterized by convulsions and coma. These were not present in one of the cases mentioned by Dr. Abt. These views have been modified also by Strümpell to cover such cases; that is, the onset may be gradual and convulsions may not play a part in the clinical picture. Dr. Abt's first case is of interest, because of the meningeal symptoms present, and because of the generalized spasticity that existed and which leaves one in doubt as to whether the process did not extend beyond the brain as might occur in an isolated case of cerebrospinal meningitis in which there is often a cerebritis as well as a meningitis.

DR. GEORGE N. ACKER, Washington, said that the condition at times is very hard to diagnose, and recalled a case during an epidemic of grippe in which the child had bronchitis and was in a state of coma in which it remained five days. The muscles of the neck were rigid and all four extremities were paralyzed. The diagnosis was poliomyelitis anterior with acute encephalitis. He has seen these cases in influenza and it is only occasionally that they recover without lesion. He has also seen cases of hemiplegia with typhoid fever with perfect recovery. It is very difficult to make a diagnosis in the first stages.

DR. J. H. W. RHEIN, Philadelphia, said that in the last two years he had had an opportunity to study microscopically the brains in several cases of encephalitis, one of which was acute. In a case of scarlet fever which displayed very few meningeal symptoms clinically the brain showed microscopically undoubted, though not marked, evidence of encephalitis. There were a few hemorrhages in the pia which was also the seat of a slight round-cell infiltration. In the cortex there was some perivascular dilation as well. In a second case an infant developed during the course of whooping-cough gradual weakness of the legs and arms associated with progressive spasticity. Finally the child became idiotic and exhibited all the symptoms of spastic diplegia. Toward the end of about two and a half years convulsions appeared and the child died during one of the convulsion seizures. A study of the brain microscopically revealed the presence of a pronounced perivascular distension in the cortex, especially in the paracentral region. The perivascular spaces were four or five times as big as was the vessel itself and in many instances the perivascular spaces were filled partially or entirely with round cells. This process was widespread throughout the cortex and there is no doubt that a number of fibers in the cortex must have been compressed and destroyed. At all events there was a perceptible degeneration in both lateral columns of the cortex which is best explained in this way. He has studied the question of encephalitis extensively from a pathologic standpoint, not only in children but in adults. In recent papers he has described a small area of softening in the cortex due to a necrotic process occurring as a result of disease of the vessels from various causes and has also referred to the presence of acute inflammation in the cortex. These conditions are most frequently the outcome of tertiary syphilis and are often only seen after careful and extensive study of the brain microscopically.

DR. H. LOWENBURG, Philadelphia, referred to acute infectious diseases and especially measles as causes of hemiplegia. He has seen a case of acute hemiplegia in a child in which convulsions occurred on the second day of the eruption and lasted forty-eight hours. After the convulsions the child had complete hemiplegia of the left side. The case was regarded as one of hemorrhage somewhere above the decussation of the seventh nerve, most probably in the cortex. The hemiplegia of the face, arm and leg was on the same side. He asked whether in Dr. Abt's case the reactions of degeneration were taken. In these cases, after their recovery from the acute symptoms, he imagined that the absence or the presence of the reactions of degeneration would help to differentiate the resultant palsy from acute poliomyelitis.

DR. I. A. ABT, Chicago, said that cases of acute encephalitis vary in intensity. Some are rapidly fatal; some give rise to severe and permanent paralyses, and in some marked improvement occurs and only slight paralysis persists. Some have epileptic seizures, and in not a few the mentality suffers, the patients becoming feeble-minded. So far as the electric reactions are concerned, early in the course of the disease they would have little diagnostic significance. Later, the reaction would be proportionate to the amount of descending nerve degeneration.

Clinical Notes

DANGER FROM THE CARELESS USE OF THE ALKALOID OF THE SUPRARENAL GLAND.

BARTON H. POTTS, M.D.
Aurist and Laryngologist to the German Hospital.
PHILADELPHIA.

I feel that it is time to speak a word of caution and warning in regard to the indiscriminate and careless use of a preparation that is being widely advertised and prescribed as harmless, viz., the alkaloid of the suprarenal gland. In its proper field and under careful observation, this preparation is very valuable and of great assistance to the operator. But I feel that the present reckless use will result in harm and cast opprobrium on a really valuable remedy. Several cases that have come under my care have brought this sharply to my notice.

DANGER TO THE MUCOUS MEMBRANE.

Application of this remedy to the mucous membrane causes an intense shrinking in the caliber of the blood vessels, and when this effect wears away there is a dilatation to and beyond normal. The later effect of the preparation is to raise the blood pressure very decidedly, and when the vessels dilate this necessarily causes a marked degree of engorgement of the tissues. Every careful observer has doubtless noticed this in his work. It is further

proved by the greater frequency of secondary hemorrhages following its use in operations.

This relaxation of the vessel walls must be overcome, and Nature is generally able to rectify the condition without trouble. But when a tissue, for any reason, is relaxed time after time it loses its power of returning to normal and in the case of the vessel walls this means an increased blood supply. When this process is repeated, times without number almost, it must follow that a condition of persistent turgescence will present itself, and this is the condition I have seen in several of my patients. These patients were all sufferers from rose cold or hay fever, but their later condition is worse than their first.

CASE 1.—J. C., a business man, aged 39, of good habits and good health except for his periodic attacks, was advised by a lay friend to use one of the well known preparations of the suprarenal gland and supplied himself with the remedy and an atomizer in the summer of 1905. He used it several times a day during his attack.

When the hay fever subsided he noticed that there was a fullness in his nose that did not disappear, but on the contrary became more marked. He was treated by his physician for a time without relief and then sought the aid of a rhinologist. The condition refused to yield to any form of treatment and symptoms of Eustachian congestion supervening, it became necessary to remove portions of both middle turbinates. After a long course of treatment he went to his home improved, but bearing traces of the condition with him.

CASE 2.—M. D., a girl, aged 18, under the advice of her physician used one of the preparations several times a day for an attack of rose cold. Her symptoms were much like those of Case 1, but yielded more readily to treatment. No operative interference was necessary; but her mucous membrane is much relaxed and engorged and it is doubtful if she has yet heard the last of it.

CASE 3.—H. R., one of my patients, was treated for rose cold during the past summer and the same condition presented itself. Fortunately the developing turgescence was recognized and the treatment changed, but not early enough to prevent some damage, as a trace of the swelling is still present.

Preparations of this character are being used at present without any supervision, the patient being advised to use them frequently, as there is no likelihood of harm resulting.

I feel that this frequent use will result, in many instances, in a condition that may leave its trace always and that the practice is to be strongly condemned. As already said, the remedy is a valuable one in its proper field, but it should be used with care and under observation.

LATENT TUBERCULOSIS IN CHILDREN.

PATRICK MOLONEY, L.R.C.P., L.R.C.S. (Edin.).
BEAUFORT WEST, CAPE COLONY, AFRICA.

The editorial in THE JOURNAL, May 19, 1906, on "Latent Tuberculosis in Children" has induced me to submit notes (from memory) of a case of tuberculous meningitis appearing after recovery from measles.

Personal and Family History.—John T., aged 3, illegitimate. Family history showed one case of phthisis and one of tuberculous meningitis, uncle and aunt respectively.

Clinical History.—Patient had measles early in January, 1906. After the rash disappeared the temperature did not fall to normal, but varied from 100 to 101. There were no complications that could be discovered to account for this. Eventually the child was taken to the country. On his return he was no better, rather thinner. His father stated that at night the child was very restless and complained of headache, and very great pain and tenderness in the epigastrium.

The child was extremely irritable, drowsy, and screamed on being touched, so that examination was impossible. Vomiting was not present; pulse, 80, not irregular; respiration normal; temperature, 101; no squint; abdomen full; tongue clean. Later the child became comatose and the classical symptoms of the disease developed; intermittent pulse, vomiting, twitching of upper extremities, Cheyne-Stokes respiration, etc. An ophthalmoscopic examination showed blurring edges of disc and white patches on lower temporal artery. These patches had no pigment edge.

Death occurred fourteen days after arrival from country, so that since onset of restlessness at night and headache, disease terminated on twenty-second day.

The interesting features in this case were the presence of the intense epigastric tenderness and pain. As has been mentioned vomiting occurred late in disease. Emmet Holt, in the second edition of his book, does not mention this fact, neither do Ashley and Wright in the 1892 edition of their handbook, "Diseases of Children."

The failure of temperature to fall to normal after disappearance of rash with the apparent absence of prominent complications with a family history of tuberculosis should be regarded with suspicion in cases of exanthemata.

The tubercle bacillus is a comparatively new arrival in South Africa. The native races who adopt civilized customs, as well as those who do not, fall an easy prey to its ravages.

THE SUCCESSFUL REMOVAL FROM THE MALE BLADDER OF A LOST FILIFORM BOUGIE BY ENDOVESICAL MANIPULATIONS.

VICTOR D. LESPINASSE, M.D.
Instructor in Genitourinary Surgery, Northwestern University Medical School.
CHICAGO.

Patient.—Mr. H. was referred to me by Dr. A. E. Mowry for treatment of a very tight stricture in the anterior urethra about 2 cm. inside of the meatus.

Examination.—I found a very nervous, excitable individual with a history of two mild attacks of urethritis, and recovery in each instance within two months. The present trouble began about six weeks ago when he noticed that it took him longer to empty his bladder than formerly and that the stream was with difficulty kept in the urinal. This condition has become progressively worse.

Examination.—On having him urinate into the glasses, it was observed that the stream was thin, crooked and of slight force, although the act was augmented by using the abdominal muscles. The urine was clear except for a few threads. On palpating the penis a hard, indurated mass could be felt on the under side about 2 cm. from the meatus.

Treatment.—On instrumentation, it was found that the meatus would admit only a No. 22 F. sound, and that this was arrested at 2 cm. from the meatus. I ran down the scale of sounds to 15 F., and none of them passing, I determined to use the urethroscope. When the stricture was observed, it appeared to be annular and the mucous membrane over it was practically normal. The opening was plainly visible and not obscured by folds or rugæ. On attempting to pass the filiform of the Le Fort instrument it passed easily and on attaching sound No. 12 F., I was enabled to pass it with little force; and there was a sensation of yielding at the strictured point. It was left in place 10 minutes. After withdrawal the patient was able to urinate with much greater freedom. He was told to report for repetition of the treatment on the third day.

He presented himself later, reporting that he was much better and had been free from distress since the treatment, except

that this day he noticed that the stream of urine was becoming a trifle smaller. Again the filiform passed easily and the sound No. 12 was passed easily in and all went well until I started to depress the handle in order to engage the tip in the membranous urethra, it seemed to catch and then immediately broke away and simultaneously the patient experienced severe pain in the penis. At that time I attributed this to the passage of the instrument over the sensitive prostatic urethra or traumatism to the verumontanum, but in reality it was due to the sharp edge of the metal fitting scraping the urethra. The apparatus was allowed to remain in place for 10 minutes and when withdrawn the filiform was missing, although its metallic fitting was still firmly screwed to the sound.

The patient arose and was told to urinate but no filiform appeared. He was then placed on the table and with a slender urethral alligator forceps, which just passed the stricture, the urethra was explored but nothing was obtained.

Operation (assisted by Dr. Alfred Fowler).—Cocain anesthesia of urethra and meatus was induced. The meatus was cut to 30 F. with scissors. Urethroscopic tube 28 F. was introduced to stricture. With a Kollman knife the band was divided to 28 F. in three places, one ventral incision and one on each lateral wall. The tube was slipped past the stricture and digital compression made on it to check hemorrhage. Next the tube was removed and the bladder distended with water. The cystoscope (Fig. 1) was introduced armed with small vesical forceps (Cabot's), and after a moment or two of manipulation the filiform was located, grasped and removed.

For the relief of such conditions we have two general methods: 1. Cutting operations, suprapubic and perineal. 2. Intravesical manipulation. Cutting operations are simpler, requiring only general instruments and general skill, but they entail a convalescence of at least a week, and in conditions of this sort any opening made in the bladder tends to stay open as long as there is obstruction in the natural passages. Hence, after recovery from the operation, the patient is in the same or even worse condition than before.

Intravesical manipulations require special instruments and special skill, especially the ability to introduce the instruments through the urethra.

In this particular case the latter seemed the best plan of procedure as opening the urethral lumen to a sufficient size to introduce the cystoscope would also be a step

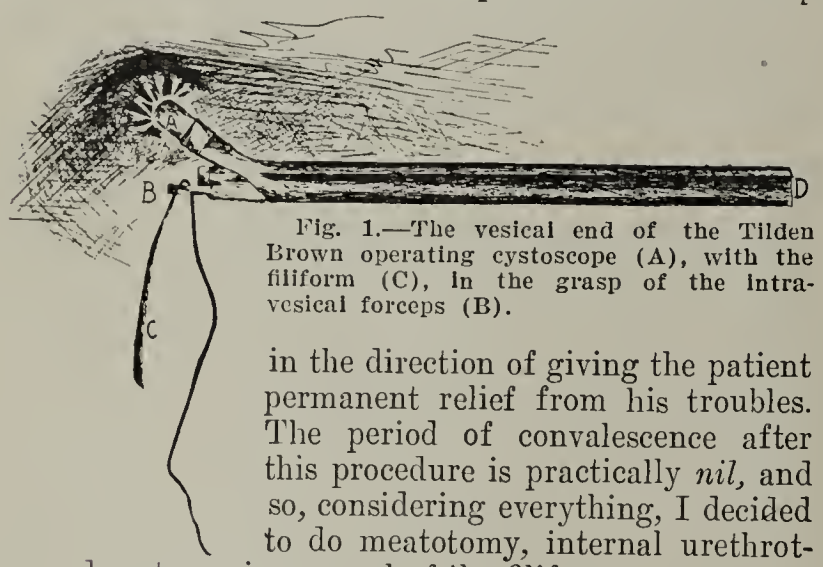


Fig. 1.—The vesical end of the Tilden Brown operating cystoscope (A), with the filiform (C), in the grasp of the intravesical forceps (B).

in the direction of giving the patient permanent relief from his troubles. The period of convalescence after this procedure is practically *nil,* and so, considering everything, I decided to do meatotomy, internal urethrotomy and cystoscopic removal of the filiform.

The Le Fort instrument (Fig. 2) employed was one of several purchased one year ago. Several of its fellows had cracked, as they usually do, and been discarded. This was the second time this particular filiform was used, and, on examination before using, it seemed to be perfect. The instruments are made with a single stout thread through the center and frequently crack, but this thread usually holds. In this instance, the entire filiform came away from its metal fitting.

The strain on the instrument during use is lateral and depends on the weight of the sound and the force used by the operator. In actual practice this occurs at the entrance to the stricture, or in the normal urethra at the bulbo-membranous junction. The filiform is already in a fixed portion of the urethral canal and it must lift the following sound up to the opening. Just here the operator should be very careful to have the sound in the axis of the urethra and with gentle manipulations relieve the strain and guide the sound into the fixed portion of the canal.

Fig. 2.—The LeFort instrument separated into its component parts: (A), the sound; (B), metal fitting; (C), the filiform.

SUMMARY.

Conditions in This Case.—Man: Filiform in bladder; stricture hard, admitting No. 12 F. 2 cm. from meatus; meatus admitting No. 22 F.

Measures Employed.—Urination, failure; urethral forceps, failure; meatotomy to 30 F., internal urethrotomy through urethroscopic tube with Kollman's knife to 28 F., hemostasis by digital pressure; cystoscopy, filiform grasped and removed by intravesical forceps, prescription given for urotropin (hexamethylenamin) and patient sent home.

Things to Be Learned.—1. To examine carefully all instruments before using them. 2. To remember that in using instruments or technic one should be prepared in armamentarium and in mechanical skill to meet any possible complication.

Result in This Particular Case.—The result was most happy. The man came into the office with a hard stricture of No. 12 F. and not nerve enough to have it operated on. When he left he had an urethral canal that was 28 F. in size and which with proper care will remain so.

RECOVERY FROM PIERCING OF BODY WITH HAY HARPOON.

C. A. HEATON, M.D.
M'CUTCHENVILLE, OHIO.

While recoveries are recorded in cases of bullet wounds of the lungs, it is more rare to have recovery take place after a wound by as large an instrument as a large prong of a harpoon hay fork.

On July 18, 1906, W. Z., 23 years of age, in robust health, was injured by the fall of a double-harpoon hay fork, weighing 20 pounds, from its attachment in the barn, 25 feet above him. One prong of the fork, having a diameter of 2 inches one way by ⅞ of an inch the other, perforated the chest, entering in the first intercostal space half an inch to the left of the sternum and emerging in the seventh intercostal space about five inches to the left of the spinal column. The distance between the two wounds was about 12 inches. The man fell on his knees, but did not lose consciousness and, seeing the crossbar of the fork just in front of his eyes, pushed it upward until he removed

the long piece of steel from his body. He was able to get off the wagon unaided and with a little assistance walked about ten rods to the house.

The patient was found in a condition bordering on collapse from shock and loss of blood. Penetration of the lung was indicated by the air mixed with the blood that was flowing from the wounds. Fortunately neither clavicle nor ribs were broken, but the clavicle was grazed. Assisted by my son, Dr. J. J. Heaton, I proceeded at once to dress the wounds, using every care to have them as aseptic as possible. The wound of entrance, which was about two and one-half inches long, was closed with several stitches and an antiseptic dressing applied, but the wound of exit was left open to provide for drainage. This wound was about one and a half inches in length, slightly smaller than that of entrance on account of the tapering of the prong of the fork toward its end.

The patient was put to bed in a semirecumbent position inclining to the left. He received during the night three hypodermic injections of morphin sulphate, grain ¼, and a little brandy in hot water. The wounds were dressed twice daily for two weeks. His improvement was continuous and without incident except a chill which occurred one night a week later. This, although exciting apprehension of septicemia, was followed by no serious result.

ACUTE ATROPHY OF THE LIVER FROM CHLOROFORM POISONING.

H. E. CUSHING, M.D.
CHAMPAIGN, ILL.

History.—On Aug. 23, 1906, I operated on Mrs. C., aged 27, for appendicitis. She had had two previous attacks and refused operation for three days before I operated. Her history, except the previous attacks, has no bearing on the case. She had taken nothing into the stomach but water for 48 hours, and only one-half cup of chocolate for 64 hours. The bowels had been loose before the attack and were in the best of condition at the time of the operation. The administration of chloroform was begun at 9:45 a. m., and lasted one and one-half hours. It was given with great care and was well taken, but required a large quantity, four ounces being used. The operation was what we call clean. The patient rallied well from the anesthetic, vomited only three times, the last time at 5 p. m., and was only slightly nauseated.

Postoperative History.—On being put to bed the pulse was 96 and of good quality. Nitrate of strychnin, gr. 1/40, administered hypodermatically every three hours. The pulse continued rapid all day, being 94 at 5 p. m., with respiration 24.

August 24: The patient slept brokenly during the night. At 6 a. m. temperature was 98, pulse 96, respiration 20. At 3 a. m. she began taking tablets of mild chlorid of mercury, gr. 1, soda bicarbonate, gr. 4, every hour until she had taken eight. She took water freely. At 11:30 a. m. she took 2 drams of a saturated solution of magnesium sulphate, and this dose was repeated once an hour for three doses. At 2:30 p. m., at her request, an enema of soapsuds was given by the nurse. This she retained for an hour, when it passed with a slight bowel movement and some flatus. The bowels moved freely at 5 p. m. and at 7 p. m., there was a slight involuntary movement. The kidneys had acted freely, once by catheter, at other times involuntarily. At 8 p. m. the temperature was 99, pulse 100, and of good quality, respiration 24. The patient had been very nervous and restless all day; there was no pain, but she was continually calling for something, and complained of being hungry. There was a peculiar look about the face which I did not like. It had a waxy appearance as seen after death.

August 25: At 5 a. m. the temperature was 98, pulse 98, respiration 24. She had not slept much and was restless all night. The patient complained of rheumatic pain in the shoulder and chest. She had taken one-half cup of chicken broth. She complained so much of pain that I directed that she be given codein, gr. ¼, every half-hour until relieved; she took five of these tablets. At 12 o'clock, noon, temperature was 98, pulse 96. At 5 p. m., temperature was 98.3, pulse 102, respiration 26. She had taken one-half glass of egg-nogg at 10:30 a. m., a cup of broth at 1 p. m., and an egg-nogg at 4 p. m., but she vomited immediately after the last. She slept nearly all the afternoon. At 7:30 p. m., she took a cup of broth, and at 10 p. m. vomited. At this hour temperature was 98 and pulse was 102.

August 26: At 5 a. m. temperature was 97.4, pulse 102, respiration 26. The patient had been very restless and irritable all night. She vomited at 2 a. m. and 5 a. m., and called for water continually, but was given only a small quantity at a time after 5 a. m. The abdomen was flat and flatus was passed freely. The pupils were dilated, but both the same. A marked icteric hue was noticeable on the legs and body. The kidneys were acting well, but the urine was dark. The patient slept one hour during the morning, but was restless when awake. At 11 a. m. temperature was 98.4, pulse 120. At 2 p. m., temperature was 99.1, by rectum, pulse 130. At 12:30 p. m. the mind seemed to be wandering. At 2 p. m. the face was deeply flushed and the jaundice color was deeper and had spread over the whole body and face. The patient was very restless, throwing her hands to her head, crying out hysterically as if in fear, and pleading piteously. Her breath was very offensive, almost fecal in odor. The tongue was covered with a dirty brown coat. Dr. Gray saw the case in consultation with me at 3 p. m. The abdomen was flat, no tympany. There was no tenderness except over the gall bladder, where pressure caused flinching. The dressings were raised and the wound found in good condition. The patient was so restless and was crying out so much that codein, gr. ¼, was administered hypodermically, and digitalin, gr. 1/50, was given in the same way every three hours. At 7 p. m. urine was passed by catheter, at least one pint in quantity. At 9 p. m. the pulse was 120, respiration 26. She was so delirious and restless that codein, gr. ¼, was given. The jaundice color was pronounced over the whole body.

August 27: At 3 a. m. the pulse was 140. At 6 a. m. pulse was 130. At 8 a. m. temperature, axillary, was 100.4; the patient was very yellow in color. Every point where the hypodermic needle had been used showed a hemorrhagic spot and hemorrhagic spots appeared on the body. The patient was in a comatose condition all night; the pupils were dilated to the full extent. At 7 a. m. 10 ounces of urine were passed by catheter; this was saved and analyzed. The temperature and pulse rose; at 12:30 p. m. axillary temperature was 104.8; pulse, 148.

The patient died at 1:45 p. m., one hundred hours from the time of beginning the anesthetic. No postmortem examination was allowed.

Examination of Urine.—Dr. Jennie Lyons made a thorough examination of the urine and made the following report:

Urine, catheterized specimen. Chemical examination: Color, greenish-yellowing-brown. Urine not clear, precipitate yellow. Specific gravity, 1,015. Reaction, acid. Albumin, small amount. No sugar. Bile, by nitric acid test, acetone.

Microscopic examination: Granular casts. Leucin. Tyrosin.

TYPHOID FEVER IN A PATIENT AGED SEVENTY YEARS.

WILLIAM G. DAGGETT, A.B., M.D.
Clinical Lecturer in Medicine, Yale University.
NEW HAVEN, CONN.

The infrequency of the occurrence of typhoid fever in persons of advanced years has long been a matter of note and makes it seem important to place on record the following case which came under my observation:

Patient.—Mrs. E. P., aged 70, had never had a serious illness. Family history was negative.

Present Illness.—Patient passed most of the winter of 1905-06 in Florida, and noticed no departure from her usual health until late in March, when she found herself very easily fatigued. She left Florida, March 29, for Savannah, Ga., and remained in the latter place until April 12. While in Savannah she had more or less diarrhea and marked lassitude. She arrived in Washington, D. C., April 13. The lassitude per-

sisted and her strength was notably below par. On April 19 she fell on a marble staircase in her hotel and sustained a scalp wound, which entailed a moderate loss of blood and required several stitches. Then for the first time she came under medical observation, and on April 22 a nurse was employed. During the ensuing four days her temperature ranged from 99.6 to 102.8, and on April 25 several rose spots were discovered on the abdomen.

Clinical History.—She was at once removed to the Garfield Memorial Hospital with a diagnosis of typhoid fever. On admission no Widal reaction could be obtained, the urine showed the presence of albumin and hyaline and granular casts, a blood count gave the number of leucocytes as 8,132, and a vaginal examination showed considerable discharge from a senile endometritis. The temperature fell gradually until, on May 1, it was normal. The negative result of the Widal test, the subsidence of the temperature, and the discovery of other conditions which might account for some constitutional disturbance caused the abandonment of the idea that she was suffering from typhoid infection. She left Washington and came directly to her home in New Haven, still weak, but able to be up and dressed.

I saw her for the first time on May 8, when, about 8 a. m., she had a sharp chill lasting about one hour, with her temperature rising to 104. This was followed by a continued fever, which lasted until May 23, the temperature declining by lysis. On May 10 one characteristic rose spot was found on the abdomen. The vaginal discharge ceased shortly after her arrival in New Haven. During the febrile period there were no toxic symptoms, and her convalescence was uneventful.

Laboratory Findings.—The laboratory findings at various times were as follows:

April 25, blood examination by Dr. H. H. Donnally, Washington, showed hgb., 65 per cent., no Widal reaction, 12,700 leucocytes, no plasmodia, and slight poikilocytosis.

April 26, at the Garfield Memorial Hospital, the leucocytes numbered 8,132. April 27, at the same hospital, urine examination resulted as follows: Color, lemon; reaction, acid; appearance, cloudy; specific gravity, 1,010; albumin, a faint pus trace; a few hyaline and finely granular casts; a moderate number of flat epithelial cells, some round cells, one cuboidal cell, and a large number of leucocytes.

May 9, Dr. C. J. Bartlett, professor of pathology in Yale University, examined the blood and found 5,288 r. b. c., 8,980 w. b. c., no plasmodia malariæ, and a partial, though insufficient response to the Widal test. Differential count gave 66.5 per cent. of polymorphonuclear leucocytes, 26.75 per cent. small mononuclears, and 6.75 per cent. large mononuclears.

May 13, Dr. Bartlett made a second Widal test which resulted in a somewhat more pronounced clumping, but still not sufficient for a positive diagnosis. His urine examination showed rather less than 0.01 per cent. of albumin, some granular casts, and a few pus cells.

June 18, urine examination by Dr. D. M. Lewis, bacteriologist of the board of health of New Haven, showed a trace of albumin and marked bacilluria. From this specimen, which was obtained by catheter under strict precautions, a pure culture of the colon bacillus was isolated.

June 27, Dr. Lewis obtained a positive Widal reaction, and no reaction from the organism found in the urine.

The clinical history and laboratory findings thus show that the patient suffered from a mild typhoid infection, with a relapse; a coincident senile endometritis; and a subacute nephritis caused by the colon bacillus.

THE CURE OF TUBERCULOUS PERITONITIS.

ROBERT L. PITFIELD, M. D.

PHILADELPHIA.

It has long been known that if a case of primary tuberculosis of the peritoneum is operated on, the peritineal cavity merely opened and then closed, the disease undergoes a retrograde change, the patient sometimes recovering permanently.

At one time it was supposed that the iodoform sprinkled in the cavity of the peritoneum had something to do with the cure. Again, others thought that the simple entrance of air was a factor.

It has occurred to me after aiding in the opening of the peritoneum in a case of primary tuberculosis of that cavity, that the surgeon unwittingly performed Pfeiffer's phenomenon. After simply opening the peritoneum evacuating some fluid and closing it the patient began to improve and now, after three months, is nearly well. Instead of the air doing any good, the improvement may have been wrought by the access of some of the patient's blood to the serous cavity. The blood, no doubt, in all such cases contains some immune serum and the serous fluid contains some complement, perhaps.

Immune serum plus complement, plus tubercle bacilli, may effect a bacteriolysis of the latter, as in the case of cholera bacilli, when some serum from an animal immunized against cholera bacilli and the natural serum (complement) in the peritoneal cavity, if mixed either in the peritoneal cavity or in a test tube, effect a solution of the bacilli. Members of the myco-bacteriaceæ group (tubercle bacilli) do not dissolve ordinarily in the presence of either immune serum or some complement serum or both, but they may do so in the body. Or, the admixture of the immune serum with the peritoneal contents may effect a destruction of the bacilli by reason of the opsonins that it may contain, or in some other way stimulate phagocytosis.

At any rate, it would do the patient very little harm to allow some of his own blood to remain behind in the peritoneum after a section, and I write this merely as a suggestion to surgeons to try this simple experiment of leaving a few drams of blood behind before closing the abdomen in tuberculous peritonitis cases that come to operation.

In support of this theory that the free blood in the peritoneum effects a cure in some cases, I need but mention that in those cases that are thoroughly irrigated recovery is not nearly so apt to take place.

5211 Wayne Avenue, Germantown.

CESAREAN SECTION PERFORMED BY A COW.

W. B. MORSE, M.D.

SALEM, OREGON.

[We recently received a newspaper clipping giving an account of a pregnant woman being gored by a cow, the abdominal walls and the uterus being lacerated so that the child was born. We wrote to Dr. Morse about the matter and he states that the newspaper account was correct. His report follows.—ED.]

Mrs. W. E., aged 31, pregnant at full term with her third child, was standing in the road about 60 feet from the house, watching her husband unload hay from a wagon. A vicious two-year-old heifer charged her and inserted a very sharp horn into the abdomen near the anterior superior spinous process of the ilium. It penetrated the abdominal wall, uterus and membranes, but escaped the child. The point of the horn then emerged again just to one side and below the umbilicus. The result was two transverse rents, the upper one about 5 inches long and the other clear across the abdomen. The child was delivered through the larger opening and fell to the road, where it was picked up by the father. I made an eight-mile trip and arrived about 20 minutes after the mother's death from hemorrhage. The uterus was outside the body, torn clear across and inverted, with afterbirth and membranes, still attached. The child is still alive and doing well. I have found histories of several similar cases in Gould and Pyle's work on medical curiosities.

New and Non-Official Remedies

THE FOLLOWING ARTICLES HAVE BEEN TENTATIVELY ACCEPTED BY THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR INCLUSION IN THE PROPOSED ANNUAL, "NEW AND NON-OFFICIAL REMEDIES." THEIR ACCEPTANCE HAS BEEN BASED LARGELY ON EVIDENCE SUPPLIED BY THE MANUFACTURER OR HIS AGENT, BUT TO SOME EXTENT ON INVESTIGATION MADE BY OR UNDER THE DIRECTION OF THE COUNCIL. CRITICISMS AND CORRECTIONS ARE ASKED FOR TO AID IN THE REVISION OF THE MATTER BEFORE FINAL ACCEPTANCE AND PUBLICATION IN BOOK FORM.

THE COUNCIL DESIRES PHYSICIANS TO UNDERSTAND THAT THE ACCEPTANCE OF AN ARTICLE DOES NOT NECESSARILY MEAN A RECOMMENDATION, BUT THAT SO FAR AS KNOWN IT COMPLIES WITH THE RULES ADOPTED BY THE COUNCIL.

W. A. PUCKNER, SECRETARY.

EUCAMUL.

An emulsion of oil of eucalyptus in glycerin and honey, containing 0.13 Cc. (2 minims) of the eucalyptus oil in 4 Cc. (1 fluidram).

Dosage.—2 to 4 Cc. (½ to 1 fluidram), as needed.

Prepared by Edward G. Binz, Los Angeles, Cal.

EUGALLOL.

A solution consisting of two parts of monoacetylpyrogallol, $C_6H_3(OH)_2(CH_3COO)$, and one part of acetone.

It is prepared by treatment of pyrogallol with acetic anhydride or acetyl chloride in the presence of a solvent and subsequent removal of the solvent by distillation. It is also obtained by other methods.

It is a syrupy, dark yellow, transparent liquid, readily soluble in water and in acetone, and containing 66 per cent. of monacetylpyrogallol.

Actions and Uses.—Eugallol acts as an energetic substitute for pyrogallol, but is liable to produce local irritation when applied to the skin.

It is recommended for external use in old and persistent cases of psoriasis.

Dosage.—It is applied pure by pencilling once a day, covering the painted part with powdered zinc oxide, suspending the application a few days if it is followed by irritation.

Manufactured by Knoll & Co., Ludwigshafen a. Rh. and New York. German patent No. 104,663.

EUMYDRIN.

METHYLATROPINE NITRATE. ATROPINEMETHYL NITRATE.

Eumydrin, $C_6H_5(HO.CH_2)CH.CO_2.C_7H_{11}N(CH_3)_2NO_3 = C_{18}H_{27}O_6.N_2$ is the nitrate of methylated atropine.

It is obtained by the interaction of methyl-atropine halide with metallic nitrates, or by treatment of the methyl atropine base with nitric acid, by interaction of atropine with methyl nitrate and by other patented processes.

It is a white, crystalline salt, melting at 163° C. (325.4° F.), odorless, permanent and readily soluble in water or alcohol, but very sparingly soluble in ether or chloroform. A quantity of 100 parts contains atropine equivalent to about 90 parts of atropine sulphate.

On warming 0.01 Gm. of eumydrin with 1.5 Cc. of sulphuric acid until the solution begins to darken, and at once adding, carefully, 2 Cc. of water a violet color develops and at the same time a faint peculiar aromatic odor appears. A solution of 0.05 Gm. of eumydrin in 3 Cc. of water remains clear on the addition of ether 1 Cc. of sodium hydroxide solution or of ammonia water.

Being an alkaloidal salt it is incompatible with alkaline solutions, etc.

Actions and Uses.—Eumydrin is a mydriatic and antihydrotic, replacing atropine sulphate both internally and externally in corresponding doses. It is claimed that it dilates the pupil more rapidly than atropine and the dilatation is of shorter duration—being intermediate in these respects between atropine and homatropine. It is said to be much less toxic than atropine, so that larger doses may be given to secure the effect. It is particularly recommended for the treatment of night sweats, whooping cough and the relief of enuresis.

Dosage.—Internally as an antihyrotic, 0.001 to 0.0025 Gm. (1/60 to 1/24 grain). Externally as mydriatic, in solutions about one-tenth stronger than the usual atropine solutions.

Manufactured by Farbenfabriken, vorm. Friedr. Bayer & Co., Elberfeld, Germany (Continental Color & Chemical Co., New York). German patent Nos. 137,622 and 138,443.

EUPHORIN.

PHENYL URETHANE. PHENYLETHYLURETHANE. PHENYLCARBAMIC ACID ETHYL ESTER.

Euphorin, $CO(HN.C_6H_5)(OC_2H_5) = C_9H_{11}O_2N$, is a compound closely allied to Æthylis Carbamas, U. S. P. (urethane) and differing from this by the replacement of the group NH_2 by NHC_6H_5.

It is prepared by the action of aniline on chlorformic acid ethyl ester.

It forms colorless needles or a white powder, melting at 50°-51° C. (122° to 123.8° F.), having a faint aromatic odor and clove-like taste. It is almost insoluble in water, readily soluble in diluted alcohol, in alcohol and in ether.

Actions and Uses.—Euphorin is anodyne, antipyretic and antiseptic.

It is recommended in rheumatism, sciatica, headache, etc. Externally it is recommended to be applied as a dusting powder in venereal and skin diseases, ulcers, burns, etc.

Dosage.—0.5 to 1 Gm. (8 to 15 grains) dissolved in wine or suspended in water; externally in powder, in lanolin ointment and in superfatted soap.

Manufactured by Fabrik von Heyden, Radebeul near Dresden. U. S. trademark.

EUPHTHALMIN.

EUPHTHALMINE HYDROCHLORIDE. PHENYLGLYCOLYL-METHYL-VINYL DIACETONALKAMINE HYDROCHLORIDE.

Euphthalmin, $C_{17}H_{25}NO_3.HCl$, is a mandelic acid derivative of beta-eucaine.

It is prepared by methylating vinyldiacetonalkamine (obtained as explained under beta-eucaine), treating the methylvinyldiacetonalkamine produced with a weak solution of mandelic acid (phenylglycollic acid) dissolving the base (euphthalmine) so obtained in ether, passing gaseous hydrochloric acid into the solution, and crystallizing the salt from its ether solution.

It is a colorless, crystalline powder, melting at 183° C. (361.4° F.), readily soluble in water and in 2 parts of alcohol.

Actions and Uses.—Euphthalmin produces prompt mydriasis free from anesthetic action, pain, corneal irritation, or rise in arterial tension. It has little or no effect on accommodation, and this disappears more rapidly than with atropine, cocaine, homatropine, etc. In its effects on the general system, euphthalmine very closely resembles atropine.

It is recommended as an aid in ophthalmoscopic examinations in place of atropine, homatropine, etc.

Dosage.—2 or 3 drops of a 5 to 10 per cent. solution, according to age of the patient and the nature of the case, are instilled into the eye.

Manufactured by Chemische Fabrik auf Actien, vorm. E. Schering, Berlin (Schering & Glatz, New York). U. S. patent No. 663,754. U. S. trademark No. 35,541.

EUQUININE.

QUININE ETHYL CARBONATE. EUCHININ. CHININUM AETHYLCARBONICUM.

Euquinine, $C_2H_5O.CO.OC_{20}H_{23}N_2 = C_{23}H_{28}O_4N_2$, is quinine ethyl carbonic acid ester.

It is prepared by the action of chlorocarbonic ethyl ester on quinine $C_2H_5O.COCl + C_{20}H_{24}N_2O_2 = HCl + C_2H_5O.CO.OC_{20}H_{23}N_2O$.

It is a light fleecy conglomeration of delicate, white needles, melting at 95° C. (203° F.) and practically tasteless. It is sparingly soluble in water, but readily soluble in alcohol, ether and chloroform. It is slightly alkaline in reaction, forming well crystallizable, bitter salts with acids. It produces a tasteless tannate.

Its solutions in acidulated water have the characteristic bitter taste of quinine. On heating a mixture of 0.2 Gm. of euquinine, 3 Cc. of solution of sodium hydroxide and a little iodine, the odor of iodoform is manifested. Like quinine its solution in dilute sulphuric acid exhibits strong, blue fluorescence, and it gives also the so-called thalleioquin reaction, but not the herapathite reaction. A solution in nitric acid should not change on addition of either silver nitrate or barium chloride.

It should leave no residue on combustion.

It is incompatible with acids which will develop the bitter quinine taste.

Actions and Uses.—Euquinine is claimed to have the same action as quinine, with the advantage of being tasteless, owing to its insolubility in water and alkaline media.

Dosage.—The same as quinine.

Manufactured by Vereinigte Chininfabriken, Zimmer & Co., Frankfort a. M. (Merck & Co., New York). U. S. patent No. 585,068. U. S. trademarks Nos. 640,977 and 701,523.

EURESOL.

RESORCIN MONACETATE. MONACETYL-RESORCINOL.

Euresol, $C_6H_4(OH)(CH_3COO) = C_8H_8O_3$, is an acetic acid ester of resorcinol (1,3-phen-diol).

It is obtained by acting on resorcinol with acetic anhydride or acetyl chloride, thus: $C_6H_4(OH)_2 + CH_3COCl = C_6H_4(OH)(CH_3COO) + HCl$, or by otherwise replacing one hydroxyl group in resorcinol with an acetyl group.

It is a thick, honey-yellow, oily liquid, having an agreeable odor, boiling at 283° C. (541.4° F.) and soluble in acetone.

Actions and Uses.—Its action is similar to that of resorcinol, but milder and more lasting because of the gradual liberation of the phenol.

Euresol is recommended in acne, sycosis, seborrhea, and particularly in the treatment of chillblains.

Dosage.—It is applied in 5 to 20 per cent. ointments and in acetone solution.

Manufactured by Knoll & Co., Ludwigshafen a. Rh. and New York. German patents Nos. 103,857 and 122,145.

EURESOL SOAP.

CHILLBLAIN SOAP.

A soft soap, supplied in tubes, containing euresol, eucalyptol and oil of turpentine.

Prepared by Knoll & Co., Ludwigshafen and New York.

EUROPHEN.

DI-ISOBUTYL-CRESOL IODIDE. ISOBUTYL-ORTHOCRESOL IODIDE. IODOSO-DIISOBUTYL-CRESOL.

Europhen, $C_6H_3(C_4H_9)(CH_3)(OI).C_6H_2(CH_3)(:O)(.C_4H_9) = C_{22}H_{29}O_2I$, is a condensation product of 2 molecules of isobutylorthocresol, with 1 atom of iodine, analogous to Thymolis Iodidum, U. S. P.

It is prepared by the addition of a solution of iodine in potassium iodide to an alkaline solution of isobutylcresol, washing the precipitate with water, and drying it at a moderate temperature.

It forms a yellow, voluminous powder, fusing at 110° C. (230° F.), containing 28 per cent. of iodine, and having a faint saffron-like odor. It is insoluble in water or glycerin, but readily soluble in alcohol, ether, chloroform and the fixed oils. It is permanent in the dry state, but splits off iodine readily when moistened, and rapidly when heated with water at 70° C. (158° F.), particularly in the presence of alkalies.

When triturated with glycerin and water, it yields a filtrate which is turned bluish by the addition of freshly prepared starch paste. Its alcoholic solution produces a yellow precipitate with mercuric chloride.

It should not be exposed to heat, light, or damp air; it is incompatible with starch, metallic oxides, mercuric salts, and alkaline hydrates and carbonates.

Actions and Uses.—Its action is similar to that of iodoform and thymol iodide. It is claimed especially to be useful in the treatment of venereal ulcerations.

Dosage.—Europhen may be given internally in the form of pills in doses of from 0.2 to 0.3 Gm. (3 to 5 grains). Locally it may be used as a dusting powder in substance or mixed with an equal quantity of finely powdered boric acid, as an ointment, with wool fat (lanolin), or as a 5 per cent. embrocation, dissolved in olive oil.

Manufactured by Farbenfabriken, vorm. Friedr. Bayer & Co., Elberfeld, Germany (Continental Color & Chemical Co., New York). U. S. patent No. 495,204; German patent No. 56,830. U. S. trademark No. 17,888.

FERRICHTHYOL.

FERRIC ICHTHYOL.

A derivative of ichthyol in which about 2.5 per cent. of iron is contained.

It is a brown-black, voluminous, non-hygroscopic powder, nearly odorless and tasteless. It is insoluble in the ordinary solvents as also in diluted acids and alkalies.

Actions and Uses.—It is said to be alterative, antiseptic, hematinic and tonic. It is recommended in anemia, chlorosis, etc.

Dosage.—1 to 2 Gm. (15 to 30 grains) in tablets.

Manufactured by the Ichthyol Co., Hamburg (Merck & Co., New York).

FERRIPYRINE.

A name applied to a product identical with Ferropyrine, which see.

Manufactured by Farbwerke, vorm. Meister, Lucius & Bruening, Hochst a. M. (Victor Koechi & Co., New York).

FERROPYRINE.

ANTIPYRINEFERRIC CHLORIDE. ANTIPYRINA CUM FERRO.

Ferropyrine, $(C_{11}H_{12}N_2O)_3.(FeCl_3)_2$, is a compound of antipyrine and ferric chloride, containing about 36 per cent. of ferric chloride and 64 per cent. of antipyrine.

It is prepared by mixing solutions of 5 parts of crystallized ferric chloride in 10 parts of 96 per cent. alcohol and 5 parts of antipyrine in 10 parts of alcohol and 50 parts of ether, washing the precipitate with ether, and drying it on porous tiles at 40° C. (104° F.).

It is a yellowish-red, crystalline powder, having an acid-astringent taste. It is soluble in 5 parts of cold water, but requires 9 parts of hot water for solution; it is soluble in alcohol, but insoluble in ether.

It should form a clear blood-red solution in water. Its aqueous solution 1:5 affords a precipitate of ferric hydroxide on addition of ammonia in excess, and the filtrate should give no reaction for nitric or sulphuric acid, nor heavy metals, and should yield a residue on evaporation, which is completely volatilized when heated on platinum. After acidification with nitric acid, the filtrate yields a white precipitate with silver nitrate and in the filtrate from this the antipyrine may be determined by means of ferric chloride or by nitrous acid.

It is incompatible with alkalies, their carbonates and bicarbonates.

Actions and Uses.—It is hematinic, hemostatic, astringent, analgesic and tonic. Its styptic action is pronounced and said not to be accompanied by irritant effects. According to Fraenkel it combines with its hemostatic properties the injurious by-actions which limit the application of ferric chloride as a hemostatic.

It is recommended internally in anemia, chlorosis, gastric and intestinal hemorrhage, intestinal catarrh, etc., in migraine and neuralgia. Externally it is applied in gonorrhea, epistaxis, hemorrhages from the throat or vagina, or bleeding after tooth extraction, etc.

Dosage.—0.3 to 1 Gm. (5 to 15 grains) in powder, with sugar and peppermint, or in solution. Externally 1 to 1.5 per cent. solution as injection, to 20 per cent. solution or pure for hemorrhages.

Manufactured by Knoll & Co., Ludwigshafen. U. S. patent No. 548,352. U. S. trademark No. 26,860.

FORMALIN.

A name applied to Liquor Formaldehydi, U. S. P.

Manufactured by Chemische Fabrik auf Actien, vorm. E. Schering, Berlin. (Schering & Glatz, New York). U. S. trademark No. 23,629.

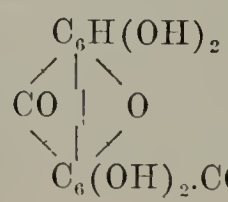
FORMIN.

A name applied to Hexamethylenamina, U. S. P.

Manufactured by E. Merck, Darmstadt. (Merck & Co., New York).

GALLOGEN.

ELLAGIC ACID. BENZOARIC ACID.

Gallogen,  $= C_{14}H_6O_8$ is an-

hydrous ellagic acid prepared from Divi-divi, the pods of *Cæsalpina coriaria,* containing more than 50 per cent of tannin.

It is prepared by prolonged boiling of an aqueous extraction of divi divi, whereby the amorphous acid assumes a crystalline condition and is completely precipitated, then collecting the precipitate, washing and drying.

It is a yellowish, odoriess, tasteless powder, insoluble in all acid and neutral liquids, but soluble in alkaline liquids to the amount of 2 per cent., such solutions being, however, very readily oxidized.

Its solutions in alkaline media give all the reactions of tannic acid with iron salts, gelatin solution, etc. With fuming nitric acid it gives a characteristic dark red color.

It is incompatible with alkaline liquids.

Actions and Uses.—Gallogen is an astringent and antidiarrheic, slowly decomposed in the intestinal tract, thus exerting its astringent action gradually during its passage.

It has been recommended in dysentery, cholera infantum, diarrhea, and is said to be useful even in those of a syphilitic or tuberculous origin.

Dosage.—0.3 to 0.5 Gm. (5 to 8 grains) for children; 0.6 to 1 Gm. (10 to 15 grains) for adults, suspended in neutral or slightly acid media.

Manufactured by Ad. Heinemann, Eberswalde (C. Bischoff & Co., New York). German patents Nos. 137,033 and 137,034.

GERMICIDAL SOAP.

A solid product containing 2 per cent. of mercuric iodide in combination with hard soap.

It is a bluish-white powder compressed into cakes. It is soluble in water.

Actions and Uses.—It is claimed to be a disinfectant which does not coagulate albumin nor corrode steel or nickel. It is stated by the manufacturers that its germicidal activity has been thoroughly tested on typhoid, cholera, diphtheria and pus germs, which it destroys within one minute.

It is recommended for the disinfection of the hands and for washing out infected cavities.

Dosage.—Applied externally, dissolved in water. A mild form is also prepared containing 1 per cent. of mercuric iodide; also a soft soap containing 1 per cent. of mercuric iodide.

Prepared by Parke, Davis & Co., Detroit, Mich.

GLUTOL-SCHLEICH.

FORMALIN GELATIN.

A chemical combination of gelatin and formaldehyde.

It is prepared by dissolving 500 Gm. of gelatin in 375 Gm. of water, adding 25 drops of formaldehyde solution, exposing the mass so obtained, in a covered box over lime, to the vapor of formaldehyde by the aid of a layer of cotton wool saturated with it until a dry mass is produced, and reducing this to powder.

It is a white, odorless powder, insoluble in water under ordinary conditions, but dissolved when heated with water under pressure, the solution thus produced gelatinizing on cooling. It is not changed by the action of acids, alkalies or saline compounds of any reaction. but is slowly decomposed in contact with living cells. It may be sterilized without decomposition.

Action and Uses.—It is claimed that while in itself non-antiseptic, non-irritant and non-toxic, it becomes antiseptic and bactericidal in contact with living cells, in consequence of the elimination of nascent formaldehyde, which is split off very slowly but steadily.

Glutol is recommended as an odorless, non-irritant, non-poisonous aseptic dressing, having sustained antiseptic action for wounds, ulcers, burns, etc.

Dosage.—It is employed undiluted as a dusting powder, etc.

Manufactured by Chemische Fabrik auf Actien, vorm. E. Schering, Berlin (Schering & Glatz, New York). German patent No. 104,365, U. S. patent No. 572,295. U. S. trademark No. 28,431.

GLYCERIN EMOLLIENT.

A mixture containing: Oil of gaultheria, 2 Gm. (30 grains), boric acid, 23 Gm. (¾ ounce), corn starch, 88 Gm. (3 ounces), glycerin, 885 Gm. (28.5 ounces), tragacanth, 17 Gm. (263 grains). It is a transparent soft solid.

Actions and Uses.—It is intended for use as a lubricant in gynecologic and surgical practice.

Dosage.—It is put up in collapsible tubes and is to be applied to the dry skin. After use it can be washed off in a stream of water.

Prepared by Parke, Davis & Co., Detroit, Mich.

GLYCEROPHOSPHATES.

GLYCERINOPHOSPHATES. GLYCERYLPHOSPHATES.

Glycerophosphates are the salts of glycerophosphoric acid, $H_2(CH_2OH.CHOH.CH_2)PO_4$; usually the two remaining hydrogen atoms of phosphoric acid are replaced by the base: $Na_2(CH_2OH.CHOH.CH_2)PO_4$.

The calcium compound is prepared by heating glycerin and phosphoric acid under certain conditions for a considerable time and then neutralizing with lime. The precipitated calcium phosphate is removed, while the calcium glycerophosphate remains in solution. From the calcium salt the other salts can be prepared by precipitating calcium by the appropriate salt of the metal whose glycerophosphate is desired. Thus the addition of sodium carbonate to a solution of calcium glycerophosphate yields insoluble calcium carbonate and a solution of sodium glycerophosphate.

The potassium and sodium glycerophosphates are dense syrupy liquids, exceedingly soluble in water, and represent 75 per cent. of the respective salts in a dry condition. The calcium, iron, lithium, magnesium and manganese glycerophosphates are pulverulent salts, moderately soluble in water.

When a solution of a glycerophosphate is tested by ammonium molybdate for the presence of a phosphate, only a slight yellow precipitate should form at once.

The watery solutions of glycerophosphates decompose in a short time. They should be made from sterilized water, but hot liquids should not be used for their preparation.

Actions and Uses.—These salts were introduced as "nerve foods" and tonics on the theory that their phosphorus, being a step nearer lecithin, is assimilated more readily than that of hypophosphites. Neither the experimental nor the clinical evidence is considered conclusive by all authorities.

Dosage.—The potassium and sodium salts may be given hypodermically 0.2 to 0.25 Gm. (3 to 4 grains) in normal saline solution, or *per os* 0.25 to 0.65 Gm. (4 to 10 grains) in water or syrup. The calcium, iron, lithium, magnesium and manganese salts 0.2 to 0.65 Gm. (3 to 10 grains) doses, preferably in the form of tablets; the quinin salt in 0.1 to 0.33 Gm. (1½ to 5 grains), and the strychnine salt in 0.001 to 0.003 Gm. (1/60 to 1/20 grain) doses.

GUAIACOL-SALOL.

SALICYLATE OF GUAIACOL. GUAIACOLIS SALICYLAS.

Guaiacol-salol, $C_6H_4.OH.COO(.C_6H_4.OCH_3) = C_{14}H_{12}O_4$, is the salicylic ester of guaiacol, analogous to salol.

It is prepared by treating a mixture of sodium salicylate and sodium guaiacolate, in molecular proportions, with phosphorus oxychloride, washing the product of the reaction with water and crystallizing from alcohol.

It is a white crystalline powder, tasteless, but having a salol-like odor. It is insoluble in water, but soluble in alcohol, ether and chloroform. It melts at 65° C. (149° F.).

Being an ester, it is decomposed by alkalies and alkaline carbonates with the formation of alkali salicylate and alkali guaiacolate. Strong acids decompose it with the liberation of guaiacol and salicylic acid. The alcoholic solution is colored wine red by the addition of ferric chloride, but if the alcoholic solution be dropped into a watery solution of ferric chloride a turbidity but no coloration is produced.

Actions and Dosage.—This compound acts like its constituents, being antiseptic and antirheumatic. It is recommended in phthisical diarrhea, dysentery, rheumatism, marasmus, chorea, etc.

Dosage.—1 Gm. (15 grains).

Manufactured by the Fabrik von Heyden, Radebeul near Dresden (Merck & Co., New York).

Correction Concerning Cascara Tonic Laxative Globules.—In THE JOURNAL, Sept. 29, 1906, page 1021, concerning Cascara Tonic Laxative Globules, it is stated that each globule is said to contain 0.2 gm. (30 grains), etc. This should read: Each globule is said to contain 0.2 gm. (3 grains), etc.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

103 DEARBORN AVENUE . . . . CHICAGO, ILL.

Cable Address . . . "Medic, Chicago"

Subscription price.....Five dollars per annum in advance

[*For other information see second page following reading matter.*]

SATURDAY, OCTOBER 6, 1906.

THE AMERICAN MEDICAL DIRECTORY.

Two weeks ago we considered the neeessity of eoöperation between the various state lieensing bodies through the medium of some eentral body which would aet solely for the good of the profession and the publie. It was shown that the organized profession itself is the only agency which ean be expeeted to assume this duty and to perform this function. The work to be done, as well as the advantages to be derived from it, were set forth. Let us now eonsider one of the tangible and visible results of this work; namely, the publication of a list of the liecnsed physieians of the United States.

A medical directory should be a list of physieians legally entitled to praetiee medieine. It should be as complete and as aecurate as it is possible to make it. It should be based on information that is reliable and impartial. It should treat all individuals alike, without discrimination or favoritism, and it should be published for the purpose of affording information and not primarily for commereial gain. The neeessity of such a directory was early recognized by the leaders of the profession. Agitation along this line was begun at the first meeting of the American Medical Association.[1] In 1856, a committee was appointed to arrange for the publication of a directory.[2] This committee actually began preparation for its compilation. Praetieal obstaeles in the way, however, prevented the consummation of the work and the projeet was abandoned. In 1868, Dr. S. D. Gross, then president of the Association, emphasized the need of such a work and, in accordance with his recommendation, another committee was appointed,[3] but again it was found impraetieable to undertake this work at the time.

No further effort was made until 1901. In the report of the Committee on Reorganization, made at St. Paul that year, one of the objeets outlined to be gained by a systematie organization was the publication by the profession itself of a reliable national directory.[4] As the St. Paul session was the starting point of a praetieal organization of the profession, so also was it the starting of a new era in which praetieal work for practical results was to be the keynote. The first effort toward the issuance of a eomplete national directory was the proposal to publish a Blue-Book. This matter was considered by the Board of Trustees in 1903 and, in 1904, at Atlantic City it was brought before the House of Delegates and "a directory of the members of the American Medical Association and of the state associations, by states, counties, etc.," was authorized.[5] This book was to contain the names, addresses, etc., of members of the organization, i. e., the members of the various constituent state associations and their component county branches, with membership in the American Medical Association indicated. The main idea was to make this Blue-Book the beginning of what should finally be a complete national directory, including all licensed physicians.

In the fall of 1904, the preliminary work on the Blue-Book was commenced, but, as the work progressed, it was realized that the labor of preparing such a book was almost as great as would be the compilation of a complete directory, since, to verify the registration, graduation, etc., of each individual member, it would be necessary to have a complete list of all licentiates and graduates. Furthermore, it was realized that a Blue-Book would be incomplete except in so far as it related to the members of the organization and that it would, therefore, be practically valueless as a directory.

During the following winter, the owners of the Standard Directory made a proposition to the Trustees to dispose of all their directory property to the Association. Only two editions of this directory had been published, the third being then in course of preparation. After considerable negotiation, the Board of Trustees, in February, 1905, obtained an option on the property, at the reduced price of $6,000. The owners of the Standard stipulated that this offer was not to be made public until the deal was closed. At the Portland Session, the Board of Trustees recommended to the House of Delegates that it authorize the purchase of the Standard Directory and the publication of a general directory of

1. See proceedings of the preliminary convention, 1847; resolution of Dr. J. L. Pierce of Michigan.
2. Transactions, vol. ix, p. 41.
3. Transactions, vol. xix, p. 35.
4. The report stated: "Another thing greatly needed is a reliable physicians' directory or register. Business houses are publishing what are called medical directories, but without exception all are unreliable. The best of them contain the names of pretenders, 'patent-medicine' vendors, horse doctors, *et id genus omne*. The qualifications may be given correctly, if the necessary information can be gotten easily, otherwise not. The profession in this, as in many other ways, is used by commercial houses as a means for money-making, and if there is money in publishing a directory, and there most certainly is, the profession should have it, and at the same time control it. The profession in Great Britain to a great extent at least controls the Medical Register. We should control it here. With such a system of registration as recommended, all information necessary for issuing a directory will always be ready without extra expense; it will insure a reliable book and one that will mean something. It will not be necessary to go outside of the profession for anything. The printing establishment now owned by the AMERICAN MEDICAL ASSOCIATION, with a little addition, can get out the book. State directories can be printed, and the same material, without any change, can be used in making the national directory. There will be no duplication of work. The national directories can be issued biennially or triennially, and a supplement annually, and also the state, when called for, separately and annually. The matter when once set up can be left standing, and corrections made as necessary. The Committee believes that the publication of an official, reliable directory is worthy of earnest consideration on the part of every physician."—THE JOURNAL A. M. A., May 25, 1901, p. 1451.
5. THE JOURNAL A. M. A., June 18, 1904, p. 1645.

the physicians of the United States, since it was possible to buy the Standard at a nominal figure and since the cost of compiling a complete directory would be comparatively little more than that of compiling the Blue-Book alone. This recommendation was adopted by the House of Delegates.

In this connection, it should be explained that the main object in purchasing the "Standard Directory" was to have a list of names as a basis to work on; not that the "Standard Directory" was to be taken as a model or that the information it contained was to be accepted as authoritative. It must be appreciated that the Association could not use the Standard or any other directory in compiling its book without the permission of the owners of such a directory. The right to use the "Standard Directory," even if no tangible property had been obtained with it, would have been worth much more than it actually cost. The tangible property acquired was alone well worth the price paid.

Active work was begun on the Directory in September, 1905. Complete copies of the records were obtained from the secretary of each state board. These records have been used for the compilation of the Directory. A staff of 6,000 correspondents was organized, consisting of one correspondent in each county, preferably the county secretary, and an additional correspondent in each town having ten or more physicians. Lists of graduates for the last five years have been obtained from every medical college now in existence, thus supplementing a fairly complete list of graduates obtained with the "Standard Directory." It is intended, immediately after the publication of the first edition of the American Medical Directory, to verify completely all the college information in the possession of the Association, and, thereafter, to keep the records corrected from year to year.

The work of compiling and editing the Directory and of comparing each state with the records of the state board has required more time than was at first estimated, as, in some cases, the records had been carelessly and incorrectly kept, and a large amount of correspondence and checking has been necessary to detect the many errors and correct the discrepancies. The work of compilation, revision and correction is now practically finished and the directory is in type. Each state, as completed, is being submitted in proof to the secretary of the licensing body of that state for verification, since only names of practicing physicians who are legally qualified will appear in the directory. It is not expected that the first edition will be absolutely free from error. Such a result would necessitate state records which were absolutely correct, correspondents who were infallible and compilers and proofreaders who were incapable of error.

TOBACCO AND ARTERIOSCLEROSIS.

The various studies of the causes of arteriosclerosis, particularly the purely clinical studies, have been so discordant in result that a certain amount of confusion regarding the etiology of this condition exists. As an example may be named the contrast between the general acceptance of the major rôle played by alcohol in the etiology of this disease, and the conclusions reached by Cabot in his study of the subject showing that alcohol, *per se,* had apparently little effect. There are a number of factors connected with the subject which render judgment of great difficulty. The variation in vulnerability of the vessels in different people is of great importance, as is the fact that in the complex conditions of modern life man is subjected to the action of a variety of poisons, either produced by himself or wilfully or unknowingly introduced from without. While it may be safe to assume that a single substance, like alcohol, does not of itself lead to arteriosclerosis, it is by no means safe to conclude that it may not be a potent factor acting in conjunction with other poisons.

Aside from alcohol, one of the most commonly used poisonous substances is tobacco. Its active principle, nicotin, has long been known to be one of the most deadly of poisons, and, though it is present in almost infinitesimal quantities in tobacco smoke, smokers themselves would probably be the last to deny that it may produce very appreciable physiologic action. As a possible source of damage to the arteries, tobacco has been under suspicion for some time and, clinically at any rate, its connection with some forms of vascular disease, such as intermittent claudication, seems fairly well established. The investigations of Adler, made some years ago, in which tobacco infusion was administered to animals *per os,* did not seem to bear out clinical results, and the more recent experiments of Josué, who used intravenous introduction, were also negative. Adler and Hensel,[1] working without knowledge of Josué's failure, have reached definite results from the intravenous injection of pure nicotin. Briefly stated, those results are the production in rabbits of a form of arterial degeneration similar to that produced by adrenalin. It is to be noted that not only arteriosclerosis, but also actual aneurisms were produced. These lesions, and the adrenalin lesions, are not, it must be confessed, exactly comparable to those of human arteriosclerosis, and there are those who have argued that the conditions are in no way comparable. This, we think, is an extreme view, and does not take into account the natural differences in reaction to a given reagent which the tissues of different animals show.

While the discussion of the pros and cons of this question is out of place here, it is fair to assume, we think, that nicotin is capable of setting up arterial changes in man. The exact rôle of tobacco in the production of arteriosclerosis, of course, can only be conjectured.

1. Jour. of Med. Research, 1906, vol. xv. p 229.

PREVENTION OF EPIDEMIC CEREBROSPINAL MENINGITIS.

Reference has been made several times recently in these columns to the genesis and the prevention of epidemic cerebrospinal meningitis. The exact mode of spreading of this disease was not understood satisfactorily until Goodwin and others demonstrated the frequency with which the meningococci occur in the nose and throat of healthy persons who come into contact with the sick. While the cocci die out quickly when deposited on clothing and other articles, they persist in the throat and nose as on a favorable culture medium. It appears that in persons who carry meningococci in this way no symptoms may be produced at all or, at most, only local catarrhal disturbances.

It is easy to understand how carriers of meningococci must be a source of great danger to individuals readily susceptible to meningeal infection and to whom the organisms may be transferred either by contact or by droplets of moisture expelled in coughing, sneezing, speaking, etc. In order to minimize this danger so far as possible, Ostermann[1] suggests that the public should be informed of the mode of spreading and asked to observe certain precautions for at least three weeks after individual contact with a case of meningitis, among which may be mentioned the following: Close contact, kissing, the use of common utensils for eating and drinking, and the mingling with crowds, e. g., on street cars, should be avoided. In speaking and coughing one should keep at least an arm's length from other persons, and discharges from the mouth and nose should be deposited preferably on rags or paper handkerchiefs that may be burned; if handkerchiefs are used they, as well as other infected clothing, should be boiled for at least ten minutes or soaked in some standard germicidal solution.

These precautionary measures have the approval of Flügge, and they seem to be reasonable and practicable. The rapidity with which meningococci die out as they leave the human body render extensive disinfection of rooms, etc., occupied by the sick superfluous, and it is the meningococcus carrier that must be rendered as nearly harmless as possible. Plainly the number of possible carriers should be reduced to an absolute minimum by promptly limiting to the greatest extent possible the number of persons that come into contact with the sick or with those that care for the sick. Hence isolation, preferably in hospital, is clearly indicated. Physicians and nurses should bear in mind the danger of themselves becoming meningococcus carriers and thus conveying the disease further, and it would seem advisable for them to wear protective masks over the mouth and nose while in close contact with the sick. Finally, now that the mode of spreading of epidemic meningitis appears to be understood better than ever before, health officials, as well as physicians in general, must not delay to assume the responsibility for the prompt enforcement of the precautionary measures that so obviously are indicated.

1. Deut. med. Wochenschr., 1906, xxxii, No. 11.

EXPERIMENTAL DIABETES.

The experimental production of glycosuria may be brought about in several ways, the most prominent being by extirpation of the pancreas and the puncture of a certain point in the floor of the fourth ventricle discovered by Claude Bernard. Besides these methods, glycosuria may be brought about by the action of various poisons. Some of these poisons, e. g., phloridzin, while producing glycosuria, do not increase the amount of sugar in the blood, but rather diminish it, and they are supposed to act by injuring the kidney so that its power to hold back the sugar in the blood is destroyed and the blood is drained of sugar. As this process does not conform to the phenomena of diabetes the result of these poisons can not be considered as experimental diabetes, and is of minor interest to the practitioner aside from the use of phloridzin in testing kidney function.

Other poisons, e. g., piperidin, adrenalin, carbon monoxid, chloroform, etc., temporarily, at least, may produce a disturbance of sugar metabolism, apparently very similar to that which occurs in diabetes. There is hyperglycemia and consequent glycosuria. Some of these substances have been shown by Herter to act very energetically when applied locally to the abdominal organs, especially the pancreas. The first explanation of this fact was that a disturbance of pancreatic function was directly brought about by injury to the organ or by the reducing action of the substances applied. F. P. Underhill,[1] however, brings forward evidence to show that the influence of these drugs is not local nor to be explained by direct influence on any particular organ, as the pancreas, but is probably due to the dyspnea which they cause. "Dyspnea, however induced, calls forth a marked hyperglycemia and glycosuria without the intervention of any drugs; the typical rise in the sugar content of the blood produced by piperidin fails to appear when oxygen is administered. It is likely, therefore, that this experimental diabetes involves defective oxidation of carbohydrate material. Hyperglycemia is the constant factor, and glycosuria follows whenever there is a sufficient accumulation of carbohydrates in the blood.

The considerations presented are inadequate to explain the phenomena of adrenalin diabetes. The administration of oxygen after painting the pancreas with adrenalin did not prevent the hyperglycemia and glycosuria. The action of this substance appears to be unique.

1. Jour. of Biologic Chemistry, vol. i., No. 1, Oct., 1905.

THE VIABILITY OF THE TYPHOID BACILLUS IN WATER.

While it is generally conceded that, under ordinary circumstances, typhoid fever is most commonly transmitted by water, our knowledge of the life history of the germ in this medium is far from complete. So far as ice is concerned, the matter of the viability of the germ has been pretty well tested, and it is now generally conceded that, except under very unusual circumstances, the danger from this source is practically *nil*. It has generally been assumed that in water under normal circumstances the bacillus of typhoid fever disappears rather rapidly, partly as the result of physical agencies like light and sedimentation, and partly as the result of the antagonism of the saprophytes with which it is associated. This is, no doubt, partly true, but the recent work of Wheeler[1] shows that it is not entirely true. For example, Wheeler found that in well water with considerable organic pollution, at room temperature, and with the exclusion of light, a considerable increase in the number of typhoid bacilli took place. It is in wells that such conditions of contamination and exclusion of temperature might be found. Wheeler also showed that not all saprophytes are antagonistic to typhoid bacillus; one was observed which grew symbiotically with it, both organisms increasing in number. These facts should be borne in mind in investigating the sources of typhoid epidemics.

ETHER DAY.

The student of medicine in the United States, in a short-sighted endeavor to have his valuable time all count for what he considers "practical," is prone to slight the historical side of medicine. Some of our medical faculties are endeavoring to give their students at least a taste of medical history, but there are other means of emphasizing historical dates, for example, ceremonies commemorating events of either local, state or national importance. Such a contribution to the education of the student and physician is "Ether Day," which will be celebrated October 16 at the Massachusetts General Hospital. This day will be the sixtieth anniversary of the performance of the first operation under ether at that hospital. This historic event was duly commemorated ten years ago on the occasion of the semicentennial celebration of the introduction of surgical anesthesia, and since that occasion the hospital authorities have undertaken to establish the custom of keeping "Ether Day" each year, to remind the young physicians and nurses of the hospital of its most sacred tradition. It would not be amiss for other hospitals, colleges or societies to establish some such custom so that the memory of America's great contributions to medicine will not grow dim to the coming generation. There are abundant opportunities for such events if we will but look about us, and these commemorations will not only contribute to historical knowledge, but to the general *esprit de corps* of the profession.

1. Jour. of Med. Research, 1906, vol. xv, p. 269.

Medical News

GEORGIA.

Medical College Opens.—The Atlanta College of Physicians and Surgeons opened for its fifty-second annual session, October 1. The exercises were held in the new building, which, when completed, will have cost about $100,000.

Personal.—Dr. T. O. Powell, superintendent of the Georgia State Sanitarium, Milledgeville, is reported to be critically ill. ——Dr. Percy L. Jones, Cedartown, now on duty at Fort Preble, Maine, will leave for Europe January 1.——Dr. William A. Jackson, Atlanta, a member of the Governor's Horse Guard, while on his way to the armory for duty, September 20, was assaulted by negroes. He was removed to a sanitarium and is reported to be improving.

Pasteur Institute Report.—The board of governors of the Pasteur Institute and Laboratory of Georgia, Atlanta, held its sixth annual meeting October 6. During the year 471 patients were treated, with only 2 deaths. Three patients developed the disease after treatment had been begun and died with hydrophobia. The following officers were elected for the ensuing year: President, Dr. Henry R. Slack, Atlanta; vice-president, Dr. James H. McDuffie, Columbus; physician in charge, Dr. Charles N. Brawner, Atlanta; assistant, Dr. Edward C. Cartledge, Atlanta, and pathologist, Dr. Claude A. Smith, Atlanta.

ILLINOIS.

Children Must be Vaccinated.—To prevent further spread of smallpox, Dr. Robert C. J. Meyer, commissioner of health of Moline, has ordered that those pupils of the Garfield school who can not show certificates of examination must be vaccinated.

Diphtheria.—The board of education of Marseilles has ordered the schools of that city to be closed for an indefinite period on account of diphtheria. Sunday school meetings and other gatherings have been prohibited, and a strict quarantine has been established at the infected points.

Will Not Permit Names in Paper.—At a regular meeting of the Decatur Medical Society, September 25, it was decided that the names of members should not be mentioned in connection with medical matters in the daily press and that, if such notice should appear, the physician in question would be requested to explain at the next meeting of the society.

Epileptics' Home.—Dr. George A. Zeller, superintendent of the Illinois Hospital for the Incurable Insane, Bartonville, in a paper to be read before the State Conference of Charities, recommends the transformation of the Soldiers Orphans' Home at Normal into a hospital for epileptics. There are, he says, 6,000 epileptics in the state; of these 1,400 now receive aid in some form, and the need for such an institution is urgent.

Conference of Charities.—The eleventh annual State Conference of Charities will be held in Chicago, October 24, 25 and 26. The meeting of October 24 will be held in the Sherman House, that of October 25 at Hull House, and the evening conference at Chicago Commons. The morning session of October 26 will be held at the Abraham Lincoln Center, Oakwood Boulevard and Langley Avenue, and the afternoon conference at the South Park Club house.

Chicago.

Deaths of the Week.—For the week ended October 6, 566 deaths were reported, equivalent to an annual mortality of 14.40 per 1,000. The deaths numbered 28 more than for the preceding week, and 94 more than for the corresponding week of 1905. Acute intestinal diseases still lead the death causes with 103 deaths, followed by heart disease, with 61; consumption, with 55; violence, including suicide, with 40, and nephritis, with 27. The principal increases in death causes were from heart disease and pneumonia.

September Mortality.—During September 2,327 deaths were reported, equivalent to an annual mortality rate of 13.81 per 1,000. During the previous month there were 2,487 deaths reported, and during September, 1905, 2,101, equivalent to annual mortality rates of 14.29 and 12.84 per 1,000, respectively. Of the deceedents 598 were under one year of age, and 401 over 60 years of age. The chief causes of death were: Acute intestinal diseases, 470; consumption, 253; Bright's disease, 180; violence and heart disease, each 161, and pneumonia, 152.

Personal.—Dr. Anders Doe, one of the delegates of the Norwegian National League at the coronation of the king of Norway, has returned after an absence of four months.——Dr.

Arnold P. Gilmore is reported as being seriously ill with nephritis.——Dr. Sarah Hackett Stevenson, who was stricken with paralysis two years ago, has been taken to St. Elizabeth's Hospital.——Dr. Alfred Schalek has been appointed professor of dermatology and genitourinary diseases in the Medical College of the University of Nebraska, Omaha, and has moved to that city.

Wertheim in Chicago.—Dr. Ernst Wertheim, professor of gynecology in the University of Vienna, is spending a week in Chicago as the guest of the Chicago Gynecological Society, and has given clinics at the Postgraduate Hospital and the Presbyterian Hospital. He has been entertained by Dr. Gustav Kolisher at a dinner at the Chicago Beach Hotel and by Dr. Franklin H. Martin at a luncheon at the Union League Club, and a banquet was given in his honor, October 10, by the Chicago Gynecological Society, at the close of which the guest of honor read a paper before a joint meeting of the Chicago Gynecological Society and the Chicago Medical Society on "Radical Abdominal Operation in Carcinoma of the Cervix Uteri."

INDIANA.

City Death Rates.—The report of the State Board of Health for August shows the following annual death rates per 1,000 for Indiana cities: Terre Haute, 23.4; South Bend, 20.3; Indianapolis, 16.7; Fort Wayne, 15.4, and Evansville, 15.3.

Hospital News.—The contract for building the Good Samaritan Hospital, Vincennes, has been let for $24,300, the building to be completed on or before July 20 next.——N. O. Nelson, St. Louis, has purchased a residence and six acres of ground at Dublin, on which he will establish a home and sanatorium.——It is the intention of the Sisters of St. Francis to build a hospital at Logansport with a capacity of 100 patients, and to cost between $60,000 and $70,000.——The city council of Richmond has appropriated $6,000 toward the maintenance of the Reid Memorial Hospital.

Test Case to be Made.—As a first step toward testing the legal rights of the Indianapolis board of health to make a contract with the Indiana Medical College, the School of Medicine of Purdue University, for the exclusive privilege of holding clinics at the Indianapolis City Hospital, Drs. Horace R. Allen and Frank F. Hutchins on September 27 made formal demand on Dr. Norman E. Jobse, superintendent of the hospital, for the privilege of admitting students of the new State College of Physicians and Surgeons to the hospital and of lecturing to them there. The demand was denied by Dr. Jobse.

Personal.—Dr. Lawson E. Bracken, Greenfield, has been appointed secretary of the local board of health, vice the late Dr. Frank W. Selman.——Dr. Henry O. Wells, Fort Wayne, has been made medical director and medical manager of the Koonse sanitarium.——Dr. R. B. Brown New Albany, has been appointed interne in the Illinois Central Hospital, Paducah, Ky. ——Dr. and Mrs. Joseph C. McClurkin, Evansville, have returned from Europe.——Dr. Lindsey L. Whitesides, Franklin, is reported to be critically ill in Los Angeles.——Dr. Rebecca Parish, Logansport, has left for Seattle, whence she sails, October 11, for Manila, to take charge of the free dispensary of the Methodist Episcopal church there.

Communicable Diseases.—The South Bend board of health has been given full power and authority to use every means available to stamp out smallpox in the city, the occasion of this action being the appearance of a case of the disease.——As a result of analyses of water drawn from three public wells in Mitchell, typhoid germs have been found in two. More than 20 cases of typhoid fever have been officially reported to the local board of health.——On account of the prevalence of diphtheria in Marion, all of the schools south of Eighteenth Street were ordered closed September 20 for an indefinite period. Church services and all public gatherings in the territory were also interdicted.——School No. 8 and the Mississinewa school, in Center Township, and School No. 2, Fairmount, Grant Township, have been closed on account of diphtheria.——Several cases of smallpox are reported in Brazil.

Brother Uses Certificate.—Dr. George L. Dickerson, Terre Haute, has been summoned, it is reported, to appear before the Indiana Board of Medical Registration and Examination to show cause why his license should not be revoked. It is alleged that he lent his diploma and certificate to his brother, Robert J. Dickerson, who resembles him closely in dress and appearance, for the purpose of assisting him in the fraudulent practice of medicine in Logansport. R. J. Dickerson was fined $5 and costs in the Cass County Circuit Court recently for practicing medicine without a license, the prosecution being instituted by the Cass County Medical Society. Dr. Dickerson replies to the charge, stating that he and his brother took advantage of the state law which permits an undergraduate medical student to practice medicine under the immediate direction and supervision of a regular practitioner, and denies that any fraud was intended.

LOUISIANA.

Hospital Site Purchased.—The Sisters of the Incarnate Word of Galveston have purchased four acres of land at Lake Charles, on which a hospital to cost $30,000 will be erected.

State Board in Its New Home.—The State Board of Health has moved to its new offices in the Hibernian building, New Orleans. The suite consists of five rooms, including separate offices for the president and secretary of the board.

Low Mortality.—The low mortality of New Orleans for the week ended September 22 is the lowest on record of the city, being equivalent to an annual rate of 13.89 per 1,000 for the entire population, or 11.25 per 1,000 for the whites.

Want Medical College.—At a meeting of the physicians of Shreveport, September 20, a committee was appointed to devise means for raising $30,000, to be used in the erection of a building for a medical branch of the Louisiana State University, Baton Rouge. The endeavor is to have the medical college established in connection with the State Charity Hospital, Shreveport.

New Health Board Takes Charge.—The New Orleans city board of health, consisting of Drs. William T. O'Reilly, William H. Robin, William A. Gillaspie, Oliver F. Ernst and Mr. A. T. Wainwright, assumed charge of health affairs September 11. The new board elected Dr. O'Reilly chairman and health officer, and Dr. Sidney L. Theard, secretary-treasurer and sanitary officer.

Quarantine Fees Reduced.—The State Board of Health, at its meeting September 11, made important changes in the quarantine regulations, reducing the cost of the inspection and fumigation service at quarantine stations. The new schedule of fees reduces the former inspection fees 33 1/3 per cent. and the fumigation fees 14 per cent., as compared with the charges now in force.

New Iberia Free.—The president of the State Board of Health on September 5 declared New Iberia free from yellow fever, 20 days having passed since the first and only case was discovered, without the development of any other infection. Under the direction of President Irion, every store and public dwelling in the place has been fumigated. The citizens of New Iberia presented President Irion and his assistant, Dr. Mayer, with umbrellas in testimony of the appreciation of the work.

Tuberculosis and Smallpox.—The State Board of Health has sent circulars to each of the 1,535 practicing physicians in Louisiana and to the various parish health officers, asking their coöperation in checking what is termed "an alarming increase of tuberculosis" and an "alarming prevalence of variola," and enclosing blanks for statistics on these points. The law making it a punishable offense for a physician to fail to report the statistics of births and deaths to the health officers of his parish, which was enacted in 1900, has never been systematically enforced.

MAINE.

Back to Panama.—Dr. Ernest Wheeler, Augusta, who has been visiting at his old home in Maine, has left for New York en route to Colon, Panama, to resume his work there.

Timely Bulletin.—The State Board of Health of Maine has issued a circular on "Typhoid Fever, Its Prevention and Restriction," and "Formaldehyd Disinfection, a New Process." In the latter it advocates the use of formaldehyd and permanganate of potash, as recommended by the Illinois State Board of Health.

Briggs Sentenced.—Dr. William H. H. Briggs, Bangor, who was arrested March 2 for manslaughter, charged with having performed a criminal operation, pleaded not guilty, and was released under $2,000 bonds, is reported to have been found guilty of manslaughter by a jury at Bangor September 3, and sentenced to serve three years at hard labor in the state penitentiary.

Military Surgeons Organize.—At the suggestion of Major Edwin M. Fuller, Bath, the Association of Military Surgeons of the State of Maine was organized at Augusta, August 16, with the object of mutual improvement of its members and keeping them in touch with the medical departments of the national guards of other states and with the regular establishment. The following officers were elected: President, Major Edwin M. Fuller, Bath; vice-president, Col. James B.

O'Neill, Portland; secretary and treasurer, Lieut. (j. g.) George H. Turner, Jr., Portland, and executive committee, the president, Capt. Gilbert M. Elliott, Brunswick; J. Frederick Hill, Waterville. It is planned to hold two meetings each year, one in the summer while the regiments are in camp, and the other in midwinter at some central point.

MARYLAND.

Public School Closed.—The public school of East Newmarket has been closed by the health officer on account of the death of one pupil from diphtheria.

County Society Meeting.—The Allegany County Medical Society held its annual meeting at Cumberland, October 2. The following officers were elected: President, Dr. S. A. Boucher, Barton; vice-president, Dr. George L. Broadup, Cumberland; secretary, Dr. William R. Faard, Cumberland; treasurer, Dr. E. B. Claybrook, Cumberland, and censor, Dr. Emmett L. Jones, Cumberland. The next annual meeting will be held at Frostburg.

State Sanatorium.—Dr. H. Warren Buckler, Baltimore, has gone to Western Maryland to seek a site for a sanatorium for consumptives to be built and maintained by the state. At least 100 acres will be required, at an elevation of 1,500 feet, with abundant water supply. The plan proposed is for an administration building, a dining room to accommodate 100 to 150 patients, a kitchen with sleeping rooms above it for employés, and separate pavilions for the patients, the whole to cost from $80,000 to $85,000.

Baltimore.

Had Tonsils Removed.—Dr. Lewellys F. Barker returned from Massachusetts October 2. While he was in the North he had his tonsils removed.

Book Presentation.—William A. Marburg, Baltimore, on the suggestion of Dr. William Osler, has presented Johns Hopkins Medical School with a valuable collection of medical books, many of which are rare specimens.

Section Officers.—At a meeting of the section on clinical medicine and surgery of the Medical and Chirurgical Faculty of Maryland, October 5, Dr. C. Urban Smith was elected chairman, and Dr. Harvey G. Beck, secretary.

Herter Foundation Lectures.—The third course of lectures on the Herter foundation was delivered by Sir Almroth E. Wright, M.D., F.R.S., late professor of pathology in the Army Medical School, Netley, and pathologist to the St. Mary's Hospital, London. The subject of the lecture was "The Therapeutic Inoculation of Bacterial Vaccines and Its Application in Connection with Bacterial Disease."

Personal.—Dr. George W. Mitchell has returned from Europe.—Dr. J. Albert Chatard has returned from abroad.——Dr. J. Hall Pleasants has returned after several months abroad. He has recovered from his attack of typhoid fever.——Dr. Robert E. Coker has resigned the Adam T. Bruce fellowship in biology in Johns Hopkins University, having been appointed by the Peruvian government to take charge of the work in connection with the marine fisheries in Peru.——Dr. Frank J. Kirby is ill with scarlet fever.

MASSACHUSETTS.

Typhoid Fever at Everitt.—An epidemic of typhoid fever at Everitt is giving the city and state boards of health considerable anxiety. Within the past two weeks 31 cases have been reported, with 3 deaths. The disease is confined to the territory lying north of Ferry Street or Glendale Square.

Crusade Against Uncleanness.—The Massachusetts Board of Health, after finishing its active crusade against unclean dairies, foul icecream manufactories and unfit meat supplies in the various cities and towns of the state, has entered on a study of the bakeries and found 247 "distinctly bad," 235 "not especially bad," 41 "satisfactory," and only 13 "worthy of special commendation."

Nurses Demonstrate Work.—The graduation of a class of six from the Training School for Nurses of the Boston Children's Hospital was made the occasion of a novel demonstration of their work at Jordan Hall. The demonstration included giving a bath to a patient, preparation for an operation, application of various splints and bandages and the proper method of preparing an infant's food.

Personal.—Dr. C. Clarke Towle has been appointed city physician of Somerville, vice Dr. Alvah B. Dearborn, deceased.——Dr. John H. Bannon, Lawrence, has resigned as a member of the school board and as one of the ward physicians of that city to accept a position as school physician.——Dr. David Wagner, Springfield, is recovering from an operation for appendicitis, performed September 22.

Ether Day.—The sixtieth anniversary of the performance of the first operation under ether will be celebrated at the Massachusetts General Hospital, October 16. This historic event is editorially referred to in this issue. The hospital authorities have undertaken to keep "Ether Day" on October 16 every year. The exercises at the hospital on Tuesday next will consist of a few reminiscent remarks in the old amphitheater by one of the staff. It is hoped also that one of the physicians who witnessed the first operation in 1846 will be present.

Medical Inspectors Appointed.—The following 15 physicians have been appointed by the board of health of Worcester for medical inspectors in the public schools: Drs. Philip H. Cook, S. Alphonse Daudelin, George E. Deering, William E. Denning, George E. Emery, Timothy J. Foley, William E. Langlois, Edwin R. Leib, Menick Lincoln, Arthur W. Marsh, Thomas F. Kenny, John McGillicuddy, George F. O'Day, Charles B. Stevens and George O. Ward.——Drs. Dennis M. Ryan, Worthington W. Miner, George F. A. Spencer and Adolphe A. Auger have been appointed school physicians for Ware.

Councilors' Meeting.—The fall meeting of the council of the Massachusetts Medical Society was held October 3, Dr. George W. Gay, Boston, president, in the chair. The secretary, Dr. Francis W. Goss, Roxbury, reported that 243 fellows had been admitted during the past year and 41 members had deceased. Delegates were appointed to the state medical societies of Pennsylvania, New York and Rhode Island. As requested by the American Medical Association, the following committee of three was appointed to act with the Council on Medical Education of that Association: Drs. George A. Sears, Harold C. Ernst and Horace D. Arnold, all of Boston. The committee was instructed to act in connection with the American Medical Association, the Massachusetts Medical Society and the State Board of Registration and Medicine. A committee of five, of which Dr. Edwin B. Harvey of Westboro, secretary of the Massachusetts Board of Registration and Medicine, is chairman, was appointed to revise the by-laws of the society to conform to the latest medical practice and to report at the February meeting. By unanimous consent, Dr. Beverly MacMonagle, San Francisco, was elected an honorary member of the society.

Health Report.—The annual report of the Boston board of health for 1905-1906 shows a death rate of 18.49 per 1,000. Of the 11,007 deaths infectious diseases caused 2,161; diphtheria, 132; scarlet fever, 44; typhoid fever, 117; measles, 54, and consumption, 1,224. The deaths of children under 5 numbered 3,024, 81 less than the previous year. Nearly 15,000 nuisances were investigated and abated. The medical inspectors of schools examined 16,961 pupils and detected 312 infectious diseases, 1,342 oral and respiratory diseases, 146 diseases of the ear, 653 of the eye, 4,390 of the skin, and 3,501 cases of miscellaneous disease. A table of mortality statistics for consumption, diphtheria, typhoid fever and scarlet fever, beginning with 1840, shows that in the last 30 years the rate of deaths per 10,000 of population has decreased for consumption from 36.65 to 20.56; for diphtheria, from 20.81 to 2.22, and for typhoid fever, from 4.19 to 1.96. The mortality of scarlet fever, too, has greatly decreased, but the fact most strikingly brought out by the table in regard to this disease are cycles of seven to nine years. There is, therefore, strong probability that within the next year or two this disease will again be much more frequent, for another increase is due.

MICHIGAN.

Will Prosecute Illegal Practitioners.—The State Board of Registration is about to take active measures to prosecute physicians who are practicing without being registered, and others legally registered but who are guilty of unprofessional conduct.

Bust Presented.—The University of Michigan has been presented with a bust of the late Dr. Pitcher, a member of the first board of registration from 1837 to 1852, professor emeritus of the institutes of medicine and obstetrics from 1851 to 1872. Dr. Pitcher was also mayor of Detroit from 1840 to 1842. The bust will be placed in the new medical building.

Epidemic Diseases.—Three Oaks is reported to be suffering from an epidemic of typhoid fever.——Rapid City reports 8 cases of diphtheria, with 2 deaths. The schools and places of public meeting have been closed.——Croton, Newaygo County, is reported to be suffering from a severe epidemic of typhoid fever.——Typhoid fever is reported to be on the increase at Kalamazoo.

August Mortality.—During August 3,237 deaths were reported in the state, equivalent to an annual death rate of 14.3 per 1,000. The total deaths were 458 more than July, and 440 more than August, 1905. Of the decedents, 868 were infants under one year of age, 329 children between 1 and 4 years of age, and 772 individuals 65 years of age and over. The important causes of death were: Diarrheal diseases, 548; violence, 266; tuberculosis, 224; cancer, 150; pneumonia, 63; typhoid fever, 45; whooping cough, 43; meningitis, 40; diphtheria, 29; scarlet fever, 12, and measles, 8.

Hospital News.—Plans are being prepared for the addition to the General Hospital, Sault Ste. Marie, that will almost double its capacity. It now has accommodation for about 70 patients.——The proposed hospital for Ludington now seems to be assured. The association which has its establishment in charge is known as the Mason Hospital Association, with membership dues of $5 annually. Several sites have been suggested, but no decision as to the location has yet been made. ——The Benton Harbor hospital committee met October 1 to award the contract for the erection of the new hospital.

Personal.—Dr. Guy M. Dunning, Lansing, and Dr. Raymond D. Sleight, Battle Creek, start for Vienna, October 16.——Dr. Arthur W. Scidmore, Three Rivers, is reported to be seriously ill.——Dr. Mortimer Willson, Port Huron, was thrown from his buggy September 11, and sustained severe cuts of the face and hands.——Dr. Orson Millard, Flint, has been elected president of the medical section of the National Fraternal Congress.——Dr. Leon M. Gillette, Battle Creek, is reported to be seriously ill at his home.——Dr. George P. McNaughton, Sault Ste. Marie, has resigned as health officer and Dr. A. Harvey Miller has been appointed in his stead.——Dr. Peter J. Livingston, Caro, was tendered a banquet by the Caro St. Andrew's Society, September 25. Dr. Livingston is about to leave Caro and locate in Detroit.

Dr. McCormack's Meetings in Michigan.—The council of the Michigan State Medical Society has arranged a series of 30 meetings throughout the state, at which Dr. J. N. McCormack of Bowling Green, Ky., will make addresses. Dr. C. B. Stockwell, president of the society, has sent out a letter, from which we quote:

> Dr. McCormack has made a similar itinerary in a number of other states, speaking before audiences composed of both the profession and the laity. He is endeavoring to make plain to the people that an underpaid profession is as much to their disadvantage as to the doctors'. He discusses the evils of drug-store prescribing, the "patent medicine" evil, venereal prophylaxis, sanitary questions, etc. He shows the laity that the profession has no interest that at the same time is not the interest of the public. Dr. McCormack is a splendid speaker, and has that happy personality which at once assures interest and attention.
>
> Will you not make a special effort both to attend one or more of these meetings, and also to urge the influential people of your clientele to be present? The attendance of the ladies is especially desired. Impress on them that it is not an ordinary "medical meeting."

The arrangements for the meetings are as follows:

Detroit, Monday, October 15. Public meeting in Museum of Art, 8:15 p. m.

Ann Arbor, Tuesday, October 16. Meeting for Physicians, New Medical Building, 3 p. m. Public meeting, Sarah Caswell Angell Hall, 8 p. m.

Jackson, Wednesday, October 17. Meeting for Profession, Unitarian Church, 2:30 p. m. Public meeting, Unitarian Church 7:30 p. m.

Lansing, Thursday, October 18. Meeting for Profession, City Hall, 2:30 p. m. Public meeting, City Hall, 8 p. m.

Charlotte, Friday, October 19. Meeting for Profession, Court House, 4 p. m. Public meeting, Court House, 7:30 p. m.

Battle Creek, Saturday, October 20. Meeting for Profession, Knights of Columbus Hall, 3 p. m. Public meeting, Congregational Church, 8 p. m.

Kalamazoo, Monday, October 22. Meeting for Profession, Academy of Medicine Rooms, Public Library, 2 p. m. Public meeting in evening, time and place to be announced.

Benton Harbor, Tuesday, October 23. Public meeting, Armory, 7:30 p. m.

Holland, Wednesday, October 24. Ottawa County Society meeting in afternoon, to which all physicians are invited. Public meeting in Winant Chapel, Hope College, 7:30 p. m.

Grand Rapids, Thursday, October 25. Public meeting in Auditorium, Ryerson Library, 8 p. m.

Greenville, Friday, October 26. Eleventh District meeting at 10:30 and 1:30 p. m. Scientific program and an address by Dr. McCormack. All physicians are invited. Public meeting, Congregational Church, 8 p. m.

Big Rapids, Saturday, October 27. Public meeting, Court House, 7:30 p. m.

Cadillac, Monday, October 29. Arrangements pending. Due notice will be given.

Upper Peninsula, Tuesday, October 30, to Thursday, November 1, inclusive. The arrangements are being made and due notice will be given of the places and hours.

Bay City, Friday, November 2. Public evening meeting under the auspices of the Bay County Society. Time and place to be announced.

Saginaw, Saturday, November 3. Meeting for Profession, City Hall, 3:30 p. m. Public meeting, City Hall, 8 p. m.

Alma, Monday, November 5. Public meeting, Alma Sanitarium, 3:30 p. m.

Flint, Tuesday, November 6. Sixth District meeting at Dryden Hall. Scientific program with an address by Dr. McCormack. This will be followed by a dinner. All physicians are invited. Public meeting, Stone's Opera House, 8 p. m.

St. Johns, Wednesday, November 7. Arrangements pending. Due notice will be given.

Lapeer, Thursday, November 8. Public meeting, Opera House, 8 p. m.

Port Huron, Friday, November 9. Meeting of the Seventh District Society with public meeting in the evening. Due notice of the arrangements will be given.

Adrian, Saturday, November 10. Public meeting, Baptist Church, 8 p. m.

NEBRASKA.

Diphtheria.—Diphtheria is said to be present in Beatrice in malignant form. A number of cases are under quarantine and several deaths have occurred.

Alumni Banquet.—The Medical Alumni of the University of Nebraska held their fourth annual banquet in Omaha, September 18. Dr. Matthew G. Tinley, Council Bluffs, presided as toastmaster.

Personal.—Dr. S. N. Richardson is reported to be seriously ill at Elgin, Neb.——The board of councilors of the Nebraska State Medical Association has elected Dr. Francis A. Long, Madison, president, vice Dr. James L. Greene, removed from the state.

Hospital News.—By the will of the late Edward Rosewater, Omaha, a bequest is made to the Wise Memorial Hospital.——Drs. Simon C. Beede and Harry E. Burdick are erecting a hospital at David City to accommodate 20 patients.——A new cottage at the Norfolk Hospital for the Insane has been completed and accepted by the authorities.

NEW YORK.

New York City.

Hawthorn Cancer Home.—This institution, devoted to the care of the cancerous poor, has been given a building for the entertainment of visitors and guests by George H. F. Schrader.

Coroners Busy.—There were 532 deaths reported to the coroners during September. Of these 334 could be accounted for by natural causes, 60 were due to falling timbers, 41 were homicides and 26 suicides.

Personal. —Dr. William S. Bainbridge arrived home on the *Campania* October 5.——Dr. William J. Burns of Sea Cliff, Long Island, was thrown from his automobile when it skidded and struck a telegraph pole.

New Strauss Milk Laboratory.—The plans have been filed for a new laboratory building which is to be erected on East Thirtieth Street. The building will be 35 feet front and 85 feet deep and will cost $30,000.

Typhoid Among Bellevue Staff.—It is reported that three members of the house staff of this hospital are ill with typhoid fever contracted from attending the unusually large number of typhoid patients in the hospital at present.

For Hebrew Charities.—The late Adolph Herrmann has bequeathed $5,000 to Mount Sinai Hospital, $2,500 to the Montefiore Home, $1,000 to the Hebrew Orphan Asylum, and $500 to the Mount Sinai Hospital Training School for Nurses.

Hospital Officers Elected.—At the annual meeting of the Long Island Throat Hospital and Eye Infirmary, Brooklyn, Dr. Charles T. Schondelmeier was re-elected president. The report of the treasurer showed a balance in the treasury of $680.

Dairies Will be Inspected.—Health Commissioner Darlington has begun a tour of inspection among the creameries of this state. After a similar trip last year milk from insanitary dairies was seized by the inspectors, and it is believed that this trip will be followed by still further improvement.

Decreased Registration at Columbia.—The College of Physicians and Surgeons of Columbia University shows a decrease in the number of students for the present year. Last year there were 405 registrations as against 331 for this year. This decrease is accounted for by the fact that the entrance requirements have been made more difficult.

Museum of Surgical Instruments.—At the regular meeting of the Academy of Medicine, October 4, Dr. D. Bryson Delavan presented to the academy a historical collection of laryngologic instruments to which he said he expected to add from time to time. It is hoped that this gift will be the nucleus for a collection of instruments in all fields of surgery, and it was shown that such a museum would be highly useful to the profession.

Contagious Diseases.—There were reported to the sanitary bureau for the week ended September 29, 367 cases of tuber-

culosis, with 151 deaths; 137 cases of diphtheria, with 12 deaths; 114 cases of typhoid fever, with 19 deaths; 61 cases of measles, with 5 deaths; 41 cases of scarlet fever, with 3 deaths: 35 cases of whooping-cough, with 8 deaths; 15 cases of cerebrospinal meningitis, with 12 deaths; 12 cases of varicella and 1 case of smallpox, a total of 783 cases, with 210 deaths.

Illiterates in Rockland County.—According to the state educational departments report there are 2,019 illiterates in Rockland County's population of 30,638. Of the 11,866 voters 1,129 are illiterates. Among the native whites there are 350; among the native whites of foreign parents, 81, and among the foreign born whites, 1,272.

NORTH CAROLINA.

New Hospital.—Mercy Hospital, Charlotte, has been incorporated under Roman Catholic auspices. The hospital is to be large and elaborately appointed.

Diphtheria.—A severe type of diphtheria is reported to be prevalent in Lenoir County. A joint meeting of the authorities and the medical officers of Kinston was held September 21 to institute systematic measures against the spread of the disease.

Honor System Established.—Wake Forest College has instituted the "honor system" as the disciplinary method of the college in the future. F. L. Wilson, Yancey County, represents the medical department of the college on the committee of administration.

Personal.—Dr. A. J. Crowell, Charlotte, professor of rectal diseases in the Medical College of North Carolina, has recently been tendered and declined a chair in a Texas medical college. ——Dr. John A. Williams, formerly of Reedsville, has removed to Greensboro.

In Sanitarium.—Dr. Joseph B. Matthews, Greensboro, who was convicted of the murder of his wife in December last and sentenced to 20 years in the penitentiary, is undergoing treatment in a sanitarium at Baltimore for the cure of the drug habit, which was claimed to have been the cause of the murder. Thus far there has been no official notice of the revocation of his license by the state board.

Congressional Contest.—The physicians of the state are taking much interest in the campaign for congress in the ninth district. One candidate is the Hon. E. Yates Webb, who seeks re-election. Mr. Webb is the author of the pure drug bill, introduced in the last session of Congress. After the bill had been defeated, at the last moment, he secured its insertion as a section of the pure food measure, which later became a law. His opponent is Dr. Frank Roberts, Marshall.

Pure Drug Bill.—It is proposed to enact as a state law the pure drug bill, introduced by Congressman Webb. At present the pure food law only restricts the "patent-medicine" manufacturers outside the state from shipping goods into the state unless the labels show in detail the percentage of morphin, alcohol, etc. It is apparent, however, that the publicity clause may be evaded by many firms, which would pack and label in the state goods intended for sale in the state. The enactment of an "open formula" statute in the state would accomplish much.

PENNSYLVANIA.

Personal.—Drs. Edith Conser and Alice Stuffian have been appointed for duty in the female department of the State Hospital for the Insane, Norristown.——Dr. Wallace W. Dill, Pottstown, has been appointed physician of the poor, to fill an unexpired term.——Dr. Andrew B. Gloninger, Lebanon, sailed for home from France September 29.——Dr. Frank Keagy, Altoona, is seriously ill with typhoid fever at Atlantic City. ——Dr. James C. Dunn, Pittsburg, is reported to be dangerously ill at his home.——Dr. Israel Cleaver was re-elected secretary of the Reading Hospital Association, October 1.

State Wins Vaccination Fight.—In an opinion handed down by Judge W. Rush Gillan of Chambersburg, October 5, in the mandamus proceedings brought by Attorney-General Carson against the school officials of the Waynesboro grammar school, he sustains the vaccination law, excluding from the schools those who are unable to present proper certificates of successful vaccination. He reviewed the laws concerning vaccination, and directs that this section of the health law shall be enforced by the directors and not by the teachers, taking the position that the directors, being elected by the people, are the responsible officials and not the teachers, who are elected by the directors.

Philadelphia.

Medical Faculty Change.—The medical department of the University of Pennsylvania has established a department of experimental surgery, and Dr. J. E. Sweet, formerly connected with the laboratory of hygiene, and more recently with the Rockefeller Institute, has been placed in charge.

Personal.—Dr. Addinell Hewson has resigned his position as assistant professor of anatomy in Jefferson Medical College. ——St. Agnes' Hospital has recently created a department of orthopedic surgery and Dr. H. Augustus Wilson, professor of orthopedic surgery in Jefferson Medical College, has been appointed chief of the new department.

Free Bed for Hospital.—Employés of the Bell Telephone Company of Philadelphia and the Delaware and Atlantic Telegraph and Telephone Company have endowed a free bed in the Pennsylvania Hospital in memory of the late Theodore Spencer, who was vice-president and general manger and director of the companies. A memorial tablet wil be placed in the central hall of the hospital.

Conference of Anti-Vaccinationists.—A state conference of the opponents of compulsory vaccination was held in this city October 3 and 4. About 80 delegates were present. The object of the meeting is to take political or other action to prevent the use of virus; to perfect plans to nominate candidates for governor and the legislature favorable to the repeal of the twelfth section of the act of June 18, 1895, which provides for the exclusion of unvaccinated children from all schools. A resolution was passed condemning vaccination in toto, but more especialy that of sick children.

Health Report.—The total number of deaths reported for the week ended October 6 aggregated 402. This is a decrease of 37 from the number reported last week, and a decrease of two from the number reported in the corresponding week of last year. The principal causes of death were: Typhoid fever, 9; diphtheria, 9; cancer, 18; heart disease, 51; Bright's disease, 41; accidents, 16; pertussis, 7; consumption, 45; apoplexy, 12; acute respiratory disease, 38; enteritis, 26; suicide, 2, and marasmus, 9. There were 183 cases of contagious disease reported, with 19 deaths, as compared with 180 cases and 30 deaths reported in the preceding week.

Dr. Wood Resigns.—Dr. Horatio C. Wood has resigned his position as professor of materia medica, pharmacy and general therapeutics in the medical department of the University of Pennsylvania, on account of ill-health. Dr. Wood has been connected with the university since 1862, when he was graduated from the medical school. He has held the chair of materia medica, pharmacy and general therapeutics since 1876. He was a visiting physician to the Philadelphia Hospital from 1872 to 1887, and to the University Hospital since 1870. His resignation was accepted by the board of trustees, and he was immediately elected, by unanimous vote, as emeritus professor of materia medica, pharmacy and general therapeutics.

Hospital Reports.—During September the Germantown Hospital admitted 103 patients and discharged 107, the total remaining October 1 being 37. There was 1,253 cases treated in the dispensary, as follows: Medical and surgical, 865; eye, 136; ear, 67; throat, 56; nose, 77; nervous, 52.——The Polyclinic Hospital admitted during the month 98 patients and discharged 83; 378 new patients were treated in the dispensary, to whom a total of 1,462 visits were made.——The Methodist Hospital reports for September as follows: Patients admitted to the house, 74; treated in the dispensary: medical, 44; surgical, 455; gynecologic, 11; eye, 96; ear, 14; nose and throat, 30; skin, 46; orthopedic, 6, and pediatric, 20; total patients treated, 722; total visits to the dispensary, 3,254.—— The report of the Howard Hospital for September shows that 781 new dispensary patients were treated and that 327 prescriptions were prepared.——The Samaritan Hospital admitted 112 patients to the wards and treated 2,263 patients in the different dispensaries.

Newspaper Advertising.—A committee of the Philadelphia County Medical Society prepared the following resolutions to be acted on October 11:

1. *Resolved,* That the publication in the lay press of the description of operations, new treatment, and allied medical matters in connection with the name of the physician be condemned by the society, and that the physicians of the society, in order to prevent such publication, make such representations to the superintendents or other officers of the hospital with which they are connected, as will, so far as possible, prevent internes, nurses, employés or friends from giving information to reporters.
2. *Resolved,* That the society try to prevent reports of the papers read at its meetings from being publicly mentioned unless such publication be conducive to the public welfare. The society shall instruct its secretary or reporter to give to the press a censored report which shall always be anonymous so far as the authorship of the papers is concerned.

3. *Resolved*, That the society condemn the publication of medical interviews in connection with the names of physicians, excepting medical interviews relating to municipal sanitation and other matters of public welfare.

4. *Resolved*, That copies of all articles appearing in the press of Philadelphia relating to regular physicians of that city shall be placed in a scrap book by the assistant secretary for the inspection of members. A member whose name appears therein shall have the privilege of attaching thereto a written explanation.

5. *Resolved*, That copies of these resolutions be printed in The Journal of the American Medical Association, the *Weekly Roster* and *American Medicine*.

Inspection of City's Water Supply.—During the week the city's water commission inspected the city's water supply from Pottsville to Philadelphia. The report of the commission shows that millions of gallons of sewage from towns up the state and tons of coal dust are daily being poured into the waters of the Schuylkill, which is the main source of the city's water supply. Reading, with a population of 97,000 inhabitants, empties 2,000,000 gallons of sewage into the river daily, and Pottsville, Pottstown, Phœnixville, Tamaqua, Spring City and other towns bordering the stream empty their polluted sewage into the river. Of all the towns indiscriminately emptying their sewage into the river only one, Reading, is making any effort to abate the nuisance. There a sewage disposal plant is being erected, but it will be six months before it will be finished. The other towns, the commission reports, are indifferent as to the extent to which they contaminate the city's water supply. It was found that the head of the river was fairly black with coal dust. It is estimated that the coal sewage amounts to more than 5,000,000 gallons a day. The examination of the commission was supplementary to the examination which has been going on for some time by engineers and water experts employed by the commission and state authorities. Since the appointment of Dr. Samuel G. Dixon, state commissioner of health, plans have been instituted to prevent the indiscriminate pollution of the city water supply, and a marked improvement has taken place as a result of his efforts.

RHODE ISLAND.

No Dogs at Large.—Hydrophobia is being frequently reported in various parts of Massachusetts, Connecticut and Rhode Island. Woonsocket, R. I., has adopted the regulation that for six months no dog shall be allowed to run at large, whether muzzled or not.

District Society Meeting.—The Woonsocket Medical Society held its first meeting September 20. The following officers were elected: President, Dr. William C. Monroe; vice-president, Ara M. Paine; secretary, Elisha D. Clarke; treasurer, John J. Baxter, and censors, Drs. Joseph T. Roswell, Robert G. Reed and Joseph E. Tanguay.

Personal.—Dr. Richard P. Boucher, Providence, has gone to New York to receive treatment in the Pasteur Institute.——Dr. Gioacchino Carella has taken charge of the Italian outpatient ward at the Twin City Hospital, Pawtucket.——Dr. Henry J. Hoye and Jay Perkins, Providence, have been reelected examining physicians for the State Sanatorium, Wallum Pond.

SOUTH DAKOTA.

Personal.—Dr. Edward F. Dann, Clarke, has been seriously ill at his home.——Dr. Rudolphus D. Jennings, Hot Springs, has been elected governor of the Battle Mountain Sanitarium, vice Dr. A. G. Hull, resigned.——Dr. William S. Bentley has resigned as surgeon of the Soldiers' Home, Hot Springs.

County Hospital.—The commissioners of Brown County have decided to present to the voters of the county the question of building a new county hospital and poor farm. The board is in favor of issuing bonds for $15,000 for the erection of the hospital. The need is apparent, as the present county hospital is not large enough to meet the demands.

VIRGINIA.

New Hospital.—Drs. Stuart N. Michaux, James W. Henson and F. K. T. Warwick have purchased two buildings on the boulevard north of Grove Avenue, Richmond, and are converting them into a hospital and sanitarium, to be known as the William Byrd Hospital.

Physicians May Exceed Speed Limit.—In the police court in Norfolk, September 25, in the case of Dr. Stanley H. Graves, charged with violating the law by running his automobile too fast in that city, it was decided that a physician on an errand of mercy is exempt from speed limit.

Refuses to Make Recommendation.—The Norfolk Medical Society, at a specially called meeting, September 19, refused by a vote of 29 to 25 to recommend any one for health commissioner, holding that any member of the society is fully competent to discharge the duties of that office.

Personal.—Dr. Tazewell Bradley, Roxbury, suffered a severe cerebral hemorrhage in Richmond, September 20, and is reported to be in a critical condition.——Dr. Fayette A Sinclair, Hampton, who has been one of the physicians at the National Soldiers' Home for some time, has resigned in order to take up private practice.——Dr. Robert E. Wine, Brentsville, was taken to Washington, September 22, and was operated on the next day for appendicitis.——Dr. John N. De Shazo, Center Cross, is rapidly improving after serious illness with typhoid fever.

Colleges Open.—The sixty-ninth session of the Medical College of Virginia, Richmond, opened September 19. Dr. Christopher Tompkins delivered the opening address. Dr. Manfred Call has been appointed professor of practice of medicine, vice Dr. Robert F. Williams, resigned; Dr. Clifton M. Miller has been transferred from the chair of anatomy to that of diseases of the nose and throat; Dr. J. Fulmer Bright has been elected professor of anatomy, and Dr. Charles R. Robins, professor of gynecology.——The University College of Medicine, Richmond, opened for its annual session, September 19. Dr. Stuart McGuire delivered the opening address. Dr. W. H. O. McGehee has been elected head of the dental department of the college.

WYOMING.

Typhoid Fever.—Typhoid fever has broken out in Evanston and 7 cases are reported. The city water is said to be responsible.

Hospital to be Established.—Bishop J. J. Keene of the Roman Catholic church is looking for a location for a Sisters' hospital and will, it is expected, decide on Thermopolis.

State Society Meeting.—The eighth annual meeting of the Wyoming State Medical Society was held in Casper, September 24 and 25. The following officers were elected: President, Alfred C. Godfrey, Lander; vice-presidents, T. A. Dean, Casper; Charles E. Stevenson, Sheridan, and G. A. Bristol, Evanston; delegate to the American Medical Association, Dr. Alfred C. Godfrey, Lander, and alternates, Drs. George L. Strader, Cheyenne, and Oliver Chambers, Rock Springs. Dr. George L. Strader, Cheyenne, was re-elected secretary, and A. Francis Hoff, Casper, treasurer. Lander was chosen as the place for the 1907 meeting.

GENERAL.

Yellow Fever and Dengue in Cuba.—According to newspaper reports, during the first week in October three cases of yellow fever were reported in Havana and twelve suspicious cases in which the diagnosis was unconfirmed. Of the latter two were at Guanabacoa, a suburb of Havana. Ten cases of dengue are reported from Havana.

The Jamestown Exhibition.—Passed Assistant Surgeon Rupert Blue of the United States Public Health and Marine-Hospital Service has been appointed sanitary director of the Jamestown Exposition. Dr. Blue has already assumed his duties in connection with the exposition, which will open April, 1907. The United States Public Health and Marine-Hospital Service will have an exhibit in the Government Building representing the scope of the service work, including the marine hospital and quarantine services, the work of the hygienic laboratory and the sanatorium treatment of tuberculosis.

Chess Players Arrange Match for Physicians.—The Tri-State Chess Association, an organization of over 400 players, the majority of whom reside in the central states, is arranging a correspondence match at chess of the doctors versus the laity. It is desired to have physicians from every section of the United States engage in this match. Therefore, every chess loving physician is hereby invited to become a consultant in the case. The match will begin in November. All who will play are urged to send name and address to the president of the association, Dr. F. B. Van Nüys, Lorain, Ohio, stating the number of games they will assume.

Cholera in Manila.—Dr. Victor Heiser, chief quarantine officer, reports that cholera is still prevalent in the Philippines. For the first time since the outbreak began—nearly a year ago—several cases are being found in the same house; but the infection occurs almost simultaneously in all cases, which would indicate that it is due to infected food introduced into the house. A rigid inspection made of the truck farms in and around Manila shows that in spite of the precautions taken there are still a number of gardeners who use liquid human excrement for fertilizing. A number of them were arrested and fined. It seems probable that the outbreaks which occur from time to time in Manila may be attributed to this source. The question of fertilizing vegetables with human excrement

became so acute that the Philippine Commission has taken legislative action and passed a law which makes it a penal offense to use this substance for fertilizing purposes. The two important sections provide:

No farmer, market gardener, or other person or persons shall use any human excreta, excrement, dejecta, or the contents of any water or earth closet, privy, vault, cesspool, latrine, pail, or other receptacle for human feces or urine as a fertilizer for any land on which is grown any article or product intended for human food or human consumption, or allow any human excrement, excreta, or dejecta to be sprinkled or applied in any manner or for any purpose to any crop, product, or vegetable growing on said land.

A fine of not less than $25, nor more than $100, or imprisonment not to exceed six months, or both, shall be imposed on each person found guilty.

It was deemed advisable to modify the outgoing quarantine detention on outgoing vessels. Regular army medical officers were detailed to act as quarantine officers at outgoing ports, which made it possible to inspect many vessels at the port of arrival, thus effecting a considerable reduction in the quarantine detention period. This modification has been much appreciated by the shipping interests and by the provinces, persons living outside of Manila being able thereby to obtain much better freight rates than when full quarantine is imposed. It is hoped that this will have a material effect in relieving the business depression, and at the same time give reasonable security to the provinces against being invaded by cholera through the maritime traffic. The necessity for granting some relief to the shipping interests will be better appreciated when it is remembered that outgoing quarantine has now been imposed continuously for almost one year.

CANADA.

Toronto University Senate Elections.—The following Ontario practitioners have been elected representatives on the senate of Toronto University to represent the graduates in medicine: Dr. Herbert J. Hamilton, Toronto, 1,175 votes; Dr. C. J. C. O. Hastings, Toronto, 826; Dr. Wilbur H. Harris, Toronto, 708; Dr. William Burt, Paris, 625.

New Sanitariums.—Winnipeg, Man., is to have a City Home for Convalescents, conducted by the Women's Hospital Society of that city.——Eastern medical men and a prominent medical man of Winnipeg are said to have purchased 14,000 acres of land in Manitoba, fronting on Lake Manitoba, with the intention of establishing a sanitarium for consumptives.

Medical School News.—The Medical Faculty of Toronto University opened for the 1906-1907 session October 3. Sir Almroth E. Wright, M.D., F.R.S., St. Mary's Hospital, London, Eng., delivered the opening lecture, his subject being "Inoculation with Bacterial Vaccines." The freshman class numbers 179.——It is rumored that the Ontario government will endow a chair of anatomy in the University of Toronto in the near future.——There is an increase in the attendance of medical students at McGill University, Montreal, this year, the total being about 400.

Personal.—Dr. Shirley McMurtry, Montreal, has gone to Japan for two years.——Dr. Goldwin Howland, Toronto, has returned from England, where he was married recently.——Dr. H. A. Stewart, Saskatoon, Sask., has received the offer of the appointment of neuropathologist and lecturer on pathology in the Indiana State Hospital at Indianapolis.——Dr. T. K. Holmes, Chatham, Ont., one of the leading surgeons of western Ontario, narrowly escaped drowning recently, having accidentally fallen into the Thames when returning at night from visiting a patient.——Dr. James Stewart, professor of medicine in McGill University, is suffering from a stroke of paralysis.——Dr. H. M. Church, Montreal, was recently tendered a dinner by the McGill anatomic staff, on the occasion of his approaching marriage.

Ontario Postpones Its Department of Health.—The Ontario government has appointed new members to the Ontario Board of Health. It was thought at one time that the government contemplated creating a new department with a minister of health at its head, but no doubt it was felt that this would be too progressive a move for a little province like Ontario to initiate. The opportunity to lead in this coming reform is, therefore, passed by. The composition of the new board is as follows, only one of the old board receiving recognition: Dr. Charles Sheard, M.H.O., Toronto; Dr. Robinson, M.H.O., Guelph; Dr. Hall, M.H.O., Chatham; Dr. M. I. Beeman, Newburgh; Dr. J. A. S. McCullough, Alliston, and Dr. C. A. Hodgetts. The last mentioned is the present secretary, and will continue to act in that capacity.

FOREIGN.

Death of Patient Does Not Release Physician from Obligation of Professional Secrecy.—This is the recent decision in a case before the courts of Saxony in which a widow summoned her husband's physician to testify in regard to his illness. The higher courts confirmed the decision.

New Insane Hospital in Australia.—Plans have been prepared for a new hospital for the insane to be built near Melbourne, Victoria. The building will contain 124 beds. There will also be a large central kitchen and an administration building. Each ward will contain some single rooms, a dining room and a kitchen, where some of the simpler meals can be prepared. The hospital is intended for the treatment of acute cases which offer hopes of speedy recovery.

Adventuresses Posing as Doctors in Paris Rob Patients.—The cable states that two women have just been arrested in Paris for illegal practice of medicine and for swindling. They rented a business suite of offices and advertised extensively throughout the provinces that they could cure all abdominal troubles without an operation. While the assumed doctor was examining the partly stripped patient, the other woman was rifling the pockets in the clothes left in the adjoining room.

International Trachoma Prize.—As already mentioned, the Hungarian government has offered a prize of $250 for the best work on the etiology of trachoma offered in competition before Dec. 31, 1908. The work can be in English, French, German or Hungarian, and the prize will be awarded at a general session of the Fifteenth International Medical Congress at Budapest, in September, 1909. Published works are eligible if they do not appear before 1907 or 1908. Address Budapest 1, Vár, Belugyministerium.

Neisser to Resume His Syphilis Research on Monkeys.—It is announced that Professor Neisser intends to return to Batavia in November to continue his experiments on monkeys with syphilis. His previous work with monkeys at Breslau in 1903 and 1904 and in Batavia last year, were all at his own expense, but now he has an appropriation of $25,000 from the government for the work, which has been zealously continued by the two assistants he left behind when he returned. The party still includes Halberstädter and von Prowazek, an authority on protozoa, has joined, and also K. Bruek, formerly of the Institute of Infectious Diseases at Berlin, and Siebert, who takes Baermann's place. The latter leaves to take charge of a large hospital in Sumatra, devoted chiefly to cutaneous and venereal diseases.

The Moritz Souvenir Number of the St. Petersburg. Wochenschrift.—Instead of its usual modest proportions, our St. Petersburg contemporary appears as a journal of 85 pages in its issue for September 20. This is in honor of the seventieth birthday of Dr. E. Moritz of St. Petersburg, the founder of the weekly, 31 years ago, and also founder of the Alexander Hospital. The issue contains 20 thoughtful articles on the action of colored light on the eye, orthostatic albuminuria, treatment of the vicious circle after gastroenterostomy, indications when vision is threatened by pregnancy, surgical treatment of severe cervical and occipital neuralgia, tetanus in the Russian army, phosphorus metabolism, acute pseudo-leukemia, antiseptic action of menstrual blood on ulcus molle, fever with visceral syphilis, etc. The authors include the best known St. Petersburg medical writers. The *Wochenschrift* is the only medical journal published in German in Russia, and it has been a welcome link between the profession in Russia and the ontside world.

Quartercentenary of Aberdeen University.—The quartercentenary of this university was celebrated during the last week in September. This is the four-hundredth anniversary of the formal constitution of King's College, which was the original university. The university was founded at the end of the fifteenth century and is the third in point of age in Scotland. It was founded by William Elphinstone, bishop of Aberdeen, and, like all medieval universities, was a Roman Catholic institution. From the very beginning there was not only a faculty but a chair of medicine at Aberdeen, and it is said that this is the oldest in Great Britain. An interesting account of the university is given in the *British Medical Journal*, Sept. 22, 1906, with several excellent illustrations of the university at various periods. The new Marischal College was opened by King Edward, September 27. Many honorary degrees were conferred. Among those so honored are Drs. Howard A. Kelly, Baltimore, and J. William White, Philadelphia, who received the degree of LL.D. This degree was also conferred on several well-known Canadian physicians.

LONDON LETTER.

(From Our Regular Correspondent.)

LONDON, Sept. 15, 1906.

A Recently Discovered African Arrow Poison.

Dr. C. Bolton has communicated to the Royal Society the results of an investigation which he has made of the toxic properties of an arrow poison obtained by Dr. D. Alexander from a medicine house in a pagan town in northern Nigeria. Dr. Alexander observed that the fresh poison is a semifluid, sticky, black substance. It is smeared on sticks and when required for dipping arrows is scraped off and heated. It appears to consist of the juice of a kind of fig, the placenta of which is used in the manufacture of the poison. Dr. Alexander saw a native shot in the abdomen die in twenty-five minutes, apparently from heart failure. Dr. Bolton experimented on cats, rabbits, guinea-pigs and frogs with the poison dissolved in 0.86 per cent. of salt solution. He found that it has a selective action on muscular tissue and that there is no evidence that it has any action on the central or peripheral nervous system. It paralyzes voluntary muscle and produces death by the same action on the heart. It first stimulates the muscular coats of the arteries and thus causes a rise of blood pressure, with the result that the vagus center in the medulla is excited, causing slowing of the heart and a fall in blood pressure. Then the irritability of the heart is greatly increased and soon the vagus fails to hold it in check. The chief factor in maintaining the high blood pressure seems to be the constriction of the vessels. The heart becomes more and more rapid and irregularity appears, a condition of delirium cordis follows, and finally, the heart stops in diastole.

Increase of the Use of Preservatives in Food.

Dr. A. E. Harris, health officer for Islington, one of the largest of the London boroughs, reports that the use of preservatives in food is increasing and that their number is multiplying. They include alum, alcohol, ammonium, acetate, boric acid and its compounds, carbon dioxid, copper salts, creosote, fluorin compounds, formic acid, formaldehyd, hydrogen peroxid, oxygen, pyroligneous acid, saccharine, salicylic acid, saltpeter, sodium carbonate, sugar, sulphites of sodium and calcium and sulphuric acid. These are used in bacon, beer, bottled fruit, British wine, butter, black puddings, white puddings, cheese, cordials, cream, fish, fresh meat, game, ham, ketchup, lime juice, maragarin, milk, pork pies, sauces, sausages, temperance drinks, vegetables, vinegar and wine, and almost every article of food that can be named. Dr. Harris adds that the object is either to retard decomposition or to enable food prepared under unsatisfactory conditions which would otherwise speedily spoil to be sold. In other words, the object is to induce people to think that they are receiving a well-prepared or freshly made article. He considers that it is high time that something definite be done by the government to check the abuse of food preservatives.

VIENNA LETTER.

(From Our Regular Correspondent.)

VIENNA, Sept. 20, 1906.

Increase of Alcoholism Among Women.

The recent report of the commissioner for lunacy contains some interesting remarks as to the fluctuation of the number of habitual drinkers. It appears that in lower Austria there are over 2,800 drunkards known as such to the local authorities. Crimes committed under influence of alcohol by these individuals can not be punished, but these people are kept for a certain period under close observation, and if there is danger of the crime being repeated, detention of the individual in a lunatic asylum is ordered by the judge. Therefore, the number of hapless persons is well known to the medical and board of guardians commissioners. Of this number of 2,800 only 640 are women, the rest men; but a comparison with the figures for the last decade shows the constant though as yet not very considerable increase of the number of females from 520 to 640, or 22 per cent., whilst the increase of population for the same period is only 17 per cent. The number of males detained for habitual drinking is fairly constant, averaging 2,200 for the time of record, thus actually declining, if the annual increase in population is taken into the calculation. These facts are the more remarkable, as the consumption of alcoholic beverages has been declining since 1899, especially since the new duties imposed on beer are in force. The total output of beer is lower by 5.5 per cent., of wine 13 per cent., and liquor 3 per cent. (not including spirits for industrial purposes), and the temperance movement is getting a firm hold among the university students, formerly known for their drinking capacities.

Regulation for the New Slaughter-House.

The necessity of supplying a sufficient quantity of cattle for the purpose of butchering has brought about the erection of a new slaughter-house in Vienna, for which new regulations have been issued. First of all, a certificate of health not older than eight days must be produced before the cattle are allowed to enter the premises, and must be signed by a veterinary surgeon of the capital. The house itself must be kept clean and sanitary. All the ejecta and waste matter must either be buried or burned. Adequate storage rooms with ice receptacles will be kept for the benefit of the vendors, but the ice has to be provided by the latter from an unimpeachable source. The necessary lavatories must be inspected daily to ensure their good working order. The officers and employés of the slaughter-house must be clean in habits and dress. The smell of blood must be prevented by a constant current of water, and each animal must be blindfolded before entering the slaughtering hall. The butchered meat is to be subjected to an examination by a staff of specially appointed trained veterinary surgeons before being pronounced fit for human consumption. All meat condemned will be seized and destroyed without exception. The examination is to be directed toward the detection of *Trichina spiralis*, tuberculosis, anthrax and septic conditions. In case of meat derived from hares, rabbits, venison or other not usual animals, the examination is to include methods of discovering diseases to which these animals are liable, and which might be transmitted to man by the use of such meat.

The Charge for a Consultation by Telephone.

The widespread use of the telephone has caused the "*Aerzte kammer*" (medical council) to advise its members to charge for every consultation by telephone as for an actual visit in the house of the physician. At the same time the "*kammer*" leaves it to the discretion of the physician to find out, if the case is such a one that it can be commented on or treated without seeing the patient, reminding its members that treatment "by letter" is not considered right. A charge of at least 50 cents is recommended as a minimum fee for every telephonic information of a medical nature requested by the patient.

Pharmacology

THE SOLUBILITY OF ACETANILID IN SODIUM BICARBONATE SOLUTIONS.

W. A. Puckner.

Secretary of the Council on Pharmacy and Chemistry of the American Medical Association; Professor of Chemistry, University of Illinois School of Pharmacy.

CHICAGO.

There seems to be a general impression among physicians and pharmacists that sodium bicarbonate renders acetanilid more soluble, or that the acetanilid is more readily absorbed in the stomach if mixed with sodium bicarbonate. Thus, Dr. John Ritter, in THE JOURNAL A. M. A., Sept. 1, 1906, page 683, in comparing the official pulvis acetanilidi compositus with the many proprietary acetanilid preparations, says: "Therapeutically it matters very little if in all these various preparations the amount of citrate of caffein is 1/50 grain more or less, or if the amount of bicarbonate of soda is ½, ¾ or 2 grains in each dose, or if the alkaline salt be bicarbonate of soda or potassium carbonate, or carbonate of ammonia, each of which is added simply as a solvent for the acetanilid." Dr. Ritter is here merely repeating an accepted belief which appears to have no basis as a fact.

Acetanilid, $C_6H_5NH(CH_3CO)$, is the acetyl derivative of anilin, $C_6H_5NH_2$; the latter may be considered as a benzene or phenyl derivative of ammonia, NH_3. Just as ammonia combines with acids to form salts so anilin combines with acids to form salts, and these anilin salts (anilin sulphate, anilin chlorid) are generally more soluble in water than anilin itself. While in acetanilid the alkaline properties of anilin have been neutralized almost completely through the introduction of the acetyl group, yet it still is mildly basic and to a certain extent

combines with acids to form salts; that is, just as anilin forms anilin chlorid, so acetanilid can form acetanilid chlorid.

And just as the solubility of anilin in water is increased by the addition of an acid, through salt formation, so the solubility of acetanilid is increased by acids. I have made experiments in which an excess of acetanilid was added to water containing 0.4, 1.0, 5.0 and 10.0 per cent. hydrochloric acid. After agitating for several hours the solutions were filtered and the dissolved acetanilid estimated in portions of the filtrates. These determinations show that acetanilid is much more soluble in 10 per cent. hydrochloric acid than in water, but that in a 0.4 per cent. hydrochloric acid solution its solubility is but slightly increased.

From theoretical considerations it was not to be believed that the solubility of acetanilid would be increased by sodium bicarbonate. This belief was verified by the following experiment: An excess of acetanilid was added to water, the mixture agitated occasionally for several days and filtered. To 25 c.c. of this saturated solution of acetanilid in water was added less than 0.005 gm. acetanilid and 1 gm. sodium bicarbonate and the mixture agitated occasionally during 24 hours. Solution of the acetanilid did not occur, showing that the solubility of acetanilid is not increased even when a relatively large proportion of sodium bicarbonate is added.

These experiments—which were repeated in different ways—appear to demonstrate that the addition of sodium bicarbonate to acetanilid does not increase its solubility; in the stomach its solubility will rather be decreased if sodium bicarbonate is added because the acid usually present in the gastric juice will be partially or wholly neutralized.

If these conclusions are correct, then the addition of sodium bicarbonate to acetanilid is useless if the object is to make the acetanilid more soluble.

Fraud and Deception Connected with So-Called Cod-Liver Oil Preparations.

The introduction of cod-liver oil as a supposedly easily assimilable nutrient and reconstructive was followed by its extensive use in wasting diseases, especially in phthisis, in the treatment of which it came to be considered almost essential. as it was supposed to possess some mysterious power different from that of other oils. Its unpalatable character led to various devices to render it tasteless and to make it more acceptable to the stomach. Emulsions containing the oil in mixture with other substances were put on the market and served a useful purpose. But the oily nature, imperfectly concealed, was disagreeable to many, and gradually other preparations appeared which attempted to retain the supposed therapeutic virtues of cod-liver oil while dispensing with its disagreeable character. This attempt has been carried to the extreme that in many of the cod-liver oil preparations now on the market the oil has been entirely eliminated and all that is left of the oil is the name. This is a species of fraud which has been tolerated too long, but which will be kept up so long as physicians are willing to be duped. Some of these articles are said to "represent" the oil and to possess all its virtues. Others are said to contain oil, while still others are stated to contain "all the valuable constituents." What is the standard by which we may determine the true value of these preparations and by which we may determine whether or not we, and through us our patients, are being humbugged?

A FOOD OR MEDICINE—WHICH?

Is cod-liver oil to be considered a food or a medicine? A food, certainly. As a food its value will consist in the fats it contains. These fats are more easily oxidizable and are considered more digestible than other fats because of the presence of compounds derived from the liver which favor its emulsification and enable it to penetrate the mucous membrane more easily than other fats. Aside from their nutrient properties we have no evidence that the fats of cod-liver oil possess any therapeutic value; if the oil possesses therapeutic qualities they must reside in its non-fatty constituents, and the activity of these non-fatty constituents is not acknowledged by those who have investigated them scientifically. Most pharmacologists believe that whatever virtue there is in cod-liver oil depends on its qualities as an easily assimilable fat.

On the whole, we must conclude with Cushny that "cod-liver oil has not been shown to have any action apart from that of an easily digested food, and its superiority to some other fats and oils has not been satisfactorily established."

If, then, the value of cod-liver oil depends on the presence of fat as its nutritive constituent, the amount of fat a preparation contains will determine the worth or worthlessness of such a preparation; at all events, a preparation claiming to represent cod-liver oil which does not contain fat in some form is fraudulent.

HOW TO PROVE OR DISPROVE THE PRESENCE OF COD-LIVER OIL.

Fats may be changed to fatty acids or to soaps, as occurs under the influence of pancreatic juice in digestion, and still retain their nutritive value, but it is not possible to manipulate them in any way so that they are still valuable as food, and yet do not respond to easily applied chemical tests which demonstrate their fatty nature.

Any preparation of cod-liver oil in which fat or fatty acid is not recognizable by proper tests is valueless as food, since its food value depends on the amount of fat or fatty acid present. An elementary knowledge of chemistry and the application of a few simple tests will enable any physician to learn for himself whether or not a preparation contains fat or fatty acids.

The preparations claiming to "represent" cod-liver oil are in liquid form, and if they contain oil it must be one of the following forms:

1. An emulsion of the oil which may be miscible with water, but from which the fat tends to separate and rise to the top. In this form the fat can be seen as globules under the microscope.

2. A solution, resulting from the saponification of the oil, containing a soap which usually will be alkaline in reaction, especially when mixed with water, and from which fatty acids are separated as a precipitate when the solution is acidified.

3. A solution of fatty acids. This will be acid in reaction and will be precipitated by the addition of water, in which the fatty acids are not soluble.

WATERBURY'S METABOLIZED COD-LIVER OIL.

To illustrate the testing of these preparations we may take Waterbury's "Metabolized Cod-Liver Oil Compound," which, according to the label, "contains the metabolized product obtained by the action of ferments on cod-liver oil," with other ingredients. It is claimed that the oil has been "metabolized"* by the action of pancreatic juice. We would expect to find the fat in one of three forms mentioned above. Examination which any physician can make shows the following facts:

1. It is a clear liquid and no globules of oil are seen under the microscope. It is therefore not an emulsion.

2. It is of acid reaction when mixed with water and remains clear when strongly acidified. Hence it does not contain a soap, and is not a saponification of fat.

3. It mixes with water without precipitation; hence it can not contain more than traces of a fatty acid.

By these simple tests a physician is easily able to demonstrate that the preparation does not contain cod-liver oil. It is therefore valueless for the purpose of nutrition, for which we give the oil. More careful analysis confirms the results of these tests and shows that it contains no fat or fat acids (except the merest traces); one or more bodies with alkaloidal reaction may be extracted from the compound with ether after adding an alkali. No intelligent physician should be misled by the extravagant and unfounded claims made for this preparation.

---

* This use of the term "metabolized" is by a manufacturer's license and does not correspond to that of physiologists or of the dictionary which defines metabolism as the "act or process by which on the one hand dead food is built up into living matter, and by which on the other hand the living matter is broken down into simpler products within a cell or organism." It can not properly be used to describe a process occurring outside the body unless the manufacturers have penetrated the secrets of Nature farther than any physiologist has yet been able to go.

HAGEE'S CORDIAL OF COD-LIVER OIL.

But there are other preparations which present the matter in a slightly different form.

Hagee's Cordial of Cod-Liver Oil Compound is said to "represent 33 per cent. of pure Norwegian cod-liver oil," with other ingredients, in perfect solution. It is also claimed, according to the advertising pamphlet, that "in this preparation we have every beneficial constituent of the best and purest Norwegian cod liver oil." Put to the above three tests, however, Hagee's cordial of cod-liver oil is not, 1, an emulsion of cod-liver oil, 2, is not a saponification of cod-liver oil, and 3, does not contain fatty acids. It therefore contains no cod-liver oil. The only nutrients in the mixture, revealed by analysis, are sugar, alcohol and glycerin, none of which is contained in cod-liver oil.

In this case the manufacturer misleads by the use of the word "represents;" he is careful not to say "contains," although the average reader would not be apt to notice the nice distinction. The manufacturer unwittingly admits that it contains no oil when he says that it "contains everything of value except the grease." What else there is of value in cod-liver oil besides the "grease" we do not know. Certainly, if we estimate the value of the remedy by its nutrient properties, it must be set down as practically worthless, if not fraudulent, for although a mixture of sugar, alcohol and glycerin does possess certain nutrient value, the materials can be purchased for it far more cheaply in the open market. It is evident that claims are made for this preparation which can not be substantiated.

Again, some of the so-called cod-liver oil preparations are termed extracts of cod-liver oil, but are not in fact made from the oil, but from the cod-livers instead. They are preparations which, if honestly made, might be worthy of trial, but they are improperly called "extracts" of cod-liver oil, since they do not contain the fat, which is the active constituent of the oil, but the extractives from the liver which may or may not possess therapeutic virtues. So far as we know, however, no satisfactory evidence is forthcoming to indicate that such extractives have any therapeutic value.

The attempt to modify cod-liver oil for therapeutic purposes may be pronounced a failure and the large variety and extensive sale of these preparations appear to be owing to the fact that physicians do not recall the ordinary facts of chemistry and fail to apply simple tests with little technical skill, but too readily accept as facts the statements of the manufacturers.

Correspondence

Interstate Reciprocity and Frauds in Medical Schools.

San Francisco, Oct. 1, 1906.

To the Editor:—The communication of Dr. Ethan H. Smith, professor in the College of Physicians and Surgeons of San Francisco, in The Journal, Sept. 29, 1906, contains so many grave inaccuracies that I beg to be permitted, in reply, to state that: 1. The requirements in California are not determined by the Board of Examiners, but by the Association of American Medical Colleges. 2. H. R. Painton neither claimed nor was he entitled to credit on matriculating at the College of Physicians and Surgeons of San Francisco, the annual announcements of which invariably contained the requirements of the above mentioned association. 3. The records of the California board show Mr. Painton's statement to the credential committee, confirming all the assertions as to his having taught school in South San Francisco during the two years preceding his graduation from the College of Physicians and Surgeons of San Francisco. 4. His work in the medical and pharmacy departments during the two months' summer vacation is not denied, but such work can surely not be construed as an annual course. 5. Last April, just prior to the earthquake, I consulted the college records in reference to Painton. The dean, Dr. Hodghead, and the president, Dr. Winslow Anderson, were present. My carefully made notes show that none of the teachers' blanks gave Painton credit for attendance in 1903 and 1904, whereas attendance was credited fo the two subsequent courses. 6. In the opinion of the distric attorney of San Francisco Painton's act constitutes perjury 7. The archives of the California board contain numerous sim ilar instances of fraud on the part of the College of Physician and Surgeons of San Francisco. 8. The perusal of the record and minutes of the California board, all of which are ope for public inspection, and a close study of the constitution o the Association of American Medical Colleges are respectfully suggested to Dr. Ethan H. Smith.

Dudley Tait.

The Necessity for Better Provision for Legal Medicine in Thi Country.

New York, Oct. 8, 1906.

To the Editor:—Anent your editorial on the above subjec August 25, in which you lament the lack of instruction i medical jurisprudence, kindly permit one of your readers t say that as far as Cornell is concerned, your statement i incorrect.

While it is true that Cornell does not have a special chai in medical jurisprudence, that subject is as thoroughly covere as is possible without such special chair, by some of the othe departments of the reguar course, viz.: lectures in toxicolog by Prof. R. A. Witthaus to third-year students; gross path ology and autopsy work at the morgue in the third and fourt years respectively, under the direction of Dr. O. H. Schultze who is a coroner's physician of several years' standing and medicolegal expert of more than local renown, and, last bu not least, in the thorough course in mental diseases given t the senior class by Prof. A. Meyer, head of the New Yor state hospitals for the insane.

In this connection I fully agree with your Philadelphia cor respondent in his note published October 6, that a lawyer ca not give adequate instruction in this important branch; an that, furthermore, a coroner's physician is almost indispensable

Samuel Hollander, M.D.

Philadelphia, Oct. 6, 1906.

To the Editor:—The letter of my friend, Prof. Henry Leff mann, on "The Teaching of Medical Jurisprudence," published in the last number of The Journal, may possibly be misun derstood by some who are not familiar with the inner work ings of the coroner's office of Philadelphia. First of all, the "City Party," an organization which has done so much for bettering the political situation in Philadelphia, elected its nominee for coroner last November, and anyone who has paid attention to the manner in which this office has been con ducted since Jan. 1, 1906, by the present coroner, J. M. Rush Jermon, Esq., of the Philadelphia bar, knows that the busi ness of this department has been carried on honestly, fear lessly and well. It should also be stated in this connection that the exposures by the *Record*, to which reference was made in Professor Leffmann's letter, occurred many years ago. Sec ond, the *Proceedings of the Philadelphia Pathological Society* for the past twenty years show numerous and constant refer ences to material of a medicolegal nature collected and exhib ited at this society by the various physicians to the coroner; while hundreds of dead bodies from the coroner's office have been autopsied, and specimens taken from other cases demon strated, before the students of our various medical colleges during the same period of time. While serving as senior coro ner's physician of Philadelphia from 1896 to 1899, the official records of the office show that I made 799 autopsies. The material removed from these bodies was largely used in a teaching position which I then held in connection with one of our medical schools. Indeed, my own book on "Postmortem Pathology," of which the third edition is to be translated into German, and the forthcoming work on "Medical Jurispru dence," by Dr. William S. Wadsworth, the present incumbent of the office, and myself, would have been impossible were it not for the data collected from those dying violent and suspi cious deaths in the city of Philadelphia.

Henry W. Cattell.

JERSEY CITY, N. J., Oct. 6, 1906.

To the Editor:—In a letter in THE JOURNAL, September 8, took exception to a statement you had made in a previous litorial (August 25) that certain New York medical schools ake no mention of the subject of medical jurisprudence. In nforming you that a course in medical jurisprudence is given ach year at the Long Island College Hospital, Brooklyn, my tter was written only to correct your error.

In THE JOURNAL, October 6, p. 1116, Dr. Leffmann refers ather sarcastically to my letter of September 8. I had no ntention of discussing the value of instruction in medical urisprudence as it is taught or the merits of any one paricular course. The course I referred to, however, does conist of exactly what Dr. Leffmann mentions: "Questions of thics, general and legal, limitations of professional duties and ights, and cognate questions." And are not these things just hat comprise medical jurisprudence?

I must confess that I was not aware that medical jurisprudence includes "practical instruction in the determination of he cause of death." If that is what medical jurisprudence onsists of, then every medical college in New York teaches it. Probably New York and Philadelphia disagree on this point. agree with Dr. Leffmann that it is the medical man who hould give "instruction in the determination of the cause of eath." And it is the medical man who does give such instruction in the medical schools of New York; given by the lepartment of pathology.

Each school in New York has abundant material for this urpose, and uses all it has in affording the students an opporunity to see, examine and autopsy a large number of bodies ach year, under the direction of the professor of pathology. Surely the men who hold such positions in the larger medical colleges, even if at the time they are not "coroner's physicians," re fully as competent to give "practical instruction in the dectermination of the cause of death."

WALTER T. DANNREUTHER, M.D.

Marriages

ALFRED A. HERMANN, M.D., Newark, Ohio, in Chicago, September 29.

GEORGE B. WOOD, M.D., to Miss Helen Foss, both of Philadelphia, October 2.

FRANK KEAGY, M.D., to Miss Martha Bennett, both of Altoona, Pa., September 20.

RALPH M. TIDD, M.D., to Miss Nettie E. Whetson, both of Clark, Pa., September 24.

JAMES HENRY, M.D., to Miss Leona Reeves, both of Grand Rapids, Mich., September 26.

A. DAVID WILLMOTH, M.D., to Miss Edna Cralle, both of Louisville, Ky., September 27.

ARCHER W. SIMS, M.D., to Miss Charlotte Badger, both of Birmingham, Ala., September 27.

HAYWOOD BERT BARTHOLOMEW, M.D., to Miss Madge Tison Hurst, both of Denver, October 1.

WILLIAM FREDERICK BAKER, M.D., Birnamwood, Wis., to Miss Inez I. Powle, September 22.

C. J. ALTMAIER, M.D., Rudolph, Ohio, to Miss Ada Mae Henry of Columbus, September 26.

HARRY EDWARD CLYDE, M.D., Evanston, Ill., to Miss Jennie Mac Rothrock of Chicago, October 3.

EDWARD M. GANS, M.D., Eveleth, Minn., to Miss Genevieve Wolf of Stillwater, Minn., September 26.

ISAAC E. VAN HOESEN, M.D., Coxsackie, N. Y., to Miss Marie A. Gauger, at Albany, N. Y., September 26.

WILLIAM LYNN WILSON, M.D., to Miss Marguerite McConnell, both of St. Joseph, Mich., September 22.

EDWIN B. KENNER, M.D., Galveston, Texas, to Miss Lulu Shumaker of Warrensburg, Mo., September 27.

ARTHUR W. STROUT, M.D., Gardiner, Maine, to Miss Delia May Swain of Farmingdale, Maine, September 26.

ELLIS JEAKING CHAPMAN, M.D., to Miss Ida Mae Hutchinson, both of Bridgeton, N. J., at Shiloh, August 30.

ROY C. FAUST, M.D., Salem, S. D., to Miss Grace Bates of Pilot Township, Cherokee County, Iowa, September 18.

Deaths

Francis J. McQueeney, M.D. Harvard University Medical School, Boston, 1889; a member of the American Medical Association, Massachusetts Medical Society, Boston Medical Library, American Association for the Advancement of Science, American Geographical Society and Harvard Medical Alumni Association; high medical examiner of the Catholic Order of Foresters of Massachusetts; a police surgeon of Boston, died suddenly at his home in that city, October 1, from heart disease, aged 47.

William T. Skinner, M.D. University of Maryland School of Medicine, Baltimore, 1870; a member of the American Medical Association, and a member and president in 1888 of the Delaware State Medical Society; one of the most prominent physicians of Delaware, and a resident of Glasgow, was killed in a runaway accident near Porter's Station, September 29, aged 64. His daughter, who was with him in the carriage, was also killed.

Henry Elmer Musser, M.D. Jefferson Medical College, Philadelphia, 1875; a member of the Medical Society of the State of Pennsylvania and the Lancaster City and County Society, died suddenly at his home in Witmer, Pa., September 22, from angina pectoris, aged 54. At a meeting of the county society resolutions were adopted placing on record its appreciation for Dr. Musser and its sympathy for his family.

Robert H. Sturgeon, M.D. Chicago Medical College, 1891; one of the most prominent practitioners of the upper peninsula of Michigan, assessor and treasurer of the village of Iron River for two terms, died at his hospital in Iron City, September 28, from injuries received in a railway accident three days before, aged 47.

Sylvester S. Burrows, M.D. University of Michigan, Department of Medicine and Surgery, Ann Arbor, 1853; who represented Ashtabula County, Ohio, in the legislature 25 years ago, and was afterward superintendent of the State Asylum for the Blind, Columbus, died suddenly at his home in Geneva, September 28, aged 79.

Henry Frank Conover, M.D. Northwestern University Medical School, Chicago, 1904, of Crivitz, Wis., while attempting to quiet a crowd assembled at a charivari at the home of a neighbor, October 3, was accidentally shot in the leg, the femoral artery being severed, and died 30 minutes later, aged 25.

Franklin B. Ferguson, M.D. Medical School of Maine, at Bowdoin College, Brunswick, 1852; a member of the American Medical Association and of the Maine Medical Association; one of the most prominent physicians of Hancock County, Maine, died at his home in Deer Isle, September 21, aged 78.

Sirvilla A. Bennett, M.D. Medical School of Maine at Bowdoin College, Brunswick, 1855; a veteran of the Civil War, and for several years a member of the board of health of Norway, Maine, died at his home in that city, September 20, after a short illness, aged 77.

Mark Emerson, M.D. Cleveland Medical College, Medical Department of Western Reserve College, 1853; of Half Moon Bay; a resident of California for 50 years, died in Redwood City, September 21, six days after amputation of the leg for septicemia, aged 74.

John C. Beekman, M.D. New York University, New York City, 1882; of New York City; one of the consulting physicians to the Harlem Hospital, died in Atlantic City, N. J., September 28, from heart disease, after an illness of one week, aged 48.

Edward Louis Buchart, M.D. Tulane University of Louisiana, Medical Department, New Orleans, 1903; a member of the Vanderburgh County (Ind.) Medical Society, died suddenly from heart disease, September 25, at his home in Evansville, aged 27.

James Moffitt, M.D. Rush Medical College, Chicago, 1868; who retired from practice in 1880 on account of ill health and has been an invalid for the past 18 years, died at his home in Monticello, Ill., September 21, from uremia, aged 66.

Walter W. Routh, M.D. Pulte Medical College, Cincinnati, 1887; health commissioner of Duluth in 1894 and 1895, died in Pasadena, Cal., September 27, from tuberculosis, after an illness of eight years, aged 50.

C. L. Clay, M.D. Kentucky School of Medicine, Louisville, 1876; a practitioner of McLennan County for 30 years, died at his home in Moody, Texas, September 25, from typhoid fever, after a long illness.

Butler Cooper, M.D. Iowa Eclectic Medical College, Des Moines, 1888; health officer of Ankeny, Iowa, died at his home in that city, September 27, from tuberculosis, after a long illness, aged 39.

George F. Hand, M.D. New York Homeopathic College and Hospital, New York City, 1865; of Binghamton, N. Y., died in Brooklyn, September 27, after an operation, aged 63.

John B. Simpson, M.D. Medical College of Georgia, Augusta, 1861, died at his home in Prosperity, S. C., September 20, after a lingering illness, aged 70.

Association News

NEW MEMBERS.

New members of the American Medical Association for the month of September, 1906:

ALABAMA.

Baird, R. H., Cullman.
Donehoo, J. H., Ethelville.
Langley, O. V., Camp Hill.
Martin, A. P., Cullman.
Swann, Edward, Sprott.
Taylor, A. S., Mobile.
Waldrop, R. W., Bessemer.
Zurmehly, S. L., Bridgeport.

ARIZONA.

Pennell, F. C., Roosevelt.

ARKANSAS.

Quidor, J. E., Argenta.
Short, Z. N., Hot Springs.

CALIFORNIA.

Adams, P. A., Los Angeles.
Baker, Fred, San Diego.
Bering, R. E., Tulare.
Briggs, E. E. Watsonville.
Conlan, F. J. S., San Francisco.
Galbraith, Alex., Oakland.
Gibbons, H. W., San Francisco.
Holbrook, G. S., San Francisco.
Jackson, J. A., Hollywood.
Jones, J. T., Grass Valley.
Mead, L. D., Byron Hots Springs.
Simmons, H. M., San Francisco.
Tucker, G. E., Riverside.

COLORADO.

Hazlett, H. W., Paonia.
Rowe, M. J., Denver.

CONNECTICUT.

Chaffee, J. S., Sharon.
Littlejohn P. D., New Haven.

DISTRICT OF COLUMBIA.

Bain, S. B., Washington.
Dunlop, John, Washington.
Ruedy, R. C., Washington.

FLORIDA.

Williams, J. F., Monticello.

GEORGIA.

Arnold, J. T., Parrott.

ILLINOIS.

Babb, Helen, Springfield.
Baxter, A. J., Astoria.
Benson, E. O., Chicago.
Colbourne, J. A., Pontiac.
Colby, C. P., Springfield.
Combs, G. W., Ridgway.
Connett, J. E., Lawrenceville.
Corbus, H. L., Kankakee.
Culhane, T. H., Rockford.
Cummins, J. S., Rosiclare.
Davisson, A. W., Peoria.
Dinges, H. A., Red Bud.
Ferry, L. A., Geneseo.
Gerould, T. F., Centralia.
Hassett, J. J. McLeansboro.
Heintz, E. L., Chicago.
Hager, Daniel S., Chicago.
Horine, E. S., Colfax.
Hubbard, C. M., Virginia.
Huston, J. W., Virginia.
Kelly, J. W., Springfield.
Kraft, O. H., Chicago.
Lovewell, C. Hubart, Chicago.
Mannon, J. H., Kewanee.
Mitchell, W. C., Rock Island.
Morgan, F. B., Cornell.
Morgan, F. R., Towanda.
Parish, L. N., Harrisburg.
Quist, F. J., Chicago.
Rawlins, B. L., Chicago.
Ritchey, R. M., Menard.
Runte, Janet Ede, Chicago.
Songer, W. E., Menard.
Stotz, C. F., Chicago.
Taylor, J. F., Buda.
Thompson, T. W., Xenia.
Webb, W. J., Chicago.

INDIANA.

Barnes, C. A., Greenfield.
Bopp, H. W., New Salisbury.
Cunningham, J. M., Indianapolis.
Dixon, H. T., Evansville.
Ford, K. C., Indianapolis.
Garrett, J. D., Indianapolis.
Hoskins, W. D., Indianapolis.
House, J. W., Indianapolis.
Leonard, H. S., Indianapolis.
Moschelle, J. D., Indianapolis.
Robinson, W. B., Indianapolis.
Smith, L. W., Liberty Center.
Thompson, A. A., La Paz.
Weil, H. J., Indianapolis.

INDIAN TERRITORY.

Conger, H. A., Duncan.
Henderson, C. F., S. McAlester.
Kendall, W. L., Durant.

IOWA.

Boice, J. C., Washington.
Cary, F. T., Colo.
Cooling, W. A., Wilton.
Hansell, Wm., Ottumwa.
Huband, C. E., Ottumwa.
Hull, J. H., Washington.
Hullinger, J. D., Clinton.
Joynt, M. J., Jesup.
McFall, W. O., Hiteman.
Onsum, E., Waukon.
Price, A. S., Des Moines.
Syp, W. W., Centerville.
Tapper, G. W., Rowley.

KANSAS.

Brown, G. H., Chanute.
Dunning, Chas., Arkansas City.
Gabriel, G. W., Parsons.
Hood, T. A., Garnett.
Johnson, S. D., Chanute.
Mains, J. R., Whiting.
Martin, Mary S., Coffeyville.
Moore, R. M., Olathe.
O'Connor, B. R., Grenola.
Smith, Albert, Parsons.
Surber, C. C., Independence.

KENTUCKY.

Cook, O. C., Crayneville.
Duerson, C. B., Mt. Sterling.
Fox, J. E., Levias.
Francis, W. R., Bowling Green.
Gardner, W. F., Sheridan.
Koehler, F. W., Louisville.
Kleiser, A. H., Eminence.
Trisler, J. W., Marion.

LOUISIANA.

Schiro, Salvatore, New Orleans.

MARYLAND.

Brace, C. H., Cumberland.
Freedom, A. G., Baltimore.
Linthicum, O. M., Rockville.

MASSACHUSETTS.

Frost, E. C., Brockton.
Johnson, P. P., Beverly.
McCormick, C. J., Waltham.
Schroeder, M. C., Boston.

MICHIGAN.

Barrett, F. E., Kalamazoo.
Crotser, L. S., Petoskey.
Eaton, D. H., Kalamazoo.
Eaton, S. R., Battle Creek.
Foster, I. C., Albion.
Green, G. W., Dowaglac.
Haughey, W. H., Jr., Battle Creek.
Howell, D. C., Onaway.
McLarty, A. A., Manistee.
Read, A. J., Battle Creek.
Riley, W. H., Battle Creek.
Stone, W. A., Kalamazoo.
Stripp, A. E., Charlevoix.
Van Sickle, F. A., So. Frankfort.
Wright, W. J., Gregory.

MINNESOTA.

Abbott, C. U., Aurora.
Adair, F. L., Minneapolis.
Dreisbach, Norman, Minneapolis.
Nissen, Henrik, Minneapolis.
Reay, G. R., Hokah.
Robilliard, W. H., Faribault.
Smersh, F. M., Owatonna.

MISSISSIPPI.

McNeal, B. F., Leota Landing.
Ullman, J. S., Natchez.

MISSOURI.

Bennett, F. W., St. Louis.
Bondurant, W. E. H., Memphis.
Booth, H. A., Pacific.
Briegleb, C. F., St. Clair.
Davis, A. L., Arbela.
Downing, T. J., New London.
Ferrell, J. J., Owensville.
Geisinger, E. J., Unionville.
Lopp, J. E., Jefferson City.
Malcolm, P. M., Sikeston.
Robertson, W. M., St. Louis.
Weiss, F. H., Kansas City.
Williamson, C. W., Poplar Bluff.
Zieber, W. H., Queen City.

NEBRASKA.

Conaway, J. B., York.
Plehn, F. W., Burchard.

NEVADA.

Masterson, J. R., Dayton.

NEW JERSEY.

Ames, E. H., Jersey City.
Harbert, G. E., East Orange.
Hardenberg, D. S., Jr., Jersey City.
Seibert, E. C., Orange.

NEW YORK.

Andrews, R. M., Bergen.
Allen, A. H., Gouverneur.
Allen, B. P., Oriskany.
Baker, F. J., Lockport.
Beaupre, J. O. A., Malone.
Bibbins, C. N., Watertown.
Blood, N. D., Auburn.
Breese, A. B., Syracuse.
Briggs, C. M., Fairport.
Brooks, N. O., Oneida.
Burch, J. H., Baldwinsville.
Clark, R., Brooklyn.
Clowe, C. F., Schenectady.
Collier, E. J., Amsterdam.
Coss, E. M., Cattaraugus.
Deck, O. H., Herkimer.
Dickert, J. G., Brooklyn.
Donovan, P. M., Canandaigua.
Dow, F. F., Rochester.
Elting, A. W., Albany.
Finch, H. C., Broadalbin.
Fitch, R. R., Rochester.
Geyser, A. C., New York.
Hammond, C. N., Elmira.
Hennessy, W. J., Palmyra.
Hoyt, H. A., Watertown.
Hudson, W. T., Auburn.
Hurrell, Louise M., Rochester.
Hyde, R. E., Plattsburg.
Ilett, A. E., Watertown.
Johnson, D. F., Newark.
Johnson, H. D., New York.
Johnston, A. M., Utica.
Kane, J. F., Olean.
Kaufmann, Jacob, New York.
Kellow, W. J., Watertown.
Knight, Robt., Seneca Falls.
Lapp, E. H., Williamson.
Lester, F. W., Seneca Falls.
Martin, M. E., Attica.
McAveney, W. J., Brooklyn.
McIlmoyle, H. A., Ogdensburg.
Morton, E. S., Brooklyn.
Murray, Archibald, Brooklyn.
Nock, T. G., Rome.
O'Connor, J. C., Rochester.
Oliver, G. H., Malone.
Osterhout, Elijah, Newburgh.
Paul, G. P., Troy.
Pfarre, E. R., New York.
Preston, Frank, Greene.
Roos, G. W., Wellsville.
Ruggles, E. Wood, Rochester.
Russell, W. D., New Hartford.
St. John, H. L., Rochester.
Sanford, M. J., Suffern.
Seeley, C. R., Attica.
Selover, C. W., Stanley.
Shaw, H. L. K., Albany.
Shea, P. H., Canton.
Smith, C. E., Whitesboro.
Smith, W. G., Walton.
Strasenburgh, F. A., Avon.
Waller, P. G., New Baltimore.
West, C. B., Central Islip.
Whitbeck, J. F. W., Rochester.
Willard, E. S., Watertown.
Wright, H. B., Skaneateles.
Zimmer, John, Rochester.

OHIO.

Adams, Thos., Cleveland.
Ash, R. C., Ashland.
Barton, R. S., New Philadelphia.
Calhoun, G. E., Uhrichsville.
Carson, F. D., Benton.
Clark, C. S., Leesville.
Eddy, R. C., Cleveland.
Emery, W. F., Ashland.
Fulwider, R. M., West Liberty.
Green, H. S., Cardington.
Hubbell, W. B., Elyria.
Jones, A. W., Westerville.
Jones, D. K., Canal Fulton.
Lemon, W. L., Cleveland.
Leslie, F. A., Toledo.
Mayhugh, G. H., Westerville.
Merriam, W. H., Fredericksburg.
Millikin, Emma, Ontario.
Perry, W. H., Van Wert.
Pyle, J. S., Toledo.
Rice, R. A., Columbus.
Richardson, E. O., Marion.
Rosenthal, H. A., Bridgeport.
Rusk, R. P., Cadiz.
Smith, H. H., Lexington.
Stockton, L. D., Carrollton.
Stokes, C. C., Rushylvania.
Stout, W. C., Killbuck.
Webster, G. E., Kingsville.
Widdecombe, Emily J., Kent.
Williams, J. R., Carrollton.
Wolf, C. P., Massillon.

OKLAHOMA.

McLean, G. D., Oklahoma City.
Taylor, G. W., El Reno.

OREGON.

Dammasch, F. H., Portland.

PENNSYLVANIA.

Baer, B. F., Jr., Philadelphia.
Bair, C. H., Homestead.
Bateson, J. C., Scranton.
Comroe, J. H., York.
Dunnick, M. C., Shrewsbury.
Harter, G. A., Maytown.
Havens, J. G. W., Philadelphia.
Hesser, A. J., Pittsburg.
Hickson, W. J., Pittsburg.
Lindeman, C. E., Pittsburg.
Mallon, E. A., Philadelphia.
Myers, N. R., Wanamie.
Pierce, A. M., West Elizabeth.
Reeser, Richard, Columbia.
Smith, Stanley, Pittsburg.
Williams, C. L., Harmonsburg.

SOUTH CAROLINA.

Cudd, A. D., Spartanburg.
Jervey, A. J., Charleston.
McCormack, J. R., Olar.
Posey, E. O., Woodruff.

SOUTH DAKOTA.

Giffin, A. M., Rapid City.
McKechnie, W., Egan.

TENNESSEE.

Allen, P. McF., West Nashville.
Barr, R. A., Nashville.
Dixon, W. C., Nashville.
Eblen, J. G., Lenoir City.
Graham, Frank, Memphis.
McCabe, W. M., Nashville.
Perry, Alexander, Nashville.
Stanley, J. B., Memphis.
Walker, G. M., Soddy.
Washburn, P. A., Nashville.

TEXAS.

Boyd, J. E., Aquilla.
Cleary, P. J. A., San Antonio.
Herring, Isaiah, Prairie Grove.
Jameson, G. M., Dublin.
Lindsay, A. H., Paris.
Scott, Z. T., Clifton.

UTAH.

Nelson, J. B., Monroe.

VERMONT.

Bosworth, Robinson, Barton.
Ricker, W. G., Wells River.

VIRGINIA.

Amiss, E. P., Harrisonburg.
Armstrong, G., Staunton.

Baird, T. E., Norfolk.
Baker, S. J., Manchester.
Brunk, O. C., Charlottesville.
Bryne, J. S., Danville.
Dice, B. A., Forest Depot.

WASHINGTON.

Palmer, D. H., Seattle.

WEST VIRGINIA.

Curry, A. W., Rouceverte.
Dix, Sherwood, Williamson.
McKinney, L. L., Burnsville.
Oates, T. K., Martinsburg.
Peck, S. P., Hinton.
Perry, O. L., Elkins.
Stump, E. H., Philippi.
Woofter, A. J., Weston.

WISCONSIN.

Flatley, M. A., Antigo.
Lenfesty, J. P., De Pere.
O'Connor, D. J., Appleton.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish name or address will be faithfully observed.

BREWERS' GRAINS AS FOOD FOR CATTLE.

———, N. J., Sept. 26, 1906.

To the Editor:—Can you or any of your readers inform me why wet brewers' grains are not allowed by some municipalities to be given in the dairies which they license for milk supply? Surely these grains form a useful and comparatively inexpensive part of the cow's ration, especially where it is difficult to grow alfalfa, and if carted from the brewery frequently, and in small quantities (by the farmer) and properly salted, should be subject to little change. Is it not a fact that in those places where dried brewers' grains are allowed the farmers wet them and leave them soaking for twenty-four hours or longer? I should like to see a discussion or expression of opinion on this subject, for I am health officer in my city, and in going around the dairies have seen that a good many farmers use these grains, and I should be disinclined to propose a prohibitive clause in our ordinances unless there is a really good reason for it. S.

ANSWER.—Average analyses show that brewers' grains contain more than 20 per cent. albumin, from 40 to 50 per cent. carbohydrate, and more than 6 per cent. fat. In the wet state more than 75 per cent. water is present. If allowed to remain in a moist coudition lactic acid fermentation sets in, which later is supplanted by butyric acid fermentation. Finally, after a certain amount of butyric acid has accumulated, putrefaction begins, which, by the production of ammonia, neutralizes the lactic and butyric acids and imparts an alkaline reaction to the mass of grains. The odor is then offensive, and the food value diminishes as the proteid contents are decomposed by the putrefactive bacteria. In this state, if not positively injurious, brewers' grains are at least of little food value. According to Dietrich, 100 pounds of barley yield 26 pounds of dry and 110 pounds of moist grains. About 65 per cent. of the nitrogenous, 20 per cent. of non-nitrogenous extract, two-thirds of the ash, and almost all the phosphoric acid pass into the refuse. If this refuse is dried without being pressed it loses none of its valuable constituents. Soaking for one-half hour in hot, or for from five to six hours in cold water, restores the dried grains to their original moist condition. There is no disagreeable odor and no sour taste in this condition. During the stage of lactic acid fermentation it is questionable whether the grain is injurious for use as food. Silage, which has been shown to be at least equal to fresh fodder, also contains lactic acid. Legitimate objection, however, can be raised if brewers' grains are fed in a state of putrefaction. Feeding experiments indicate that when cows are fed with brewers' grain, even in large amounts and in the early stages of fermentation, detrimental results do not follow (New York Agricultural Experiment Station, 1884). At present dry brewers' grains are listed among the licensed feeding stuffs in Wisconsin. One experimenter (A. S. Alexander) found that the flow of milk increased with brewers' grains as food, and that the quality of the milk was good. In conclusion, it may be said that the considerable amount of nutrient material in brewers' grains makes them, when fed to cattle in proper condition, of great value. Brewers' grains alone should not be expected to furnish cattle with a suitable amount and quality of food any more than any other food substance, and the chief objections advanced against the use of brewers' grains are also applicable to many other food materials. If given in conjunction with other feeding stuffs and before putrefaction has set in brewers' grain must be considered a valuable and cheap food for dairy cattle. No detrimental effect has been demonstrated either on the health of the animals or on the milk produced by them. On the other hand, distillery refuse containing considerable quantities of alcohol seems to be very undesirable.

EMULSION OF SILVER IODID.

WEST GROVE, PA., Sept. 28, 1906.

To the Editor:—Some time ago I saw a formula for emulsion of silver iodid in THE JOURNAL, but I have mislaid the number containing it. Will you kindly give me the formula and greatly oblige DR. W. B. EWING.

ANSWER.—This formula appeared in THE JOURNAL A. M. A., June 9, 1906, page 1766, in chapter XXIV of "The Pharmacopeia and the Physician." The formula is as follows:

℞.	Argenti nitratis Potassii iodidi āā.....gr. xxxlll	2
	Mucilago chondri (N.F.).....f3vi	25
	Aquæ dest. q. s. ad.....f3iii	100

M. Sig.: Use as an injection.

The best method of preparing a finely-divided precipitate is to dissolve the potassium iodid in all of the water and to add the crystals of silver nitrate, shaking well after each addition; when the silver nitrate is dissolved add the mucilage and shake thoroughly once more. The resulting mixture will represent approximately 3 per cent. of silver iodid. If prepared in this way the weaker mixtures will require a correspondingly smaller amount of mucilage to hold the powder in suspension and mixtures below 1 per cent. may be dispensed without the addition of any foreign material.

WHAT IS A RESIDENT PHYSICIAN?

HOT SPRINGS, S. D., Oct. 4, 1906.

To the Editor:—Will you, through the columns of THE JOURNAL, kindly define what is called a "resident physician" to a hospital? F. E. WALKER.

ANSWER.—The physician who lives in the hospital (or sometimes near by) who has the routine medical oversight of the patients and who is supposed to be within call during his hours of duty.

The Public Service

Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending Oct. 6, 1906:

Hoff, John Van R., asst.-surgeon general, granted 30 days' leave of absence.

Havard, Valery, asst.-surgeon general, left Washington, D. C., en route to Newport News, Va., for duty as chief surgeon, Cuban expedition.

Kean, J. R., surgeon, left Washington, D. C., en route to Havana, Cuba, for duty.

Crabtree, Geo. H., asst.-surgeon, left Ancon, Canal Zone, Isthmus of Panama, on 6 weeks' leave of absence.

Morris, S. J., asst.-surgeon, reported for duty as transport surgeon of the *Sumner*.

Eastman, William R., asst.-surgeon, left Army General Hospital, Presidio of San Francisco, on leave of absence for 10 days.

Woodruff, Charles E., surgeon, returned to Plattsburg Barracks, N. Y., from leave of absence.

DeLaney, M. A., asst.-surgeon, returned to attending surgeon's office, Washington, D. C., from leave of absence.

Harvey, P. F., asst.-surgeon-general, returned to Governor's Island, N. Y., from leave of absence.

Buck, C. D., asst.-surgeon, left Fort Leavenworth, Kans., for the Army General Hospital, Presidio of San Francisco.

Raymond, H. I., surgeon, left Columbus Barracks, Ohio, with troops for Fort Mackenzie, Wyo.

Lewis, W. F., asst.-surgeon, returned from Chicago, to his proper station, Fort Sheridan, Ill.

Chamberlain, W. P., asst.-surgeon, left Jackson Barracks, La., on leave of absence for two months.

The following named officers ordered to duty with expedition to Cuba:

Havard, Valery, asst. surgeon-general.

Taylor, Blair D., deputy surgeon-general.

Johnson, Richard W., Birmingham, Henry P., Willcox, Charles, Frick, Euclid B., and Clarke, Joseph T., surgeons.

Geddings, Edward F., Hartsock, Frederick M., Truby, Willard F., Brooks, William H., Little, William L., Church, James R., Webb, Walter D., Allen, John H., Thomason, Henry D., Gilchrist, Harry L., Bevans, James L., Davis, William T., Truby, Albert E., Patterson, Robert U., Hansell, Haywood S., Fauntleroy, Powell C., Cowper, Harold W., Kieffer, Charles F., Koerper, Conrad E., Quinton, William W., Miller, Reuben B., Webber, Henry A., Wilson, Compton, Duval, Douglas F., Tefft, William H., Stone, John H., Shook, Jay R., Whitcomb, Clement C., Smart, R., Richards, Robert L., Bartlett, Cosam J., Marrow, Charles E., and Miller, Edgar W., asst.-surgeons.

Branch, Frederick D., contract surgeon, ordered from Fort Wood, N. Y., to Fort Totten, N. Y., for temporary duty.

McAlister, John A., dental surgeon, left Fort Rosecrans, Cal., and arrived at the Presidio of Monterey, Cal., for duty.

Wing, Franklin F., dental surgeon, returned to Fort D. A. Russell, Wyo., from leave of absence.

Stone, Frank P., dental surgeon, returned to Fort Sam Houston, Texas, from leave of absence.

Boak, S. Davis, dental surgeon, left Columbus Barracks, Ohio, on leave of absence.

Wolven, F. Homer, dental surgeon, left Fort Jay, N. Y., and arrived at Fort Monroe, Va., for duty.

Mason, George L., dental surg., left Fort Fremont, S. C., and arrived at Fort Moultrie, S. C., for duty.

Navy Changes.

Changes in the Medical Corps, U. S. Navy, for the week ending Oct. 6, 1906:

Wentworth, A. R., surgeon, detached U. S. R. S. *Franklin*, Navy Yard, Norfolk; to the *Louisiana*, sailing Oct. 4, 1906.

Evans, S. G., surgeon, detached *Louisiana* and from treatment at the Naval Hospital, Boston, and granted sick leave of absence for two months.

Lovering, P. A., medical inspector, detached U. S. Naval Medical School, Washington, D. C.; to command the U. S. Naval Hospital, Norfolk, Va.

Brooks, F. H., asst.-surgeon, when discharged treatment at Naval Hospital, Newport, granted sick leave of absence for six weeks.

Du Bose, W. R., medical Inspector, detached duty as assistant to the Bureau of Medicine and Surgery, Navy Department, Washington, D. C., etc.; to command U. S. Naval Hospital, Yokohama, Japan, sailing Oct. 20, 1906.

Halloway, J. H., P. A. surgeon, to the *Nevada*.

McLean, A. D., P. A. surgeon, detached Navy Recruiting Station, Cincinnati, Ohio; to duty at Navy Recruiting Station, Detroit.

Woodward, J. S., asst.-surgeon, to Navy Recruiting Station, Cincinnati, Ohio.

Boyd, John C., medical director, to duty in command of the U. S. Naval Medical School Hospital in addition to his present duties.

DeBruler, J. P., asst.-surgeon, to duty at U. S. Naval Medical School Hospital in addition to present duty.

Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ending Oct. 3, 1906:

Wertenbaker, C. P., surgeon, extension of leave of absence for seven days from September 22, granted Surgeon Wertenbaker, amended so as to read for four days only.

Wickes, H. W., P. A. surgeon, directed to proceed to Stapleton, N. Y., and report to the medical officer in command for duty and assignment to quarters, on being relieved from duty at Reedy Island Quarantine Station by P. A. Surgeon W. A. Korn.

Lavinder, C. H., P. A. surgeon, directed to proceed to Wilmington, N. C., and assume command of the service, on the arrival at Stapleton, N. Y., of P. A. Surgeon H. W. Wickes.

Hobdy, W. C., P. A. surgeon, granted leave of absence for ten days from October 1.

Stansfield, H. A., P. A. surgeon, relieved from duty at Baltimore, and directed to proceed to Havana, Cuba, reporting to P. A. Surgeon R. H. von Ezdorf for duty.

Salmon, T. W., asst.-surgeon, granted leave of absence for seven days from September 29, under Paragraph 191 of the Regulations.

McKeon, F. H., asst.-surgeon, granted leave of absence for one day.

Fogarty, J. N., acting asst.-surgeon, granted leave of absence for one day, September 18.

Goldsborough, B. W., acting asst.-surgeon, granted leave of absence for two days from September 29.

Hicks, W. R., acting asst.-surgeon, granted leave of absence for ten days from September 22.

Watkins, McDonald, acting asst.-surgeon, granted leave of absence for one day.

Allen, G. C., pharmacist, leave of absence granted Pharmacist Allen for twenty-three days from August 4, amended to read twenty-three days from August 5.

APPOINTMENTS.

Dr. Frlench Simpson, of Texas, commissioned (recess) as assistant surgeon, Public Health and Marine-Hospital Service, October 1.

Dr. Robert A. Herring, of Mississippi, commissioned (recess) as assistant surgeon, Public Health and Marine-Hospital Service, October 1.

BOARDS CONVENED.

Boards of medical officers were convened to meet on Oct. 10, 1906, for the purpose of making physical examinations of applicants for cadetships in the Revenue Cutter Service at the following named places: Washington, D. C., Asst. Surgeon-General J. W. Kerr, chairman, Asst.-Surgeon J. W. Trask, recorder; Boston, Surgeon R. M. Woodward, chairman, P. A. Surgeon B. S. Warren, recorder; New York, Asst.-Surgeon J. S. Boggess, chairman, Acting Asst.-Surgeon R. Knowles, recorder; Philadelphia, Surgeon J. M. Gassaway, chairman, Asst.-Surgeon H. McG. Robertson, recorder; Baltimore, Surgeon L. L. Williams, chairman, Acting-Asst. Surgeon ——, recorder; Chicago, Surgeon G. B. Young, Chairman, Asst.-Surgeon E. T. Olson, Recorder; Detroit, Surgeon Fairfax Irwin, chairman, Asst.-Surgeon K. A. C. Wollenberg, recorder.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended Oct. 5, 1906:

SMALLPOX—UNITED STATES.

Louisiana: New Orleans, Sept. 15-22, 1 case, imported.

SMALLPOX—FOREIGN.

Canada: Toronto, Sept. 8-15, 1 case.
Ecuador: Guayaquil, Aug. 1-31, 39 deaths.
France: Marseilles, Aug. 1-31, 6 deaths; Paris, Aug. 13-15, 11 cases.
Gibraltar: Sept. 2-9, 1 case.
Great Britain: Liverpool, Sept. 8-15, 1 case.
Italy: General, Aug. 23-Sept. 13, 12 cases.
Russia: Odessa, Sept. 1-8, 3 cases, 1 death.

YELLOW FEVER.

Cuba: Habana, Sept. 29, 1 case; Santa Clara Province, Oct. 2, 1 case, 1 death.
Mexico: Merida, Sep. 16-22, 3 cases, 2 deaths; Tierra Blanca, 1 case; Vera Cruz, 1 case.

CHOLERA—INSULAR.

Philippine Islands: Manila, Aug. 4-18, 153 cases, 128 deaths; Provinces, 1,104 cases, 856 deaths.

PLAGUE.

Brazil: Campos, Aug. 14-18, 7 deaths.
China: Hangchow, Aug. 18-25, present; Hong Kong, July 7-Aug. 11, 33 cases, 34 deaths.
Egypt: Alexandria, Sept. 2-13, 6 cases, 3 deaths; Beni Souef Province, Sept. 11, 1 case, 1 death; Suez, Sept. 5-10, 6 cases, 4 deaths.
Mauritius: July 25-Aug. 15, 5 cases, 4 deaths.
Peru: Lima, Aug. 17-20, present.
Turkey: Trebizond, Aug. 8-29, 10 cases, 3 deaths.

Miscellany

The Blood in Gastric Cancer.—Baradoulin examined the blood in 10 patients with cancer of the stomach. The proportion of red blood corpuscles was much diminished and the hemoglobin percentage very low, lower than corresponded to the reduction in the numbers of reds. There was always leucocytosis, more intense the more advanced the case. The leucocyte formula was normal at first, but later the lymphocytes increased while the polynuclears diminished. The leucocytosis of digestion was present in only 2 cases. In both of these, free HCl was found in the stomach content. He also noticed the absence of leucocytosis of digestion in case of cancer in other parts of the body (breast, upper jaw, rectum), and he thinks that this is due to the fact that the lymphatic glands, being constantly irritated by the cancer toxins, cease to respond to such a mild excitation as the process of digestion. In case of gastric ulcer the leucocytosis of digestion can always be determined. He suggests that in doubtful cases the absence of hyperleucocytosis during digestion may serve as a positive sign for differential diagnosis, its absence indicating the presence of cancer. His communication is published with casuistic detail in the *Russky Vrach*, No. 28, 1906.

Abdominal Fissure and Double Genitalia.—In the *British Medical Journal*, Aug. 25, 1906, E. Chill reports a case in which the premature rupture of the membranes was followed by a tedious labor ending in inertia uteri, which necessitated delivery by forceps. The liquor amnii was of a peculiar tenacious consistence, dirty black color, staining deeply as it escaped with each pain. The mother made an uninterrupted recovery. The child was an eight months' fetus and lived for some hours after its birth. The whole of the abdominal wall was absent from about an inch below the point of the sternum to within an inch of the pubic bone, with the exception of a small irregular flap of skin which contained the umbilical cord. The viscera protruded freely through this opening. There was no great omentum. The external genitalia were duplicated and separated from one another by a clearly defined central space of skin (raphe). The urogenital and anal orifices on both sides were extremely rudimentary and suggested early intrauterine arrested development. There were present two shallow sinuses, with raised labia majora in each and two anal depressions below the perineum on either side. The organs on the left of the raphe were rather more developed than those on the right. With the exception of these abnormalities the child was in every other respect well formed, and cried lustily at birth.

Another Test for Detection of Occult Blood.—I. Boas of Berlin describes in the *Centrbl. f. innere Med.*, No. 24, 1906, the application of Storch's reagent to the detection of invisible blood in the stools and stomach content. The test appears to be about as sensitive as the turpentine and aloin tests, but less so than Adler's benzidin reaction. The latter is said by O. Schumm to be too sensitive, sometimes indicating the presence of blood when none exists. The reaction described need not supplant those at present in use, but may prove useful when the findings with the other tests are dubious or contradictory. Boas has recently been using it almost exclusively and says that he has every reason to regard it as an easily applied and reliable test. It is applied as follows: The material is treated in the usual way with as little glacial acetic acid as possible (about 20 drops), and extracted with ether. To the ethereal extract 1 to 2 drops of a very dilute solution of paraphenylendiamin hydrochlorid (1 to 200) are added. As the reaction occurs very slowly if at all in the presence of acid, 1 c.c. of one-half normal alcoholic solution of potassium hydroxid is added to the mixture and then 10 to 15 drops of a 3 per cent. solution of hydrogen peroxid. There now appears immediately at the bottom of the test tube, after a little shaking, a characteristic olive green color. Especially characteristic is the olive green ring between the ether and the hydrogen peroxid layers, while the supernatant liquid shows a more or less intense violet color due to the action of the reagent. The green color is very evanescent and soon changes to a more or less deep dark violet, according to

the amount of blood. In stools containing much bile or urobilin it is advisable to extract with alcohol-ether according to the method of O. Schumm before applying the blood test. In the absence of blood the green color either does not appear at all or only after long standing. Numerous control comparative trials of the new test and those previously used have shown completely concordant results.

Cancer of the Pancreas.—Two cases of cancer of the pancreas are minutely described by Lubenetzky and Phaphanoff in the *Russky Vrach*, Nos. 12-13, 1906. The first patient entered the hospital complaining of weakness, palpitations, nausea, loss of appetite; edema of the feet and ascites. No syphilis or alcoholism. After tapping, a tuberous, solid and very painful tumor could be palpated in the hypogastrium on the median line, but the sides of the tumor were covered. It was immovable during respiration, and inflation of the stomach did not change its position. The stomach contents showed mucus, no HCl, traces of lactic acid, and Sahli's test with desmoid capsules containing iodoform showed absence of iodin in the saliva even twenty-five hours after the test. The feces were apparently normal. The urine, 800 c.c., was not examined with chemical tests. There was no glycosuria nor excess of fat or nitrogen. The further course was accompanied by a distaste for meat, pains in the hypogastrium, rapid reaccumulation of the ascites (the next day), nausea and vomiting immediately after meals, and, later, even fasting. Autopsy showed cancer of the pancreas with involvement of the duodenum, pylorus, omentum and transverse colon. In the second case there was pain in the epigastric and umbilical regions, increasing after meals, also diarrhea, with fair appetite, weakness, but no syphilis or alcoholism, and no ascites. The abdomen was enlarged and in the upper and middle portions of the abdomen along the median line, a tumor could be felt as large as a watermelon, immovable during respiration. The stomach did not contain HCl, but lactic acid was found in normal quantities. The tumor was diagnosed as a cyst of the pancreas, and cancer as the patient showed progressive decline. The operation did not improve his condition and he died several months later. Autopsy confirmed the diagnosis of cyst and cancer of the pancreas, with metastases in the spleen.

Fractures in the Insane.—J. F. Briscoe (*Clinical Journal*, London, August 8), has endeavored to test the truth of the general assumption that the bones of the insane are peculiarly liable to fracture, and especially that the ribs are peculiarly fragile by sending out a circular letter of inquiry to 50 asylums in Great Britain and analyzing the answers received. The general belief, as indicated by the replies, is that fractures are not especially frequent among the insane, and although some observers have noted an unusual fragility of the bones, either from clinical observation or at postmortem, the majority do not seem to think that the insane are in any way peculiar so far as the osseous system is concerned; unless the peculiar fragility is the result of improper nutrition, advancing age, or possibly general paralysis. While trophic changes have been recognized as a result of nervous disease, there seems little reason for giving that as an explanation in the case of the bones, as the nerves entering the bones are mostly distributed to the blood vessels and if they influence nutrition, probably do so through the distribution of blood. There is need of more careful examination of the blood vessels of the bones in these cases. The bones of the insane appear to heal as readily when broken as those of sane persons in general. There is little reason for believing that the ribs are especially liable to softening and fracture. One reason for the more frequent fracture of the ribs in the insane may be an original defect of structure and another is that they are especially liable to pressure in struggles that can not be avoided with the best of attendance. For this reason, it is believed that a reasonable amount of mechanical restraint by the padded straight jacket would be preferable to the uncertain action of the arms of a male attendant under the provocation of a struggle.

The Pathology of Chill.—W. Ringrose Gore (*Clinical Journal*, London, August 8) divides bacterial diseases into infective, in which the bacteria are introduced from without the body, and those in which the bacteria are present in the body but become active only after some interference with the natural immunity. The most frequent cause of the loss of immunity is an alteration of the secretions brought about by chilling the external surface. The altered character of the secretions has been shown for nasal catarrh by experiments which demonstrate that the bacteria of nasal catarrh do not grow well in normal nasal mucus, nor will the ordinary bacteria of the mouth and nose increase if incubated in healthy mucus, but that all these organisms grow rapidly in the secretion from the first stage of catarrh. As diseases which may be originated by chill he enumerates nasal catarrh, bronchitis, pleurisy, pneumonia, rheumatic fever, and, in some cases, intestinal catarrh. An important distinction between infective diseases and chill diseases, he states, is that an attack of the former confers immunity by an alteration of the blood while in the latter immunity depends on the protective action of the secretions, a renewal of the chill is followed by a renewed attack. The best method of prevention, he believes is the hardening of the body by cold bathing and careful exposure.

The Leech as a Means of Research in Regard to Toxic Causes.—Cajal has long called attention to the advantages of the common medicinal leech for purposes of scientific research. Its organs are so simple that they form practically a schematic diagram of the vital organs. The blood to be examined is ingested by the leech by the natural route, instead of the unnatural process of intraperitoneal or other inoculation. The changes in its neurofibrils are easily apparent and form a sensitive and reliable index of toxic action on the part of the blood ingested. R. Rebizzi, of Florence, reports in the *Rivista di Pathologia nerv. e. mentale*, June, 1906, a series of researches undertaken with the leech to determine the toxic cause of certain mental affections. It has recently been established that the neurofibrils react like the chromatic substance, even to non-elective stimuli, and this opens a wide field for research in regard to the action of toxins. Rebizzi announces among other points thus learned that dementia præcox in its early stages shows most decidedly the action of a toxic agent elective for the nervous system. After the nervous system has been injured by the toxin, the latter always vanishes from the blood so that in this, as also in alcoholic psychoses, the first intoxication and the permanent lesions it leaves are followed by no indications of the presence of an elective toxin in the blood later. He is convinced that the causal toxin in the majority of mental affections is of exclusively intestinal origin. The task now is to determine which bacteria in the intestinal flora are responsible, and to learn how to keep them under control.

Mortality Among Athletes.—Dr. Robert E. Coughlin, Brooklyn, N. Y., has been studying the fatalities in athletic games and deaths of athletes in 1905. In the *Medical Record*, June 2, 1906, he records 128 deaths, of which 78, or about 61 per cent., were due to accidents, distributed as follows: Football, 28; baseball, 12; horse racing, 9; boxing, 6; gymnasium exercise, golf, polo, bicycle coasting, handball, hammer throwing and wrestling, 3 each. Of the 50 deaths due to disease, 9 resulted from cerebrospinal meningitis, 8 from cardiac diseases, 7 each from pneumonia and pulmonary tuberculosis, 5 from Bright's disease, 4 each from appendicitis and typhoid fever, 1 each from apoplexy, suppurative tonsillitis, splenic anemia and senility; 2 were cases of suicide. The number of deaths due to cerebrospinal meningitis was exceptional, as this disease was epidemic last year. The average age at death of the athletes dying from accident was 20 years; that of the athletes dying from disease, 31 years. Among the causes of fatalities from accidents were: Abdominal injuries, dislocation of spine and paralysis, fracture of skull, cerebral hemorrhage, shock, cardiac failure, heat exhaustion, concussion of brain, fracture of spine, acute peritonitis. Dr. Coughlin's conclusions are that athletes are specially susceptible to cardiac lesions, pneumonic and infectious diseases generally; that football is the cause of an appalling number of serious injuries and fatalities, and that the aim of athletics should be not to cripple men, but to improve them.

Transmission of Disease by Pets.—The Journal commented on "The Pathologic Cat," July 21, page 209. Another warning on the danger from pet cats and dogs is from Remlinger and Nouri of Constantinople, who relate instances from their experience in which the strictest measures of isolation and disinfection were nullified by a pet cat allowed to roam through the house. They state: "There is scarcely a hospital or ward without its cat or cats, and they go from bed to bed and ward to ward seeking for tidbits and caresses which the convalescents are only too glad to bestow to while away the time." They describe in a communication to the newly founded journal, *Hygiène Gén. et Appliquée*, experiments with cats whose fur was touched with cultures of various bacteria. They found typhoid bacilli still alive and viable up to the seventeenth day after inoculation of the fur. Diphtheria bacilli were viable up to the twenty-fourth day, but were dead by the twenty-seventh, while anthrax bacilli lived and persisted indefinitely. All these germs were found with unattenuated virulence as long as they could be cultivated from the cat's fur. The results of similar tests on dogs were approximately the same. The article concludes with the statement that fondling cats and dogs is an antihygienic habit. Until the habit is abandoned for good, at least the hands should be washed with soap and water whenever one of these animals has been touched.

Lack of Legislation Regulating Practice of Medicine in Germany.—The lack of legislation regulating the practice of medicine in Germany is explained by an interesting historical sketch of "Charlatanism in Germany", published in the last *British Medical Journal*. It states that until 1869 Germany had a law regulating the practice of medicine, imposing a large fine or five months' imprisonment for the practice of medicine without being duly qualified. Another paragraph of the law imposed a penalty, ranging from $14 to $106, in the event of a medical man refusing his help in a case of danger or without sufficient excuse. In order to obtain the repeal of this last obnoxious paragraph, the Berlin Medical Society agitated the repeal of the law *in toto*, and finally accomplished its purpose, thus throwing down all barriers against the unlimited practice of medicine, although no one was allowed to assume the title of "Arzt" (physician) except those duly licensed. The profession in Germany has long rued its action in this matter.

The Best Medical Text-Books.—If the text-books most widely used in medical colleges are the best, considerable interest will attach to the summary, in *Medical Notes and Queries*, of the text-books recommended in the catalogues of 58 out of the 67 medical schools belonging to the American Association of Medical Colleges. The most commonly recommended books are as follows: Anatomy, Gray, Cunningham; histology, Huber; embryology, Heisler; physiology, American; chemistry, Remsen; pathology, Stengel; bacteriology, McFarland; materia medica and therapeutics, Wood, Hare; medicine, Osler, Tyson; neurology, Dana, Church and Peterson; pediatrics, Holt; obstetrics, Hirst; gynecology, Dudley; medical dictionary, Gould; ophthalmology, de Schweinitz; surgery, American International; laryngology, rhinology and otology, Kyle; Dench; dermatology, Crocker, Stelwagon; hygiene, Bergey, Harrington; toxicology, Taylor.

Book Notices

Pneumonite Crupale con speciale Riguardo alla sua cura. By A. Serafini. Cloth. Pp. 64. Price, L. 2.50. Milan, Italy: Ulrico Hoepli, 1906.

This little monograph on pneumonia, a disease which in this country, at least, has become one of the chief causes of mortality, we take to be the most recent statement of the current Italian view on the subject. The author says in his introduction that as a practical physician he has laid down what would seem to him the most rational principles of treatment and the methods which have given him the best results. He has also reviewed more or less extensively the facts as to the etiology, pathology, anatomy, symptomatology, etc., of the disease, and it may be taken as—for its size—a fairly exhaustive and critical discussion of the subject. Serafini holds that in the greater number of the cases the pneumococcus of Fraenkel is the responsible germ, the others being effective in smaller proportions. The contagion of the disease is recognized, though the importance of conditions affecting resistance is also noted and the effects of meteorologic conditions are not underrated. It would appear that in Italy the fall and spring are the seasons in which pneumonia is specially prevalent and its mortality highest, that of winter being noticeably less, except in certain localities. The author is not inclined to recognize an abortive type of pneumonia which some authors have claimed exists. Such cases he thinks are often more properly classified as manifestations of the influenzal infection. The figures as to the mortality of pneumonia differ widely in different localities, from 4 per cent. in some German figures to the 37 per cent. or 38 per cent. of the Paris hospitals, and the well-known high figures observed in some of our American cities. The prognosis therefore is somewhat uncertain, especially in view of the possibility of complicating infections. According to the author, jaundice is one of the most serious symptoms.

The part of the most interest, as the title of the work would seem to indicate, is that devoted to treatment, which comprises nearly one-third of the text. Dr. Serafini himself collaborated with Professor Pane in his earlier experiments with serotherapy, but his attitude on this matter is thoroughly impartial and judicial, and he advises against any too positive enthusiasm in regard to such methods. Both the Pane and the Tizzoni sera are noticed and he seems to consider the latter even more unreliable than the former. Among the drugs specially noticed as recommended and employed by various authorities are digitalis, alcohol, potassium iodid, creosote inhalations, formic acid, and the various expectorants, revulsives, etc. He has not seen quinin modify the disease apparently, except to increase the blood in the expectoration or to make it appear when it did not before. The large doses advised by Aufrecht and in the Galbraith treatment are evidently not favored by the author.

Considerable space is given to the subject of blood letting in pneumonia, which the author himself advises in a moderate way. Subsequent injections of normal salt solution he considers not necessary with the ordinary amount of blood taken (200 to 500 grams). The rational treatment of pneumonia according to him, would consist in proper hygienic conditions of the sick chamber, keeping it at a temperature of about 20 C. with pure air, opening the windows for this purpose in winter for a few minutes at a time, avoiding excitement, using regular and nutritious diet, generally of milk (3 liters of which daily, affording 1,830 calories, being sufficient for nutrition), plenty of fresh water, acidulated with orange juice if necessary, the use of a purge of calomel or castor oil and moderate amount of blood abstraction in the first stage by leeches, together with the use of diaphoretics, sedatives to relieve fever, cough, pain, etc. The same general treatment should be continued through the second stage, but a larger blood depletion, 300 to 500 grams, from the arm is advisable when the infection has reached its acme. In the third stage the liquid diet may be gradually changed to mixed, and expectorants employed, as seems desirable. During the convalescence stage the ordinary tonics and tonic and reconstituent treatment generally is indicated. As regards the use of cardiac tonics he favors digitalis in generous doses when there is decided weakness and in severe cases injections of camphorated oil, one syringe every two or three hours of a 20 per cent. solution and possibly the use of alcoholic stimulation.

This work, like so many other of the Hoepli manuals, is a valuable digest of its subject, critically presented, according to the point of view of its author, and is not a mere uncritical compilation of the literature. The references are numerous and show the author's wide acquaintance with the literature of the subject.

Elements of General Chemistry, with Experiments. By J. H. Long, M.S., Sc.D., Professor of Chemistry and Director of the Chemical Laboratories in the Northwestern University Medical School. Fourth edition. Revised and Enlarged. Cloth. Pp. 443. Price, $1.50 net. Philadelphia: P. Blakiston's Son & Co., 1906.

While, as stated in the preface of this revision, "most of the added matter is given in a chapter, not in the older editions,

on the theories of solution and the conditions of chemical equilibrium," yet the entire matter has been conscientiously revised by the author and brought up to date. Professor Long's large experience as a teacher of chemistry has enabled him to present the modern theories of solution, mass, action, etc., in a simple, direct manner, free from technicalities, which will appeal to students in medical schools. Throughout the book the author's effort is apparent to present to the student the fundamental facts of chemistry in a simple yet exact manner, and in this he is eminently successful. In our opinion, it is to be regretted that more attention is not given to chemical phenomena of direct interest to physicians; thus, although eight pages are devoted to the occurrence, history and metallurgy of iron, to the blast furnace and the nature of cast iron, wrought iron and steel, only four pages are given to the compounds of iron, their properties and behavior. Similarly, it seems that when considering mercury the theories and conditions of variation in combining power, oxidation and reduction could with profit have been taken up. In other words, would it not be desirable in a book for physicians to illustrate the principles of chemistry by examples of direct application to medicine rather than to base them on the metallurgy and processes of manufacture, which do not interest the student in medicine?

THE MORPHOLOGY OF NORMAL AND PATHOLOGIC BLOOD. By G. A. Buckmaster, D.M., University College, London, formerly Radcliffe Fellow, Magdalen College, Oxford. Cloth. Pp. 244. Price, $3.00. Philadelphia: P. Blakiston's Son & Co., 1906.

This volume contains the substance of a course of lectures delivered by the author in the Physiologic Institute of the University of London. Besides discussing the subjects embraced in the title of the work, Buckmaster also discusses the action of hemolysins, oxygen capacity, various chemical tests of blood, the biologic differentiation of bloods by means of precipitin tests, and a variety of other subjects ordinarily not classed under the term morphology. The author gives the result of his investigations into the question of polycythemia at high altitudes. In discussing the clinical pathology of the blood he protests against the excessive importance which is often attached to counts of red blood corpuscles to the neglect of the more instructive methods of investigation. The book is to be commended.

State Boards of Registration

COMING EXAMINATIONS.

NEW JERSEY State Board of Medical Examiners, Trenton, October 16-17. Secretary, J. W. Bennett, Long Branch.

TEXAS State Board of Medical Examiners, Houston, October 16-18. Secretary, T. T. Jackson, San Antonio.

FLORIDA Board of Medical Examiners (Regular), Jacksonville, October 17-18. Secretary, J. D. Fernandez, Jacksonville.

ILLINOIS State Board of Health, Great Northern Hotel, Chicago, October 17-19. Secretary, J. A. Egan, Springfield.

LOUISIANA State Board of Medical Examiners, New Orleans, October 19-20. Secretary, F. A. Larue, New Orleans.

KENTUCKY State Board of Health, Louisville, October 23. Secretary, J. N. McCormack, Bowling Green.

INDIANA Board of Medical Registration and Examination, Indianapolis, October 23-25. Secretary, W. T. Gott, Indianapolis.

NEVADA State Board of Medical Examiners, Carson City, November 5. Secretary, S. L. Lee, Carson City.

NEBRASKA State Board of Health, State House, Lincoln, November 7-8. Secretary, Geo. H. Brash, Beatrice.

MAINE Board of Registration in Medicine, Portland, November 18. Secretary, Wm. J. Maybury, Saco.

CONNECTICUT Medical Examining Board, City Hall, New Haven, November 13-14. Secretary, Charles A. Tuttle, New Haven.

MASSACHUSETTS Board of Registration in Medicine, State House, Boston, November 13-14. Secretary, Edwin B. Harvey, State House,

WEST VIRGINIA State Board of Health, The Frederick, Huntington, November 13-15. Secretary, H. A. Barbee, Point Pleasant.

MISSOURI State Board of Health, Kansas City, November 26-28. Secretary, J. A. B. Adcock, Warrensburg.

Massachusetts July Report.—Dr. E. B. Harvey, secretary of the Board of Medical Registration in Medicine, reports the written examination, held at Boston, July 10-11, 1906. The number of subjects examined in was 11; total number of questions asked, 60; percentage required to pass, 70. The total numer of candidates examined was 153, of whom 117 passed, including 9 non-graduates, and 36 failed, including 20 non-graduates. The following colleges were represented:

PASSED. College.	Year Grad.	Per Cent.
Yale University	(1905)	70.1, 73.8, 88.3
Medical School of Maine	(1883),* (1902)	70
College of P. and S., Baltimore	(1906)	77.1, 78.5
University of Maryland	(1906)	83.1
Johns Hopkins Med. School	(1902), 77.8; (1906)	82.3
Maryland Med. Coll.	(1905)	70, 74 3
Baltimore Med. Coll. (1901) 72; (1904) 75.8; (1906), 70.5, 72, 72.6, 73.8, 73.8, 74.3.		
Harvard Med. School (1904) 72.3, 72.5; (1905) 84.9; (1906) 70.6, 71.1, 72.1, 73.3, 73.3, 73.8, 75, 75.3, 76.3, 76.5, 76.6, 77, 78.1, 78.6, 78.8, 81.1, 81.1, 81.5, 81.6, 81.6, 82, 82.1, 83.		
Tufts Coll. Med. School, (1906) 70, 70.3, 70.8, 71, 71.1, 71.6, 72, 72.1, 72.3, 72.3, 72.5, 72.6, 72.6, 72.8, 73, 73, 73.1, 73.3, 74.3, 75, 75.1, 75.1, 75.5, 75.8, 76.3, 76.3, 76.5, 77, 77.8, 78.3, 78.5, 79.8, 80, 80.5, 81, 82.6.		
Boston University, (1904) 70; (1905) 74.1; (1906) 70, 70.1, 70.1, 71, 71.8, 72.6.		
University of Michigan (1895) 77.8; (1905) 75.5; (1906) 70.5, 83.1		
Long Island Coll. Hospital	(1906)	71.6
Dartmouth Med. Coll.	(1906)	74.8, 75
University of Pennsylvania	(1900)	70.6, 75.3
Woman's Med. Coll. of Pennsylvania	(1906)	73.5, 80.8
Jefferson Med. Coll.	(1906)	74
Hahnemann Med. Coll., Philadelphia, (1905) 72.8; (1906)		70.3
University of Vermont	(1906)	72.3, 75.8, 76
Syrian Protestant College, Beirut	(1891)	71

FAILED.		
College of P. and S., Baltimore	(1905)	57.6
Baltimore University	(1903) 43; (1906)	63.8
Baltimore Med. Coll.	(1906)	63.1, 66.1, 66.6
Maryland Med. Coll.	(1906)	56.5
Boston University	(1906)	65, 65.1, 65.3
University Med. Coll., Kansas City	(1899)	58.5
Eclectic Med. Coll., New York	(1906)	55
University of the South	(1906)	66.8
Laval University, Quebec	(1905)	63
Harvard Med. School	(1906)	65.3
University of Naples	(1904)	63.4

* No percentage given.

Oregon May and July Reports.—Dr. Bryan E. Miller, secretary of the Board of Medical Examiners of Oregon, reports the written examinations, held at Portland, May 10-12 and July 11-13, 1906. The number of subjects examined in was 15; total number of questions asked, 100; percentage required to pass, 75.

At the May examination the total number of candidates examined was 44, of whom 19 passed and 25 failed, including one non-graduate. The following colleges were represented:

PASSED. College.	Year Grad.	Per Cent.
University of Southern California	(1900)	79.4
Rush Med. Coll.	(1891)	81.8
University of Iowa	(1892)	76.6
University of Iowa, Homeo Dept.	(1890)	76.7
University of Michigan	(1884)	76.6
University of Minnesota	(1899)	82.6
University of Oregon, (1906) 77, 77.3, 78.5, 78.7, 80.1, 80.6, 81.2, 82.7, 82.8, 83.6.		
Willamette University	(1906)	80.3
University of Virginia	(1902)	78.5
Trinity Med. Coll., Toronto	(1906)	78.8

FAILED.		
Denver and Gross Med. Coll.	(1888) 74.6; (1904)	72.4
Northwestern Univ.	(1905)	72.2
Southern Homeo. Med. Coll.	(1897)	67.9
St. Louis University (Marion-Sims-Beaumont Med. Coll.), (1904) 72.		
Ensworth Central Med. Coll.	(1906)	58.7
Lincoln Med. Coll.	(1903)	73.4
Eclectic Med. Inst., Cincinnati	(1902)	74.9
Willamette University, (1906) 59.6, 61.9, 64.2, 69.4, 69.7, 70, 71.7, 72.1, 72.6, 73.2.		
University of Oregon	(1906) 66.8, 69.6, 73.9,	74.8
University of Vermont	(1905)	57.6
Laval University, Montreal	(1904)	67.8

At the July examination the total number of candidates examined was 44, of whom 21 passed and 23 failed. The following colleges were represented:

PASSED. College.	Year Grad.	Per Cent.
Cooper Med. Coll.	(1906) 80.3,	85.9
Denver and Gross Med. Coll.	(1904)	75.6
Hahnemann Med. Coll., Chicago	(1889)	80.6
Hering Med. Coll., Chicago	(1896)	75
Rush Med. Coll.	(1903) 92.7; (1904)	81.9
Northwestern Univ. Med. School.	(1904) 82.8; (1906)	84.8
College of P. and S., Chicago	(1906) 81.8,	82.4
Tulane University	(1906)	82
Johns Hopkins Med. School	(1906)	91.7
Harvard Med. School	(1906)	86.6
Eclectic Med. Inst., Cincinnati	(1902)	83.1
Willamette University	(1906)	75
University of Oregon	(1905)	82.3
Jefferson Med. Coll.	(1905) 78.9; (1906)	90.2
University of Toronto	(1904)	84
University of Munich, Germany	(1903)	76.2

FAILED.

Denver Homeo. Med. Coll.	(1906)	68
American Med. Miss. Coll.	(1899)	69.4
Bennett Coll. Eclec. Med. and Surg., Chicago	(1906)	68.1
Rusb Med. Coll.	(1903)	70
College of P. and S., Chicago	(1902) 69.7; (1904)	59
Tulane University	(1893)	72.8
Southern Homeo. Med. Coll.	(1897)	73
University of Michigan	(1872)	71.4
University of Michigan Homeo. Dept.	(1896)	72
Detroit Coll. of Med.	(1896)	66
Washington University	(1887)	65.8
Barnes Med. Coll.	(1903)	73.7
Medico-Chirurgical College, Kansas City	(1905)	73.1
Willamette University	(1906)	60.1, 64.8, 67.2, 68.6
University of Oregon	(1906)	65.9, 71.8, 72.6
Unversity of Vermont	(1905)	60.4
Laval University, Montreal	(1904)	63.9

Wisconsin July Report.—Dr. J. V. Stevens, Secretary of the Wisconsin State Board of Medical Examiners, reports the written examination held at Madison, July 10-12, 1906. The number of subjects examined in was 15; total number of questions asked, 140; percentage required to pass, 75. The total number of candidates examined was 37, of whom 33 passed, 2 failed, and 2 were conditioned. Forty reciprocal licenses were granted, including 2 Osteopaths. The following colleges were represented:

PASSED.

College.	Year Grad.	Number Examined.
Rush Med. Coll.	(1906)	3
College of P. & S., Chicago	(1906)	3
American Med. Miss. Coll.	(1905)	1
Northwestern Univ. Med. School	(1906)	1
Illinois Med. Coll.	(1906)	1
Johns Hopkins Med. School	(1906)	2
Milwaukee Med. Coll.	(1906)	10
Wisconsin Coll. of P. & S.	(1906)	10
University of Toronto	(1906)	1
Western University, Canada	(1906)	1

FAILED.

Northwestern Univ. Med. School	(1895)	1
Wisconsin Coll. of P. & S.	(1906)	1

REGISTERED THROUGH RECIPROCITY.

	Year Grad.	Reciprocity with
Northwestern U. M. S.	(1902), (1904), (1905, 2), (1906)	Illinois
Rush Med. Coll.	(1887), (1902), (1903), (1904, 3)	Illinois
Coll. of P. & S., Chicago	(1903), (1905, 2), (1906, 4)	Illinois
Illinois Med. Coll.	(1906)	Illinois
Hahnemann Med. Coll., Chicago	(1906)	Illinois
Bennett Coll. of Eclec. Med. & Surg.	(1896)	Iowa
Keokuk Med. Coll.*		Iowa
Keokuk Med. Coll.	(——)*	Iowa
Louisville Med. Coll.	(1887)	Iowa
Baltimore Med. Coll.	(1905)	Iowa
College of P. and S., Baltimore	(1900)	Minnesota
Detroit Coll. of Med	(1906)	Michigan
Michigan Homeo. Med. Coll	(1906)	Michigan
University of Minnesota	(1905)	Minnesota
University of Minnesota	(1897)	Illinois
Missouri Med. Coll.	(1897)	Illinois
St. Louis Univ. (Marion-Sims-Beaumont Coll.)	(1906)	Illinois
Western Reserve University	(1905)	Ohio
University of Vermont	(1890)	Illinois
Queen's University, Canada	(1895)	Illinois

*Year of graduation not given.

The following questions were asked:

PRINCIPLES AND PRACTICE.

1. In a comprehensive way give the causes of disease in man. 2. Give differential diagnosis and treatment of ulcer of the stomach. 3. Give etiology and treatment of sciatica. 4. Give differential diagnosis of rubeola, rotheln, scarlatina, varicella, variola. 5. What is autointoxication? Give source of the toxins causing disease in man. 6. Define all the valvular lesions of the heart and give etiology, prognosis and differential diagnosis. 7. Give diagnosis, prognosis and symptoms of acute uremia. 8. What is ascites? Give etiology in full. 9. What effect has urea on the human organism? 10. Give differential diagnosis between appendicitis and cholocystitis.

OBSTETRICS.

1. Describe the physiology of ovulation and menstruation. 2. Give the anatomy of the uterus and its appendages, including nerves and blood vessels. 3. What are the conjugate and transverse diameters of the superior and inferior straits of the pelvis? Give anatomic points of measurement. 4. In a case of firmly contracted uterus and persistent hemorrhage, what would you suspect and what would you do? 5. Give five conditions in labor, any one of which would warrant instrumental interference and give technic of use of forceps. 6. Give clinical history, method of prevention and treatment of puerperal eclampsia. 7. Give causes, diagnosis, prognosis and treatment of puerperal phlebitis. 8. How would you manage a case of prolapsed funis? How one of short funis? 9. What means would you employ to resuscitate a still-born child? 10. Name three oxytocic agents and give indications for their use.

ANATOMY.

1. Give the origin, insertion and function of the gastrocnemius, sternocleidomastoid and biceps muscles. 2. Describe the femoral vein and sciatic nerve. 3. Describe the femur. 4. Describe the brachial plexus. 5. Describe the inguinal canal; Poupart's ligament; and name the principal coverings of inguinal hernia. 6. What is the abdomen? Name its contents. 7. Name and give a brief description of the membranes of the brain. 8. Describe the heart, and name the important vessels leading into it. 9. Describe the brachial, radial and ulnar arteries. 10. Name the bones entering into the formation of the ankle joint.

MATERIA MEDICA AND THERAPEUTICS.

1. Describe the actions of potassium iodid, giving in full its actions: a. In small doses; b. in large doses; c. its manner of elimination; d. its therapeutic uses. 2. Describe the physiologic actions, the active principle and therapeutic uses of *Glandulæ suprarenales siccæ*, U. S. P. 3. What accidents are liable to occur during the administration of ether as an anesthetic? Describe in full how they are to be avoided. 4. What are the following substances and of what strength should they be in order to be up to the standard of U. S. P., pepsin, pancreatine? 5. On what principles do medicines act as diuretics? Describe physiologically how this is done, giving an illustration in each case. 6. What is plumbism and how is it brought about? 7. Name eight drugs which act as anthelmintics. 8. Give therapeutics of hypodermoclysis. 9. Give source, composition and therapeutics of the following antitoxins as they are now known: Antidiphtheric serum, tetanus antitoxin, antitoxin of bubonic plague, antistreptococcus, antipneumococcus, antituberculosis and anti anthrax serum. 10. Give treatment of poisoning by carbolic acid.

DIETETICS.

1. Define dieting. 2. Classify components of organic food. 3. Give comparative value in calories of protein, starch or sugar and fat. 4. Prescribe a course of diet in a case of typhoid fever (adult) during period of fever and also during convalescence. 5. Prescribe a course of diet in a case of diabetes mellitus.

HYGIENE.

1. What is meant by the term disinfection? Name five disinfectants and give in detail the manner of using them. What is a deodorant? 2. Give the source of the contagion of typhoid fever. How may it be conveyed and how may the disease be prevented from spreading? 3. Give practical method of ventilating an ordinary unventilated room. At what temperature should it be kept in a case of pneumonia, diphtheria, scarlatina, measles or smallpox? 4. What is best general method of purifying drinking water? 5. How long after recovery would you keep under quarantine a case of diphtheria, scarlet fever or smallpox?

PATHOLOGY.

1. Define inflammation and explain the phenomena of inflammation in the order of their occurrence. 2. Give the etiology of acute endocarditis and describe the pathologic changes in structure throughout its course, limiting your description to a mitral valve. 3. Discuss the causes and structural changes in arteriosclerosis. 4. Trace in the order of their occurrence the gross and microscopic changes that take place in a lung affected with lobar pneumonia. 5. Name the degenerative or retrogressive processes and describe one of them. 6. Briefly outline Ehrlich's side-chain theory of immunity, and explain the action of diphtheria antitoxin. 7. (a) Give the kinds of infarcts, where they are found and causes of their formation. (b) Give the pathologic changes which take place in a Peyer's patch throughout the course of typhoid fever. 8. Describe a small contracted kidney, giving the gross and microscopic appearance. 9. Make a drawing of a miliary tubercle in the lung and show condition of surrounding lung tissue. 10. Classify the animal parasites causing disease in man, and describe the pathologic condition caused by any one of them.

CHEMISTRY.

1. Name the halogens and describe one of the group. 2. Define the following terms and give an example of each: (a) Water of crystallization, (b) binary compound, (c) double salt, (d) double decomposition. 3. Express by equations the chemical reactions when the following substances are combined: (a) Barium dioxid and sulphuric acid, (b) slaked lime and sal ammoniac, (c) lead acetate and sulphuretted hydrogen, (d) Manganese dioxid, sodium chlorid and sulphuric acid. 4. Give the formulæ for three insoluble carbonates and three insoluble chlorids. 5. Discuss the element mercury. 6. Describe in detail three reliable tests for albumin in urine other than the heat test. 7. Give the chemical test for free HCl in gastric contents and write equation to show reaction. 8. Describe the diazo reaction and give its diagnostic value. 9. Give two reliable tests for sugar in urine and write equations for reactions in each case. 10. Write the formulæ for chloroform, wood alcohol and marsh gas, and describe any one of them.

MEDICAL JURISPRUDENCE.

1. Differentiate between lunacy and idiocy. 2. What is the difference between civil and criminal malpractice? 3. How could you positively decide that an infant had died since birth instead of being a "still-born child"? 4. What rights does a physician have in refusing to testify as a medical or surgical expert unless he is allowed fees as an expert? 5. Define infanticide and state whether it is ever justifiable and if so what steps would you take to protect yourself in such a case.

TOXICOLOGY.

1. Name five vegetable poisons and an antidote for one of them. 2. Give treatment for poisoning by swallowing mercuric chlorid. 3. How would you detect arsenical poisoning? Give treatment for a case. 4. How would you diagnose and treat a case of poisoning by phosphorus? 5. What is carbolic acid (chemically speaking)? Name an antidote for it.

SURGERY.

1. Differentiate asepsis and antisepsis, and illustrate their principle in applied surgery. 2. Differentiate the uses of chloroform and ether anesthesia, and give contraindications in the use of each. 3. Define a Pott's fracture and a Colles' fracture and give treatment for each. 4. Describe the different dislocations of the shoulder joint, and give the methods of reduction. 3. Give history and treatment of osteomyelitis, acute and chronic. 6. Diagnose and give treatment for strangulated hernia and describe some one oper

ation for the radical cure of inguinal hernia. 7. Give varieties and treatment of fistula in ano, and give the radical treatment of hemorrhoids. 8. Give history and treatment of acute appendicitis and acute cholecystitis. 9. Give the cardinal principles in use in making amputations of the extremities, and describe a Choparts amputation. 10. Give the cardinal principles in use in the treatment of fractures, and describe (the) treatment for a fracture of the patella.

GYNECOLOGY.

1. Give diagnosis and treatment of extrauterine pregnancy. 2. Give varieties and treatment of tumors of the uterus, and differentiate malignant from non-malignant. 3. Diagnose salpingitis and pyosalpinx and give treatment in each. 4. Give varieties and treatment of tumors of the ovary. 5. Give varieties and treatments of malpositions of the uterus, and name the important operations used, describing any one of them. 6. Give diagnosis and treatment of metritis and endometritis. 7. Define urethral caruncle and vesicovaginal fistula, and give the treatment for each. 8. Describe operations of choice in a given case of lacerated cervix uteri and of ruptured perineum. 9. Describe treatments of choice in given cases of vaginitis, urethritis, vulvitis and pruritis. 10. Give the most common causes and results of acute pelvic inflammation with treatment.

PHYSIOLOGY.

1. Locate and describe and give functions of glomerulus of the kidney. 2. How is the normal temperature of the body maintained? 3. What are the chief differences of function between the cerebrospinal and sympathetic nervous systems? 4. Describe and give functions of the spleen and pancreas. 5. What are the changes in bread during its digestion, and where does each occur? 6. How many kinds of muscular tissues are found in the body? Describe each. 7. Give the physiology of vision. 8. Give the origin, function, and the relative number of the different kinds of blood corpuscles in the healthy body. 9. What are the functions of the vagus nerve? 10. Describe the chemical interchange between blood and air during respiration and mention the forces concerned in this interchange.

URINALYSIS.

1. Give test for chlorids. 2. Give test for sugar. (a) albumin. (b) uric acid. 3. Of what significance is the urea found in urine? 4. Give direction for collection of urine examination. (a) When should specimens be voided to give best results? (b) Outline your method of procedure in examining suspected urine. 5. Give test for blood in urine. 6. Give constituents of normal urine. (a) How are they determined? 7. What are the tests for urinary calculi? (a) Give composition of urinary calculi. 8. How do you take specific gravity? What is the significance of abnormal deviation in specific gravity of urine? 9. How would you detect bile in urine? 10. What is mucin? How detected?

BACTERIOLOGY.

1. What is phagocytosis? What is diphtheritic antitoxin? 2. Describe the mosquito theory of the spread of yellow fever. 3. Give the bacteriology of chronic phthisis and describe reversion of type. 4. Describe a method of making a plate culture, and a stab culture. 5. Describe the Kiebs-Loeffler bacillus. What is Koch's postulate?

HISTOLOGY.

1. Name the leucocytes and describe each. 2. Diagram a typical mucous membrane and name the structures composing it. 3. Name the varieties of epithelium, and describe each. 4. Describe a Peyers' patch and state where found. 5. Draw diagram of a lobule of the liver, and describe it.

PHYSICAL DIAGNOSIS.

1. Differentiate between diphtheria and follicular tonsilitis. (a) Scarlet fever and measles. 2. Diagnose a typical case of acute enterocolitis. 3. What are the symptoms of lobar pneumonia? (a) Pleurisy with effusion? 4. What are the various methods used in making a physical diagnosis? (a) Give a plan or system by which you may be reasonably sure of arriving at a correct diagnosis. 5. Differentiate between neuritis and neuralgia. 6. Give signs of suppurative appendicitis. (a) Recurring appendicitis. 7. Give the differential diagnosis of smallpox and chickenpox. 8. Give the differential diagnosis of eczema, acne and urticaria.

Travel Notes

DISEASES AND HOSPITALS OF AFRICA.

NICHOLAS SENN, M.D.

Professor of Surgery in the University of Chicago; Professor and Head of the Surgical Department, Rush Medical College.

CHICAGO.

(*Concluded from page 1099.*)

THE HOSPITALS OF PRETORIA AND CAPE TOWN.

The road from Cape Town to Vynberg, over which the tramway passes, is lined on both sides with veteran oak trees, which the Dutch imported and planted more than a century ago. They are not the tall smooth-stemmed proud oaks of our forests but low, knotty, many-branched trees, which have managed to live and to attain extreme old age, on this to them foreign soil, but would look strange and unfamiliar to their kin in their native land. On this road, 15 minutes from Rondebosch station, is the famous "Groot Schuur," (Great Barn), one of the many African residences of the late Cecil Rhodes. The palatial house built in Dutch style is in the midst of a magnificent flower garden in an open place surrounded by a dense forest of indigenous and planted trees. The location is an admirable one for a restful retreat and which the great statesman and financier must have enjoyed when he took the time to leave his work and take a rest. The house is now occupied by Premier Jameson, of Jameson Raid notoriety—a strange piece of history.

The present population of Cape Town is about 100,000, including the natives. The natives here resemble in every respect the colored people of our northern cities and are engaged in similar employments.

SOMERSET HOSPITAL.

This is the only hospital in Cape Town. A large, centrally located dispensary takes care of the bulk of the sick poor who do not require hospital treatment, thus relieving the congestion in the out-door department of the hospital. The hospital was built forty-five years ago and has undergone many material alterations since that time and has been enlarged, with the increasing number of patients seeking admission. It is beautifully located near Green Point and the docks of the Union Castle Steamship Company facing the spacious harbor. The front of the building is stone and cement; its many windows, wide entrance, two corner towers and the ornamental grounds in front of it give it the appearance of a royal mansion, rather than that of a home for the sick.

The interior of the hospital leaves much to be desired to meet the requirements of such an institution in these days of hospital perfection and it is strange that such an old city with its many citizens of wealth should not have arranged before this for the necessary changes which are urgently needed. A staff of eight doctors, four surgeons and four physicians, each of them with a long string of capitals behind their names, a resident surgeon and three resident medical officers are in charge of the sick and injured. The only specialists are an opthalmologist and a dental surgeon. In none of the African hospitals I have visited have I found a gynecologist, although pelvic surgery forms an important item in the hospital reports. Pelvic surgery is included, as it should be, in general surgery, and constitutes a part of the legitimate work of the attending surgical staff.

The Victoria Nurses' Home, in the same grounds, is nearing completion at a cost of about $33,000. It is a handsome two-story brick building and when ready for occupancy will meet one of the urgent needs of the hospital. The nursing is in charge of nine ward sisters, one night superintendent, one operating theatre superintendent, and 36 probationers. The report of the hospital for 1905 shows that *amour* does not disdain to enter here, as elsewhere, the sanctity of a hospital, as during the year two ward sisters and four nurses resigned from the nursing staff to be married. Of 116 applicants to enter the training school, only 22 were accepted, and many of the probationers left during the first three months, owing to unsuitability.

The hospital has space for 191 beds, including the two wards for natives. At the time of my visit only the children's ward was full. In the other wards half of the beds were not occupied. As in South Africa, it is during the summer months that the hospital has the largest number of patients. As the institution takes care of all sailors who require hospital treatment, its inmates represent many nationalities and languages. The total number of patients treated during the year was 1977; 1,190 were Europeans and 636 colored. Of this number 170 died, 87 Europeans and 83 colored. The last two figures attract attention when we consider the small number of blacks who are in the hospital, as compared with the whites.

The average daily cost per in-patient was $1.55. The total maintenance expenses amounted to over $100,000. Toward meeting the running expenses of the hospital, the government grant of $55,000 furnishes the bulk, the income from paying patients is a little over $10,000 and the balance of the expenses is made up by subscriptions, donations and collections. Among the donations, one appears in the list like this: "U. S. America Government appropriation, as contributed to hospital per Horace Lee, Washington, American consul general, pounds 10, 2s., 8d."

This hospital appears to have more grateful, appreciative patients than others, as in the list of donations marked, "Grateful patient," one contributed $50.00, another $2.50, one $5.25, and a third one $10.00.

The clinical material of the hospital is not of special interest to the surgeon, as it is almost identical with that of any hospital in the eastern, western and middle states. In the children's ward, I saw a child, three years old, recently operated on successfully by the bloodless method for double congenital dislocation of the hip joint. I was told that it was the first operation of the kind in Africa. In the same ward was a little girl who had been repeatedly operated on for exstrophy of the bladder. The first operation of Maydl's method—implantation of the trigone of the bladder into the large intestine—failed. Subsequent plastic operations finally succeeded in procuring a cover of skin flaps for the exposed and bulging posterior wall of the bladder. Tuberculosis of the lungs is very frequent.

The report states: "The number of cases of tuberculosis is remarkable. The cases we get are generally far advanced and the ravages of this terrible disease, especially among the colored people, are truly appalling." Many of the negroes afflicted with the disease die in three months from diffuse miliary tuberculosis. The mortality of tuberculosis in Cape Town is increased by patients coming from Europe, too late to be benefited by change of climate and who are too sick to return to their homes with any hope of reaching their destination alive.

The beds of typhoid patients in the general ward have a white instead of a blue bedspread to distinguish them from the other patients, which at once reminds the visitors and nurses of the nature of the disease of their occupants. In the ward for colored women, I examined a patient who was suffering intensely from advanced carcinoma of the pyloric end of the stomach. The woman was a half caste about 40 years of age. I must repeat here in completing my account of hospitals and diseases of Africa that what I have emphasized a number of times has been confirmed by subsequent observations, viz.: 1. The pure-blooded negro is almost, if not entirely, immune to carcinoma and inflammatory diseases of the appendix. 2. In consequence of adoption of civilized habits and change of food and especially by the admixture of the blood of the whites, he gradually loses this immunity and becomes subject to all the diseases of the whites, including carcinoma and appendicitis.

The farther I got away from the real primitive negroes of the east coast of Africa, the more frequently I heard of the occurrence of these diseases among the negroes, who for fifty years and longer had been under the influence of civilization, and most of the patients were half castes.

On board S. S. *Kilderman,* July 20.

Medical Organization

THE CARROLL COUNTY (GA.) MEDICAL SOCIETY.

J. F. Cole, M.D., Secretary.

CARROLLTON, GA.

The Carroll County Medical Society has been in existence continuously since 1865. It is, of course, a member of the State Medical Association. During the dark reconstruction days following the Civil War, the society struggled and held its own, its lines falling in more pleasant places as the times improved.

To-day we present almost a solid phalanx, every medical practitioner in Carroll County, with the exception of two non-eligibles, being active members in good standing. Never in the history of the society have the doctors of the county come so near being a unit. We are all standing together, shoulder to shoulder, each doing his utmost to make smooth the rough places of his brother. We are enthusiastic; we are in earnest. There is no county society in the whole country which has less of backbiting, strife and unprofessional hammer and tongs. Each member tries to upbuild and to uphold our glorious profession, to follow the Golden Rule, to pattern after the Great Physician.

The meetings of the society are held at 10 a. m. on the third Tuesday in each month, in the office of the secretary. After the routine work, cases of interest are reported and discussed and clinics are held, which are both instructive and interesting. After one hour's adjournment for dinner, business is again resumed and then follows the reading and discussion of scientific papers. On file in the archives of the society will be found many masterly and highly instructive papers.

At our October (1906) meeting we will have a banquet at which will be present some of the most eminent practicians in the state. We anticipate a glorious time.

On the question of fees for life-insurance examinations we are an absolute unit. Every member has signed the schedule of fees, viz., $5 for examination with urinalysis, or $3 without urinalysis; $10 where microscopic examination is required. Those insurance companies who refuse to pay our fees are not selling any insurance in the county, but those paying fees are getting the business, for every doctor in the county who is an examiner naturally throws his influence to those companies who comply and against those who do not. More than that, we will not accept a reduced fee from the company and the rest of the $5 from the agent. We took that action in order to bring the matter to a focus. Certain companies have attempted to bring neighboring physicians into the county to do the examining, at the reduced fees, but the companies were informed that the plan would not work. We are standing for our rights, and we determine what our professional services are worth. Those insurance companies which do not pay a $5 fee might just as well move out of the county; their busines here will be slim.

We are flourishing as the green bay tree. Each stands for his profession and for rights. We are proud of our society.

Missouri.

SCOTT COUNTY MEDICAL ASSOCIATION.—A medical association has been organized at Benton with the following officers: Dr. Theodore F. Frazer, Commerce, president; Dr. Richard A. Sparks, Blodgett, vice-president; Dr. Uriel P. Haw, Benton, secretary; Dr. Pleasant W. Malcolm, Sikeston, treasurer, and Drs. William H. Westcoat, Oran; Garnett S. Cannon, Fornfelt, and Henry Rodenmeyer, Kelso, censors.

Kansas.

COFFEY COUNTY MEDICAL SOCIETY.—With the assistance of Dr. J. E. Sawtell, Kansas City, councilor for the seventh district, a county medical society was organized at Burlington on the standard plan with the following officers: Dr. John C. Fear, Waverly, president; Dr. Harry T. Salisbury, Burlington, vice-president; Dr. Drury B. Rowe, Le Roy, secretary; Dr. William H. Mathias, Waverly, treasurer, and Drs. Alexander K. Berry, Granville R. Norris and Verbinia McMullen, all of Burlington, censors.

Kentucky.

ADAMS COUNTY MEDICAL ASSOCIATION.—The physicians of Adams County have organized a medical association with Dr. R. Y. Hindman, Columbia, president, and Dr. Uriah L. Taylor, Columbia, secretary.

CRITTENDEN COUNTY.—The physicians of Crittenden County met at Marion and reorganized the Crittenden County Medical Society, with the following officers: Dr. J. Ernest Fox, Levias, president; Dr. William T. Daughtrey, Marion, secretary.

Maryland.

QUEEN ANNE COUNTY MEDICAL ASSOCIATION.—The Queen Anne County Medical Association has been organized with the following officers: President, Dr. James M. C. Corkran, Centerville; vice-president, Dr. Wilmer Adams, Wye Mills, Talbot County; secretary, Dr. Howard R. Hopkins, Queenstown, and delegate to the Medical and Chirurgical Faculty, Dr. John H. W. G. Weedon, Church Hill.

Michigan.

KENT COUNTY MEDICAL SOCIETY.—This society, which was recently organized, has adopted the constitution and by-laws recommended by the American Medical Association for county societies.

Minnesota.

DAKOTA COUNTY MEDICAL ASSOCIATION.—Through the efforts of Dr. E. Franklin A. Dodge, La Sueur, councilor for the seventh district, and Dr. Thomas S. McDavitt, St. Paul, secretary of the state medical society, the Dakota County Medical Society was reorganized at Hastings, with the following officers: Dr. Julius C. Fitch, president; Dr. Thomas A. Caldwell, vice-president; Dr. H. H. Hazeltine, secretary; Dr. Henry G. C. Van Beeck, treasurer, and Drs. Alexander C. Dockstader, Alfred M. Adsit and Llewellyn D. Peck, censors, all of Hastings.

Society Proceedings

COMING MEETINGS.

American Association of Railway Surgeons, Chicago, Oct. 17-19.
Mississippi Valley Medical Association, Hot Springs, Ark., Nov. 7-8.
Southern Surg. and Gyn. Assn., Baltimore, Dec. 11-13.
American Public Health Assn., Mexico City, Dec. 3-7.

AMERICAN ASSOCIATION OF OBSTETRICIANS AND GYNECOLOGISTS.

Nineteenth Annual Meeting, held at Cincinnati, Sept. 20-22, 1906.

(*Continued from page 1128.*)

Intestinal Obstruction Due to Gallstones.

DR. MILES F. PORTER, Fort Wayne, Ind., said that gallstones may obstruct the bowel in five different ways, obturation being the most usual form, and is more common in females past middle life. The stone may get into the bowel through the common duct, but usually enters from the gall bladder by obturation, via the duodenum, and may lodge anywhere from the pylorus to the anus, but in the majority of cases it is found in the ileum. As a rule, the gut is not damaged, but gangrene and perforation occur if the obstruction is not relieved promptly. The symptoms are those of acute, but often not complete obstruction of the bowel. A previous history of gallstone disease is found in most cases. A migrating tumor originating in the gall bladder, or a stationary tumor of egg-size and shape, and hard, are of great diagnostic value, but are absent in most cases. Tenderness and rigidity are not present until late. Shock is not marked. Multiple attacks of bowel obstruction are significant of gallstone ileus. Exploratory incision is the best means of making the diagnosis in the majority of cases. The mortality is 50 per cent. This large mortality is due in no small measure to the advice given by many authors to delay operation until a fair trial of medical treatment, massage, etc., has failed. The mortality might be reduced to 5 per cent. by prompt surgical interference. He reported two cases in women past 40, who had had previous gallstone trouble; the stone lodged in the ileum in both cases. In one case a tumor near the gall bladder disappeared before obstruction came on. One woman, treated medically, died; the other recovered after enterostomy.

Diagnosis and Treatment of Accidental Uterine Hemorrhage.

DR. ADAM H. WRIGHT, Toronto, said that the following procedures are conspicuous in this regard: Rupture of the membranes, plugging the vagina, forcible delivery, and Cesarean section. The mortality rate of forcible delivery, when the patient is suffering from shock and the uterus is tetanically contracted, is, in his opinion, 100 per cent. A certain amount of force might, however, be used under certain circumstances. For instance, the obstetrician may have ruptured the membranes before the os was dilated; there might still be considerable hemorrhage, making an early emptying of the uterus advisable. In such a case manual dilatation of the os with version or forceps delivery might be advisable. It is doubtful, however, whether such manual dilatation under such circumstances could be designated forcible delivery. He has had no experience with vaginal or abdominal Cesarean section for accidental hemorrhage. In the case of either concealed or combined internal and external accidental hemorrhage, with the patient suffering from shock and a cervix as hard as iron, any operation probably would be unjustifiable. The shock should be treated, and if in spite of such treatment the symptoms of shock grow worse instead of better, the patient is probably going to die. If, on the other hand, the patient recovers from the shock, it is certain that in some cases, if not in the majority, serious operation is not advisable. It might happen, however, that internal hemorrhage is taking place into a uterus whose walls are stretching rapidly, and the loss of blood is the chief factor. If, in such an emergency, it is not possible to dilate the os, and deliver soon enough to save life, some form of Cesarean section might be deemed advisable.

Diffuse Peritonitis.

DR. JOHN B. MURPHY, Chicago, reported 36 cases of general suppurative peritonitis from perforation, with one death. In treating this condition he emphasized the importance of relieving pressure and of instituting drainage, doing as little surgery as possible. The patient should be put in a sitting position both before and after operation, so as to keep the infective material out of the diaphragmatic zone, and not the pelvic zone. At the time of operation the patient usually has all the infection he can carry; he is handicapped, and it is the duty of the surgeon to eliminate that infection or intoxication as much as possible, and in doing so care should be taken not to abrade any more surface so as not to admit more infective material. The patient should be tided over for a few hours and his local resistance built up by washing out the blood with normal salt solution. Antistreptolytic serum should be employed and little or no food given.

Abuse of Purgatives.

DR. EDWIN WALKER, Evansville, Ind., said that purgatives are used by the public and profession under widely adverse conditions. This promiscuous use does much harm. The best authors differ as to the physiologic action of purgatives. There is a close resemblance between infections of the intestinal canal and the action of purgatives. All of these considerations suggest care in the use of cathartics. In constipation purgatives are contraindicated; in diarrhea they are limited in value. Biliousness is too vague a term to be considered an indication for their use. They should rarely be used in the preparation for surgical operation or the complications following. Increased knowledge will no doubt materially curtail their use.

Factors Which Have Lowered Operative Mortality and Have Improved Postoperative Results.

DR. X. O. WERDER, Pittsburg, Pa., attributed his better results both in regard to operative mortality as well as postoperative morbidity to (1) A more simple and better aseptic technic, including the wearing of rubber gloves; (2) better diagnosis and more careful preparation of the patient, especially the acute inflammatory cases, whose abdominal section is delayed at least three weeks after the subsidence of all acute symptoms; (3) the employment of a trained, absolutely reliable first assistant; (4) centralization of all operative work, enabling the operator to give the greatest amount of personal attention to his patients; (5) the careful closure and covering of all raw surfaces in the peritoneal cavity; (6) the exclusive use of catgut prepared under personal supervision; (7) a trained anesthetist who administers a minimum amount.

Management of Bowel of Doubtful Vitality in Operations for Relief of Strangulated Hernia and Intestinal Obstruction.

DR. RUFUS B. HALL, Cincinnati, said that these cases can be divided into three groups as soon as the operation has progressed to the stage where it can be inspected. 1. Those cases where it is evident that a resection is not necessary. 2. Those cases in which it is certain that a resection must be made. 3. Those cases in which the surgeon is in doubt as to the vitality of the injured portion of bowel. His method of treating this condition consists in employing a single layer of iodoform gauze, about three inches wide, placing it against one side of the mesentery and carrying it over the diseased bowel until it rests on the mesentery on the opposite side, extending a couple of inches beyond the bowel of doubtful vitality on each side and placing this loop of bowel surrounded by the gauze just inside of the abdomen. The wound is dressed, if it is intra-abdominal, by leaving one or two stitches untied; if it is a hernia operation, the end of the gauze surrounding the bowel is left projecting out of the wound a foot or more, so that there is no danger of loosening it inside. The method is not applicable in all kinds of bowel injury, and is not advised except in certain definite conditions and surroundings.

Utilization of Broad and Round Uterine Ligaments in Supravaginal Hysterectomy.

DR. WALTER B. DORSETT, St. Louis, pointed out that in impacted cases of myomatous uteri, as well as in cases of large abdominal tumors of the uterus, a tendency to a shortening of the vagina follows the operation, and a sacculation of the bladder also is apt to ensue. This is obviated by folding the remaining portions of the broad and round ligament on themselves, and attaching them to the stump of the uterus.

In cases in which it is desirable to leave the ovaries, they are maintained in a better position and never become prolapsed.

Symptoms and Treatment of Atresia Vaginæ.

DR. AUGUSTUS P. CLARKE, Cambridge, Mass., said that inflammation occurring in the vaginal tract may become the exciting cause of atresia vaginæ. Adhesions of the labia or other parts in the vicinity may interfere with normal parturition, if not prevent the menstrual flow. In atresia hymenalis the obstruction usually is complete, and this gives rise to collections of blood or mucus high up in the vaginal introitus. Such a condition can be relieved only by surgical measures. The author has met with cases of atresia in which firm bands of cicatricial tissue had formed laterally between the middle and upper segments of the vaginal walls. Traumatic cases can often be cured by resort to operative measures. Congenital cases can not always be relieved satisfactorily. In those cases in which the uterus and Fallopian tubes are in a mere rudimentary condition, surgical attempts for relief for the most part prove useless. In two cases in which the cause was extensive laceration and sloughing of the parts, on account of traumatic lesions during parturition, subsequent pregnancy failed to take place. In cases in which surgical measures have been resorted to, the employment of hard vaginal dilators and iodoform gauze is of much benefit.

The author reported a case in which the vagina, at the time labor began, was so much contracted that an artificial opening, an extended incision, had to be made before the patient could be delivered. The incision was made transversely, midway between the meatus urinarius and the anus and the lower portion of the sacrum. Considerable depth of areolar tissue had to be broken down before the cervix was reached. Delivery by the fect was then accomplished. The condition was due to extensive sloughing of parts after a previous labor. Bimanual examination, so far as it can be carried out, assisted by rectal investigation will be helpful in reaching a decision as to whether or not the uterus and adnexa are absent. Their non-existence might be further strengthened by the absence of the vagina and clitoris. Accumulations of blood high up, causing consequent pressure on the bladder and rectum, accompanied with symptoms of recurrent menstrual pains, is strong evidence that surgical measures should be resorted to. In some of the cases in which atresia vaginæ supervenes after parturition, and in which extensive sloughing is also noticed, the mucous tissue is found to have undergone destructive changes at a number of different points throughout the vaginal canal. Nearly all cases of the accidental or acquired class may be relieved by operative treatment. In congenital cases radical means for relief prove useless. Such cases are due to the non-differentiation of the original kidney duct into the Wolffian and the Muellerian duct. The proper formation of the latter is absolutely essential to the development of the adnexa, the uterus and of the vagina.

Preservation of the Vault of the Vagina in Pelvic Operations.

DR. A. VANDER VEER, Albany, N. Y., said that the life of a female can be divided into three periods—through puberty; through marriage and the birth of her first child, and through the menopause. At the period of puberty we must consider the functions of the ovaries and malpositions of the uterus. At the time of the first confinement we must consider the possible lesions that might present, notwithstanding the most earnest care on the part of the obstetrician. We must also consider the possible morbific changes that come at the time of the menopause. In malignant growths the surgeon is in doubt in this region of the body as to how much normal tissue should be preserved. Dr. Vander Veer emphasized the axiom of practice to preserve normal tissues as much as possible, and under no circumstances to remove healthy organs.

Vaginal hysterectomy requires separate consideration for each individual case. In abdominal operations there is a difference in the nature of the procedure as between a malignant or non-malignant condition. Whatever method is adopted, the one important object in view should be to bring the stump well up in position so that it will hold the vault and fornix of the vagina and prevent sagging. The author has found that the old extraperitoneal method of hysterectomy preserves the vault of the vagina very well, there being less complaint of pressure of the cervix downward on the rectum, or against the tip of the coccyx. In extensive operations the surgeon should not promise too much. In considering recognized cases of malignancy, all organs within the pelvis should be removed, as these conditions frequently occur at a time in life when all functions have ceased.

MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA

Fifty-sixth Annual Meeting, held in Bedford Springs, Sept. 10-13, 1906.

(*Continued from page 1132.*)

DR. DANIEL W. JEFFERIS, Chester, in the oration on medicine, discussed the passing of the general practitioner.

Some Causes of Inefficiency in Medical Practice.

DR. JOHN B. ROBERTS, Philadelphia, considered this subject under the following headings: 1, Lack of equipment for prompt service; 2, carelessness in observation; 3, indefiniteness in giving orders; 4, want of self-confidence and tact; 5, failure to appreciate the value of common remedies, and 6, insufficient doses of medicine.

The Kidney in Scarlet Fever.

DR. B. FRANKLIN ROYER, Philadelphia, studied the kidney condition of 300 patients treated by routine doses of chloral hydrate given during the febrile period and continued for several days after all fever subsided, paralleling this analysis with a similar group of 756 patients treated with the usual remedies used in this disease. His study showed an incidence of 5.50 per cent. postfebrile nephritis where chloral was used, and 7.76 per cent. where chloral was not used. He concludes that chloral hydrate is of distinct value in the treatment of scarlet fever; that it ameliorates nervous symptoms better than any remedy yet suggested in the treatment of scarlatina; that it allays the itching of the skin; that when given during the febrile period and for some days thereafter, postfebrile nephritis appears to be less frequent.

Latent Diphtheria a Public-Health Problem.

DR. M. SOLIS-COHEN, Philadelphia, said that the latent form of diphtheria in which the only symptoms are redness of the fauces, slight tonsillitis, nasal catarrh, an increased pulse frequency, an irritable heart, or a headache, is as dangerous to the public health as are the severe forms with definite membrane. He recommended the taking of cultures from all throats presenting evidence of tonsillitis or which have been in contact with true diphtheria, and that all cases in which the Klebs-Loeffler bacilli are found be placed under the control of the health authorities.

DR. FRANK F. SIMPSON, Pittsburg, reviewed the progress made in gynecology and referred to the new achievements therein.

Surgical Treatment of Chronic Colitis.

DR. WILLIAM M. BEACH, Pittsburg, cited as proper cases for appendicostomy, cases of amebic dysentery, colon adhesions, following catarrhal appendicitis, and gynecologic operations, syphilis and primary tuberculosis of the colon, although the operation should not be done until less radical measures, such as diet and local treatment, have been exhausted. He described the technic of the operation and the after treatment, particularly the irrigation, the choice of solutions to depend on the conditions present.

Perineal Prostatectomy; Its Accidents and Complications.

DR. L. J. HAMMOND, Philadelphia, stated that the perineal route is the logical one, both anatomically and clinically, and cited as indications for the procedure: 1, Imposible catheterization or nearly so; 2, permanent hypertrophy of the prostate with well defined tumor; 3, residual urine in large amounts and rapidly decomposing; 4, frequent and painful micturition; 5, acute cystitis. The only contraindication is advanced pyelonephritis, associated with general arteriosclerosis. The chief accidents which are liable to occur are: Tear of the rectum, urethra or bladder wall, or hemorrhage or accidental injury to the prostatic plexus of veins, and recommended, in order to lessen the liability thereof, thorough

distension of the sphincter. The principal complications are shock, fistula (urethral, vesical, recto-urethral and recto-vesical), permanent incontinence, sepsis, uremia, pneumonia, cystic calculus.

DR. WILLIAM L. RODMAN, Philadelphia, stated that in the majority of cases the perineal route is better than the suprapubic route, but in cases in which the gland is very large, or in which there is enlargement of the middle lobe, and projection into the cavity of the bladder, the suprapubic is the method of choice. In the perineal operation he prefers the method of Young, as it gives a better view of the field of operation, prevents injury to the ejaculatory ducts, and unnecessary traumatism to the urethra and neck of the bladder.

Use of Silk in Tenoplasty; an Experimental Study.

DR. GEORGE P. MÜLLER, Philadelphia, referred particularly to cases in which part of the tendon had been removed and replaced with a silk cord. Out of the ten dogs operated on three are still living with no perceptible limp; five were killed at from two to five weeks; both limped perceptibly, in both the silk was surrounded by fibrous tissue. In the other three new tendon tissue was forming.

Causes of Failure in Tendon Grafting.

DR. DAVID SILVER, Pittsburg, stated that failure is due to improper selection of cases, in which the greatest possible improvement has not been obtained by other measures, and occurs in cases in which the existent deformity has not been over-corrected a sufficient length of time to allow the actual condition of the muscles to appear, and to errors in planning and executing the operation, such as inexact determination of the extent of the paralysis, improper distribution of the power, insufficient attachment of the implanted tendon, insufficient tension and improper technic leading to the formation of adhesions.

Address in Surgery.

DR. OTTO C. GAUB, Pittsburg, referred particularly to the treatment of hemorrhage occurring in the scalp, thorax and abdomen, and reviewed the literature on the subject. Hemorrhages of the scalp were considered under the designation of extradural and intradural, and those of the thorax as extrapulmonic and intrapulmonic.

Injuries of the Thoracic Cavity.

DR. GEORGE W. WAGONER, Johnstown, divided the condition into injuries of the wall, or external injuries, which usually are not serious conditions, and injuries of the contents, or internal injuries, which are more grave. He stated that the general principles of surgical cleanliness, the removal of destroyed tissue, drainage, disinfection and rest apply particularly to this class of cases. He commented on the treatment of hemorrhage of the chest walls, of fractured ribs (in which case strips of adhesive plaster reaching halfway round the chest only should be used), surgical emphysema, dislocated cartilage, dislocation of the vertebral ends of the ribs, fractures of the sternum, shock, traumatic empyema, and injuries of the pericardium and heart.

Abscess of the Lung.

DR. WILLIAM L. RODMAN, Philadelphia, stated that with the exception of the cases following influenza there is usually more than one pyogenic organism present, and that the abscesses may be either multiple or single. The diagnosis should determine as to whether there are pleural adhesions present or not, but an exploratory operation should not be done unless it is to be followed immediately by a radical one. In cases demanding a general anesthetic he prefers chloroform, which must, however, be given by an experienced operator.

Empyema in Children.

DR. JOHN H. JOPSON, Philadelphia, reported a series of cases, the ages of the patients varying from 10 months to 13 years; 58 were males and 42 were females. Prompt diagnosis and careful after treatment are essential factors.

Treatment of Pleural Effusion.

DR. EDWARD MARTIN, Philadelphia, stated that streptococcic empyema offers a more favorable outlook than do the latent pleural effusions, the latter being tubercular in origin, with thickening of the parietal and pulmonary pleura. Pleuritis is nearly always a secondary condition, frequently following pulmonitis or osteomyelitis. Bacteriologic and cytologic examination of the effusion are valuable to determine its character. He described in detail the operation for drainage of the cavity, which in the absence of contraindications should be made in the sixth interspace, in the midaxillary line, and if the effusion is purulent, continuous drainage is necessary.

Roentgen Treatment of Tubercular Glands.

DR. GEORGE C. JOHNSTON, Pittsburg, remarked on the frequency of tuberculosis following the removal of malignant growths, and urged the employment of the *x*-rays as a post operative measure. He cited as the advantages of this treatment over the surgical procedure, freedom from pain; non-confinement to bed; no death rate; good cosmetic results and less liability of recurrence; while the disadvantages are that it is tedious, expensive and requires the services of an expert operator.

Clinical Significance of the So-called Acute Stages of Bone Tuberculosis.

DR. H. AUGUSTUS WILSON, Philadelphia, stated that bone tuberculosis is an essentially chronic, insidious process, and that the phenomena heretofore known as the acute stage are avoidable sequelæ. The term acute stage is misleading and confusing in that it implies the beginning of a disease. In reality the so-called acute stage is intended to indicate the presence of more or less severe pain, swelling and temperature occurring during the progress of some cases of bone tuberculosis. Such exacerbations have a pathologic basis in the pressure phenomena and toxemia produced by the accumulation of broken-down detritus within the field of the osteitis. The symptoms disappear as soon as the process of advance has opened up new territory and thereby released the previously existing pressure. Recurrences take place in certain cases more or less frequently. It is erroneous to call the condition acute stage, because it is not an essential part of the disease and never occurs in the beginning.

(*To be continued.*)

BRITISH MEDICAL ASSOCIATION.

Seventy-fourth Annual Meeting, held in Toronto, Ontario, Aug. 21-25, 1906.

(*Continued from page 1130.*)

SECTION ON OPHTHALMOLOGY.

President's Address.

MR. R. MARCUS GUNN, F.R.C.S., London, the president, in his introductory remarks, recalled the loss that Canadian ophthalmology has sustained in the death of Dr. Frank S. Buller, Montreal, whose work at Moorefields and Montreal is so well known, and who recently in collaboration with Dr. Casey Wood, of Chicago, brought to the notice of the profession the effects of poisoning by wood alcohol in a memoir already classical. He welcomed heartily the visitors, especially those from the United States.

Sympathetic Degeneration.

MR. FREELAND FERGUS, Glasgow, described twelve cases of a condition which he called sympathetic degeneration. In many cases, in which one eye has been severely damaged, the other eye undergoes a degenerative process, characterized by a concentric contraction of the field of vision, in some cases extreme. In most of the eyes thus affected there is a diminution of the visual acuteness and in a few there is severe neuralgia. The condition is not accompanied by any obvious inflammation of the eye undergoing degeneration, and has never yet led to blindness. In the author's opinion, when the field of vision, under such circumstances, becomes contracted, it never recovers.

Obstruction of the Central Retinal Vein.

DR. FREDERICK H. VERHOEFF, Boston, reported six cases of obstruction of the central vein of the retina, from which he drew the following deductions. Complete obstruction of the central retinal vein, with the classical opthalmoscopic picture of thrombosis of this vessel, may be produced by endophlebitis proliferans without thrombosis. The proliferation may involve the subendothelial tissue alone, or the obstruction may be com-

pleted by a more active endothelial proliferation within the lumen. All cases attributed to non-septic thrombosis are in all probability due to endophlebitis alone. The so-called canalized thrombus of the central retinal vein is in the nature of a dissecting aneurism. In certain cases obstruction of the vein may early give rise to acute glaucoma.

Wood Alcohol Amblyopia.

Dr. Casey Wood, Chicago, reported some recent cases of death and blindness from wood alcohol poisoning. He stated that intoxication from the imbibition of methyl preparations is unknown in Great Britain. It is comparatively more common in America because of the high excise duty on alcohol in the United States and Canada, by reason of which, deodorized or refined alcohol is extensively used in the arts and industries. The characteristic ocular lesion is an optic neuritis with some papillary edema and distinct engorgement of the central vessels. At the onset, this gives rise to primary blindness. The acute papillitis soon subsides and vision improves, to be followed by a post-neuritic atrophy and permanent loss of sight. The most important form of poisoning is that from inhalation of the fumes in a confined space, observed among shellacers, whose varnish is made from the deodorized wood alcohol. Within forty-eight hours the patient complains of nausea, abdominal distress, weakness, headache, blindness and dyspnea, followed in fatal cases by convulsions, coma and death. The treatment of the eye lesions is of little avail. With the adoption of denatured, untaxed grain alcohol for commercial purposes by the United States, and its probable adoption by Canada, this form of poisoning will disappear. In the meantime, more than 700 people have been killed or made blind by methylated preparations in these countries.

Dr. Edward J. Bernstein, Kalamazoo, reported a case of poisoning from inhalation of methyl alcohol in a watchman in a pharmaceutical laboratory. He said it is customary with some manufacturers to use methyl alcohol to extract the active principles from the drugs, and questioned whether there is any danger of methyl-alcohol poisoning in the use of such extractives.

Sympathetic Ophthalmia.

Dr. G. Herbert Burnham, Toronto, opened the discussion on this subject with a consideration of the treatment of the sympathetically inflamed eye, and stated his belief that the routes traveled by the impulse are the optic and ciliary nerves. The combined treatment of mercury and iodid of potassium internally and the hypodermatic injection of pilocarpin will control and practically cure sympathetic inflammation. In cases of injury of the eye, the other eye may be rendered immune by the use of this treatment, which he advises should be employed at once. From the author's experience of sixteen years with this treatment, he feels justified in advocating the procedure.

Mr. Arnold Lawson, London, considered the preventive treatment of the disease. What is most needed is authoritative information on which a surgeon may base his decision on an attempt to save a dangerously wounded eye. He suggested that great good would come from the investigation and report on the following five questions: 1. Can it be definitely stated of any wound of the globe that it will inevitably produce sympathetic ophthalmitis in the other eye? 2. If not, what are the lines on which a surgeon should decide on immediate removal of the globe? 3. What are the considerations which may make him decide to attempt to save the eye? 4. In the later history of a case, short of definite evidence of commencing sympathetic ophthalmitis, what symptoms, if any, should make the surgeon decide on enucleation of the injured eye? 5. Are there any premonitory symptoms which may be accurately described as heralding the approach of sympathetic ophthalmitis, and on which a surgeon, by immediate enucleation of the injured eye, may prevent the onset of disease?

Dr. John W. Sterling, Montreal, said that the pathology and etiology of sympathetic inflammation needed elucidation before the treatment of this disease can be anything but empirical. Only when these positions have been made absolutely plain can any clear diagnosis and scientific treatment of the conditions be hoped for, and this will probably be on the lines of serum injection. A bacillus has already been found, the inoculation of which into the vitreous and circulation of a rabbit, has set up a uveitis, resembling sympathetic ophthalmia.

Dr. Frederick H. Verhoeff, Boston, thinks that sympathetic disease, arising many years after injury, may be explained by recent infection of the scar by specific microörganisms.

Dr. Samuel Theobald, Baltimore, believes in the neuropathic origin of the disease and that a vasomotor paralysis of the sympathetic eye precedes actual inflammation, as indicated by tortuosity and distension of the central retinal veins in disease commencing in the posterior pole, and by a similar condition of the subconjunctival veins when the disease commences in the anterior structures of the eye.

Dr. John E. Weeks, New York City, spoke of the conditions of the uveal tract in cases of sympathetic ophthalmia many years after the lesion, and mentioned one case which occurred forty-five years after the injury to the exciting eye. In five such cases he had found a small-celled infiltration of the uveal tract, usually most pronounced in the ciliary body. He believed that evidence of threatened sympathetic inflammation is present, when the exciting eye, after having been quiescent for months or years, shows evidence of deep-seated inflammation however mild this may be.

Accommodation After Middle Life.

Dr. Edward Jackson, Denver, in his paper entitled "Accommodation After Middle Life and Its Practical Importance," gave statistics based on observation of 559 patients more than 50 years of age. The practical importance of this persistence of accommodation after middle life comes from the greater comfort and convenience of the patient, who is allowed to use what accommodation he has, and from the false deductions that may be made as to the presence and degree of ametropia, because of the failure to recognize the presence of such accommodation. Slight inaccuracies in the lenses of elderly patients who strain their diminishing power of accommodation to overcome them, may be more serious than higher degrees of hyperopia in young people who have plenty of accommodation.

Visual Tests for Public Services.

Dr. Charles H. Williams Jr., Boston, in his paper entitled, "Necessity for Careful Examination of Vision and Color Sense," briefly summarized the work done by railroad companies in the United States, beginning with 188 , the Australian railway in 1904 and the Canadian Pacific railway in 1906, as regards the test for color vision and perception. These roads used the Snellen or other test cards and the Holmgren worsteds and the lantern introduced by the author as an additional test for the color sense. Standard tests for visual and color sense can be safely trusted to non-professional men, instructed by and acting under the supervision of a competent ophthalmic surgeon. The examination of pilots and others at the Port of Boston under the United States Public Health and Marine-Hospital Service has followed the same methods for the last three years. The author spoke especially of the necessity of requiring similar tests before licensing drivers of automobiles, which run on the highway at a rate of speed often equaling that of an ordinary passenger train. He also referred to the recommendations of the committee on color vision of the Royal Society and of the House of Delegates of the American Medical Association in 1902 as showing the professional opinion regarding these examinations for visual and color sense.

Mr. Arnold Lawson, London, outlined the general requirements as regards tests for military service, and analyzed the present regulations in force and suggested improvements therein.

Dr. Edward Jackson, Denver, referred to the danger of relying on tests that are not reliable. There is a certain part of the spectrum that serves as a test for nearly all cases of red and green blindness, and the departure from this allows many cases to escape detection. Test letters that can be known from larger letters on the card are readily learned and the candidate will often take great pains thus to evade the test.

Mr. Freeland Fergus, Glasgow, believes that it is essential for a man who has duties as a pilot to perform to have a good light difference sense, as without this it would be impossible to make out land on a dark night.

(To be continued.)

Therapeutics

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulæ and outlines of treatment are answered in these columns.]

Autumnal Catarrh.

According to the *Practitioner* this condition may be looked on as a vasomotor neurosis, as the sufferers are of a neurotic constitution and from time to time suffer from spasmodic bronchial asthma. In considering the treatment of the disease, the patient must be removed from the exciting cause of the paroxysm, and the conjunctival sacs and nostrils must be washed out with a bichlorid solution, 1 to 6,000.

In some cases, according to the *Praetitioner*, tamponing the nostrils with cotton-wool soaked in glycerin is very efficient. A careful examination of the nasal passages must be made to discover any abnormal condition, if present. Some authorities recommend the following combination used locally:

℞. Mentholis .....gr. xl 2 | 65
Petrolati liq. .....ʒi 30 |

M. Sig.: Apply locally with a swab.

Sir Andrew Clark recommended the following combination to overcome the irritability of the nasal mucous membranes:

℞. Quin. hydrochloratis.....ʒi 4 |
Glyceriti acidi carbol.....ʒi 30 |

M. Sig.: Apply locally on a swab.

In cases of asthmatic attacks the following combination is recommended:

℞. Kalii iodidi.....gr. v | 30
Spts. ammon. arom.
Tinct. gentianæ co., āā.....m. xx 1 | 20
Aquæ q. s. ad.....fʒi 30 |

M. Sig.: To be taken at one dose, and such a dose repeated three times a day. Or:

℞. Liquoris trinitrini (1 per cent.).....m. ss | 03
Spts. etheris nitrosi.....m. xx 1 | 20
Spts. chloroformi.....m. v | 30
Aquæ q. s. ad.....fʒi 30 |

M. Sig.: To be taken at one dose, and such a dose repeated every four hours.

By inhalation the following combination is recommended:

℞. Pulv. lobeliæ |
Pulv. stramonii |
Pulv. theæ |
Potass. nitratis, āā.....ʒi 4 |

M. Sig.: A small amount to be ignited and the fumes inhaled.

The general tone of the patient's nervous system must be improved with such preparations as arsenic, iron, phosphorus and strychnin. For this, the following combination is of value:

℞. Kalii bromidi.....gr. xv 1 |
Liq. arsenicalis.....m. iii | 20
Tinct. gentianæ co.....m. xxx 2 |
Aquæ q. s. ad.....fʒi 30 |

M. Sig.: To be taken at one dose, and such a dose repeated after each meal, well diluted in water.

Angina Pectoris.

In the same periodical Hugh Barber, in writing on the subject of angina pectoris, states that in this disease there is atheromatous degeneration of the coronary arteries, producing narrowing of their orifices. The heart may show myocardial changes. The pain is due, according to Hughes, to the involvement of the cardiac plexus and radiates to adjacent nerves.

The treatment recommended is as follows:

RELIEF OF THE ATTACK.

In a severe attack of angina pectoris inhalation of amyl nitrite is recommended at once by breaking a capsule containing three minims of this preparation and instructing the patient to inhale it. If good results do not follow this treatment within a minute or two, he recommends that chloroform be tried, applied on a sponge in a smelling bottle and inhaled, the patient holding the bottle himself. If the pain is severe and persistent, a hypodermic injection of morphin is recommended, given in ¼-grain doses (.015). If the patient is feeble he counteracts the effects of the morphin by administering strychnin, grain 1/40 to 1/30 (.0015-.002). At the same time the following combination may be taken by the mouth as a heart stimulant:

℞. Spts. etheris |
Spts. ammon. arom., āā.....m. xxx 2 |
Aquæ camphoræ q. s. ad.....fʒi 30 |

M. Sig.: To be taken at one dose, well diluted.

As an alterative for amyl nitrite, he recommends one or two minims (.06-.12) of the liquor trinitrini (B.P.), which is equal to 1 per cent. solution of nitroglycerin. As he states that this latter preparation will give relief in some cases in which amyl nitrite fails, sodium nitrite in doses of from 2½ to 5 grains (.15-.30) is advised for the pain when it is not readily relieved by the amyl nitrite. Vapors such as iodid of ethyl or bromid of ethyl may be tried in stubborn and intractable cases.

In mild cases, or those in which the pain persists after the attack is much relieved, hot applications should be applied to the precordium. After the attack has passed the patient should be instructed to rest, avoiding all excitement and restricting himself to a light diet and avoiding alcoholic stimulants.

If such attacks recur Barber recommends that a course of nitrites be given similar to the following:

℞. Liq. trinitrini.....m. i | 06
Tinct. card. co.....m. xxx 2 |
Spts. chloroformi.....m. x | 65
Aquæ q. s. ad.....fʒi 30 |

M. Sig.: One such dose, to be taken three times a day.

This dose should be gradually increased every fifth or sixth day until headache occurs and flushing is present. The nitrates may be kept up for several weeks.

The most difficult cases, according to the author, are those in which there is a tendency for the heart to become incompetent, as the liquor trinitrin (nitroglycerin) may increase such a tendency, while digitalis would cause the pain to return. Such patients must be kept in bed or instructed to lie down while the nitroglycerin is being given, and instead of giving digitalis he recommends caffein and nux vomica, combined as follows:

℞. Liq. trinitrini.....m. i | 06
Caffeinæ citratis.....gr. v | 30
Tinct. nucis vomicæ.....m. viii | 50
Syr. aurantii .....f3ss 2 |
Aquæ q. s. ad.....fʒi 30 |

M. Sig.: One such dose three times a day.

TO AVOID ATTACKS.

A patient who is subject to attacks of angina pectoris should regulate his life in such a way that he may avoid all forms of excitement. Physical exertion, over-filling of the stomach and emotion should be avoided as the most important factors in bringing on an attack. Other causes, such as mental excitement, business worry, anger, exposure to cold, the ingestion of tea, tobacco, coffee and alcohol, are all exciting factors which may bring on an attack and should be avoided. The clothing should be warm in winter. The diet should consist of boiled fish, eggs lightly boiled and milk puddings. The patient should be instructed to drink plenty of water. Vegetables and such other foods as are liable to cause flatulence should be avoided. Regularity in eating should be instituted and supper omitted.

The bowels must move daily and regularly. If necessary, a pill containing aloes and nux vomica, with an occasional dose of calomel, may be given.

As a tonic to the digestive tract the following combination is recommended:

℞. Sodii bicarb.....gr. xx 1 | 20
Tinct. aurantii.....m. xx 1 | 20
Infus. calumbæ.....fʒss 15 |
Aquæ chloroformi q. s. ad.....fʒi 30 |

M. Sig.: At one dose. Or:

℞. Acidi nitro-hydrochlor. dil.....m. x | 65
Tinct. nucis vomicæ.....m. viii | 50
Tinct. aurantii.....m. xx 1 | 20
Aquæ q. s. ad.....fʒi 30 |

M. Sig.: To be taken at one dose, and such a dose repeated after each meal, in water.

He also recommends potassium iodid in doses ranging from grains 10 to 20 (.65-1.20) three times a day, well diluted in water. Arsenic and strychnin when combined are serviceable in this disease, given as follows:

℞. Liq. strych. hydrochlor.
Liq. potass. arsenitis, āā.....m. iii | 20
Tinct. aurantii.....m. xx | 1 | 20
Aquæ q. s. ad.....f℥i | 30

M. Sig.: One such dose three times a day.

In neurotic individuals potassium bromid is of value, given with the foregoing combination.

When anemia is present, with a valvular lesion of the heart, digitalis and iron may be combined, remembering, as he states, that the former may cause the pain to return:

℞. Tinct. digitalis.....m. x | 65
Liq. ferri perchlor.....m. xv | 1
Acidi citrici.....gr. v | 30
Syrupi limonis .....f℥ss | 2
Aquæ q. s. ad.....f℥i | 30

M. Sig.: To be taken at one dose.

Rhus Poisoning.

The following combination is recommended by Loving, in the *New York Med. Jour.*, for the treatment of rhus poisoning:

℞. Chloralis hydratis .....℥ii | 8
Sodii hyposulphitis .....℥i | 30
Aquæ dest. .....Oi | 500

M. Sig.: Keep the inflamed parts covered with a cloth constantly saturated with the solution.

In case the foregoing combination fails to produce the proper results, Loving recommends that the official black wash be applied locally.

Pruritus Ani.

In the treatment of pruritus ani, Hirschman, in the *Physician and Surgeon*, recommends that a saturated solution of boric acid be employed as a local wash, as it is not only a cleansing agent, but produces a cure in some cases. An ointment prepared as follows may then be applied:

℞. Hydrarg. chloridi mitis.....℥ss | 2
Adipis q. s. ad.....℥ss | 15

M. Ft. unguentum. Sig.: Apply locally.

He emphasizes the importance of calcium chlorid given internally in the following combination:

℞. Calcii chloridi .....℥ii | 8
Tinct. aurantii flores.....f℥vi | 24
Aquæ chloroformi q. s. ad.....f℥vi | 180

M. Sig.: One or two tablespoonfuls three times a day, one hour before meals.

If any disturbance of the stomach should arise the dose may be reduced.

Sodium thiosulphate is in some cases of value, applied as follows:

℞. Sodii thiosulphatis.....℥iii | 12
Aquæ dest. .....f℥vi | 180

M. Sig.: Apply locally after thoroughly cleansing the parts.

Ringer recommends the following:

℞. Acidi salicylici .....℥ii | 8
Olei myristicæ.....f℥iss | 6
Cetacei .....℥iii | 12
Olei theobrom. .....℥v | 20

M. Sig.: Apply locally night and morning.

Acute Articular Rheumatism.

The following outline of treatment is recommended by Shoemaker in the *Med. Bulletin*, in the treatment of acute articular rheumatism: Salicylic acid combined with soda is the most preferable combination, and if the pain is severe, codein may be given in conjunction with them as follows:

℞. Sodii salicylatis .....℥ss | 15
Codeinæ sulphatis .....gr. vi | 36
Glycerini .....f.℥i | 30
Tincturæ cardamomi co.....f.℥i | 30
Aquæ q. s. ad.....f.℥vi | 180

M. Sig.: Two teaspoonfuls in water every three hours.

If the codein is omitted from the foregoing combination, the dose may be repeated once every hour for five or six doses.

In addition to the foregoing internal treatment, the application of lead water and laudanum to the parts involved is often of value in relieving the extreme pain if accompanied by inflammation and swelling.

After the temperature has returned to normal it is recommended that some alkali, such as sodium bicarbonate or the iodid, may be added to the salicylate; later the salicylate may be discontinued and the alkali alone kept up until complete convalescence. The diet must be regulated to suit the individual and his digestive capabilities. So long as there is fever it is better to confine the patient to a liquid diet consisting chiefly of milk, and the patient should be encouraged to drink as much water as possible. In case constipation is present, the following pill is recommended as necessary to correct this condition:

℞. Massæ hydrarg .....
Ext. colocynth. co.....
Pulv. jalap co., āā.....gr. xx | 1 | 30
Olei menth. pip.....mi | 06

M. Ft. pillulæ No. xx. Sig.: One pill, as necessary, to relieve the constipation.

Some authorities recommend the following combination as a pleasant one in the treatment of acute rheumatism:

℞. Sodii salicylatis .....℥iii | 12
Syrupi zingiberis .....℥i | 30
Aquæ q. s. ad.....℥vi | 180

Fiat mistura. Sig.: One tablespoonful every three hours.

The following combination of ammonium and sodium salicylate is said to be a very efficient combination and is devoid of unpleasant symptoms:

℞. Sodii bicarb.
Ammonii carb., āā.....gr. v | 30
Acidi salicylici .....gr. xx | 1 | 30
Aquæ q. s. ad.....℥i | 30

M. Sig.: To be given at one dose and repeated every two hours for three doses and then once in four hours.

Those who have a preference for salicin may find the following combination of service:

℞. Salicini
Potass. bicarb.
Sodii bicarb., āā.....gr. xii | 75

M. Ft. chart. No. i. Sig.: One such powder dissolved in half a glass of water every three hours.

Locally to the joints the following liniment is of service in rendering the pain more endurable and in lessening the swelling:

℞. Acidi salicylici .....gr. cxx | 8
Alcoholis .....f.℥i | 30
Olei ricini .....f.℥iss | 45

M. Fiat linimentum.
Sig.: Apply locally to the affected joints.

Medicolegal

Neither County Nor Members of Board of Health Liable for Quarantine Through Mistake or for Loss of Crops.

The Supreme Court of Iowa says, in the case of Beeks vs. Dickinson County and others, an action for damages, where a farmer and his family were quarantined by the local board of health of the township on the mistaken supposition that there was a case of smallpox in the family, that it is the settled law of Iowa, as well as the general rule, that municipal corporations are not liable for the negligence of their officers or agents in executing health regulations adopted for the purpose of preventing the spread of contagious diseases. In so far as a municipality undertakes the duty of making and enforcing quarantine regulations and other laws for the promotion of the public health, it is performing governmental functions, and its officers are not agents for whose action or inaction it is liable unless such liability is imposed by its charter, or by the laws of the state under which it exists. Furthermore, it was probably true that the officers in question were not strictly municipal officers or agents so as to render the county liable for their acts in any event. They became health officers by virtue of the statute which fixed the tenure of office also. While such officers are elected in townships, they are elected in obedience to the statute, to perform a public service not peculiarly local or corporate, but as state officers with such powers and duties as the statute confers on them

The plaintiff, in addition to claiming that the county was liable generally for the alleged negligence of the local board of health, contended that the local officers had promised that the county would provide him with the necessary help for tak-

ing care of his crops, as well as that, because the statute made the county liable in the first instance for the care of infected and quarantined persons, it was liable for the value of his crops which had been lost. The court replies that section 2568 of the Iowa Code creates local boards of health, and makes it the duty of such boards to make such regulations as are necessary for the protection of the public health, and to proclaim and establish quarantine against all infections or contagious diseases dangerous to the public, and section 2570 provides for the care of infected persons and for the payment of the expenses incurred on account thereof. The statute neither expressly nor by implication provides for anything more, and the court is not at liberty to read into it an enlarged liability. It is also very clear that the members of the local board of health had no power to create a liability not imposed by law, even if they had acted under the direction of the board of supervisors. The liability that may be incurred by such boards is fixed by law and beyond this neither can go.

Taking up the question of whether the members of the local board of health were individually liable for the loss of the plaintiff's crops, the court says that the statute makes it the duty of health officers to quarantine against "all infectious or contagious diseases dangerous to the public," and it can not well be questioned that the defendants were acting within the scope of their duty as such officers, and that in establishing the quarantine they were acting in a quasi (as it were) judicial character. They were vested with the power to determine whether an infectious or contagious disease existed in the plaintiff's family, and if found to exist, their duty under the statute required them to take the proper steps to prevent its spread, and had they neglected to do so they would have been culpable in a high degree. They were, therefore, acting judicially, and it is the general rule that officers so acting are not liable for injuries which may result from such acts performed in the honest exercise of their judgment, however erroneous or mistaken the action may be, provided there be no malice or wrong motive present.

In some cases an exception to this general rule has been recognized, and the individual officers have been held liable because of the maxim that where there is a wrong there is a remedy. This court is of the opinion, however, that where the public health is involved this rule should not be applied, notwithstanding the fact that courts of great ability have so held. It is the modern tendency of judicial opinion to hold that the public health is the highest law of the land and "whenever a police regulation is reasonably demonstrated to be a promoter of public health all constitutionally guaranteed rights must give way to be sacrificed without compensation to the owner."

Nor does this doctrine necessarily conflict with the maxim referred to. As already stated, this board of health was a creation of the statute and its paramount duty was to protect the public health; its duty, then, was to the public and not to any individual member thereof, except to act honestly and without design to injure him. If a health officer fails to do his duty no individual may complain, for the duty is public and the officer is not charged with any individual duty to any particular person. If there be no liability for an omission of public duty, it would seem to follow without question that an erroneous performance should not subject the officer to personal liability. It may, it is true, cause an injury to the individual, but it is not a wrong because the officers owe the individual no duty beyond that already stated. This rule should not be so extended as to protect health officers who act without the scope of their authority, or who act with gross negligence amounting to malice.

It is unfortunate that any individual should suffer loss because of a mistake as to the existence of a dangerous contagious disease, and yet the welfare of the public is of such paramount importance that a rule should not be established which will have the necessary effect of increasing the public danger. If health officers, acting in perfect good faith and as their judgment dictates, are held liable for a mistake in judgment, the effect on the public health can not be doubted. For instance, many competent physicians have never been brought into actual contact with smallpox, and many mistakes have been made in diagnosing diseases which later prove to be highly contagious. Whole communities have been exposed and suffered because of mistakes in judgment and overcaution for the liberty of the individual. If a civil liability is to be imposed because of a quarantine which is later proved unnecessary, the danger to the public will be greatly enhanced, and the effectiveness of the statute greatly impaired. This court does not feel like announcing such a rule, nor does it believe justice to the individual requires it.

Liability for Negligence of Nurse in Sanitarium.

The Supreme Court of Louisiana says, in the case of Stanley vs. Schumpert and others, that a physician suggested to the plaintiff (his patient) that during the treatment of his eyes he should stay at a certain sanitarium. The physician prescribed a mild solution to be applied under the direction of a trained nurse. But one day one of the nurses in the institution, who happened to be in charge of this patient's ward, undertook to administer the solution. Instead, however, of administering the mild solution prescribed, through negligence she put the dropper into alcohol and dropped alcohol freely into the patient's eye. The injury, if any, was very slight, although the alcohol caused intense pain.

An action for damages was brought. Two of the defendants, the court says, were not the owners of nor connected with the management of the sanitarium at the date of the accident. Suit against them did not lie. They were not liable. But the third defendant, at the time the lessee of the sanitarium, who was alone responsible for its management, the court holds was liable for nominal damages, fixed in this case at $25, for the suffering, though momentary, which the negligent mistake occasioned.

An attendant in a sanitarium, the court holds, should be careful, and it is the duty of those in charge to compel the nurse to be careful, and not to neglect the patient who is under the care of the sanitarium, and to whom it must see, to some extent at least, that medicines are properly administered. Again, the court says that a nurse should exert her best endeavors to avoid mistakes of any kind, as they are sometimes attended in the sick room with the saddest consequences. The proprietor of a drug store has been held liable for the mistake of his clerk. The general responsibility of a druggist and of his clerk is greater than are the duties of the nurse. Nonetheless, the functions of the nurse are sufficiently important to render her and her employers liable in damages for inflicting pain negligently. This nurse was employed by the sanitarium and had charge of the plaintiff's case in accordance with his contract of employment. She was acting for the sanitarium under the direction of the plaintiff's physician. Her duty was to carry out the orders of this physician, and it was the duty of the sanitarium to see that she carried out the orders devolving on her as a nurse. The physician could have had another nurse called in her place, but he had no right to discharge her. The management of the sanitarium had the right of control and of discharge.

Current Medical Literature

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

Boston Medical and Surgical Journal.

September 29.

1 *New Foundation of the Medical School. J. C. Warren, Boston
2 *The Faculty of Medicine. W. L. Richardson, Boston.
3 *The Laboratories. T. Dwight, Boston.
4 *The Clinics F. C. Shattuck, Boston.
5 *Acceptance of the Buildings. C. W. Eliot, Boston.
6 *Diseases of the Bile Passages, Including the Liver, Gall Bladder and Pancreas. M. H. Richardson, Boston.
7 Diseases of the Biliary Passages, Including the Liver, the Gall-Bladder and the Pancreas. E. G. Cutler, Boston.
8 *An Experimental Study on the Bactericidal Power of Various Silver Preparations. G. S. Derby, Boston.
9 Case of Pyloric Spasm in an Infant. J. L. Morse, Boston.

1, 2, 3. 4, 5.—See abstracts in THE JOURNAL, Oct. 6, 1906 pages 1113, 1114 and 1115.

6. Diseases of Bile Passages.—The rule by which Richard-

son has been guided and which he has rarely, if ever, had occasion to regret, is that when symptoms exist in the right upper quadrant which are of a chronic character, when the attacks of pain or distress continue especially at irregular intervals, and when the attacks of pain in any form suggest the presence of gallstones, exploration is indicated, particularly when palliative measures have been employed in vain for a reasonable length of time. When later signs confirm the existence of gallstones, any measures other than surgical are unreasonable and ineffectual.

8. Bactericidal Power of Silver Preparations.—Derby compared the bactericidal power of nitrate of silver and some of the newer silver preparations for which so much has been claimed by their manufacturer. The preparations tested were purchased in original bottles from reputable wholesale firms. The *Staphylococcus aureus* was utilized for the work. The following silver preparations were tested: nitrate of silver, argyrol, protargol, collargol, largin, ichthargan, albargin, argonin and argentamin. Solutions of nitrate of silver varying in strength from 0.5 per cent. to 2 per cent. killed the *Staphylococcus aureus* in from two to five minutes. An exposure of 30 seconds to the 0.5 per cent. solution was generally sufficient to prevent a growth in 24 hours, but not sufficient to kill all the cocci. The bactericidal action of protargol is efficient, though not so efficient as that of nitrate of silver. The microörganism is usually killed by a 2 per cent. or a 4 per cent. solution at the end of from three to five minutes, though occasionally a few colonies will grow after ten minutes' exposure. An exposure of one minute will usually prevent a growth of the germ in 24 hours. Solutions of the same strength will kill the pneumococcus in one minute. The bactericidal power of collargol is comparatively weak, as a growth of the *Staphylococcus aureus* could be obtained at the end of 20 minutes, using the 4 per cent. solution. With a 1 per cent. solution a growth was obtained at the end of one hour. Albargin in 10 per cent. and 20 per cent. solutions killed the *Staphylococcus aureus* in from two to five minutes. The 1 per cent. solution gave a growth after 15 minutes' exposure. In ichthargan solutions varying in strength from 1/10 per cent. to 1 per cent., there was no growth after from one to four minutes. With argentamin, ethylenediamine-silver nitrate, practically the same results were obtained with a 5 per cent. solution of this drug as with ichthargan. Largin, silver protalbin, is an efficient bactericide. The *Staphylococcus aureus* was killed by a 10 per cent. solution in from two to five minutes. With argonin, argentum casein, no growth could be demonstrated after from three to six minutes. The bactericidal power of argyrol is exceedingly weak. In a large series of observations a growth of the *Staphylococcus aureus* was obtained after exposure to the 10 per cent., 25 per cent. and 50 per cent. solutions for one hour, one hour and two hours respectively. A diminution in the number of colonies commonly appeared at the end of 20 minutes. Its action was uncertain, and while occasionally the germs were affected by a 20-minute exposure, more often the cultures taken at the end of one hour showed a growth when examined 24 hours later. The age of the solution did not appear to be of importance.

New York Medical Journal.

September 29.

10 *Case of Myoclonus Epilepsy, with Autopsy. C. W. Burr, Philadelphia.
11 Observations in the Tropics. L. L. Seaman, New York.
12 *Gunshot Wounds of the Spinal Cord. I. S. Haynes, New York.
13 *Drugs in Diabetic Glycosuria. A. C. Croftan, Chicago.
14 *Posterior Gastroenterostomy; Extreme Gastroptosis, Motor Insufficiency, Epilepsy; Apparent Cure. J. Burke, Buffalo.
15 Pathologic Physiology. B. Robinson, Chicago.
16 Etiology of Uterine Fibroids. D. H. Griffith, Dunbar, Pa.
17 *Case of Westphal's Pseudosclerosis. F. T. Simpson, Hartford, Conn.

10. Myoclonus Epilepsy.—The patient whose history is reported by Burr died of acute pulmonary tuberculosis after he had been under the author's care for ten years. The most marked lesions found at the necropsy were smallness of the right cerebellar hemisphere, decrease in the number of cells of Purkinje in both lobes and thickening of the arachnoid with obliteration of the right posterior lacerated foramen. Burr thinks that these changes were caused by disease during intrauterine life or soon after birth, and that the cerebellar changes instead of being the sole cause of the patient's condition were simply a part of the general process resulting in the production of a poorly developed brain.

12. Gunshot Wounds of Spinal Cord.—Haynes presents the statistics of 46 cases collected by him from the literature covering the period from 1896 to 1906. His paper also contains the statistics of Prewett's 42 cases collected from the literature of 1879 to 1896. Haynes makes a plea for early myelorrhaphy and reports a case of bullet wound through the liver, spinal column and cord in which laminectomy was performed successfully and the patient recovered.

13. Drugs in Diabetic Glycosuria.—Croftan claims that none of the remedies recommended for the cure of diabetes can exercise a curative effect on the disease proper, and that only a few appreciably influence the excretion of sugar. In vaunting the efficacy of any drug in diabetes the element of suggestion should always be considered, particularly when a new drug of much heralded efficacy is tried for the first time. Among the drugs discussed by Croftan are opium and its alkaloids, nerve sedatives, preparations of salicylic acid, jambul, alkalies, potassium iodid, and intestinal antiseptics.

14. Epilepsy and Gastroenterostomy.—Burke reports a case of epilepsy occurring in a woman of 33. There existed a total gastroptosis, the greater curvature rested on the pubes, the lesser at the umbilicus. There were marked muscular insufficiency and ectasy with the consequent deficient drainage. Medicinal and mechanical treatment were used to the limit of patience and endeavor without improvement, and a posterior gastroenterostomy was made to improve gastric drainage. This, he says, was a case in which the result justified the attempt, and the operation apparently cured a case of genuine epilepsy.

17. Westphal's Pseudosclerosis.—Simpson reports a case of this kind occurring in a girl 21 years old, whose mother and father were cousins. One uncle and one aunt have been insane. Her father died at 59 of heart disease; her mother is well. Two younger sisters are reported as well. The disease began five or six years ago, and all the symptoms have been typical. The features of Westphal's pseudosclerosis present in this case are: 1. Psychoses in the antecedents. 2. In the initial period slight mental deterioration, apathy, followed by irritability and resulting in dementia. 3. Remission in the course of the disease, progressive course. 4. Vertigo and headaches. 5. Disturbance of speech, slow, becoming incomprehensible. 6. Slowness of muscular movements. 7. Spastic paresis, transitory, then lasting. 8. Increased tendon reflex. 9. Tremor and ataxia of upper extremities. 10. General weakness, walking uncertain. 11. Hypesthesia.

Medical Record, New York.

September 29.

18 *Percussion of the Skull as a Means of Placing the Indication for the Performance of Lumbar Puncture. H. Koplik, New York.
19 *Problem of Localization in Relation to Head Injuries. W. W. Graves, St. Louis.
20 *Surgical Treatment of Trigeminal Neuralgia. L. V. Moschcowitz, New York.
21 *One Hundred and Three Cases of Epilepsy. W. L. Stowell, New York.
22 *A Plea for a More Thorough Course in Practical Pharmacy in Our Medical Schools. M. C. Thrush, Philadelphia.
23 *Some Points on the Diagnosis and Treatment of the Pretuberculous State. C. F. Disen, Minneapolis.
24 *Examination of the Feces of Twenty-Five Starch-fed Infants, with a Few Clinical Observations. J. H. Lopez, Philadelphia.
25 Suppurating Omental Hernia. F. R. McCreery, New York.

18. Percussion of Skull as Indicator for Lumbar Puncture.—Koplik states that percussion of the skull affords a means of detecting acute hydrocephalus, whether caused by acute distension of the ventricles on the first day of a cerebrospinal meningitis, or during the slow, insidious onset of a tuberculous meningitis. When the lateral ventricles are distended with serous fluid the percussion note at a given spot varies according to the position of the head. While the person sits with head upright, the most resonant note is brought out by percussion of the skull by means of the finger toward the basal level of the frontal bone, and the squamous part of the parietal

bone. On the lower bone, as the head is inclined to one side, percussion gives a tympanitic note. In cases of acute distension of the ventricles lumbar puncture is a life-saving operation. Koplik considers percussion of the skull the only definite means of determining whether there is an increase of fluid in the ventricles or the subarachnoid space causing pressure effects, and therefore demanding immediate relief. He cites a number of cases in point.

19. **Localization in Relation to Head Injuries.**—Graves declares that a satisfactory solution of the problem of localization in traumatic lesions of the brain depends on a consideration of all symptoms and their order of development; the degree of consciousness manifested by the patient and his reactions to stimuli; a degree of involvement of areas of the brain of known function sufficient to cause focal symptoms; the carefulness and thoroughness with which the examination is made.

20. **Surgical Treatment of Trigeminal Neuralgia.**—Moscheowitz says if the supraorbital, infraorbital, mental, malar, or inferior dental branches, either singly or collectively, are involved, the nerve should be divided and the foramen plugged by a gold or silver wire or button. If the superior or inferior maxillary nerve is involved, Abbe's operation is indicated. A celluloid or gold button should be substituted for the rubber tissue. He believes that by following these suggestions the extirpation of the Gasserian ganglion will be rendered unnecessary.

21. **One Hundred and Three Cases of Epilepsy.**—Stowell gives the summary of his notes on 103 cases of epilepsy.

22. **Practical Pharmacy in Medical Schools.**—Thrush reviews the curricula of various medical schools and points out the deficiency in the instruction in practical pharmacy. He declares that on examination 1.3 per cent. of the prescriptions written by recent graduates were found to contain dangerous combinations that would have resulted seriously if they had been given as ordered. Thrush urges that every medical student should be thoroughly trained in practical prescription writing and dispensing.

23. **The Pretuberculous State.**—Disen classifies patients in two groups, the acid and the alkaline. He believes that the alkaline type is far less immune to tuberculosis than the acid one. He tests both urine and blood to determine the type with which he is dealing. He describes his methods in detail.

24. **Starch-fed Infants.**—Lopez tested the digestion of 25 starch-fed infants and is convinced from his work that they do healthfully digest starch.

The Journal of Infectious Diseases, Chicago.

September 29.

26 *Specialism in Its Modern Significance. A. B. Hale, Chicago.

26.—See abstract in THE JOURNAL, Oct. 24, 1903, page 1041.

The Journal of Infectious Diseases, Chicago.

June 30.

27 Statistical Study of Generic Characters in the Coccaceæ. C. E. A. Winslow and A. F. Rogers.
28 Toxic Effect of Certain Acids on Typhoid and Colon Bacilli in Relation to the Degree of Their Dissociation. C. E. A. Winslow and E. E. Lochridge.
29 *A Contribution to the General Principles of the Pharmacodynamics of Salts and Drugs. A. P. Mathews, Chicago.
30 *Studies on Simple and Differential Methods of Staining Encapsulated Pneumococci in Smear and Section. A. Wadsworth, New York.
31 *Liver Necrosis and Venous Thrombosis in Horses Actively Immunized with Diphtheria and Tetanus Toxins and with Streptococci and Their Products. H. D. Pease and R. M. Pearce, Albany, N. Y.
32 A Fundamental Error in Current Attempts to Apply Physical Chemistry to Serum Pathology. W. H. Manwaring, Bloomington, Ind.
33 Third Serum Component. W. H. Manwaring, Bloomington, Ind.
34 *Cause of Green Coloration of Bacterial Colonies in Blood-agar Plates. G. F. Ruediger, Chicago.
35 *Generalized Blastomycosis. E. E. Irons, Chicago, and E. A. Graham.
36 *Rôle of Phagocytosis in the Pneumococcidal Action of Pneumonic Blood. E. C. Rosenow, Chicago.

29. **Pharmacodynamics of Salts and Drugs.**—Mathews concludes that the action of salts on the protoplasmic system is due chiefly to the actions of the ions of the salt. The particular result obtained is caused, in part at least, by the substitution of the ions in the protoplasmic system by the ions of the salt solution used. The power of different ions to upset the ordinary state of the protoplasmic system depends on the difference between the potential energy content of the ion which is replaced, and that which is reintroduced. This difference in the potential energy content is determined by the difference in the intensity factor of the potential energy of the ions—i. e., by difference in the ionic potentials. It is shown that a good numerical relation exists between the available potential energy of any salt and its minimum fatal dose, so that for simple systems the minimum fatal dose can be very closely calculated from the available potential energy of the salt, if certain constants are known. The character of the action of any given salt solution on protoplasm must of necessity depend on the character of the ions, metal and metalloid, already in combination with the protoplasm. This results as a necessary consequence of the theory, and it explains the fact that toward different cells, and toward the same cell after exposure to different salt solutions, the same salt solution may exert a different action, being at times stimulating, at other times depressing. Mathews thinks that the action of organic drugs will be found to depend, in part at least, on the available potential energy of the dissociated particles of the drug.

30. **Staining Encapsulated Pneumococci.**—Wadsworth finds fixation with 4 per cent. formalin most satisfactory for smears. This may be followed by gentian-violet, or the Gram differentiation method may be employed. To demonstrate encapsulated pneumococci in smears of sputum, albumin in the form of blood serum (Hiss) or egg albumin (Boni) must be added and thoroughly mixed before making smears. In staining sections of tissue it was found necessary, in order to secure sufficient penetration, to inject the tissue with the hardening fluid (formalin) or to cut the material into small bits or thin slices. The Gram method of staining the sections was found the most useful on account of the virtue of its differentiation.

31. **Liver Necrosis and Venous Thrombosis.**—Pease and Pearce found in a series of 12 horses, actively immunized with the products of certain pathogenic microörganisms, widespread liver necrosis in 9 and localized liver necrosis in one. Thrombosis of the portal vein was present in 3, of the splenic vein in 2, and of the branches of the pulmonary artery in one, of the 9 horses showing widespread necrosis. One horse had thrombosis of the branches of the portal veins and another of the pulmonary artery without the liver necrosis. The evidence leads them to conclude that the toxic bacterial products injected are directly and indirectly responsible for the production of the liver necrosis and not such materials as peptones, beef extractives and antiseptics. They could not determine what factors were responsible for the venous thrombosis.

34. **Green Coloration of Bacterial Colonies.**—Ruediger has found that the green coloration of bacterial colonies in blood-agar plates is dependent on the production of an acid and the action of this acid (probably lactic acid) on the red corpuscles.

35. **Generalized Blastomycosis.**—Irons and Graham report the following case of systemic blastomycosis: A lumberman, aged 47, noticed in March, 1905, a nodule on the right thigh which "broke" and healed slowly with ulceration. Soon other similar lesions appeared on the forehead and extremities. Weakness, slight fever and swelling of the ankles set in. When first seen (September, 1905), numerous healed and partially healed superficial lesions, resembling blastomycetic dermatitis, as well as subcutaneous abscesses were present. Soon cough set in with dulness and râles over the lungs and the appearance of blastomycetes but no tubercle bacilli in mucopurulent, occasionally blood-stained sputum. New external lesions with sloughing, extensive dissection, and even denudation of bone, appeared, with increasing anemia, leucocytosis, fever and death, January, 1906. The autopsy showed multiple subcutaneous abscesses and sinuses involving the face, scalp and extremities; erosion of the left parietal bone; deep sloughing ulcer of the right thigh, numerous superficial ulcers and scars; miliary blastomycosis of the lungs and spleen; ulcerative blastomycotic bronchopneumonia; retro-esophageal abscess with erosion of the vertebræ; abscess of the thyroid cartilage; fibrous pleuritus; atrophy of the liver

and heart, and enlargement of the spleen and mesenteric lymph nodes. Microscopically the nodules showed necrotic centers surrounded by a zone of giant cells and new tissue cells. The giant cells all contained organisms which also occurred free. Occasionally a bronchiole was found in the center of an area; blastomycetes were present in a large blood vessel in the lung near a focus; blastomycetes were present in the retro-esophageal abscess and in the cellular foci in the spleen—no giant cells were seen here. No amyloid cultures of blood during life were sterile; cultures from sputum and pus gave blastomycetes. Streptococci were isolated after death from the cerebrospinal fluid, liver, spleen and kidney; the *Staphylococcus pyogenes aureus* was isolated from the liver, spleen and retro-esophageal and knee abscesses. Blastomycetes (present in lesions) after death were isolated only from the kidney. They were virulent for guinea-pigs and rabbits, causing local abscess and general miliary blastomycosis.

36. **Phagocytosis in Pneumococcidal Action of Pneumonic Blood.**—Rosenow has studied thoroughly phagocytosis of pneumococci *in vitro* under various conditions. Non-virulent strains of pneumococci are readily taken up by human leucocytes in the presence of normal serum and the phagocytosis is roughly proportional to the amount of serum present. Washed leucocytes do not take up the organisms. Virulent strains are not taken up by the leucocytes under any conditions, but as they lose their virulence by cultivation they become susceptible to phagocytosis. As a rule, pneumococci isolated from the blood of patients before, during or after crisis are not taken up *in vitro* by the patient's blood or by any other blood. The opsonin for pneumococci is nearly destroyed by heating to 60 C. for one and one-half hours. Rosenow's experiments seem to show that in some cases during and shortly after crisis there is a slight increase in the opsonic content of the patient's blood and that in fatal cases it may fall below normal. The pneumonic leucocytes are more actively phagocytic than normal leucocytes and also more resistant to heat. He concludes that the pneumococcidal action of pneumonic or other bloods is due to the combined action of the serum and the living leucocytes through phagocytosis and subsequent intracellular digestion. The serum of normal or pneumonic individuals has no bactericidal effect whatever on pneumococci. In view of such facts as the failure of pneumococci isolated from the blood to be taken up by leucocytes the phenomenon of crisis and healing in pneumonia can not be attributed solely to phagocytosis.

Surgery, Gynecology and Obstetrics, Chicago.

September.

37 *Atonia Gastrica in Relation to Cholelithiasis. A. Rose, New York.
38 Artificial Dilatation of the Cervix. L. Knapp, Chicago.
39 Cesarean Section Necessitated by Obstruction of Pelvis by Non-Pregnant Half of Bi-Cornate Uterus. G. S. Brown, Birmingham, Ala.
40 *Some Mooted Questions Pertaining to Prostatectomy. C. G. Cumston, Boston.
41 *Operation of Choice in Chronic Obstruction of the Intestine Due to Malignant Stricture. J. De V. Singler, Pittsburg.
42 *Enormous Elephantiasis of Both Legs Surgically Treated. P. F. Rogers, Milwaukee.
43 *Case of a Lithopedion. S. C. Beede, David City, Neb.
44 The Contest with Cancer of the Uterus. Professor Dührssen, Berlin.
45 Study of the Development of Extrauterine Decidua. W. H. Lamborn, Chicago.
46 Malignant Disease of the Bowel—Chronic Interstitial Obstruction. G. P. LaRoque, Richmond.
47 *Treatment of Placenta Prævia Centralis by Cesarean Section. A. P. Condon, Omaha, Neb.
48 *Induction of Premature Labor and Accouchement Forcé in the First Five Thousand Labors in the Obstetrical Department of Johns Hopkins University. J. W. Williams, Baltimore.
49 Infection of Ovarian Cystomata. H. C. Coe, New York.
50 *Ovarian Cysts Situated Above the Superior Pelvic Strait, Complicated by Pregnancy. C. L. Patton, Springfield, Ill.
51 Choice of Methods for Dilating the Gravid Uterus. E. P. Davis, Philadelphia.
52 Truth About So-called Maternal Impressions. A. Dixon, Henderson, Ky.
53 Retention of Drainage-Catheters. J. R. Eastman, Indianapolis.
54 Technic of the Examination of the Urine and Feces in Suspected Cases of Disease of the Pancreas. P. J. Cammidge.
55 Directions for Nurse and Home Physician, Burnside Lying-in-Hospital, Toronto. A. H. Wright, Toronto.

37. **Atonia Gastrica and Cholelithiasis.**—Rose points out that the treatment of gastroptosia by a plaster bandage may be the most rational prophylactic measure to prevent stasis of bile and consequently the formation of gallstones.

40. **Prostatectomy.**—Cumston believes that all patients should be operated on, when an absolutely aseptic catheterization for any length of time is not possible. To this class belong those who can not carry out catheterization themselves on account of senile tremor, blindness or some similar infirmity. There is also that large group in which catheterization is necessary often, or in which it is associated with pain or hemorrhage, or is rendered difficult by false passages, and so forth. In all instances in which vesical calculi are present at the same time, and result from the hypertrophy, operation should be done, otherwise recurrences of the calculi will take place, and it may be said that prostatectomy is more dangerous than lithotrity under these circumstances. Finally, all patients who have cystitis should be operated on, and last, but not least, all those in whom there is the slightest suspicion of malignancy, and in whom the disease is apparently in its early stages, should be radically treated. Perhaps the ever advancing development of surgery will make prostatectomy such a safe operation that the scope of its indications may be enlarged, but in the meanwhile the excellent work being done will be injured if surgeons persist in persuading patients, who can live comfortably for many years with a catheter life, to undergo an operation the good results of which can not always be guaranteed.

41. **Obstruction of Intestine by Malignant Stricture.**—Singley urges the value of extraperitoneal inclusion of malignant stricture of the intestine to be dealt with subsequently according to some of the methods that have been pointed out, especially the improved operation of Mikulicz, for the following reasons: 1, The rapidity with which the primary operation can be carried out; 2, the slight risk of infection; 3, the elimination of the danger of suture of diseased tissue, and 4, the low mortality.

42. **Elephantiasis.**—Rogers reports the case of a woman who had an enormous elephantiasis of both legs. Although the patient was only 5 feet in height, she weighed 248 pounds. Her thighs measured 38 and 39 inches in circumference; calves 29 and 31 inches, and ankles 29 inches. The upper part of her body was thin and scrawny. The process ended abruptly at the subgluteal fold, but the lower part of the abdominal wall was thickened and pendulous. Repeated blood examinations by day and night failed to show any filaria. Ten operations were done and after each a most decided improvement was noted.

43. **Lithopedion.**—Beede reports the case of a woman, aged 50, who menstruated last in July, 1905. He saw her for the first time in January, 1906, when she was suffering marked abdominal pain, most severe in the lumbar and inguinal regions. The whole abdomen was tympanitic and tender. She was vomiting, had a rapid pulse, but a normal temperature. The patient had been subjected for years to similar attacks. On vaginal examination the uterus could be outlined in the anterior portion of the pelvis to the right of the median line. Behind it, to the left, and extending in the cul-de-sac below the level of the cervix, was a smooth, hard, round mass which appeared continuous with the posterior portion of the uterus. Owing to the abdominal distension and muscular rigidity, the upper limits of the tumor could not be palpated. The mass was crowded down into the pelvis, and seemed to fill it completely. The vaginal walls were swollen and livid, and general pelvic tenderness was marked. The diagnosis of fibromyoma seemed so plausible that it was not questioned.

On opening the abdomen the nature of its growth, its flinty hardness and irregularity of surface, showed it to be a lithopedion. Without any difficulty, except that of disengaging it from the pelvis, into which it was molded like a plaster cast, the growth was removed. The adhesions to surrounding parts were slight and required no ligatures, except at the two pedicles which corresponded to the Fallopian tube at the right and the ovarian vessels at the left. The sac was distinct, but nearly transparent, thin and friable. It was ruptured in the removal of the mass. The fetus had developed to somewhat beyond the fifth month, and both it and the placenta were

endered hard and brittle by the deposit of earthy salts. The etal head lay low down in the Douglas pouch, and through he swollen vaginal walls presented to the examining finger he precise sensation produced by a subperitoneal fibroid in hat situation.

47. **Cesarean Section for Placenta Prævia.**—Condon summarizes his paper as follows: 1. In placenta prævia centralis, when the child is alive and viable, the procedure indicated is Cesarean section. 2. The life of the unborn babe (when viable) is as much to be thought of as that of the mother. 3. The operation of Cesarean section can be done more quickly than dilatation, version and extraction. 4. The danger of a ruptured uterus and uncontrollable hemorrhage can be better overcome by section. 5. An obstetrician should not attempt a version unless he is capable of doing a Cesarean section.

48. **Premature Labor and Accouchement Forcé.**—In the series of cases reported by Williams it was thought neeessary to induce premature labor in 11 and to resort to *accouchement forcé* in 100 instances, as follows: Induction of premature labor by Krause's method, 11; *accouchement forcé* by Harris' method of manual dilatation of the cervix, 83; *accouchement forcé* by Champetier de Ribes' balloon, 15; and *accouchement forcé* by vaginal Cesarean section, 2. The induction of premature labor by means of a bougie (Krause's method) was employed in all cases in which it was deemed advisable for the welfare of the mother to terminate pregnancy, but in which rapid emptying of the uterus was not necessary. Harris' method of manual dilatation of the cervix was employed in 83 instances, as follows: Eclampsia, 33; pre-eclamptic toxemia, 7; placenta prævia, 12; and danger to mother or ehild during the course of labor, 31; *accouchement forcé* was resorted to in 33 cases of eclampsia, with 7 deaths. As 5 of the patients did not regain consciousness after delivery their death must be attributed to the underlying disease. On the other hand, 2 patients died as the direct result of the operation, one from infection and the other from incomplete rupture of the uterus. *Accouchement forcé* by Harris' method was resorted to in 7 cases of pre-eclamptic toxemia. In each instance the cervical canal was intact and the external os not obliterated. Preliminary dilatation by means of Goodell's or Hegar's dilators was necessary before Harris' method could be employed, and the operation was usually difficult and required considerable time. Two of the patients died—one from toxemia and the other from incomplete rupture of the uterus, due to the operation.

Accouchement forcé by Harris' method was employed in 12 cases of placenta prævia, in 4 of which the cervix was intact, while in 8 the cervical canal was obliterated and the external os more or less dilated. Three patients died, 2 of whom were brought to the hospital in an exsanguinated condition, and died in collapse immediately after delivery, but in neither instance could the fatal termination be attributed to the operation, as there was no injury to the cervix. The third patient, however, died from hemorrhage following an incomplete rupture of the uterus, which resulted directly from the manual dilatation of the cervix. In 31 women who had already fallen into labor, dilatation of the cervix was completed manually by Harris' method when some condition had arisen which so seriously threatened the life of the mother or the child as to render the immediate termination of pregnancy necessary. The following indications necessitated interference: Intrapartum infection, 8; exhaustion, as indicated by a pronounced rise in the maternal pulse, 8; marked variations in the fetal heart rate, 5; prolapsed cord, 4; various indications, 6. With one exception, all the mothers recovered without difficulty, and the single death was due to profound disturbances resulting from a partial intestinal obstruction and an extensive thrombosis of the vesels of the left leg originating during pregnancy.

The Champetier de Ribes balloon was employed in only 15 instances, viz: Danger to mother or child, 12; eclampsia, 1; toxemia, 1, and placenta prævia, 1. All the patients recovered. The cervix was uninjured in 6 cases, while it was slightly or deeply torn in 3 and 6 eases, respectively. In two of the latter hemorrhage necessitated immediate repair. Vaginal Cesarean section was employed twice, once for eclampsia and once for profound toxemia associated with twin pregnancy. In both instances the operation was very successful from a technical point of view, although one of the patients died, partially from hemorrhage following uterine atony, and partially from the underlying intoxication.

50. **Ovarian Cysts.**—Patton reports 3 cases and reviews 321 cases collected from the literature.

Medicine, Detroit, Mich.
September.

56 Treatment of Non-Malignant and Non-Tubercular Skin Lesions. W. S. Newcomet, Philadelphia.
57 Cause of Sudden Death Following the Injection of Horse Serum. M. J. Rosenau and J. F. Anderson, U.S.P.H. and M.-H.S.
58 Sal-Ethyl in the Treatment of Rheumatic Affections. L. W. Bremerman, New York.
59 *Fifty Bacteriologic Tests of Hands, Brushes, Gloves, Pasteur-Filtered Water, Steam and Formaldehyde Sterilizers and Formaldehyde Disinfection of Rooms. A. Goldspohn, Chicago.
60 Obstetric Asepsis and Antisepsis. J. B. De Lee, Chicago.
61 *Significance of Hydrochloric Acid Variation in the Stomach Contents. E. J. Brown, Decatur.

59.—This article has appeared in the *Chicago Medical Recorder*, August 15, and the August issue of the *Illinois Medical Journal*.

Illinois Medical Journal, Springfield.
September.

62 Tonsillectomy by Electro-Cautery Dissection. E. Pynchon, Chicago.
63 The Ottawa Tent Colony. J. W. Pettit, Ottawa.
64 *Operative Treatment of Discharges from the Ear. A. E. Prince, Springfield.
65 *The Logic of Abdominal Pain. J. L. Wiggins, E. St. Louis.
66 *Treatment of Obesity and Its Complications. A. C. Croftan, Chicago.
67 *The Brain a Good Field for Surgery, as Shown by Its Disregard for Traumatism. C. D. Center, Quincy.
68 Rheumatism. B. Bachrach, Decatur.
69 Violent Deaths in Chicago. T. G. Allen, Chicago.

61, 66, 67.—See THE JOURNAL, June 9, 1906, page 1787.
64, 65.—See THE JOURNAL, June 23, 1906, page 1966.

New Orleans Medical and Surgical Journal.
September.

70 Sanitary Science and Quarantine. F. J. Mayer, Scott, La.
71 Yellow Fever in New Orleans, and Its Bearing on the Health of the State. J. Carroll, Washington, D. C.
72 Experiences During the Yellow Fever Epidemic of 1905. H. D. Bruns, New Orleans.
73 Vaginal Section, Indications, Limitations and Technic in Pelvic Suppuration. C. J. Miller, New Orleans.
74 Spinal Analgesia in Forceps Delivery. W. T. Richards, New Orleans.

The Medical Herald, St. Joseph, Mo.
September.

75 Fragmentary Clinical Therapy of the Static Current from the Generalist's Scrap Heap. S. G. Burnett, Kansas City.
76 *Removal of the Uterus for Chronic Inflammation. T. C. Witherspoon, St. Louis.
77 *Rachitis. A. E. King, Blockton, Iowa.

76, 77.—See THE JOURNAL, April 7, 1906, pages 1055-56.

Washington Medical Annals.
September.

78 Subconjunctival Injections in Diseases of the Eye. R. S. Lamb, Washington, D. C.
79 Dermatologic Review. S. Fry, Washington, D. C.
80 Surgery. W. A. Jack, Jr., Washington, D. C.

Journal of Cutaneous Diseases, New York.
September.

81 Dermatology as a Field for Original Research. M. B. Hartzell, Philadelphia.
82 Development of Multiple and Successive Initial Syphilitic Lesions and the Pathology of Syphilis. R. W. Taylor, New York.
83 Case of Lichen Spinulosus. J. T. Bowen, Boston.
84 Alopecia Congenita. J. Kingsbury, New York.

New York State Journal of Medicine, Brooklyn.
September.

85 Portals of Entry and Sources of Infection in Tuberculous Children. D. Bovaird, Jr., New York.
86 Preparation for the Course of Medical Study. C. F. Wheelock, New York.
87 Treatment of Rheumatoid Arthritis and Allied Conditions of the Joints. W. B. Snow, New York.
88 Still's Disease. C. P. Bull, Jr., New York.
89 History of the Medical Society of New York. (To be continued). J. J. Walsh, New York.
90 Methylene Blue in the Treatment of Inoperable Cancer. A. Jacobi, New York.

Western Medical Review, Lincoln, Neb.
September.

91 The Nebraska State Hospital for Crippled, Ruptured and Deformed Children. J. P. Lord, Omaha, and H. W. Orr, Lincoln.
92 Factors Which Have Contributed to Better Results in Gynecology and Obstetrics. P. Findley, Omaha.

Denver Medical Times.

September.

93 Treatment of Bronchial Asthma. W. A. Lamont, Denver.
94 Id. J. T. Meivin, Saguache.
95 Id. H. C. Brown, Denver.
96 Id. H. W. Rover, Denver.
97 Laboratory Diagnosis for the Practitioner. J. C. Todd, Denver.

Utah Medical Journal.

September.

98 Epilepsy in Legal Medicine. F. Clift, Provo, Utah.
99 Value of Absolute and Relative Leucocyte Count as an Aid in Medical and Surgical Diagnosis. R. Anderson, Salt Lake City.

Chicago Medical Recorder.

September 15.

100 Exploratory Laparotomy. C. E. Humiston, Chicago.
101 Membranous Rhinitis (Nondiphtheritic). C. M. Robertson, Chicago.
102 Hay Fever. W. F. Waugh, Chicago.
103 Causation and Treatment of Cataract. S. E. Wright, Marinette, Wis.
104 A Synopsis of Gout and Rheumatism. B. F. Feich, Chicago.
105 Treatment of Cystitis. J. S. Perekhan, Chicago.

Iowa Medical Journal, Des Moines.

September 15.

106 Chairman's Address, Section of Medicine, Iowa State Medical Society. E. Grimes, Des Moines.
107 Uric Acid Therapy. C. Van Epps, Iowa City.
108 Measles in Adults. W. E. Harriman, Ames.
109 Autointoxication. W. L. Hearst, Cedar Falls.
110 Diagnostic Foibles. H. A. Minassian, Des Moines.
111 Gastric Neuroses. F. J. Murphy, Sioux City.
112 Effects of Abnormalities of Eye and Ear on the Mental and Physical Development of Children. W. J. Bussey, Sioux City.
113 President's Address, Iowa Union Medical Society, Cedar Rapids. W. C. Post, Maquoketa.
114 Why Should the Medical Profession Be Thoroughly Organized? C. A. Boice, Washington.

The Journal of the New Mexico Medical Association, Albuquerque.

September 15.

115 Malaria. J. M. Shields, Perea, N. M.
116 Fracture of the Astragalus. J. B. Cutter, Albuquerque.
117 Six Cases of Fracture of the Skull. J. W. Elder, Albuquerque.
118 The Pretubercular Stage of Pulmonary Tuberculosis. C. F. Beeson, Roswell.
119 Medical Organization. S. D. Swope, Deming, N. M.
120 Drinking Water. F. T. B. Fest, Las Vegas.
121 Pneumonia. R. E. McBride, Las Cruces.

The Laryngoscope, St. Louis, Mo.

February.

122 Oto-Projectoscope. M. A. Goldstein, St. Louis.
123 Use of the X-Ray in Sinus Disease. H. P. Mosher, Boston.
124 Significance of Edema of the Pharynx. J. E. Schadle, St. Paul.
125 Case of Traumatic Mastoiditis. S. Oppenheimer, New York.

Woman's Medical Journal, Toledo, Ohio.

September.

126 The Pneumococcus as a Cause of Single Multiple and General Infections. M. M. S. Johnstone, Chicago.
127 Variation in the Fat Percentage of Mother's Milk as a Factor in Feeding. L. Taylor-Jones, Washington, D. C.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal.

September 15.

1 Prevention of Tuberculosis. S. G. Dixon.
2 Idem. J. Roberts.
3 *General Analogies Between Tuberculosis and Influenza. A. W. Gilchrist.
4 Doubtful Phases of the Tuberculosis Question. C. O. Probst.
5 *The Dust Problem. G. Homan.
6 Basic Factors of Present-Day Water Supply Problems. H. W. Hill.
7 Artificial Purification of Water Supplies. W. J. Robinson.
8 Water Supplies. H. D. Holton.
9 General Water Questions. T. A. Starkey.

3. **Analogies Between Tuberculosis and Influenza.**—The analogies referred to by Gilchrist are the following: 1, Both diseases have prevailed in epidemic and endemic forms; 2, tuberculosis and influenza are both respiratory diseases; 3, the respective microörganisms are aërobic and successfully cultivated in general on blood serum and hemoglobin respectively; 4, they display the same tendency in their urinary and respiratory biochemistry; 5, both are infectious diseases; neither confers immunity; in fact, both predispose to subsequent attack; 6, both distinctly affect the functions of relation (a) by exciting rheumatic symptoms, and (b) by giving rise to meningeal and nervous complications. Gilchrist closes his paper with the following statement: Influenza is a disease of ancestral respiratory function; tuberculosis is a disease affecting these functions in their more recent and actual phylogenetic stage.

5. **The Dust Problem.**—As the result of careful observation Homan is convinced that clubs, hotels and similar places, constitute a real seeding ground for tuberculosis among members, guests and employés, chiefly through the inattention or incompetency of those charged with the physical care of the latter and the business management of the institutions. The pleurisies, pneumonias, bronchial catarrhs, and cases of tonsillitis and influenza occurring among patrons and among the help of these places find sufficient explanation, according to Homan, in the local conditions, and undoubtedly these ailments prepare the way for the tuberculous infection that easily and commonly follows. He is further convinced that the disease is so common in the poorer quarters of the city because many wage-earners in clubs, hotels, etc., are drawn from such localities, and medical observation shows that after a time physical deterioration takes place among those employés most exposed to dust. The deterioration is usually evidenced by coughs and other manifestations of respiratory disease. As measures of prevention Homan advises the total banishment of broom and duster and any other implement or device by which dust is set afloat; and, if carpetings are to be retained, the adoption of mechanical appliances by the use of which no flying matter will be allowed to escape—this, if necessary, to be followed by the wiping of exposed surfaces and furniture with soft cloths. The vacuum or pneumatic method of cleaning should be made compulsory by law in every hotel, club, office building, theater, church, school and business establishment.

The Lancet, London.

September 15.

10 *Ten Years' Lunacy Treatment in Lewisham Infirmary. F. S. Toogood.
11 *Suture of Perforating Wound of the Heart; Death on the Eleventh Day. F. T. Travers.
12 Study of the Streptococci Pathogenic for Man. (To be continued.) F. W. Andrewes and T. J. Horder.
13 *The Pulse in Aortic Disease; Relation of Pulse Curves to Blood Pressure. T. Lewis.
14 The Rash in Cerebrospinal Meningitis. W. Wright.
15 *New Method of Administering an Anesthetic Through a Tracheotomy Tube. W. P. Cockle.
16 Ankylostome Parasitism Among the Native Laborers in the Transvaal. W. G. T. Posnett.
17 Urinary Calculus and Its Detection with the X-Rays. E. W. H. Shenton.
18 *Convulsions in Children and Their Relation to Epilepsy. R. O. Moon.
19 *Prophylactic Use of Antidiphtheritic Serum. W. W. Shackelton.

10. **Ten Years of Lunacy.**—Toogood details the work done in the Lewisham Infirmary during the ten years from 1896 to 1905, when 2,033 cases of alleged lunacy were admitted. Of these 1,020 patients were discharged either cured or sufficiently recovered for their friends to look after them, 804 were sent to asylums and 209 died. Alcohol was directly responsible for 471 cases (23.16 per cent.). Of these 403 patients, or 85.5 per cent., recovered; 18, or 3.8 per cent., were sent to asylums; and 50, or 10.6 per cent., died. There were 407 cases of delusional insanity. Of these 283 patients were sent to asylums, 118 recovered and 6 died. Melancholia was responsible for 223 patients, of whom 141 were sent to asylums, 81 recovered and one died (suicide). Of 149 cases of mania, 123 patients were sent to asylums, 21 recovered and 5 died. There were 83 cases of general paralysis of the insane. Of these 72 patients were transferred to asylums, 5 recovered their mental equilibrium sufficiently to be handed over to their friends, 6 died. There were 190 cases of senile dementia, with 29 commitments, 68 recoveries and 93 fatalities. Epilepsy with mental derangement supplied 112 cases. Thirty-two individuals of these were committed, 74 were sent home and 6 died in the condition known as *status epilepticus*. Other causes for admission were: Idiocy, 75 cases; temper, 19 cases; malingering, 7 cases; cardiac mania, 7 cases; delirium, 19 cases; hysteria, 48 cases; mental derangement, associated with gross brain lesions, 38 cases, and puerperal mania, 25 cases.

11. **Suture of Perforating Wound of Heart.**—Travers reports

the case of a young man, aged 19 years, who fell and was impaled on a spike fence. When taken down one hour afterward, there was found a transverse wound about two inches in length over the lower end of the sternum, through which a vertical fissure in the bone could be seen. A rent in the pericardium about two and a half inches in length was exposed, through which blood was slowly escaping. The pericardium was full of blood, which was sponged away, a piece of bone one inch by half an inch was removed, and a small spicule of bone was abstracted from the heart. A wound (admitting the tips of three fingers) was felt in the right ventricle, where another piece of bone was also felt. Its removal was followed by a terrific gush of dark blood. The wound in the heart was closed with 20 sutures. The patient did fairly well until the eleventh day, when death ensued. The cause of death was apparently failure of the heart's action due to the pressure of a clot slowly forming on its anterior surface, which also blocked the pericardial wound and prevented the escape of the blood oozing from the gap in the wound in the heart, and not directly due to a slight secondary hemorrhage. The most noticeable features of the case were the plugging of the wound in the heart by the detached fragment of sternum, which almost entirely stopped the bleeding, and the tolerance shown by the heart to the injury and the handling required at the operation. Pulsation continued regularly while three fingers were held in the wound with their tips within the cavity of the ventricle. The loss of blood was very considerable even then, but the insertion of each suture was observed to act as a very immediate stimulus, and after the insertion of the first row, when the heart's action had become very feeble, the insertion of the second superficial layer of sutures stimulated its action so that it became more regular and forcible.

13. **The Pulse in Aortic Disease.**—Lewis reports the results of an analysis of the pulse curves in 20 cases of aortic regurgitation. The frequent references made to reproductions of pulse tracings and a very excellent table make it impossible to abstract the article.

15. **Administering Anesthetic Through Tracheotomy Tube.**—In order to simplify and to make more safe his method of anesthesia, Cockle has devised an instrument which he describes as follows: The total length of the instrument is about 15 inches and it is composed of a handle, F G, and a long arm, F E D C B to A. The latter is of flexible metal from D to

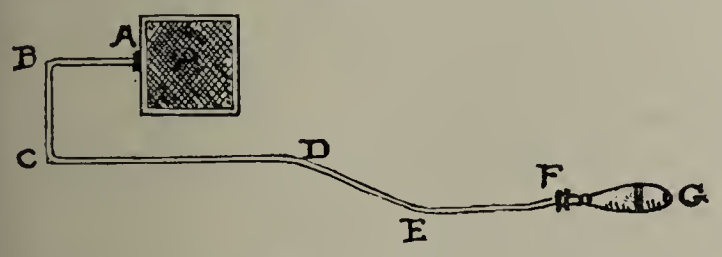


Diagram of Inhaler.

A and is bent as illustrated. A is a one and a half inches square frame, which is to be covered with lint held in position by a safety pin or stitching. To use the instrument a piece of lint or similar material is stretched across the square A so as to cover it above and below and held in place by means of a safety pin. Chloroform or C.E. is sprinkled on this from a drop bottle and the part B C is rested on the sternum of the patient, so that A is above the tracheotomy tube. The limb C D to E is so bent as to bring the point E well down toward the operating table out of the way of the surgeon; E F gradually sloping up and bringing G to about the level of the patient's ear. The length of the instrument enables the anesthetist to stand well back while using it. The square A can be raised or lowered over the tracheal opening in two ways—first, as the metal at B is flexible it should be bent up to an angle of about 30 degrees; and secondly, using C B resting on the sternum as a fulcrum by merely raising or lowering the handle F G the distance of A above the tracheotomy tube can be easily adjusted from time to time, to whatever extent desired, according as less or more chloroform is to be given.

In order to replenish the anesthetic it can either be sprinkled on the lint while *in situ* from a drop-bottle or the whole instrument can be withdrawn sideways for the purpose without trouble. The double lint on the square frame takes a good charge of the anesthetic and being double and sloping downward toward the sternum the liquid does not tend to drop on to the tracheal opening should too much accidentally run out. By this method the air-way is not encumbered and feathers can be passed into the tube at any time.

18. **Convulsions in Children.**—Moon is of the opinion that convulsions in infancy, associated with reflex causes, have a much more serious prognostic significance than is usually supposed, not only as regards the frequency of the convulsions, but still more as to the probability of future mental and moral deterioration. In 200 cases taken haphazard, carefully investigated and followed up, the prognosis as to the future moral and mental condition of the child does not appear to be any better when the first seizure is associated with a reflex cause which can be removed than when it is of idiopathic origin.

19. **Prophylactic Use of Antidiphtheria Serum.**—Shackleton subscribes to the value of antidiptheria serum used for prophylactic purposes during a school epidemic of diphtheria.

The Clinical Journal, London.

August 29.

20 Pyuria. W. P. Herringham.
21 Deformities of the Arch of the Foot and of the Toes. (To be continued.) E. M. Corner.
22 *Mechanism of the Therapeutic Action of Nitrite of Amyl. F. Hare.

22. **Action of Amyl Nitrite.**—Hare explains the therapeutic uses of amyl nitrite by its power to dilate the peripheral blood vessels. The compensations of the vascular system are such that a lowered blood pressure corresponds to increased rapidity of the heart's action and a slowing of the cardiac action means an increase of the blood pressure by constriction of the blood vessels. When the pulse rate is not affected we may assume that a dilatation of the vessels of one region is compensated by a corresponding constriction of the arterioles in another region and vice versa. This being the case, it is reasonable to suppose that when a vasodilator affords relief in a certain condition it does so by relaxing vasoconstriction either in the part itself or in other parts by which a local congestion is relieved by the fall of the general blood pressure. The beneficial effects of amyl nitrite in menorrhagia and in dysmenorrhea are explained by the disappearance of uterine congestion in consequence of dilatation of peripheral vessels and fall of the blood pressure. Hare has found that amyl nitrite administered during menstruation may stop the process. A similar action explains its utility in hemoptysis and other internal hemorrhages in which constricted peripheral vessels and high blood pressure favor the continuance of the bleeding. Rigors are accompanied by peripheral vasoconstriction and are frequently relieved by inhalations of amyl nitrite. The same is true of angina pectoris in which whatever may be the condition of the cardiac vessels those of the periphery are generally constricted. Hare explains the relief of syncope in the same way. Hay fever and asthma, he states, are occasioned by local congestions accompanied by general peripheral constriction and the relief of the peripheral spasm brings about a lessening of the local congestion. Some neuralgias, headaches and epilepsy are affected in a similar manner. This explanation of the action of the drug, Hare thinks, will indicate other uses as in angioneurotic edema, impending asphyxia and laryngeal spasm.

Presse Médicale, Paris.

23 (XIV, No. 69.) Le coup de pression (caisson disease). P. Carnot.
24 (No. 70.) Les nouvelles théories des solutions dans leurs rapports avec la médecine. S. Leduc.
25 *Sur l'origine intestinale de la pneumonie et d'autres infections phlegmasiques du poumon chez l'homme et chez les animaux. A. Calmette and others.
26 La maladie de Banti. Caillaud.

25. **Intestinal Origin of Pneumonia and Other Pulmonary Infections.**—Calmette recently announced that tubercle bacilli fed to animals in his experiments passed rapidly through the intestinal wall and were soon found in the lung, without leaving a trace of their passage. Similar tests were equally positive when finely pulverized charcoal or other insoluble particles were fed to the animals instead of tubercle bacilli.

This research was recently summarized on page 1139. He now publishes another series of tests in which pneumococci were ingested by the animals in the same way, and with the same result, that is, the pneumococci were found accumulated in large numbers in the lungs, with much congestion but no lesions. None of the animals sickened. It is probable that the animal organism is able to take care of these bacilli unless the vitality is depressed from some cause. See editorial in The Journal, October 6, page 1100.

Semaine Médicale, Paris.

27 (XXVI, No. 36.) *Les satellites de l'alcoolisme. C. Fernet.

27. The "Satellites of Alcoholism."—Fernet uses the term satellite in the second definition given in the dictionaries, namely, an obsequious dependent, ready to do any villainy for the master. The satellites of alcohol to which he refers are the intoxications of the same kind which take their place at its side and reinforce, supplement and aggravate its ill deeds. The use or abuse of stimulants of all kinds, coffee, tea, condiments, alleged tonics and pharmaceutic "bracers," has become such a habit, he states, that it is growing to be a new scourge whose dangers and their formidable consequences can not be too often proclaimed. He reviews the clinical picture of the intoxication due to abuse of essences, coffee and tea, and then that from spices and condiments. Korczynski's tests, published in 1901, failed to show that spices and condiments stimulated the gastric secretions. Neither the acidity of the gastric juice nor the secretion of the digestive ferments was increased but, on the contrary, the chemical functions of the stomach were decidedly depressed by the action of mustard, pepper, etc. The motor function, however, seemed to be somewhat promoted. Tinozzi found that cirrhosis of the liver followed administration of small amounts of pepper to dogs and rabbits for a year. Boix has succeeded in inducing experimental sclerosis of the portal type with the aid of acetic acid, butyric acid and pepper. Erythema and pruritus have been known to follow the exaggerated use of pepper. Neither of these "satellite" intoxications alone would probably prove very serious, but when the effects of several are superposed in the course of the day the matter is liable to be serious, especially in the train of alcoholic intoxication.

Archiv f. klinische Chirurgie, Berlin.

Last indexed XLVI, page 1892.

28 (LXXIX, No. 3.) *Defective Closure of Jaws.—Ueber schiefen Biss in Folge Arthritis eines Unterkieferkopfchens. von Eiselsberg.
29 *Osteoplastische Verlängerung des Unterkiefers bei Mikrognathie. G. v. Auffenberg.
30 *Experimentelle Erhöhung der molekulären Concentration des Blutes (to increase concentration of blood). G. Ekehorn.
31 Ossification of Muscles After Single Trauma.—Ueber Muskelverknocherung nach einmaligem Trauma. F. Berndt.
32 *Ueber die chirurgische Behandlung des Magengeschwürs (gastric ulcer). Krönlein.
33 *Zur Nieren-Chirurgie (of kidneys). P. Clairmont.
34 *Bedeutung der Phloridzin-Methode. G. Kapsammer.
35 *Ueber mein drittes Tausend Kropf-Exstirpation (third thousand goiter operations). Kocher.
36 *Experimentelle Beiträge zur Internen Therapie des Darmverschlusses (intestinal occlusion). Offergeld.
37 Experimentelle Untersuchungen über die Einwirkung der Gastroenterostomie auf das Ulcus ventriculi. Fiebig.
38 Mein neues Verfahren bei Amputation des Mammakarzinoms. I. Tansini. See abstract, page 902.

28. Correction of Defective Closure of Jaws.—Two cases are described in which the lower jaw had been injured by an arthritic process with the result that the teeth did not come together. In the first case, the head of the lower jaw was much enlarged and it was resected with complete success. Slight facial paresis was noticed for a few days as the only by-effect. In the second case the jaw was freely movable, but when the teeth were closed the lower jaw swung to one side as if from unilateral dislocation. The trouble was due to arthritic enlargement of the condyloid process on one side. Treatment was by resection of the part at the neck of the jaw, and the results were apparently entirely satisfactory.

29. Osteoplastic Operation on Lower Jaw for Receding Chin.—This communication, likewise from von Eiselsberg's clinic, describes 3 cases of micrognathia resulting from a bone affection in youth. The receding chin was brought out into place by an osteoplastic operation, with results most excellent both from the functional and the cosmetic points of view. The operation consisted essentially in sawing the bone apart in the shape of steps, then drawing the parts back to allow the desired space between the horizontal halves of the stumps, and fastening them in this position with silver wire. The details of the intervention are described with illustrations.

30. Effect of Dry Diet in Nephritis.—Ekehorn has been experimenting with a dry diet in cases of nephritis, and he found that while in health the specific gravity of the urine increases in proportion to a decrease in its amount, in nephritis a dry diet lowers the freezing point of the blood. The amount of urine was reduced, but the specific gravity did not rise to correspond. The kidneys were incapable of secreting a concentrated urine.

32. Surgical Treatment of Gastric Ulcer.—This address by Krönlein opened the discussion on this subject at the recent German Congress of Surgery. He has performed 112 operations on account of gastric ulcer, including 6 supplementary and 5 correcting operations on 101 patients. The mortality was 13.8 per cent., and the patients were mostly between the ages of 35 and 49. He asserts that about one-fourth of all patients with gastric ulcer, treated by internal measures, have a recurrence of the trouble, and that the mortality is about 10 to 13 per cent. The mortality of the latest series of operations on the stomach for ulcer is not more than 8 or 10 per cent. The late results are especially fine, a complete cure being accomplished in 61 per cent., essential improvement in 24 per cent., that is, remote successful results in 85 per cent. The operation promotes the healing of the ulcer; a dilated stomach returns to normal size in nearly every case, and secretory anomalies gradually become transformed to normal functioning. The operation need not aim to remove the ulcer as much as to produce more favorable conditions for its healing and for normal functioning. Gastroenterostomy is generally sufficient alone; excision of the ulcer is rarely required except on suspicion of cancer. Operative intervention, he believes, is indicated in every case of stenosis of the pylorus, whether slight or pronounced, also in functional motor insufficiency, if internal treatment fails, and also in case of small recurring hemorrhages. In case of a fulminating hemorrhage, the risk of delaying until the patient has recuperated from the loss of blood is more dangerous than an immediate operation. Gastroenterostomy in this case also is preferable to an attempt to apply direct hemostasis. There are no grounds, however, for advocating early surgical intervention in case of a simple ulcer of the stomach. Systematic internal treatment should be given a thorough trial first.

33. Surgery of the Kidneys.—Clairmont analyzes 77 operations performed on the kidneys by von Eiselsberg or under his guidance. The mortality was 21 per cent. It was found that the freezing point of the urine was not a reliable index unless it failed to vary in several examinations. The freezing point of the urine further afforded no aid for an early diagnosis. The phloridzin test was found to be more sensitive than cryoscopy. In some cases the freezing point of the urine may be found normal, but a slight delay in the elimination of sugar in response to the phloridzin test may point unerringly to functional disturbance in the kidney. In case of a gall-bladder affection, the right kidney may show delay in eliminating the sugar, consequently this tardy elimination can not serve to differentiate a kidney affection from a tumor in the right hypochondrium. Hypernephromata were found most frequently among the tumors of the kidney, and carcinoma was the rarest. Pigmentation and freckles were frequently observed in connection with hypernephroma and with this alone. Tumors that bleed readily contraindicate catheterization of the ureter on that side. The movability of a kidney tumor is an indispensable indication for its operability, although it may also be observed with inoperable growths. Resection of the kidney for a hypernephroma, even sharply circumscribed, should not be attempted. Transperitoneal nephrectomy does not allow detection of thrombosis of the vena cava nor of extensive infection of the glands. Large tumors are best removed through a lumbar incision, opening the peritoneum at the side. Lumbar laparotomy is harmless, he states, and facilitates the detachment of the mesocolon. In hydronephrosis, nephrotomy is

indicated only when causal treatment is impracticable and nephrectomy contraindicated for any reason. Pyonephrosis may be cured by nephrotomy, especially the cases in which a non-gonorrheal cystitis is the source of the ascending infection, and it is of recent development. In case of persisting fistula, etc., a secondary resection or other secondary operation may lead to a complete cure, avoiding the necessity for nephrectomy. Primary nephrectomy is indicated in case of a tuberculous process, and also when pressure on the tumor evacuates thick pus. Reflex anuria may be the result of the pains and checking of the secretion in the affected kidney. The irritation inducing the anuria is due to changes in the parenchyma which render the kidney more sensitive without materially affecting its functioning.

34. **The Phloridzin Kidney Test.**—Kapsammer found a constant regularity in the time when the sugar appeared in the urine after the phloridzin test. The findings harmonized with a regular law in more than 200 tests in his experience. After injection of 0.01 gm. phloridzin if sugar appears in the total urine in from 10 to 15 minutes, it may be assumed that one kidney at least is functionally sound. He examines the urine for sugar every five minutes. A delay of 30 minutes speaks for essential functional disturbance in both kidneys, and if no sugar has appeared in 45 minutes the functional disturbance in both kidneys which this proclaims contraindicates nephrectomy completely. In short, he proclaims that the phloridzin test gives findings that can be relied on implicitly. It is more conclusive than even the findings with exploratory incision, as both he and Albarran have observed cases of tuberculous processes or new growths in the kidney in which the organ presented an absolutely normal aspect both externally and on exploratory sectional incision. The only exception is in case of parenchymatous nephritis. When albuminuria and tube casts are found, the early response to the phloridzin test is not synonymous with normal functioning. The response is even prompter than in normal conditions. Changes in the functional capacity of a kidney are liable to be reflected in the varying response to the phloridzin test. This is particularly evident in a kidney injured by toxic action, especially from a diseased mate.

35. **Three Thousand Operations for Goiter.**—Kocher's last series of a thousand goiter operations has confirmed him in the view that these operations can be regarded as practically harmless, even when the goiter is low and large, and even in elderly persons, if the heart is sound. No serious infection of the wound occurred in any case. The heart functioning must be carefully tested. Even the mere lowering of the blood pressure from the standard 150 mm. to 130 renders an operation of the kind somewhat hazardous. General anesthesia is avoided if possible, as it renders it more difficult to avoid injury to the recurrent nerve. The fact that heart disturbances contraindicate an operation for goiter should induce internists not to let the affection get to this stage before advising operative treatment. Still more insistent is Kocher's warning not to produce the "goiter heart" by internal measures in cases in which from the start these offer no prospect of cure. He refers to the excessive and too long protracted use of iodids and the abuse of the thyroid preparations, which latter, he thinks, have done much more harm in the treatment of goiter than they have ever done good. The "goiter heart" is one of the main features of exophthalmic goiter. If we can prevent its development, the prognosis of operative treatment would become much more favorable. The simplest means of prevention is by early operation. It should not be deferred until a late stage, as only in the earliest stages does it give its best results. Surgeons should not be tempted to operate in exophthalmic goiter in case of existing insufficiency of the heart, such as is present in the "goiter heart" of advanced exophthalmic goiter. Only one possibility need be borne in mind in operating, that of the development of slight hypothyreosis even after partial strumectomy. It can be prevented by care that enough functionally capable thyroid tissue is left behind, or if the excision has to be extensive, the operation should be followed by thyroid treatment, which here wins its greatest triumphs.

36. **Experimental Study of Internal Treatment of Intestinal Occlusion.**—Offergeld's extensive research was directed principally to internal prevention and treatment of postoperative ileus, and to a study of the action of peristaltic drugs on the female genitalia. In case of postoperative "strangulation ileus," a second laparotomy, as early as possible, is the only salvation. If peritonitis already exists, this complication is decisive for prognosis and therapy. All measures that arouse or stimulate the action of the bowels should be strictly avoided in this case; otherwise the process is spread and rupture or perforation may follow. Peritoneal adhesions can be reached only by a second operation. The only drugs of the slightest use, he states, are those which stimulate peristalsis, eserin, nicotin, barium chlorid, used as prophylactics. Mercury is useless in all forms of postoperative ileus. Physostigmin, nicotin and strychnin work equally powerfully. Nicotin is very toxic. Pilocarpin is less active and it induces copious sweating. Barium chlorid is still less active, but it is nontoxic. In case of beginning intoxication from any of these drugs, copious saline infusion would eliminate the poison. The drugs which induce peristalsis excite the ureters, but do not affect the female genital system.

Berliner klinische Wochenschrift.

39 (XLIII, No. 29.) Die Behandlung des Puerperal-Fiebers mit Antistreptokokkenserum. E. Martin.
40 Die Einwirkung des Vierzellenbades auf den Blutdruck (four-cell bath and blood pressure). M. Hirsch.
41 Fat and Carbohydrates.—Fett und Kohlenhydrate. G. Rosenfeld.
42 Zur bakterioskopischen Früh-Diagnose der Lungen-Tuberkulose (early diagnosis from scrapings of throat). C. A. Blume.
43 Renal Surgery.—Ueber moderne Nierenchirurgie, ihre Diagnose und Resultate. H. Kümmell (Hamburg). Concluded.
44 (No. 30.) Ueber Agglutination von Bakterien der Typhus-Gruppe durch Galle (bile). T. A. Venema. Negative results.
45 *Ueber eine bemerkenswerten Fall von Tumor cerebri. H. Oppenheim.
46 Ueber die Grundlagen und Anwendung der Wright'schen Opsonin Theorie (principles and applications). E. Weinstein.
47 *Diabetes insipidus und seine Behandlung mit Strychnin. I. Spaether.
48 Ueber Syphilis der Caruncula sublingualis. J. Helier.
49 Ueber experimentelle Krebsforschung (cancer research). H. Beitzke.

45. **Brain Tumor.**—Oppenheim's patient was a man with attacks of paresthesia and tingling sensations, starting in the right leg and spreading upward over the entire right side, first noticed a year ago. In time these became accompanied or followed by clonic contractions and cramps. Later the symptoms appeared first in the arm each time, and finally the seizure involved the whole body, with more or less complete loss of consciousness, postparoxysmal weakness and ultimate paresis. There were no signs of compression, but there was considerable disturbance of the sense of position ("Lagegefühl"), and there was also astereognosis, that is, inability to recognize objects by handling them; this was pronounced in both right and left hands. The diagnosis made on the above findings was confirmed by the operation, which disclosed a tumor as large as a hen's egg, in the cortex, projecting into the subcortical tissues about the middle of the posterior central convolution and extending to the adjacent part of the anterior convolution of the upper parietal lobe. The tumor was easily enucleated with the fingers, and the patient is convalescing smoothly. By the fifth day it was noticed that the astereognosis of the left hand had mostly subsided.

47. **Strychnin in Diabetes Insipidus.**—Spaether reports a case of diabetes insipidus developing after an injury to the head and favorably influenced by strychnin. He suggests that the trauma must have affected the vasomotor centers governing the circulation in the kidney, with the diabetes as the result. The strychnin had favorably modified the centers in question, and thus indirectly it had benefited the diabetes.

Centralblatt f. Chirurgie, Leipsic.

Last indexed, page 1141.

50 (XXXIII, No. 32.) Zur Gallenblasen-Exstirpation (cholecystectomy). O. Witzel (Bonn).
51 (No. 33.) Curette for Removal of Gauze Grown in or Held by Tissues.—Die Curette zur nachträglichen Entfernung eingewachsener resp. eingeklemmter Gazestreifen. M. Mori.
52 Knochenhebel für Osteotomien (lever for bone). G. Hohmann (Munich).

Centralblatt f. Gynäkologie, Leipsic.

Last indexed, page 1142.

53 (XXX, No. 25. *Zur Technik der Radikal Operation grosser Nabel- und Bauchwand-Hernien (very large umbilical and abdominal hernias). E. Graser.
54 Thrombose einer Placentarhaupt-Vene. Intra-uteriner Frucht-Tod. P. Mathes.
55 Ein neuer durch Nieren-Dekapsulation geheilter Fall von puerperaler Eklampsie. G. M. Edebohls (New York).
56 Seltene Neubildungen der weiblichen Harnröhre und des Septum urethrovaginale (rare neoplasms in female urethra). H. Thomson.
57 (No. 26.) *Die subkutane Symphysiotomie. P. Zweifel.
58 Einfluss der Uterus-Nerven auf die Atonie des nicht-puerperalen Uterus. L. Fellner.
59 *Deep Incisions and Vaginal Cesarean Section Should be Banished from Obstetric Practice. L. M. Bossi.—Die tiefen Inzisionen als Methode zur gewaltsamen Entbindung und der vaginale Kaiserschnitt müssen aus der geburtshilflichen Praxis ausgeschaltet werden. L. M. Bossi (Genoa).
60 (No. 27.) * Measurement of Pelvis.—Die unmittelbare Messung der Conjugata obstetrica. P. Zweifel. Id.—Eine vereinfachte und verbesserte Beckenmessung. C. J. Gauss (Freiburg). Id.—Farabeuf's Beckenmesser. O. v. Herff.
61 (No. 28.) *Das Bier'sche Verfahren in intra-uteriner Anwendung. F. Turan.
62 Vaginaler Kaiserschnitt bei der Morlbunden—lebendes Kind (Cesarean section with living child). Westphal.
63 Reaction to Homologous Sperma Subcutaneously Injected.—Verhalten des Menschen bei paragenitaler Zufuhr artgleichen Spermas. W. Gessner.

53. Radical Operation of Large Hernias.—Graser has used the Pfannenstiel transverse incision with Menge's modification in four cases of extremely voluminous umbilical or abdominal hernia. The operation required three hours to complete and the numerous buried sutures with the extensive raw surfaces proved a severe test of the asepsis, but the course of healing and the results were unexpectedly fine in every instance. The sheath of the rectus muscle was incised horizontally and the upper flap turned back with the greatest care not to injure the rectus muscle below. The parts were joined without the slightest tension, and approximately normal anatomic conditions were restored. The patients were prepared in the severest cases by four or five weeks of daily purges, restricted diet, compression with bags of shot and attempts at reposition. The abdomen in the case illustrated measured 230 cm. in circumference—considerably over two yards.

57. Subcutaneous Symphyseotomy.—Zweifel does not hesitate to declare that this is an important advance in pelvis-enlarging operations. It avoids the danger of excessive hemorrhage, which is sometimes an unpleasant surprise in pubiotomy or hebotomy. He reports 3 patients thus treated, with absolutely perfect outcome, no hemorrhage to mention, smooth healing and no disturbance in the gait later. It avoids severing arteries liable to be encountered in a pubiotomy.

59. Advantages of Instrumental Dilatation in Certain Obstetric Cases.—Bossi states that he has used his dilator in 107 cases which terminated favorably for the mother in all but 5, and for the fetus in 65. Of the 42 dead fetuses 16 were dead before delivery, 9 succumbed during delivery; 17 were abortions.

60. Measurement of Pelvis.—Zweifel describes and illustrates a pelvic gauge which has proved very useful, and Gauss describes another. A third was found at Basle by von Herff, said to have originated with Farabeuf, which he has slightly modified, and recommends.

61. Suction Therapy of Interior of Uterus.—Turan's further experience has confirmed the notable benefit derived from suction applied to the interior of the uterus by means of a long, wide sound with broad slits extending from the tip to the middle of the sound. The procedure seems to be harmless, and it is certainly painless. It relieves dysmenorrhea and all disturbances consequent on chronic inflammation of the uterus. It has also a tendency to reduce the secretions in catarrhal conditions, and it promotes healing. This treatment can be given at the office, and does not interfere with the woman's usual occupations.

Deutsche medizinische Wochenschrift.

64 (XXXII, No. 34.) Ueber Behandlung der Hämorrhoiden, Riedinger. Clinical lecture.
65 *Ein modifiziertes Mastdarm-Speculum (for rectum). H. Elsner.
66 Ueber den Diplococcus intracellularis meningitidis und seine Beziehungen zu den Gonococcen. W. G. Ruppel.
67 Ueber spezifische Immunkörper gegen Gonococcen (immune bodies). C. Bruck.
68 Ueber die therapeutische Wirkung des Antistreptococcenserum. H. Aronson.
69 *Ueber Asthma bronchiale. Strübing.
70 Action of Carbonated Thermal Saline Baths on High Pressure.—Die Wirkung kohlensäurehaltiger Thermal-Solbäder auf den übernormalen Blutdruck. T. and F. Groedel (Nauheim).
71 Portable Washstand for Army Surgeons.—Ein neuer Waschtisch für den Operations-Raum in Feld- und Kriegslazaretten. A. Brentano.
72 Die Leukoplakie der Mundhöhle. M. Joseph.
73 Review of Progress in Obstetrics.—Ueber einige Fortschritte auf geburtshilflichem Gebiete. E. Opitz.
74 *Medical German.—Aerztedeutsch. O. Wille.
75 (No. 35.) *Zur Behandlung der Lungenschwindsucht durch künstlich erzeugten Pneumothorax. C. Forlanini.
76 Die Malaria-Moskito-Lehre und die epidemiologische Malaria-Kurve. Ruge.
77 *Zur Frage der Leydenschen Hemisystolie. O. F. Helsingius.
78 Transient Paralysis of Ocular Muscles After Spinal Anesthesia.—Augenmuskellähmung nach Rückenmarks-Anästhesie. W. Mühsam. Two cases. Id. H. Lang.
79 Zur Frage der Glykosurie bei Quecksilberkuren. O. Mendelsson. Negative Findings.

65. A New Rectal Speculum.—Elsner gives an illustrated description of the speculum in constant use at Boas' polyclinic for affections of stomach and intestines. The speculum consists of a broad flaring tube with handle and obturator. The sides of the tube are removable, leaving a long open space on each side. The speculum has several advantages over the Otis and the Kelly instruments of the kind, especially the flaring of the tube, the diameter of the outer end being twice that of the tip.

69. Treatment of Bronchial Asthma.—Strübing affirms that the first point in treatment is to train the patient to make the respiratory movements more regularly. Every unnecessary movement during expiration is avoided, allowing the elastic pressure of the lung alone to accomplish the task of expiration. An anesthetic is beneficial only because it abolishes the forced muscular contractions. When these false expiration movements are brought under control, the next step is to prolong and to deepen the inspiration, and thus gradually to restore the normal type of respiration. Success depends on the degree of intelligence, and the energy of the patient and the intensity of the catarrhal affection. It is important to train the patient's will power to exert itself, especially in the incipiency of an attack. Most patients after a little practice are able voluntarily to open all their air passages, if even for a short time. Some are able to suppress all the symptoms of asthma from the start by concentrating their attention and will power on them. Saenger advocates gymnastic exercises of the expiration to abolish the forced movements of expiration. The patients must be taught, he says, to breathe so that the expiration lasts longer than the inspiration. To accomplish this he has the patient count aloud, with a slow, moderately loud voice. Patients who at first were able to count only about 7 during expiration become able in two or three days to count from 16 to 20 without stopping. Speaking and slow reading are particularly useful in learning to control the spasmodic contraction. The iodin preparations will be found useful, he states, to soften the tenacious secretion in the bronchi. Atropin is valuable, and local lesions in the nose or elsewhere must receive treatment. The bronchial catarrh is liable to be long refractory to treatment. The vasomotor disturbances in the bronchial mucosa are among the principal factors in the asthma and require "toughening measures." The nervous system may also require treatment.

74. Medical Language.—Wille reviews a number of mannerisms and bad habits in the use of words, deprecating many of the modern word-building tendencies. He has the German language in view, but some of his remarks apply equally well to other tongues, as, for instance, his sarcastic comment on the expressions of gratitude that top off certain scientific works, gratitude to the professor under whose supervision the work was done, etc. He styles a remark of this kind a "foreign body in a scientific work." . . . "It annoys the reader as he looks for the scientific conclusions of the article and encounters this empty phrase. Such conventional expressions of gratitude can not cause the instructor much gratification—a fine scientific production is a better tribute to him than a meaningless compliment at the end of a poor article." He refers also to the custom of referring in a footnote to an already cited reference as *l. c. (*loco citato*). Looking back to find the original reference is sometimes a weary task. It would be much better, if many references are used, to collect them

at the end or beginning of the work. If only a moderate number are needed the footnote or the citation in the text should each time give the reference in full, with the page.

75. **Artificial Pneumothorax in Treatment of Tuberculous Pulmonary Processes.**—Forlanini in 1882 suggested the possibility of favorably influencing tuberculous processes in the lungs by artificially inducing pneumothorax, and published several communications on the subject in Italy and Germany between 1882 and 1895. His 14 years of experience have confirmed him more and more in the efficacy of this procedure. His technic differs from Murphy's, although the aim is the same—to promote healing by immobilizing the affected lung. He believes that three conditions are necessary for success, a pneumothorax large enough to ensure that the lung is positively immobilized, the gradual induction of the pneumothorax to avoid too sudden compression, and, lastly, the continuance of the pneumothorax without any interruption, the compression always remaining at the same point without fluctuating. These conditions would be ideally realized if the pleural cavity could be kept constantly connected with a tank filled with compressed air to admit a fresh supply as the air in the pleura becomes absorbed. This ideal is approximated by frequently repeated renewal of the air in the pneumothorax. He uses a special apparatus for introducing the air, two glass cylinders, connected below. The first is graduated and contains nitrogen, the second a 1 per cent. solution of corrosive sublimate. A tube from the nitrogen cylinder terminates in a fine puncture needle through which the nitrogen is injected after being filtered through cotton. An air manometer projects from the top of the cylinder, containing the corrosive sublimate, which in turn is connected with a double bulb. Oxygen is absorbed too rapidly for ordinary air to be suitable for inducing the pneumothorax. He now uses air from which the oxygen has been extracted with pyrogallic acid. About 200 or 300 c.c. of air are required to arrest all sounds of breathing in the lung, and the procedure may have to be repeated every day at first; later at much longer intervals, as the absorbing power of the pleura gradually declines. He has treated 25 patients by this means, and the results corresponded in every particular with the theoretical assumptions as to the efficacy of the measure. He has not found the involvement of the second lung a contraindication. An incipient process in the second lung frequently healed completely while the first lung was being immobilized. If both sheets of the pleura are partially or entirely grown together it is impossible to induce the pneumothorax unless they can be separated. In one case he found this artificial pneumothorax the only means of arresting uncontrollable hemoptysis. He describes the autopsy findings in one patient who had succumbed to an intercurrent affection two years after the cure of a tuberculous process by this means. In another case he kept up the pneumothorax for four years, the patient, a woman, being apparently in the best of health. During this interval she has had two febrile attacks of influenza and bronchial catarrh, but no tubercle bacilli were found in the sputum and the patient recovered as under ordinary circumstances.

77. **Leyden's "Hemisystoly."**—Helsingius reports in detail two cases observed at Kiev in which there was active reduplication of the apex beat. The 10 curves show the variations in the *pulsus bigeminus* and emphasize the fact that the second wave of the *pulsus bigeminus* is the consequence of the second contraction of the left ventricle following close on the first. This phenomenon appears with varying distinctness on the curves, according as the heart contracted weakly or strongly at the second systole. The findings suggested von Leyden's hemisystoly, but comparison of the various curves shows that the cases present the *pulsus bigeminus* with exceptionally instructive clearness.

Monatsschrift f. Geb. u. Gynäkologie, Berlin.

Last indexed, page 80.

80 (XXIII, No. 6.) Zur Kenntnis der Pyelonephritis gravidarum. G. Zickel.
81 Ueber heterologe mesodermale Neubildungen der weiblichen Genitalien (new growths). E. Kehrer. (Concluded.)
82 *Die sklerotischen Gefäss-Veränderungen des Uterus bei Nulli- und Multiparen und die klimakterischen Blutungen (vascular changes and climacteric hemorrhage). K. Wittek.
83 *Gonorrhoe und Puerperium. A. Mayer.
84 (XXIV, No. 1.) Die Lymph-Drüsen bei der Ausbreitung des Uterus-Karzinoms. M. Cigheri. (Concluded in No. 2.)
85 Exceptionally Large Fetuses from Obstetric Standpoint.—Die aussergewöhnlich schweren Früchte vom Standpunkte der Geburtshilfe. A. Vaccari.
86 Zur Kenntnis der Darmstörungen der Säuglinge und der Säuglingssterblichkeit (intestinal disturbances in infants). T. I. P. Schabort.
87 Zur Pubiotomie-Frage. F. Frank.
88 Permeability of Germinal Epithelium.—Exp. Untersuchungen über die Durchlässigkeit des Keimepithels für corpuskulare Elemente und Bakterien (zugleich eine Studie über die Topographie der Bursa ovarica bei Tieren). R. Wolfheim.
89 (No. 2.) Ein höchst gradig verengtes rachitisches Becken (smallest contracted pelvis among 50,000). C. J. Bucura.
90 *Ueber Venen-Thrombosen im Puerperium. A. Rielander.
91 Akute postoperative Magenlähmung mit sekundärem Duodenal-Verschluss (paralysis of stomach). R. Birnbaum.
92 Phlebolithen in den Tuben-Fimbrien. F. Kermauner.

82. **Sclerotic Vascular Changes in the Uterus.**—Wittek states that in 12 cases during the last seven years he removed the uterus on account of uncontrollable hemorrhage, the presumptive diagnosis of arteriosclerosis of the vessels of the uterus being confirmed by the findings in 4 cases and by the course of the case in the others. A primary affection of the vessels—which he assumes to be arteriosclerosis on a non-inflammatory basis—was discovered as the cause of the constantly recurring hemorrhages. He is inclined to believe that such affections are more frequently the cause of climacteric and other uterine hemorrhage than is generally accepted. Ergot in such cases has an action exactly opposite to its usual effect.

83. **Puerperal Gonorrhea.**—Mayer reports 6 cases to sustain his assertions that puerperal gonorrhea is not always so innocent as it is generally assumed to be. There may be high fever and severe general infection with chills. The course of the infection is not specially characteristic.

90. **Venous Thrombosis in the Puerperium.**—Rielander states that in 6,000 maternity cases at Marburg since 1888, there have been 23 cases of venous thrombosis. The patient, especially the limb, was kept quiet, and great care was taken not to disturb the patient for any cause. The stools were artificially suppressed for several days if there was no contraindication, and a specially trained nurse was appointed to attend these patients and was repeatedly warned of the dangers of allowing any movement. If it was necessary to move the patient, enough strong arms were supplied to lift her without the slightest necessity for help on her part. With symptoms of embolism the precautions were redoubled. Digitalis might be of use if symptoms of heart weakness develop, especially given subcutaneously. The prognosis depends on the location of the thrombosis; it is better with the veins of the leg, more serious with the pelvic veins, and most dangerous with the iliac veins and vena cava, as they lead directly to the heart. In case one leg is affected first and then the other, the pelvic veins must be involved. The pulse and temperature curves are the guide to treatment. The patient must not leave her bed until they have been normal for two weeks, and then the movements must be begun very gradually.

Münchener medizinische Wochenschrift.

93 (LIII, No. 28.) Experimentelle Versuche ueber Framboesia tropica an Affen (monkeys). A. Neisser, Baermann, and L. Halberstadter.
94 *To Avoid Mishaps in Spinal Anesthesia.—Wie vermeidet man Misserfolge bei der Lumbalanästhesie? A. Dönitz.
95 *Erfahrungen an 399 Lumbalanästhesien mit Stovain-Adrenalin (Billon). E. Deetz.
96 *Operationen mit Ruckenmarksanästhesia (spinal anesthesia). E. Becker.
97 *Ueber eine neue Methode der Blut- und Gewebs-Farbung mit dem eosinsauren Methylenblau (stain for blood and tissues). G. Assmann.
98 *Beitrag zur Agglutinations-Technik. W. Gaehtgens.
99 *Non-Recognition of Mental Affections.—Verkennung von geistigen Erkrankungen. G. Dreyfus.
100 Zur Entstehung und Verhütung chronischer Diphtherie. L. Grunwald. One case.
101 Ueber Lippen- resp. Mundwasser-Ekzeme. Galewsky.
102 Ueber das Verhalten der im Blute der Typhuskranken nachweisbaren Typhusbazillen gegenueber der bakteriziden Wirkung des Blutes. H. Conradi.
103 *Professional Syphilis and Accident Insurance.—Syphilis und Unfallversicherung der praktischen Aerzte. Jesionek.

94-96. **Spinal Anesthesia.**—Dönitz sifts the literature that has appeared on the subject of spinal anesthesia, pointing out the causes of the mishaps and failures, and the errors most liable to occur in technic. He discusses the fatality reported by Bosse in which a patient died in the night after a second

amputation of the leg under stovain anesthesia. Autopsy revealed nothing abnormal except multiple subpleural ecchymoses. Bosse accepts them as charaeteristic for asphyxia, and attributes the death to direct paralysis of the medullary centers by the chemical poison. Dönitz criticises this verdict, as subpleural ecchymoses are observed also in cases of death from heart failure and from fat embolism. The long interval before death suggests fat embolism rather than paralysis of the respiratory center from the anesthetic. Experiments on animals and 4 cases in which transient paralysis of the respiratory center was observed, all concur in the almost immediate onset of the paralysis after administration of the anesthetic. An interval of hours is altogether out of the question. Some of the symptoms observed in the case also suggest fat embolism after the operation on the leg. One fatality has occurred at the Bonn clinic in 1,000 applications of spinal anesthesia. The patient was a man of 75 with cancer of the penis. Owing to the extent of the contemplated operation 2.6 times the standard dose of the anesthetic was injected and in other points the prescribed technic was not adhered to. Tropacocain to the amount of 0.13 gm., diluted with 10 c.c. of the patient's own cerebrospinal fluid, was injected between the second and third lumbar vertebræ, the patient seated, and he was then laid horizontally. The anesthesia spread rapidly up to the neck. After a few minutes there was complete arrest of the respiration and pulse. The thorax was found so stiff and rigid that artificial respiration was very difficult, and it proved unable to resuscitate the patient, even after an opening had been made into the trachea. The lungs were adherent to the chest wall. The anesthetic preferred at the Bonn clinic is 0.04 gm. stovain, except when the anesthesia is required at a high level, when 0.05 tropacocain is substituted on account of the danger of respiratory paralysis. The patient is then laid flat when the operation is not above the perineum, or the pelvis is at once raised for operations on higher regions. A minute or two after the injection the reflexes are tested and the pelvis raised or lowered to correspond, the knee and cremaster reflexes for operations below the groin, the three abdominal reflexes for higher fields. It is also determined whether pinching the leg causes as much pain as pinching the neck, for example. The anesthesia reaches its maximum in about five minutes.

Deetz reports 399 cases in which operations were performed under spinal anesthesia with 0.06 gm. stovain in combination with a suprarenal preparation. One patient, a much debilitated man of 72 with acute peritonitis, succumbed to arrest of the respiration six minutes after the anesthetic had been injected. Another patient died of appendicitis five weeks after the anesthesia. No inconveniences of any kind were observed in 52.6 per cent. of all the patients, but headache followed in 50, very severe in 8, but never lasting more than three or four days, except in one patient who had headache for two weeks, and a man who still has headache after six weeks. The communication issues from Müller's clinic at Rostock.

Becker relates the similar experiences at Hildesheim with spinal anesthesia in 81 abdominal operations, 20 on the perineum or vicinity and 34 on the legs. No by-effects were noted in the majority of cases, and headache has become much less frequent since the practice has been adopted of having the patients sit up in bed after the operation to prevent congestion in the head. Serious symptoms were observed in 2 cases; in one the patient still complained of headache and pain on movement with occasional vertigo three weeks after the operation. She was a consumptive diabetic of 47 requiring an operation on account of suppuration after amputation of the leg.

97. **Methylene-Blue-Eosin Stain for Blood and Tissues.**—Assmann presents a staining technic which for nearly a year has given most excellent and constant results in his hands, not only in staining dried specimens of blood, pus, sputum, urinary sediments, etc., but also for sections of tissues. It seems to be free from the drawbacks of other stains of the kind. The dried specimen, without fixation, is placed on an object glass and this in turn is placed in a Petri dish. About 40 drops of the stain, the methyl alcohol solution of eosin-methylene blue, are then poured on the preparation, the fluid being kept on the object glass. After three minutes in the stain 20 c.c. of distilled water is poured over the specimen, after 5 drops of a 1 per thousand solution of potassium carbonate have been mixed with the water and the Petri dish is shaken until the fluid assumes a clear, homogeneous, bright violet color. In five minutes after this the specimen is removed and dried without further rinsing. For sections of tissues the first step of the process is the same but, instead of the potassium carbonate, 5 drops of a 1 per thousand solution of acetic acid are added to the 20 c.c. of distilled water poured into the Petri dish over the specimen. It is left in the fluid for fifteen instead of five minutes, and is then rinsed in alcohol, then in xylol and embedded in neutral Canada balsam. The alcohol must be absolutely free from water. The details are brought out much more clearly and more evenly than with the May-Grünwald or other technics, he asserts.

98. **Improved Agglutination Test.**—Gaehtgens describes a method with which the agglutination test can be completed in ten minutes. The findings were always confirmed by control tests by other technics. A test-tube containing—as usual—the patient's serum, suspension of bacteria and salt solution, with the serum diluted 1 to 100, is centrifugalized for ten minutes and then shaken up three or four times. In the control test-tube some of the bacteria will be found accumulated in a small sediment at the bottom of the tube, the patch being about 2 mm. in diameter. Shaking the tube breaks up this mass, so that in the hanging drop under the microscope only isolated, freely motile bacteria are visible. The same picture is offered in case of negative findings with the patient's serum, but in case it possesses agglutinating properties the bacteria, clumping in flakes, will be found deposited around the central patch of sediment, sometimes dotted around it and sometimes forming a single mass of sediment several times as large as that in the control tubes.

99. **Non-Recognition of Mental Affections.**—Dreyfus classifies mental affections as those that may be insidious and never recognized, and those in which the progress of the affection compels its recognition sooner or later. He reviews the symptoms of the early phases of various types in each group, remarking in regard to paralysis that at first it is generally taken for neurasthenia, but that differentiation is now easy by means of lumbar puncture. In arteriosclerosis there are only one or two or no lymphocytes to be found in the cerebrospinal fluid; with syphilis there are about 17, but with paralysis from 40 to 50 or even more are discovered in the field. This proportion was found practically constant in 132 lumbar punctures made on 102 patients with paralysis. Frequently the puncture findings were the only clue to the paralysis. The only dubious findings were in case of preceding syphilis or existing meningitis. Other symptoms that should suggest paralysis are change in character in middle-aged persons, with irritability and temper, slight weakness in judgment and memory and restlessness.

103. **Professional Syphilis and Accident Insurance.**—The physicians of Germany, under Neisser's lead, are taking concerted action to obtain more consideration in case of professional infection with syphilis. The companies in which they have been insured against such contingencies have too frequently managed to escape paying the contracted indemnity. Jesionek relates the case of a physician in a small town who contracted syphilis from a scratch during an obstetric operation. The company paid the indemnity for the transient sickness consequent on the primary symptoms, but at the close of the year canceled his policy. He is still in good health and has shown no signs of tertiary trouble, but he appealed to the courts against the canceling of the policy, stating that the company—in which he had carried insurance for 20 years—should be held responsible for any tertiary trouble that may develop later from the syphilitic infection. This the company will not agree to, and it will not reinsure him unless at a higher rate on account of his infection, and only under the agreement that if any other accident occurs to him the indemnity shall not be any higher than if it affected a non-syphilitic person. All the insurance companies in Germany take this stand, and the courts state that the contracts as at present worded and signed by physicians uphold them in these rights.

The Journal of the American Medical Association

Published under the Auspices of the Board of Trustees.

VOL. XLVII. CHICAGO, ILLINOIS, OCTOBER 20, 1906. No. 16.

Original Articles

THE SIMULTANEOUS OCCURRENCE OF TWO NON-RELATED TUMORS IN A MOUSE.*

E. E. TYZZER, M.D.

Director of Cancer Research, Harvard Medical School.

BOSTON.

HISTORY OF THE CASE.

The tumors described in the present paper occurred in an old uninoculated mouse kept apart for breeding purposes. They were primary in the lung and in the kidney.

History.—The mouse was an old, black, female, purchased April 29, 1905. It died Aug. 4, 1905. During this time, slightly over three months, it raised two litters of young and was vigorous and apparently in good health up to the last week of its life. At this time the two young ones, which were then about three weeks old, appeared small and poorly nourished, but were soon able to care for themselves. The mother ate irregularly and became uneasy. There was a slight loss of flesh and toward the last the animal's breathing became labored. An autopsy was made immediately after death.

Autopsy.—The superior lobe of the right lung occupies the major portion of the right thorax. Within this lobe, and involving the greater portion of it, is a grayish white mass measuring 5x10x10 mm. The surface of the mass, presenting to the lateral wall of the thorax, has a slightly depressed central portion and an elevated border. At both ends and along the anterior edge is a small amount of air-containing lung tissue which is also grayish white. On section small nodules were found in the lung substance about the mass just described. In the surface of the middle lobe of the right lung are two minute nodules only a fraction of a millimeter in diameter. The other lobes of the lung were pink and apparently normal with the exception of a minute area of consolidation at the left apex. The pleural cavity contains a small amount of fluid, but there are no adhesions.

The kidneys present a puckered, uneven surface with many clear spots not over a millimeter in diameter, probably retention cysts. Scattered throughout the substance of the kidney are opaque whitish or yellowish points. In the right kidney near its anterior extremity is a yellowish white nodule one and one-half millimeters in diameter, elevating the surface. The other organs present no gross lesions.

A fresh teased preparation of the mass in the lung examined microscopically showed it to be an epithelial growth. One portion of this tumor was fixed in Zenker's fluid and the remainder was placed immediately on ice until preparation was made for its inoculation into other mice.

INOCULATION OF OTHER MICE.

About two hours after the autopsy, the portion of the lung tumor which had been placed on ice was snipped into small bits and inoculated subcutaneously into five mice. Following the inoculation a small mass appeared in each mouse at the site of inoculation. This was apparently due to exudation about the material inoculated, and a fortnight later it had entirely disappeared. In one mouse, sixteen days after the inoculation, there was a minute subcutaneous nodule which increased slowly in size and appeared as a rounded, slightly elevated translucent mass about 3 mm. in diameter. Four weeks after its appearance this mass, which was evidently a small cyst, ruptured and practically disappeared, but after a few days it began to fill out again. After rupturing a second time it finally disappeared about fourteen weeks after the inoculation. All five mice were under observation for many months after the inoculation and nothing additional developed. The results of these inoculations will be considered in connection with the nature of the primary tumor.

THE PRIMARY LUNG TUMOR.

The primary tumor is essentially alveolar in structure (Fig. 1). It consists of epithelium which lines spaces made very irregular by projecting folds and processes. Some portions of the tumor present an open structure with cavities of considerable size, while other portions present a closer structure, most of the available space being filled by closely packed, irregular folds. This growth may be regarded as a carcinoma. The blood vessels of the tumor are empty, but towards the root of the lung are two large dilated vessels, the branches of the pulmonary artery and vein, which are filled with blood. Between the lobules of the primary tumor are several dilated bronchi. The tumor epithelium consists of cuboidal or columnar cells arranged in a single layer. The cells vary in size in different portions of the tumor, but are in all cases somewhat larger than the cells of the normal bronchial epithelium. The cell outline is distinct and there are no demonstrable cilia. In some portions of the tumor the nuclei present a pale, hollow appearance, and what chromatin is in evidence is rather evenly distributed. In other portions the nuclei, as well as the cells, are smaller and more deeply stained. Some of the nuclei are deeply fissured, so that they appear irregular. Cells are found with two or more nuclei; probably the result of this type of fission. Fission may take place in several different places simultaneously, so that the nucleus is divided in four, eight or even a greater number of segments. In the study of a great many sections no mitoses have been found.

A large proportion of the nuclei of the tumor epithelium present inclusions of a peculiar type. They appear as pale, rounded bodies with a definite contour. Others are indefinite and are very faintly stained. Some appear to be either vacuolated or composed of an aggregation of granules. The relation of these inclusions to the nuclear structure is peculiar. A continuous membrane surrounds them which is similar in most respects to the nuclear membrane. This is either applied directly to the surface of the inclusion or it encloses a perfectly clear spherical space with the red stained body in its

* Read in the Section on Pathology and Physiology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

center. The inclusions, although numerous in the tumor epithelium, are not confined to this tissue, but occur also in the connective tissue cells of the stroma and have been observed in many instances in the organs of other mice.

The supporting tissue of the tumor proper is small in amount and forms a very delicate structure. The thin plications and septa on which the epithelium grows are composed of both fibrous and elastic tissue. The latter element is present in larger amount in the tumor than in the normal lung. At one portion of the periphery of the tumor its epithelium is found growing along the thickened walls of the alveoli of the lung. The limits of the tumor are not so well defined here as elsewhere. An isolated group of tumor cells is found at one point in the lung tissue growing on the alveolar walls. It is apparent that the tumor extends not only by uniform internal expansion, but also by the growth of epithelium over the surfaces of the alveoli. The interior space of the tumor is filled in places with finely granular material. in places with clear fluid containing a few mononuclear cells. Next to the epithelial surface are found rings similar to those found in the tubules of the kidney. Since the tumor epithelium is found growing on the surfaces of alveoli, it is probable that air has free access at least to certain portions of its substance.

Within the tumor just beneath the central depression is a mass of connective tissue which apparently replaces an older portion of the tumor. This mass consists, in part, of thick bundles of degenerated connective tissue, in part of loose reticular tissue, in which are large numbers of large connective tissue cells. Special staining brings out a considerable amount of elastic tissue.

The adjoining tumor epithelium presents various retrograde changes. In many places the layer is extremely thin and large surfaces are found denuded of epithelium. Within this mass of connective tissue are large cystic cavities from which the epithelium lining has almost wholly disappeared. The epithelial cells where they persist may be flattened and compressed in clumps or disassociated and irregular. The growth of connective tissue has surrounded groups of epithelial cells and there are many multinucleated cells included within it, which are of epithelial origin. It seems probable this scar-like mass of connective tissue represents, on account of its central position, a reaction following a retrograde process in the older portion of the tumor.

The secondary nodules in the lung are similar in character to the primary growth. The reaction about them varies greatly. About one nodule, 2 mm. in diameter, the lung tissue presents no change whatever. About other smaller nodules there are collections of mononuclear cells and there is marked increase in connective tissue over a wide area. A small nodule situated near a bronchus represents growth along the route of the blood vessels.

The air spaces of the upper portions of the same lobe of the lung contain many mononuclear cells the origin of which it is difficult to account for, unless they represent alveolar epithelium. In places alveoli are tightly packed with these cells, which vary greatly in size. The larger ones are vacuolated, probably containing fat.[1] There is considerable emphysema in a portion of the lung adjacent to the primary tumor.

Fig. 1.—Primary carcinoma of lung.

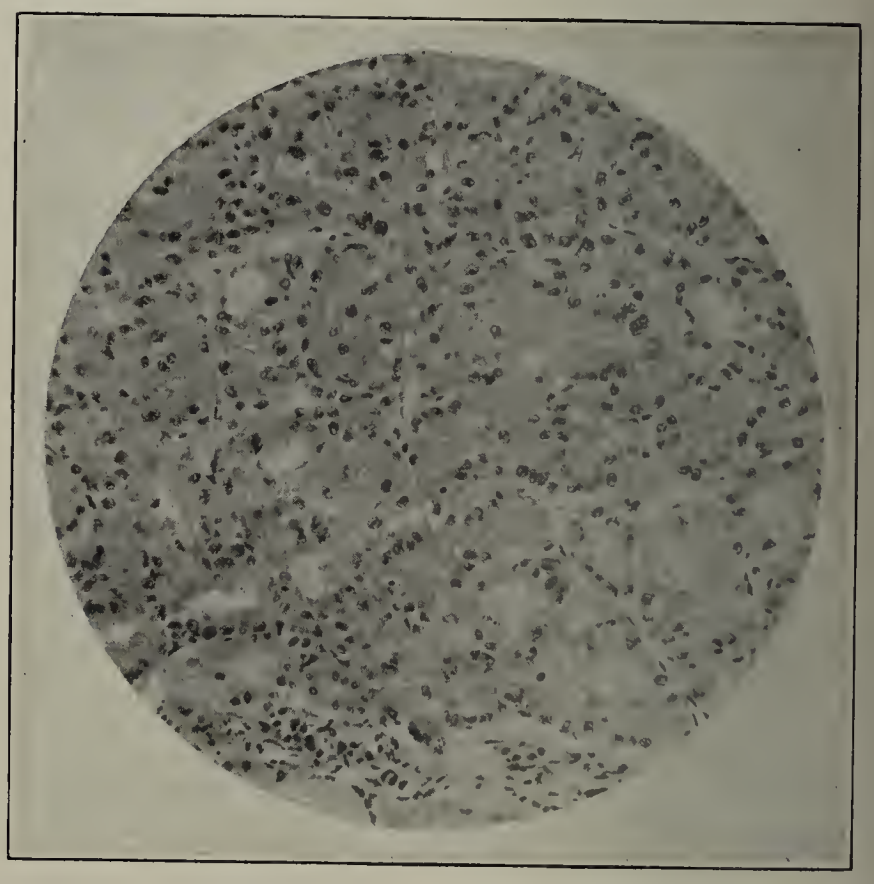


Fig. 2.—Adenoma of kidney.

THE PRIMARY KIDNEY TUMOR.

The nodule observed in the kidney of this mouse is found to consist of irregularly arranged epithelium with staining affinities closely resembling those of the convoluted tubules (Fig. 2). The nodule is sharply defined and distinct from the kidney substance. It extends through the entire thickness of the cortex and bulges slightly from the surface of the kidney. The epithelium

1. Haaland has described nodules arising from the epithelium lining the alveoli in the lungs of mice inoculated subcutaneously with tumors. The collections of cells found in the lung in this case have a close resemblance to the nodules described by Haaland. It does not appear to me that these collections of cells represent a form of new growth.

MILK WITH NEUTRAL GASTRIC SOLUTION AND HYDROCHLORIC ACID:

Fig. 1.—HCl 0.1 per cent. Fig. 2.—HCl 0.2 per cent. Fig. 3.—HCl 0.3 per cent. Fig. 4.—HCl 0.4 per cent.

MILK WITH SODIUM CITRATE, NEUTRAL GASTRIC SOLUTION AND HCl:

Fig. 5.—HCl 0.1 per cent. Fig. 6.—HCl 0.2 per cent. Fig. 7.—HCl 0.3 per cent. Fig. 8.—HCl 0.4 per cent.

ILLUSTRATING ARTICLE OF MR. ENGLAND.

MILK WITH TABLE SALT, NEUTRAL GASTRIC SOLUTION AND HCl:

Fig. 9.—HCl 0.1 per cent. Fig. 10.—HCl 0.2 per cent. Fig. 11.—HCl 0.3 per cent. Fig. 12.—HCl 0.4 per cent.

MILK WITH CEREAL DECOCTION, NEUTRAL GASTRIC SOLUTION AND HCl:

Fig. 13.—HCl 0.1 per cent. Fig. 14.—HCl 0.2 per cent. Fig. 15.—HCl 0.3 per cent. Fig. 16.—HCl 0.4 per cent.

Illustrating Article of Mr. England

composing the tumor is columnar and in places is apparently ciliated. In portions of the nodule the epithelium has a tubular arrangement, while in other portions the growth is very irregular. Extending about a portion of the nodule there is a flattended cavity, making it appear probable that the growth has originated from the epithelium lining cyst. Near the surface of the nodule is a mass of eosin-staining material consisting chiefly of dead epithelial cells. There are several long-pointed crystals in this material.

The kidney proper presents marked changes. Many of the tubules are dilated with dense, refractive, homogeneous material, in some instances staining with the basic stain, in others appearing yellowish and unstained. There are also interstitial changes in the cortex with increase in connective tissue and occasional groups of lymphoid cells. The cortex is much thinner than normal and scattered throughout its substance are cysts of various sizes lined with swollen epithelium.

FEATURES OF INTEREST.

The tumors in this case present several features of interest. The fact that no cells were found in mitosis in the tumor of the lung seems rather remarkable and may account for the negative results of the inoculations. The appearance of a small cyst at the site of inoculation in one mouse is of little significance on account of its failure to continue growth. There is also a possibility that this cyst resulted from the displacement of epithelium in the trauma of the inoculation, but this result has never occurred in a large series of similar inoculations employing the same technic. In view of the opaque appearance of the tumor and the lobe in which it grew and the absence of blood microscopically, it seems very probable that the blood supply to this lobe was cut off at a time just prior to the animal's death, perhaps being the direct cause.

The nuclear inclusions are not without interest. If they present the result of retrograde changes they are important in the analogy which they bear to cancer inclusions in general. Their non-specificity is clear in that they occur in other tissues and in other mice without tumors. The tumor found in the kidney is of another type and bears no relation to the tumor of the lung.

SUMMARY.

1. Two non-related primary tumors, an adenocarcinoma of the lung and an adenoma of the kidney, were found in an old uninoculated mouse which had been kept apart for breeding purposes.
2. Inoculation of other mice with the tumor of the lung resulted negatively.
3. Nuclear inclusions numerous in the tumor of the lung are not regarded as specific, since they are found occasionally in the tissues of other mice.

Pollakiuria in Liver Affections.—Wasserthal observed pollakiuria in a case of cirrhosis of the liver. The patient had to urinate every twenty minutes, especially at night. This caused insomnia. Hot baths gave him three or four hours of rest. The amount of urine in twenty-four hours was 2,000-3,000 c.c. without any pathologic properties. Artificial distension of the bladder with ʒvii of a solution of boracic acid was well borne, and the solution was well retained. The pollakiuria in this case was evidently due, not to the so-called "irritable bladder," but to some peculiarities of the more or less concentrated urine, as well as to an abnormal amount of ammonium and sarcolactic acid.—*Vrach. Gaz.*, No. 16, 1906.

THE USE OF SODIUM CITRATE AS A MODIFIER OF COW'S MILK.

FROM A CHEMICAL AND PHYSICAL POINT OF VIEW.*

JOSEPH W. ENGLAND, PH. G.
PHILADELPHIA.

The use of sodium citrate with cow's milk, first recommended by Wright (1893) and later by Poynton (1904), Variot (1904), Vanderslice (1905) and Shaw (1906), has attracted considerable attention, the claim being made that it furnishes an exceedingly valuable method for the treatment of proteid-indigestion and the vomiting of chronic gastric catarrh.

It is entirely apart from the purpose of this paper to discuss the therapeutic aspects of the subject, the purpose being only to consider the chemical and physical facts in relation thereto.

The chemical ground has been taken by the earlier investigators that the addition of sodium citrate to milk resulted, on contact with the gastric juice, in the decomposition of the calcium-casein of the milk, with the precipitation of insoluble calcium citrate, and the separation of the casein in a more flocculent form than ordinarily obtains. But Shaw's experiments have clearly demonstrated that such is not the case. He treated milk with sodium citrate solution, filtered the mixture through asbestos filter paper, by means of a suction pump, and dried and ignited the filter; then weighed the residual ash. In no instance did he obtain an appreciable amount of ash, and, hence, no precipitation in a chemical sense occurred. He believes that some unknown and undetected action or combination takes place between the sodium citrate and the calcium-casein, but advances no theory.

What is the nature of this action or combination? Is it a chemical or physical one, or both? Shaw has shown clearly that the calcium-casein combination is not changed in the reaction. What other chemical reaction could take place? When sodium citrate solution is brought in contact with hydrochlorie acid, it would seem very possible that the stronger inorganic acid would displace the weaker organic acid, from the salt used, and form sodium chlorid and free citric acid. Such a reaction would be a most logical one, chemically; and, if such is the case, it would follow that the value of sodium citrate, as a milk modifier, is not dependent on the sodium citrate, but on the sodium chlorid and free citric acid formed when the sodium-citrated-milk comes in contact with the gastric juice.

That such a decomposition takes place, is indicated by the following chemical reactions. When a slightly warmed solution of sodium citrate is acidulated with hydrochlorie acid and shaken and then has some freshly precipitated strontium carbonate added to it, a milky white precipitate of strontium citrate immediately forms at the surface of the liquid, and falls to the bottom of the container. The reactions are in two stages, as follows:

(1) $Na_3C_6H_5O_7 + 3HCl = 3NaCl + H_3C_6H_5O_7$; and then,
Sodium citrate — Hydrochloric acid — Sodium chlorid — Citric acid

(2) $2H_3C_6H_5O_7 + 3SrCO_3 = Sr_3(C_6H_5O_7)2 + 3H_2O + 3CO_2$
Citric acid — Strontium carbonate — Strontium citrate — Water — Carbonic acid gas

This precipitation of insoluble strontium citrate, formed by the neutralization of insoluble strontium carbonate, shows that there is free citric acid in the solu-

---

* Read in the Section on Diseases of Children of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

tion, and not free hydrochloric acid, because if free hydrochloric acid be treated with insoluble strontium carbonate, a clear, transparent solution of soluble strontium chlorid is formed, according to the following reaction:

$$2\,HCl + SrCO_3 = SrCl_2 + H_2O + CO_2$$

Hydrochloric acid — Strontium carbonate — Strontium chlorid — Water — Carbonic acid gas

That the milky precipitate formed is not an excess of insoluble strontium carbonate was proved by adding a quantity of strontium carbonate insufficient to neutralize all the free acid, so that the solution remained slightly acid.

It may be claimed that there is free hydrochloric acid in the mixture, and that this is first neutralized by the strontium carbonate to form soluble strontium chlorid, and that this latter is then precipitated by the sodium citrate. That such is not the case can be very clearly proved by physiologic experimentation, that is, a solution of sodium citrate in water has the cooling taste of the salt which is absolutely not "salty," while the same solution acidulated with hydrochloric acid and warmed to body-temperature for five minutes is unmistakably "salty" in taste.

At the meeting of the Section this morning, Dr. A. C. Cotton reported the theory suggested to him by Prof. Jerome Salisbury that, possibly, sodium citrate modified milk by decalcifying the calcium-casein, forming sodium-casein and insoluble calcium citrate, and that the latter was dissolved by the sodium-casein. This is essentially the view of Poynton except that, in addition, it is held that the calcium citrate is made soluble by sodium-casein, and thus kept in solution.

It is a well-known fact in chemical analysis, and one that is used to differentiate citrates from tartrates, that the calcium salts, in the presence of soluble citrates, precipitate calcium citrate only when the solution is *boiled*. While calcium citrate is practically insoluble in water, it is slightly soluble, though far less soluble in boiling water. In addition, if the milk is thus changed, a part or all of its casein should be dissolved, as sodium-casein is water-soluble; and this, apparently, is not the case. But, if so, what chemical change takes place when the sodium-casein comes in contact with the hydrochloric acid of the gastric juice? Clearly, the formation of sodium chlorid and insoluble casein.

In further demonstration I have made a series of experiments with milk and various reagents, and present a score or more of specimens of different combinations. The first four specimens were prepared with milk and varying percentages of hydrochloric acid (0.1, 0.2, 0.3 and 0.4 per cent.). In the first specimen, only a part of the casein has been precipitated by the acid; in the second and third specimens the curds were tough and cheesy, as they were also, in the fourth specimen. But in this last, and to a slight degree in the third, the curds are more or less broken up by reason of the excess of acid over and above the amount required to precipitate the casein.

In the next two specimens the milk was treated with a gastric solution (made by glycerin extraction from the fresh healthy hog's stomach, by Fairchild Brothers and Foster, New York), which was slightly acid, and not with a rennet solution, as used by Shaw. The gastric solution contains both the proteolytic and clotting enzymes, while the rennet solution contains the clotting enzyme only, or chiefly. Hence, the former is a better representative of the actual gastric conditions that obtain on feeding milk.

Pepsin occurs in the gastric juice of both adults and new born infants. This condition is peculiar. "While in a few herbivora, such as the rabbit, pepsin occurs in the mucous coat before birth, this enzyme is entirely absent at the birth of those carnivora which have thus far been examined, such as the dog and cat."[1]

The fifth specimen was treated with neutral gastric solution; there was a thickening, but little or no curdling; in the sixth specimen, the gastric solution used was slightly acid, and abundant curds were produced which, later, shrunk in size and left clear whey. When the milk was treated with a neutral or faintly acid rennet solution, it curdled, more rapidly in the acid condition than in the neutral.

The susceptibility of enzymes to changes in environment or physical conditions is remarkable. Rennet, as Green[2] states, in his most interesting and instructive work, is active in neutral or in faintly acid or alkaline solutions, but the presence of only a little more than the optimum quantity of either acid or alkali speedily destroys the enzyme at the ordinary temperature. Hammarsten found that clotting occurred most rapidly when a faintly acid extract was used, and Ringer has confirmed the observation, care being taken that the acid was added in an insufficient quantity to precipitate the casein. The clotting was not due to the action of the acid on the casein, as the addition of the same amount of acid without the rennet produced no effect on the milk. The study of the actions of acids, alkalies and salts on albuminoids is a most interesting subject, but one that can be considered here only most briefly. It may be of interest to quote the following statement:[3]

> Recent researches have shown that the albumins of the blood have no real acid-combining power or alkali-combining power, as has been thought. In other words, there are no acid-albuminates or alkali-albuminates in a true chemical sense, such as one would liken to the union of an acid with an alkali. Albumins may loosely combine with acids or alkalies in weak solutions without change of properties, but such combinations are apparently more physical than chemical, more intermolecular than interatomic. By the action of strong alkali solutions, the albumins are converted (with the elimination of nitrogen as ammonia and sulphur as alkali sulphid) into modifications called alkali albuminates, but these are clearly the products of disrupted molecules, and radically different from the original molecules. In a somewhat similar manner these so-called acid-albuminates may be obtained with albumins and acids (but without the elimination of nitrogen or sulphur), together with albumoses and, sometimes, peptones; the nature of the products varying with the temperature and strength of the acid used.
>
> The albumins possess some very interesting physical features. The white of an egg (the albumins of which are very closely related to the albumins of blood plasma and its globulins to serum globulins) consists of a frame-work of thin membranes enclosing a yellowish albuminous liquid of light density. Its viscosity is due to its membranes. It is always alkaline in reaction. Its albuminous bodies are mixtures of albumins and globulins together with a mucin. The albumins are soluble in water. On diluting white of egg with water, the globulins separate as a glairy mass, and on diluting it with four volumes of water, the mucin is precipitated. I have observed that if to 25 gm. of the white of an egg sufficient sodium chlorid and water be added to make 100 c.c. of a 0.6 per cent. solution of NaCl, the globulins and mucin are brought

1. Hammarsten, Mandel: "Physiological Chemistry, 1900, p. 260.
2. "Soluble Ferments," 1899, p. 238.
3. England, Joseph W.: "The Reactions of Albumin with Acids and Alkalies," Am. Jour. Pharmacy, 1903, p. 510.

immediately into solution, and a transparent solution results. This is a remarkable fact, especially if organized material has been made to yield a transparent solution by a change in the physical condition of the solvent. If the solution be saturated with sodium chlorid, the globulins are precipitated.

The proportion of six parts to the thousand of sodium chlorid in water corresponds in strength with that of physiologic saline solution, and the valuable therapeutic results following the injection of this solution into the body, in certain pathologic conditions, is apparently due to the fact that the saline solution not only dilutes the poisons in the blood by increasing the volume of blood plasma, but makes this increase under normal physical conditions whereby the globulins and mucin are kept in solution, and not under abnormal physical conditions such as obtain with the injection of water alone. In health, the amount of sodium chlorid in blood plasma is remarkably uniform (six parts to the thousand). So closely is the rule observed that with food containing an excess of sodium chlorid, the latter is quickly eliminated by the urine, and with food poor in chlorids, the volume of blood first decreases, but increases after taking chlorid from the tissues. The secretion of chlorids by the urine is correspondingly diminished.

The next four specimens (Figs. 1, 2, 3 and 4) were made with milk, neutral gastric solution and varying proportions of free HCl (0.1, 0.2, 0.3 and 0.4 per cent.). The curds formed were analogous in appearance to the acid curds, but somewhat gelatinous in consistency. Shaw states that the acid curd is chemically different from that produced by rennet. The specimens shown in Figures 5, 6, 7 and 8 were made with milk, sodium citrate and gastric solution with varying amounts of free HCl (01, 0.2, 0.3 and 0.4 per cent.). The curds were gelatinous and superior in physical appearance to those formed by acids and gastric solution. The specimen shown in Figure 5 is barely curdled; that in Figure 6 is strongly curdled; the one shown in Figure 7 is less curdled; the one in Figure 8 is still less curdled and is about equal to that in Figure 5 in appearance. Each is distinct and characteristic, both in the amount and kind of curd produced. The next four specimens (Figs. 9, 10, 11 and 12) were prepared with milk, sodium chlorid and gastric solution, with varying amounts of free HCl 0.1, 0.2, 0.3 and 0.4 per cent.); and each is remarkable in its similarity of appearance to the corresponding one made with milk, sodium citrate and gastric solution.

In fact, the similarity is so striking that, apart from the chemical evidence submitted, one can hardly resist the conclusions that the physical action of sodium chlorid as a modifier of milk is exactly the same as that of sodium citrate; and that sodium citrate acts as a physical modifier, not as such, but as sodium chlorid, by being decomposed by the hydrochloric acid of the gastric juice. Whether or not the free citric acid formed has any therapeutic influence is a therapeutic question. The percentage of free HCl in healthy nurslings ranges from about 0.1 to 0.2 per cent. In adults the percentage is usually calculated to be about 0.2 to 0.3 per cent., "but these figures are not based on pure gastric juice, as Pawlow and his pupils have shown that the gastric juice of the dog contains 5 to 6 parts to the thousand, and that of the cat an average of 5.2 to the thousand, of HCl (Riasantzen). According to Verhaegen's researches, "there is no doubt that pure human gastric juice from perfectly healthy persons has a higher acidity than 2 or 3 parts to the thousand."[1] These experiments indicate that the addition of sodium chlorid to milk has, apparently, some physical influence on the proteids of cow's milk whereby they are more rapidly permeated by the peptic ferments and digested, and the presence of sodium chlorid may stimulate also the gastric glands and the outpouring of gastric juice.

It is well known that the extractive substances of meat (which contain sodium chlorid), are the most powerful of chemical irritants in producing gastric juice,[4] and that rennin may be entirely absent in gastric atrophy and in certain chronic catarrhs.

Since, as Shaw points out, sodium citrate as a modifier of milk, is of value only when there is protcid-indigestion and vomiting from gastric catarrh, what is more rational to believe, since the sodium citrate is changed into sodium chlorid by the hydrochloric acid of the gastric juice, than that its action is both physical and chemical.

In the use of sodium chlorid as a milk modifier it is essential that only small quantities be employed, as large quantities inhibit the action of rennin (i. e., larger quantities than 1 per cent. of NaCl), and of pepsin i. e., larger quantities than 0.5 per cent. of NaCl).

The remaining four specimens (Figs. 13, 14, 15 and 16) were mixtures of milk, cereal decoctions, with neutral gastric solution and varying amounts of free hydrochloric acid (0.1, 0.2, 0.3 and 0.4 per cent.). Mechanically, the casein in these mixtures is very much better attenuated than with the salines; being uniformly in fine flakes and diffused through the liquid. Doubtless, sodium citrate or sodium chlorid can be added to these mixtures, if desired, and used in the conditions indicated.

In all the specimens made, the milk (25 c.c.), etc., was digested on a water-bath at a temperature of 40 C., 0.4. c.c. or eight drops of the gastric solution being added, and the mixture heated for five minutes.[5]

In conclusion I would express the opinion that sodium citrate, which is a neutral salt, has no decomposing action on calcium-casein in the cold, but that it does exert no important physical influence on the casein of milk; that, when the citrated milk is brought in contact with the gastric juice, the sodium citrate is decomposed into sodium chlorid and and that sodium chlorid has important physical, chemical and therapeutic properties in the digestion of the proteids of cow's milk, more important, probably, than has been hitherto believed. Whether the free citric acid formed has any more important therapeutic value than the hydrochloric acid of the gastric juice (stimulated in production by the presence of the sodium chlorid) would seem to be very doubtful.

4. Verhaegen: "La Cellule," 1896 and 1897.

5. The same lot of milk was used for each test, and the most striking result of the test was the similarity, in appearance, of the different specimens of the same acid strength, except those made with the cereal decoction; that is, the curds became progressively finer as were used, respectively, hydrochloric acid, gastric solution and acid, sodium citrate, gastric solution and acid, and sodium chlorid, gastric solution and acid. With the cereal decoction, gastric solution and acid, the results were very different in that the curds were uniformly fine irrespective of the acidity, and they were less bulky, showing the largest degree of peptonization, a result doubtless brought about by the extreme fineness of the curd, which permitted more ready penetration by the ferments and more rapid action.

Field for Art in Medicine.—Béliard of Paris calls attention to the lack of modern, attractive pictures dealing with medical subjects and suitable to hang in a physician's anteroom or elsewhere. Every one is tired of the classic Rembrandt's "Lesson in Anatomy" and the like. He suggests that here is a promising field for aspiring artists to paint subjects that appeal especially to physicians. Rich men would buy the originals, while the poorer medical men would be content with reproductions.

PUBLICITY AS A FACTOR IN VENEREAL PROPHYLAXIS.*

PRINCE A. MORROW, A.M., M.D.
NEW YORK.

The association of the idea of publicity with a class of diseases whose distinctive peculiarity is privacy, may seem at first glance somewhat incongruous. Venereal diseases are the diseases which above all others are concealed from public observation; both social sentiment and the code of professional ethics have always protected them from exposure. The motive for concealment is emphasized by the element of shame with which they are invested by popular prejudice, from the erroneous idea that they have their exclusive origin in licentious indulgence. In the popular conception they are essentially *les maladies rèvelatrices,* affording proof positive or presumptive of immoral relations.

Bearing these distinctive traits of shame, secrecy and immorality it is perhaps not surprising that the conventional attitude toward this class of diseases is the very antithesis of all that is implied by publicity. The public mind is so imbued with the idea of the essential privacy of venereal disease that any suggestion of sanitary control is resented as an invasion of the private rights of individuals.

While it may be true that an individual has the right to use his own body as he pleases, even in the contraction of disease, yet to speak of any infectious disease as private is a contradiction in terms, since every bearer of contagion is a possible source of danger to others. If venereal disease were private in the sense of being always limited to the individual who contracts it by voluntary exposure, the case would be different; unfortunately venereal infection from its capacity of expansion, its morbid irradiation through family and social life, its transmission in full virulence to the offspring and its consequent injury to the productivity and vitality of the race, becomes transformed into a social danger of the greatest magnitude and against which society has the right to protect itself by means of every order.

VALUE OF PUBLICITY.

We may first inquire into the value of publicity in general, and its special adaptation to the prophylaxis of the class of diseases under consideration.

Publicity has come to be accepted as a sort of panacea for all social ills. Recent developments have demonstrated its remarkable value in the correction of certain public, political and commercial evils, especially those which are based on mystery and secrecy. The essential condition of the existence of these evils is the ignorance of the public. It has been found that the best remedial measure is to turn on the light of publicity, and the result shows that there is more corrective force in this enlightenment than in any laws which can be enacted.

From an examination of these abuses it appears that whatever may be the motives which prompt to concealment, the methods by which they are rendered possible are practically the same and their result is to hoodwink the public. One or two specific illustrations may be cited: The methods by which certain great commercial trusts, the oil and beef trusts for example, have been enabled to crush competition and to reap enormous profits, have been through a system of secret rates, of blind billings, of rebates through unlawful combinations with the railways and concealed from the public by a deceptive system of bookkeeping and a fraudulent balance sheet.

The evils brought to light by the insurance investigating committee were made possible by the methods of false entries, by charging to the general expense account or to some supposititious fund (as "the yellow-dog fund"), moneys of the policy holders which had been expended for bribery, corruption or campaign purposes. That these methods were clearly wrong and entirely indefensible is evident from the fact that simply exposing them, was quite sufficient to secure their prompt and unsparing condemnation by the public, and has covered with disgrace those responsible for these evils.

It is to be noted that the men who profited by these secret methods sought to justify them on the grounds that they were conventional and sanctioned by business usage. But exposed to the light of day and measured by the strict standard of business probity, they were found to partake of the nature of dishonesty or crime.

The same formula of mystery and secrecy is practiced by the "patent-medicine" and proprietary medicine trusts. The public is duped by the false branding of goods and by false claims fortified by false certificates of their value. Enlightenment of the public as to the actual composition of these nostrums would at once depreciate their commercial value, and that is why the manufacturers so vigorously fight for secrecy.

MAGNITUDE OF THE VENEREAL EVIL.

We come now to the consideration of an evil which is patriarchal in comparison with these modern evils of mushroom growth. Venereal infection furnishes the most conspicuous example in social history of an evil which flourishes in disguise and darkness and which owes its chief potentiality for mischief to the very obscurity to which it has been relegated by traditional prejudice.

The venereal evil vastly overshadows these modern evils in magnitude and significance as a social danger. The commercial evil affects only a limited class, the venereal peril affects the interests of the race; the one involves chiefly monetary interests, the other involves the health and lives of human creatures; the former threatens business probity and fair dealing, the latter is a menace to the physical and moral welfare of society.

Venereal infection stands as the prototype of evils made possible by ignorance of the public and we can not fail to be impressed with the perfect parallelism in methods employed for its concealment with those responsible for commercial evils. While the object or end in view is different, the methods are similar and the result identical, so far as the public is concerned.

METHODS OF ENTERING THESE CASES IN HOSPITALS.

Our system of medical book-keeping, as exhibited in hospital records, health reports and vital statistics, is not free from misleading entries. A convenient and somewhat elastic medical nomenclature lends itself to this policy of concealment. A vast number of morbid conditions which should be charged to venereal infection are entered under some non-compromising name which does not indicate its real nature. Disease directly caused by gonorrhea and in which the gonococcus may be identified as the pathogenetic agent, are entered in our hospital records as purulent ophthalmia, arthritis, endocarditis, endometritis, salpingitis, peritonitis, etc. Diseases in which syphilis is the essential etiologic factor are entered as tabes, paresis, paralysis, aneurism, etc. These

* Read in the Section on Hygiene and Sanitary Science of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

diseases plainly bear the image and superscription of syphilis, but we do not render to Cesar the things that are Cesar's.

The enormous debt created by venereal infection and which humanity must pay in suffering disease and death, is charged to the expense account of general disease. The balance sheet of venereal morbidity and mortality presented to the public in the annual reports of our hospitals, in the reports of the boards of health and the bureau of vital statistics, the only documents accessible to the people, does not correspond with what physicians know to be the true pathologic balance sheet of venereal infection.

The report of the Committee of Seven in New York disclosed the fact that it is not possible to gain from our hospital records or other sources any accurate statistics of the extent of venereal infection in that city. This report states: "We find records of cases, many thousands altogether, in which the sequelæ of gonorrhea and the systemic manifestations of syphilis are received and treated in hospitals but are entered under names which are not recognized by the laity as indicating a venereal origin."

Thus for example: "In one of the eye hospitals there were 136 cases entered as 'purulent ophthalmia,' in all of which the gonococcus had been identified by bacteriologic examination as the pathogenetic factor. In the same hospital there were 38 cases of interstitial keratitis, indubitably of syphilitic origin, but not so indicated on the records," etc.

It would be easy to multiply specific examples illustrating this practice, but the fact is well known that the policy of the governing boards of our hospitals is to exclude all mention of venereal disease from their reports.

The object is not so much to protect the individual from the odium attaching to a shameful disease as to protect the hospital from the reproach of treating such cases. In the out-patient department, for example, the diagnosis of venereal disease is plainly entered as gonorrhea or syphilis, but if the patient is admitted to the hospital the same disease must be entered under some respectable alias which does not betray its venereal origin.

In private practice the concealment of every source of venereal contagion takes on the character of a peremptory obligation imposed by the precepts of the professional code. In the presence of any other infectious disease, the cardinal consideration is to prevent the infection of others, but in the presence of venereal disease, the higher duty of protecting others from infection falls below the duty of protecting the individual from exposure.

It is well known that the health boards, the official representatives of the state, which are charged with the control of all contagious diseases dangerous to the public health, ignore the existence, even, of this class of infections.

This exposure of methods by which it is rendered impossible to obtain accurate statistics of venereal morbidity and mortality which might serve for the education of public opinion is not intended as a criticism, still less as a censure of the motives which underlie the practice. These motives from the professional point of view are not only defensible, but commendable and claimed to be in the interests of the social order. But, irrespective of motive, this policy of concealing a grave peril to the public health is opposed to the first principles of sanitary wisdom. Concealment has ever been the most powerful ally of infectious disease.

It would be just as insensate to endeavor to prevent gambling when the officers of the law carefully concealed every case coming under observation and the courts ignored its existence in the community.

DANGER OF CONCEALMENT.

It may be affirmed that there is no factor of danger to the public health which is so utterly ignored, no peril to society which is so systematically covered up and concealed as venereal infection. Clearly, publicity, applied to venereal diseases, would mark a revolution in social sentiment, an innovation on traditional custom and an entire change in the spirit and practice of the medical profession.

Under these circumstances, is publicity desirable? It may be positively affirmed that publicity is not only desirable but absolutely indispensable to the successful working of any scheme for the prophylaxis of venereal diseases.

It is not necessary to violate the time-honored principles of the professional code in enlightening the public, —the medical secret is confined to the individual—it does not extend to the collectivity.

The aggregate of venereal diseases and its danger to the individual and to society may be exposed without referring to particular cases. Notwithstanding the defective system of recording cases physicians can read between the lines and form an approximate estimate of the extent of venereal infection. This pathologic balance sheet should be translated into intelligible terms and spread before the public so that the educational power of the truth may have full force and effect.

INDIFFERENCE OF THE PUBLIC AND NECESSITY FOR PUBLICITY.

It may be claimed that the public is indifferent, even averse, to this enlightenment. Less than ten years ago the public was indifferent to the dangers of tuberculosis, but it was only necessary to correct the ignorance, the cause of this indifference, and public apathy was at once transformed into a lively, active interest. The public was indifferent to the insurance and other commercial evils referred to until the advent of that pioneer in the reform of modern abuses who bears the inglorious title of the muck-raker.

Now the rôle of muck-raker is considered neither dignified nor desirable, the work of delving in the filth of human weakness and depravity is unsavory, even repulsive; it can be undertaken only from a sense of duty, but the muck is there and needs to be raked. It is not confined to the terrain of prostitution where it originates—it spreads beyond the purlieus of vice and invades the habitations of virtue—even the sanctuary of marriage affords no safeguard against its soilure. It collects about the very sources of human existence, it pollutes the fountains of life; it befouls the sacred function of maternity; its defilement clings to the innocent infant ushered into the world. It is especially needful that the muck of venereal infection should be cleared away from marriage, the breeding place of humanity, so that the springs of heredity may be kept pure and children no longer be deprived of their rightful heritage of vitality, health and vigor.

The public should know that the introduction of venereal infection into marriage constitutes its chief social danger and at the same time makes up the saddest chapter in the martyrdom of women.

If the medical profession should share with the people the knowledge it possesses of the frequency of such in-

fections and their terrible consequenee to the health and lives of innocent women and children, of the havoc wrought in the home and family, an awakened public sentiment and an aroused public conscienee would no longer tolerate such social infamies. So long as this foul ulcer in the flank of society is covered up and concealed, it will continue to fester and to send its infection through every part of the social body. It must be exposed and laid bare in order to be cured. The medical profession should be deterred by no false sentiment or fastidious nicety from engaging in this work of exposure. The end not only justifies, but dignifies the means.

IS PUBLICITY PRACTICAL.

We may now inquire whether publicity is practicable. What are the most available ways and means of enlightening the public?

At first glance the indications do not appear reassuring. There is a complicity of silence on the part of all the educational agencies of human society in relation to everything pertaining to venereal infection. The ordinary channels of communication with the public—the newspaper press, popular literature and other means of general enlightenment—are closed to this knowledge. The mention even of these diseases is interdicted by the best forms of good society.

Social sentiment holds that it is a greater violation of the proprieties of life publicly to mention venereal disease than privately to contract it. But a sentimental objection based on conventional prejudice affords no valid reason for silence on the part of the medical profession. Sentiment has no place in the counsels of preventive medicine—when sentiment is opposed to sanitation it must be disregarded. Now as to ways and means: It is evident that we can not create educational agencies, we must utilize those already existing.

First of all, we must recognize that the public can not be reached to any effective extent so long as we discuss these questions, so vital to the interests of society, behind closed doors; they must be brought into the open, *coram publico*. John Stuart Mill declared that: "the diseases of society can no more be checked or healed than those of the body without publicly speaking of them." Not only must we speak openly, but we must call things by their right names; we must speak plainly but sanely, clearly but cleanly, scientifically but simply. There is no need of sensationalism, the plain unvarnished truth is sufficiently sensational, without embellishment or exaggeration. This plain speaking should be devoid of any quality of offensiveness, it should be tempered by tact, discretion and a sense of the fitness of things.

SPECIFIC METHODS OF PUBLICITY.

Time will permit only the briefest reference to specific methods of publicity. Since the newspaper press, the most powerful of all agencies of publicity, is not available, at least for the present, we must have recourse to other agencies of popular enlightenment—pamphlets, tracts, conferences, lectures, etc. Meetings organized by medical societies for the free discussion of these subjects and to which the public is invited constitute a most valuable means of propagandism.

Another valuable agency in this educational campaign would be the establishment of a journal of popular medicine, devoted to the study and prevention of all communicable diseases, especially those spread in the ordinary relations of social life. A knowledge of the source, the means of dissemination, the modes of contagion and the measures to be taken to prevent the spread of these diseases, should be given in simple language, intelligible to laymen. In such a publication the study and prevention of venereal infection would enter naturally as one of the most important of the group of communicable diseases. Such a journal has already been projected and under auspices which, it is hoped, will insure success.

The brief experience of the American Society of Sanitary and Moral Prophylaxis in this educational work has shown that thousands of serious-minded members of the laity are already thoroughly aroused to the importance of this work. The opportunity seems to be propitious for inaugurating a general campaign of education; the public mind is receptive and ready to assimilate this knowledge. We should take advantage of the current of social reform which is now sweeping the country and which sets so strongly in the direction of publicity in all matters affecting the interests of the public.

66 West Fortieth Street.

THE DUTY OF THE MEDICAL PROFESSION TO THE PUBLIC IN THE MATTER OF VENEREAL DISEASES, AND HOW TO DISCHARGE IT.*

W. J. HERDMAN, M.D., LL.D.
ANN ARBOR, MICH.

Ignorance is the condition which alone makes slavery and oppression possible.

This applies to the tyranny of disease quite as much as to the unjust dominion of man over man. Nothing should stand in the way of emancipating mankind from the tyranny of disease and especially of those diseases that are most destructive and wide-reaching in their effects.

Physicians alone know the truth as to the widespread ravages of venereal diseases and on them rests primarily the duty of disseminating that truth so effectually that the way of escape from their dire effects may be made plain; and adequate safeguards for the protection of the innocent may be created.

WHERE AND HOW SHOULD THIS TRUTH BE MADE KNOWN?

So self-evident are the three leading propositions that head this paper that they need no discussion. The consensus of medical opinion the world over declares that the time is at hand for adopting such measures as will be most effective in arresting the hideous ravages of syphilis and gonorrhea. In order to accomplish this we must go to the root of the matter and, throwing aside all false barriers of prudishness, mock modesty and misguided sentiment, build up rational and enduring defenses such as a right and sufficient knowledge of the nature of these diseases and the modes of their propagation alone affords. It is most assuredly imperative, if this knowledge is to be placed where it will do the most good, that it be given to those who are in the greatest danger from such diseases, and in time to serve as a preventive.

The members of the medical profession throughout the civilized world have at length awakened to a sense of their duty as guardians of the physical welfare of mankind in its broader sense, not only in respect to the cure of disease, but also as to the prevention of it.

---

* Read in the Section on Hygiene and Sanitary Science of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

The futility of attempts to check the ravages of many diseases by confining effort solely to the individual victim of them, the physician has discovered and made so apparent to all that society claims and exercises the right to regulate the conduct of its members in so far as public sanitation and private sanitation may require it. This principle is now so well established that the pathway for its application, in any direction, needs but to be made plain and society will follow it, no matter what the obstacles. Long-established custom, prejudice, sentiment, all will go down before the more fundamental right of self-protection from real and grave danger.

In initiating a propaganda, therefore, against the ravages of venereal diseases the medical profession is but discharging its proper duty and showing itself worthy of its high mission. That mission in this instance is to disclose the pathways of invasion of these formidable enemies of man and to make plain the ravages they commit, leaving it to the parent, the teacher, the pastor and the legislator to devise the proper means for protection and defense.

But in order to carry on the campaign effectually there must be no dissension in the ranks of those who enlist to fight its battles. All should be agreed as to the fundamental truths which they are seeking to establish, otherwise the warfare will be a half-hearted one.

Since it has fallen to the medical profession to take the initiative in enlightening the public regarding the dangers that surround and threaten them from the prevalence of these diseases, the information furnished should be as accurate as possible. All statements from medical sources made with a view of stimulating the public to action should receive critical supervision and go forth stamped with recognized authority.

MISCONCEPTIONS AND FALLACIES.

At the very foundation of this proposed structure lie certain quicksands which must be removed before we can build securely.

These consist of certain misconceptions or fallacies which have a strong hold on a large number of minds, both medical and lay, and which until they are removed will exercise a retarding if not a reactionary influence on the best endeavors put forth to create enduring barriers against these evils.

The first of these fallacies is the medical or physiologic one that continence in sexual life is in any way injurious to him or her who practices it.

The second is the social one that permits one standard of recognition for the man and another for the woman who has fallen from virtue.

And the third is a fallacy of method, built on a misconception of the factors entering into the problem, and consists in a prevalent belief that a breach of moral law with its evil effects both moral and physical can be repaired by any system of legal restraint or license directed to the physical effects alone, especially since such legal control must of necessity be both partial and incomplete.

It is scarcely to be expected that much will be accomplished for this new movement by any whose minds are clouded by one or other of these misconceptions.

Such beliefs are not consistent with high ideals of manhood and womanhood; and only those imbued with such ideals can be relied on voluntarily to sacrifice personal comfort and convenience and to initiate a contest against the most formidable forces for evil that man has yet encountered.

METHODS OF DISSEMINATING KNOWLEDGE.

It must be a most gratifying and hopeful sign to those who hold dear the honorable traditions of the medical profession and expect for it a larger measure of usefulness to humanity in the future to see its leading members everywhere giving voice, influence and personal effort to check the remote causes of disease, being prompt to enter into association and to adopt the most effective measures to attain this purpose.

The more thorough the organization the sooner will we reap beneficial results, and the present machinery of the American Medical Association affords an excellent vehicle for prompt and efficient action in getting the needed knowledge to the public, of all ranks and conditions of life, in the most effective ways. First, as has been proposed, there should be a standing committee of the American Medical Association as a central nucleus charged with the duty of collecting statistics, gathering and disseminating campaign literature, keeping in affiliation and co-operation with foreign organizations of similar purport, suggesting and aiding in securing needed legislation.

Each state medical society should have its standing committee charged with corresponding duties, and so on to the county societies.

Through these county organizations, or the councilor district organizations representing them, the medical profession the country over with great force and effectiveness can bring the gathered information directly to the knowledge of the people through the medium of public meetings judiciously arranged.

It will soon be discovered by the committees chosen to do this work what persons are the best fitted to present tactfully and effectively to the lay mind the truths that we need to impart. And the leaders in philanthropic movements in each community can be entrusted with the duty of devising the plans for disseminating this knowledge best suited to their local conditions.

Thus a host of capable workers will soon arise in each state, and in every councilor district of the state, who can be called on to lend their aid as circumstances require their services.

There are many suitable channels already at hand for the distribution to the public of the facts they need to know concerning these diseases.

It is the proper function of our state and municipal boards of health and local health officers to disseminate such information, and while there has been a hesitancy on the part of these officials to initiate a campaign of instruction on a subject which respectable people have hitherto dared mention only with bated breath, with the sanction and backing of the medical profession these officers can be counted on to assume the duty.

By this means circulars of information and instruction can be distributed and state laws and municipal ordinances, designed to limit the spread of such diseases and to check their evil effects, can be kept constantly before the public mind so as to insure their enforcement. The medical inspection of schools and of school children, with the precaution it creates against the spread of contagion of these and other diseases and the enlightenment it gives to parents and teachers as to the nature of these diseases among others, is another most effective channel of instruction.

The city physician and sanitary inspector, when well chosen, are in a position to aid greatly in the work by

bringing such sources of contagion to the knowledge of those whose duty it is to enforce the law and ordinances designed to suppress them.

Members of boards of education, superintendents, principals and teachers of schools, both public and private, should all be well informed as to the nature of these diseases and the dangers which attend them and their interest and co-operation secured in efforts to check their ravages.

Effective work can be done through church organizations, young peoples' Christian endeavor societies and mothers' meetings.

The young men's and young women's Christian associations are admirable channels for the spread of such knowledge, and the possibilities which the Salvation Army has for reaching these sources of evil directly and effectively must not be overlooked.

In manufacturing, commercial and industrial cities where large numbers of men and women are employed, both young and middle-aged, the interest of employers can usually be enlisted to afford an opportunity for such instruction to be given when it is not possible for these people to be reached through other channels.

In all of this work the physician who knows the facts and can speak from experience must take the lead, and it is in work such as this that the woman physician, of the right sort, will find a sphere of activity and great service peculiarly her own, for separate instruction to the sexes, both young and old, will need to be given plainly, but tactfully, and by those who have seen at close range the dangers they portray and whose word carries conviction because spoken with authority. Broad, disinterested benevolence, such as rightly represents and adds dignity to a liberal profession, should characterize the persons chosen for this work. It is not for the self-seeker nor the unsympathetic, but for those who know what it means to labor for the unperishable riches, and of these workers the medical profession has an abundant share.

In the brief sketch here given I have but presented in outline the plan of campaign already adopted in the state of Michigan. The State Medical Society of that state created, a year ago, a standing committee charged with the duty of bringing to the knowledge of the public the facts that need to be generally known, and referring to the origin, spread and dangers of venereal diseases. This committee was authorized to enlarge its number to twenty, many of whom are chosen from the laity. One most successful meeting has already been held in Detroit, at which it was fully demonstrated that the most influential citizens are quick to respond and follow the lead of the physicians in this work. From this committee of twenty, subcommittees on publication, education and legal enactment have been organized and are at work. On these committees are physicians, lawyers, ministers of several denominations, business men and women devoted to philanthropic and charitable undertakings. There is no question but that which we have demonstrated, through the work of this organization in Michigan, serves but to indicate the general temper throughout America on this most important matter, and it needs no prophet to foresee how fruitful of good results such a systematic and thorough plan of enlightenment against this grave evil will soon be able to accomplish.

THE DUTY OF THE STATE TOWARD VENEREAL DISEASES.*

HENRY D. HOLTON, A.M., M.D.
BRATTLEBORO, VT.

In discussing the duty of the state in relation to both syphilis and gonorrhea, we must recognize that, under the present status of public opinion, the state can accomplish very little, either by the enactment of new laws or by giving additional authority to boards of health; that before we seek aid from the state there must be created a public sentiment which will sustain action by authority, but there must also be a strong demand for state interference.

This can only be brought about by an educational movement, which shall begin in the home and continue in the high and preparatory schools and college.

The parents should explain how the race is perpetuated, the sacredness and responsibility of the relations of parents and children, the great moral and physical dangers that attend on the abuse of those functions, and that continence is not incompatible with health. The teacher or physician should enlarge on these lines and point out the diseases that result from impure intercourse; that all clandestine embraces are dangerous, as the individual, male or female, who enters into such relations, be it clandestine or otherwise, will sooner or later become infected; and either of the diseases thus acquired are of the most serious character, of long duration, often followed by the most disastrous results, ending in death or chronic invalidism, and many times by deformity. It is quite possible that the profession should first be educated along the line of duty. Physicians are familiar with the loathsome and disastrous nature of venereal disease; of the danger of its communication to innocent persons; in fact, of the great menace it is to our civilization. Yet in the past we fear that it has been regarded too lightly by some; others have turned away such cases with disgust. In both cases, the great duty of attempting to stay its destruction and progress has not been recognized or at least acted on.

In countries across the sea statistics have been gathered, showing the prevalence, how provided for, and the means used to prevent its spread. In a certain way, these are of value to us, yet the difference of our form of government and social conditions is such as seriously to impair their usefulness when we attempt to draw deductions or to formulate regulations for their control.

The information necessary to carry on successfully the work of prevention should be the first work of any organization that has in view the control of these diseases.

Without going into details it will be recalled that in a joint meeting of this section and that on cutaneous medicine, in 1904, a committee reported on this subject, recommending the sending to every physician a request for certain statistical information, which it was hoped might be useful in the further consideration of this subject.

These communications received the approval of the state and provincial boards of health, and they are here inserted:

* Read in the Section on Hygiene and Sanitary Science of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

VERMONT STATE BOARD OF HEALTH.

OFFICE OF THE SECRETARY, BRATTLEBORO.

Dear Doctor:—The enclosed leaflet is issued in the interest of prevention of venereal diseases. It is for you to give each patient who consults you suffering from either gonorrhea or syphilis. It has been prepared so as to be concise and in language to be understood by everyone. This, we hope, will cause it to be read by those to whom it is handed. It will introduce the subject of prevention, thus enabling you to give your patient further information of the extent of this scourge. Additional copies of this leaflet can be had on request.

It is estimated that 80 per cent. of all deaths from pelvic diseases in women are due to gonorrhea. Twenty per cent. of all blindness is due to gonorrheal infection of the newborn. Fifty per cent. of all involuntary childless marriages are caused by gonorrhea of the female organs of generation, of which 45 per cent. are due to marital infection by men. In this country it is impossible to quote statistics, as they never have been gathered. The committee of fifteen estimated that there were annually 200,000 cases in New York City alone. In Prussia, where they have more reliable data, it has been stated that typhoid fever represents a yearly loss of 8,000,000 marks, while the increased expenses and decreased income caused by venereal diseases amount to 90,000,000 marks annually, an amount which exceeds that caused by tuberculosis. But the financial loss is of minor importance compared with the enormous social changes and consequent social misery.

In view of these startling facts, which indicate the increasing danger to our people, will you not, my dear doctor, aid your state board of health in gaining reliable statistics relative to these diseases, by returning to the secretary each year the following blank with every question answered?

Cases of gonorrhea observed during the year 190.. Male.... Female.... Married.... Single.... Number having children.... Number without children....

Cases of syphilis.... Male.... Female.... Married.... Single .... Number having children.... Number without children....

CIRCULAR OF INFORMATION ADOPTED BY THE CONFERENCE OF STATE AND PROVINCIAL BOARDS OF HEALTH OF NORTH AMERICA.

Issued by the State Board of Health of Vermont.

We hand you this leaflet believing that you would not willingly communicate your disease to some innocent person.

Many fail to comprehend the exceedingly disastrous results that often follow these diseases. Many cases of blindness, complete disability, and not infrequently death results from them. Gonorrhea is one of the most frequent causes of diseases peculiar to women. So serious a menace have these diseases become to the public health that the medical profession and sanitarians in all countries have become alarmed; and are advocating measures for their prevention.

Syphilis (or pox) is especially a disease from which innocent persons may suffer, as it usually produces sores in the mouth or on the lips, hence may be conveyed by kissing, drinking from the same cup, or using anything which has been put to the lips or into the mouth of one affected by the disease.

These diseases are often communicated when the patient thinks he has recovered. Hence marriages contracted at this time of the disease result in much unhappiness, and often in the death of the wife. To protect yourself and others, we earnestly advise the following.

IN THE INTEREST OF PREVENTION OF YOUR DISEASE.

What to do and what not to do, to get well and to prevent giving your disease to any other person.

Follow strictly the advice of your doctor, use no other treatment.

Remember that it takes a long time to entirely recover.

Carefully wash your hands with soap and hot water whenever you handle the private parts.

Do not have intercourse and avoid all sexual excitement until your physician says you are completely cured. Be especially careful not to rub your eyes with your fingers.

Do not allow any person to use any cup, glass, spoon, fork or anything that you have put in your mouth.

Do not kiss anyone or wipe the face of a child with a handkerchief you have used. Always use a separate towel. Burn all cloths or cotton soiled by discharges.

It was then considered desirable to send the circular of information to the principals of preparatory schools and to the presidents of all colleges, with a request that they call the attention of their medical officer to the subject, to the end that it should be prescnted to the students in their respective institutions. The committee not having funds to defray the expenses of printing and postage, applied to the trustees of this Association, asking that the printing office of the Association aid them, but were refused this assistance. So far as we are informed, these circulars have only been sent out in Ohio, Florida, Minnesota and Vermont.

If all cases were reported to boards of health as other communicable diseases are (without names), so that we could arrive at a fairly accurate estimate of the whole number of cases occurring, the number of cach, the manner acquired—whether innocently or otherwise—and the effects on procreation, we should have a foundation on which to base recommendations for prevention. A more accurate recognition and division of the manner of communication, whether from the ordinary courtesan, clandestine embrace, or from entirely innocent sources, is also of importance.

THE WAR AGAINST THE VENEREAL DISEASES IN FRANCE.*

THEODORE TUFFIER, M.D.

Professor Agrégé of the Faculty of Medicine of Paris; Surgeon to the Hospital Beaujou,

PARIS, FRANCE.

The question of venereal prophylaxis is the order of the day in our country; from all sides medical men, statesmen and even literary men are combining their efforts to contend against this scourge. New measures are being studied and our *Société de Prophylaxie,* composed of internalists, surgeons, obstetricians, the most eminent members of the school of law and the principal police officials, meets once a month to consider important matters relative to the subject. This society has been productive of definite results.

The system in use in France is composed of two separate branches—absolutely different—that is, the police and the medical service. Government surveillance is exercised in reference to houses of prostitution as well as to the so-called free prostitutes who are registered at police headquarters. The inmates of all houses are examined once a week, the others are obliged to report to the examiner once in two weeks. A card is given them which shows the absence of every venereal symptom at this visit, and is in effect an authorization to continue their calling. There is also clandestine prostitution, the object of special consideration by the police, which constitutes, strange to say, a third of all diseased women. When arrested, these women are kept in a special hospital—Saint Lazar—until cured.

This system which has been in existence for numerous years is now violently attacked. It is said that an examination made so infrequently is necessarily illusory as regards any benefit. It is claimed that prostitution should be free. The dictum has gone forth: "A free woman on a free sidewalk." The abolitionists in France are represented chiefly by an extraparliamentary constituency. Everybody believes that the system should be modified, and various modifications are being studied.

ACTIVE FORCES IN THIS WORK.

Among the most active forces in the study of this prophylaxis and the practical methods best adapted for its realization must be mentioned the collaboration of Professor Fournier, the world-renowned syphilographer, and Mr. Brieux, a dramatic writer of great talent. They have already done much for the cause, one by his authoritative writings and the other by his theatrical representations, of which "Les Avariés" has achieved a universal recognition. Their program is this: To tell everybody regarding the existence and the danger of syphilis and to increase the facilities for treatment. The education of the people regarding venereal matters is effected by an active propaganda. A series of conferences is established wherever men are grouped together. In the army and navy this is done officially by the medical officers. In great industrial centers, which are the hot-beds of syphilitic propagation, instruction is given

* Translated by Denslow Lewis, M.D., Chicago.

* Read in the Section on Hygiene and Sanitary Science of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

and thousands of pamphlets are distributed. For example, "The League Against Syphilis," "The Social Danger of Syphilis," "For Our Sons When Eighteen Years Old," etc., are short articles of some thirty pages, capable of being read and understood by all who are ignorant of medical terms. More than 20,000 copies of these pamphlets have been distributed.

A propaganda of this kind is the only means of reaching the man in France, because here no ordinance, no law can affect one who is tainted (avarié). The soldiers and sailors alone are subject to military regulations and can be placed in a position where they can do no harm until they are free from disease. Unfortunately, the fear of this enforced sequestration causes much dissimulation by all kinds of methods and favors a continuance of infection for a protracted period before the men are finally interned.

It is the woman alone and chiefly that reglementation can affect, but reglementation in her case must, above all things, be humane and legal. If it is impossible to arrest a woman known to be syphilitic, unless she solicits, it is in our power to limit the deplorable effects of her calling by decreeing that no woman shall publicly solicit patronage unless she can show a certificate of health signed by some physician. Unquestionably there is wide latitude in this statement, "some physician," but the responsibility attested by a signature under these conditions is such that we do not believe it is ever given without a full knowledge of the facts.

The propaganda against syphilis, the partial reglementation, these are the first two elements of the new program. The third consists in the increased facilities for treatment, and in this connection there has been considerable discussion as to the advisability of increased venereal therapeutics in special hospitals or in a special service in all general hospitals. The first fact of importance, on which all are agreed, is the recognition of the necessity of more frequent examinations. Fournier and Brieux have insisted on an examination night and morning every day, including holidays. Practical experiments at Saint Lazar and the Hopital du Midi have shown good results. The evening examination, which is for the benefit of those employed during the day, that is, the great majority, results often in the discovery of an increased number of diseased women who are at once removed from the possibility of pursuing their calling, and thus diminish the chance of contamination. A second fact, very generally acknowledged, is that all physicians who make these examinations must be venereal specialists. Such practitioners alone bring to each examination a personal interest which ensures an adequate, competent and necessary understanding of each individual case.

EXAMINING STATIONS.

As regards the location of examining stations, most medical men believe that in connection with all special and general hospitals there should be a dispensary—a special service—devoted exclusively to the venereal diseases.

Such is the new plan, proposed, discussed, elaborated and still the subject of study, which represents in France the result of our efforts against venereal infection. It is only a project, but by its simplicity and its logic it seems destined to rally to its support all of our voters and to secure the approbation of our government. "The right of the question is one of social protection and interest."

WHAT SHALL WE TEACH THE PUBLIC REGARDING VENEREAL DISEASES?*

ALBERT E. CARRIER, M.D.
DETROIT.

It seems to me that the answer to this question should be that required of a witness in a court of law, viz., to tell the truth, to tell the whole truth and nothing but the truth.

It has been our custom in the past to tell a part of the truth only in regard to venereal infections, to apologize for not telling the whole truth, and to cover what we did tell with a coloring that has robbed these affections of their appalling nature. An ounce of prevention is worth a pound of cure, and our profession is evidencing this in its efforts for better sanitary methods, better hygiene, the isolation of contagious diseases, and in educating the masses how to avoid contraction of these affections.

The object sought by these efforts is the reduction of the death rate. The enormous sums of money spent to reduce the death rate, one in a million, is considered well expended, while the labor involved and the sacrifice of health and even life are regarded as necessities. Were sanitary and hygienic methods directed solely to the prevention of morbidity, venereal disease would stand first in demanding attention, but to-day there are thousands of centers of infection against which the public has no protection; no measures have been instituted whereby the masses might be instructed in ways to avoid the contagion of venereal diseases, nor that these affections may be contracted innocently; more than this, these centers are ambulatory, traveling from place to place. In outlining any plan of instruction, conditions must be appreciated in order that our efforts may be along lines of least resistance.

The public is made up of individuals of both sexes, of all ages, of all nationalities, of all religions or none, of the educated and the ignorant, of the affluent and the poverty stricken, of the virtuous and the vicious. Different peoples have different viewpoints of chastity, of purity and morals in general, and our methods of teaching the truth will require modifications to meet these different conditions. Illicit intercourse is wrong; probably 999 in 1,000 know that.

While the province of the physician lies in the prevention and cure of disease, there are times when he must enter the domain of morals also, and nowhere will he find better opportunity for teaching morality than in giving advice regarding the sexual apparatus, for here he can teach purity from the standpoint of health, while the spiritual adviser has less influence, because he teaches that the infringements of virtue are punished in a hereafter, an indefinite time and in an existence that is partly speculative.

There is a woful ignorance among the laity regarding the purposes of the sexual apparatus which needs dispelling. We must teach that these organs are not simply for the elimination of waste products, nor for the simple gratification of an animal passion.

We will need spend little time in attempts to prove illicit intercourse wrong, for that is pretty generally accepted, and there are other fields for us to cultivate that are more promising of results.

The hygiene of the generative organs has had little attention until about the age of puberty; up to this period it has been considered a shameful act to call at-

* Read in the Section on Hygiene and Sanitary Science of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

tention to these organs, and the fear has been expressed that there would be danger in so doing, a danger that I can not appreciate. Let us attempt to make respectable the generative organs. I can not see why a child should not be taught the care of the sexual apparatus, as well as the care of the eyes, ears, nose or any other organ. Granted that this instruction is proper, who is to give it and how early in life is it to be given? The latter part of this question can not be answered in months or years, for we all know that different individuals of the same age are in reality of different ages when it comes to the knowledge of the sexual apparatus, depending in part on the natural aptitude of the individual and in part on the environment, but just as soon as these organs are objects of curiosity to the child instruction should be begun.

The first part of the question is easily answered, for the supposition is that parents are anxious for the welfare of their offspring and naturally should be the instructors of their children in their care of the sexual apparatus, and it remains for us to impress on the parents the necessity of their giving the instruction. I well know the objection that will be offered to this statement, but I can assure the objector that if this instruction is not given in this manner improper information will be given by improper instructors. Many cases of venereal infection occur before the age of puberty is reached; some of these might have been avoided had the danger of venereal infection been known.

We must teach that continence is compatible with health. Among his associates the boy assumes to prove his manliness by his ability to use tobacco or liquor. Sexual intercourse is a frequent topic of conversation, and the boy that boasts of a dose is considered a man, indeed. Sometimes physicians have advised the sexual act as a cure for certain conditions by recommending marriage. Such advice is debasement of the sexual function and prostitution of the sacrament of marriage. Patients reasoning on such erroneous advice come to the conclusion that the sexual act is the cure and select a paramour instead of a wife.

While much will be accomplished by early instruction, it will not be general and we have to face a grown-up public that does not know to what extent venereal diseases prevail and we face the necessity for statistical data to prove our assertions. Figures are convincing arguments, but medical figures are often unreliable even when used for diseases that are not shamefully contracted, while applied to the diseases we are considering, having no reports made to health boards, nor having hospital accommodations for those suffering from these affection, reliable data is difficult to obtain.

Venereal statistics should not only give numerical frequency, but should also give attending sequelæ, emphasizing the sequelæ. Statistics that are well within the truth, instead of being overdrawn, that are beyond contradiction, would furnish us with a text-book for our use from Maine to California. Have such data authenticated by the American Medical Association. The public does not realize that syphilis and gonorrhea are dangerous diseases, nor that a lengthened treatment is necessary for their cure; neither does it realize that danger exists of these diseases being contracted innocently. Years ago when gonorrhea was considered simply a local affection, the discharge disappearing, the disease was pronounced cured, and, as this occurred at times very quickly under treatment, the affection was considered trivial by the profession, a belief that the laity soon adopted. Since the discovery of the gonococcus and the difficulty of its destruction our views have changed, but the laity still hold to the belief that a clap is no worse than a hard cold. That a gonorrhea ever causes constitutional troubles, or that it can ever be contracted by the use of napkins, etc., seems to the public absurd. It is entirely ignorant of the sequelæ that follows gonorrhea so often, and the death rate resulting after operations rendered necessary by these sequelæ is attributed to unnecessary surgery. It will require persistent effort to overcome this belief of the people, supported, as it is, by some members of our profession who regard a gonorrhea on the level of a five-dollar bill.

Regarding syphilis, the prevailing impression that, with the disappearance of the initial lesion, the disease has lost its contagiousness, must be combated. The laity know that the disease pursues a long course, but think that the only contagious lesion is the chancre, and the only danger lies in sexual intercourse. The innocent contraction of venereal affections, especially syphilis, tests the credulity of the average layman, and when the statement is made that body contact is not even necessary to catch the disease their credulity is not sufficient for belief.

We must prove these diseases chronic, lasting for a period of years, and during all this period any skin lesion or mucous membrane lesion or the blood of a syphilitic is just as competent to cause syphilis as the virus from the chancre. Warnings must be given against the careless use of places of public convenience, of public drinking cups, towels, combs, etc., and the act of kissing. I think it would be well to teach that all sores are dangerous, warning against contact with them for fear they might be syphilitic.

Another fact that we must emphasize is that it takes a long period of persistent treatment to cure these affections, if gonorrhea is ever cured, and the dangerous sequelæ that are liable to follow cases not properly treated must also be emphasized. The quacks make the work harder for us by their advertisements of their ability to cure these affections quickly and effectively. The majority of the laity know no difference between the advertising charlatan and the honorable physician, and the statement of one has as much weight as the statement of the other. It will be hard work for us to convince the people that the quacks are lying.

The danger of inheritance of syphilis is another fact that must be emphasized. The public has little idea of the enormous number of deaths resulting from syphilis. A bare statement of the fact is too appalling for their belief and we are accused of trying the fright method for our purpose.

If it were possible to clothe syphilis and gonorrhea with a semi-respectability, so that these pathologic conditions could be discussed by the laity as diseases dangerous to life and health in the same manner that tuberculosis is discussed, much would be gained. Syphilis and gonorrhea are so often contracted innocently that the cloak, "venereal," should be removed from them. If we can accomplish this, the death rate and morbidity that result from venereal diseases will be realized by the community and measures will be taken to control these affections.

Another matter that the public needs to learn is the necessity that exists for hospital accommodations for those that suffer from venereal diseases, who not only have not the proper facilities for successful treatment, but who become agents for the spread of these diseases innocently. Those of us that have dispensary experi-

ences know of the difficulties that attend the treatment of these affections when the patient can not be controlled. No general hospital admits venereal cases until the period of contagion has passed. Every hospital should have accommodations for venereal cases. Reporting by health boards of venereal diseases would soon provide hospital accommodation for patients with gonorrhea and syphilis.

Prostitution is the most fruitful source of venereal affections. The public knows this. What we are required to do in this connection is to demonstrate that a certain amount of legal control in isolating the diseased would be of great value. Prostitution will never be stamped out. This we must realize and direct our attention to measures that will minimize the dangers of contagion from this source.

423 Stevens Building.

WHAT SHOULD WE TEACH THE PUBLIC REGARDING VENEREAL DISEASE?*

GEORGE WHITESIDE, M.D.
PORTLAND, ORE.

Let us briefly consider, first, what we do teach regarding venereal disease; second, what deduction the average layman draws from information received, and, third, in what way our teaching may prevent the spread of infection.

As physicians we teach the public by precept and by example; we do not give systematic lectures or demonstrations to laymen; we give brief and fragmentary personal talks to our own sons (generally not to our daughters); to the children of our patients occasionally, but generally after the acquirement of disease and not before; very occasionally a few lectures are given to young men as members of a college or school or church, but never, to my knowledge, to young women. Now and then one learns of a class of men being instructed in methods of prophylaxis. That is all, except such fragmentary individual instruction as the physician gives to his venereal patients. What can we expect the public to learn from us in such a variety of unconnected and unsystematic ways?

I think we may expect just what we know to be the results. They may be summarized as follows:

The average boy is wide awake, bright, of inquiring mind and credulous. The average young man is his instructor and teaches him that gonorrhea is no worse than a cold in the head, that chancroid is due to filthy habits and can be entirely avoided by bathing and that syphilis is a rare and loathsome affection which is absolutely incurable.

We know these to be in brief, the opinions held by thousands of intelligent laymen and we know them to be from first to last untrue.

The average girl knows nothing of venereal disease. When she becomes a young woman she either remains in this blissful state of ignorance or, if she becomes intimate with low companions, she is taught by them to believe that gonorrhea is not virulent in the female, that its worst consequence is leucorrhea. With regard to chancroid and syphilis she believes the same misinformation given above.

We know these versions of the story to be also untrue to fact. These beliefs are the result of lack of intelligent instruction. On the other hand of how much benefit would it be to humanity to know the truth? I believe very little, indeed. If people were taught that gonorrhea is sometimes mild, transient and easily cured and at other times severe, protracted and difficult to cure; where would the advantage be? Would any given individual hesitate longer before exposing him or herself to infection?

If people believed syphilis to be, under careful treatment, mild and almost certain to be cured, would it encourage chastity?

These diseases have been prevalent since the earliest times of which history tells us; men of all races, of varied intelligence, of all religions, of all schools of medicine have thought, written and spoken on this theme. Nothing new can be said on the subject. Very likely in Pharaoh's time some Egyptian or Arabic medical society held just such a symposium on the subject as we to-day. What has come of the effort of centuries? Is venereal disease less prevalent to-day than then? I think not. Our enlightenment has not exterminated it.

I believe that effort to stamp out venereal disease by giving instruction regarding its nature, natural history, sequelæ and amenability to treatment is time wasted. So long as men desire, women and men reciprocate, venereal disease will exist and that will be as long as there are men and women in the world. The love of honor and justice, or the fear of evil, will always deter some but not all from venery.

According to the most modern ideas it is now thought best to try to reform vice by attacking it in a previcious stage. This axiomatic epigram appears in a monograph entitled, "Alfalfa in the Willamette Valley," by W. W. Cotton. In speaking of seed and seeding he describes a vine called dodder which is a parasite of the alfalfa plant. Mr. Cotton says: "The proper way to avoid dodder is not to plant the seed." How simple this statement and yet how all comprehensive! To paraphrase it we may here say that the proper way to avoid venereal disease is not to plant its seed. That is the modern method—to look forward and not back, to train the child in order that the next generation may be cleaner and more manly than the present one.

We must rely on the prophylactic value of very early education. If the anatomy of the sexual organs and their physiology and use were taught by every mother to her young children as soon as they are old enough to understand at all; if we did not wait until puberty but began at three or four or five years of age, would it not be better?

It is the mystery that shrouds the subject that renders it attractive. It is the secrecy of his elders that piques the curiosity of the child. A reasonably full explanation that satisfies the young mind's thirst for knowledge will dissipate the fog of mystery and render the subject no longer interesting.

Later, about the time of puberty, desire appears as a tempter. It is the strongest and most natural instinct of our natures, the instinct which leads us to wish to procreate, to regenerate the race. This can never be repressed. Education will not eradicate sexual desire. Should it do so the species would eventually become extinct.

Teaching and example may sometimes guide and train the mind to control the desires of the flesh until reason releases them and allows sexual passion an outlet. Such teaching should inform the mind of youth of the energy which should be potential. It should advise habits of

* Read in the Section on Hygiene and Sanitary Science of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

cleanliness, both mental and physical, and should picture the possibilities of venereal disease. This last should not be overdone. The fear of the contraction of disease deters only the cowardly and these it often drives to the unnatural outlet of masturbation. Certainly venery is preferable to the mental degradation of the other vice.

Boys of 15 or 16 may be taught the symptoms, nature and results of gonorrhea, chancroid and syphilis, and the importance of proper treatment and how pernicious amateur tinkering is. This should not be done to frighten them, but simply as information. It is best done by the parents or by the family physician, or in the case of public schoolboys, whose home influence is sometimes not of the highest order, by some physician appointed to lecture to them on the subject. This latter method is probably the least beneficial.

In later life among mature men, such teaching is certainly less effective. To prevent venereal disease and to lessen the number of cases of it in the community, lectures on prophylaxis are undoubtedly of value for a time until men by habit become careless. Lectures on anatomy, physiology or symptomatology do not restrain or regulate the desire of mature individuals. Lectures on the curability of not only acute but chronic venereal disease and even on the remote results dissipate the erroneous ideas before mentioned. Whether such knowledge is conducive to public happiness or not is another question.

Does it do good to teach the frequency of epididymitis or stricture or to explain the causative relation of gonorrhea to ophthalmia neonatorum or pyosalpinx? Would gonorrhea be less frequent if it were generally known that a specific urethritis can not be contracted from a non-infected woman during the menstrual period, that intromission is not necessary for infection, that varicocele rarely produces sterility, and that physiologic seminal emissions are not a sign of impotence?

The education of our girls is a different matter. They should understand their anatomy and physiology, but let us spare the sympathetic sensibilities of girls of the better class. Why tell them of venereal disease or loathsome perversions of sexual desire? Girls who must protect themselves, who unfortunately have no one to look out for them, should be as well informed as the boys are. They must be taught the danger there is for them in drink, because it leads to venery, the possibility of conception and the crime of abortion. They should be taught these things by their mothers or, if that is not possible, by some high-minded woman physician.

The parasites known as gonorrhea, chancroid and syphilis are as destructive to the human body as the dodder vine is to the alfalfa plant, and our axiom is that "the proper way to avoid dodder is not to plant the seed." Let us, therefore, prepare the soil of the mind by well-chosen education begun very early and continued into adult life, because in that way we may best avoid venereal disease by teaching the youth or maiden not to plant the seed and also by giving it no encouragement to grow.

Whether or not such methods will better the condition of the world to-day is doubtful, but if we do not try it we can not find its sphere of usefulness.

Study Food.—There are many details respecting the digestion of all classes of food that must be known before one can apply dietetics in a practical and successful manner.—*Medical Times.*

WHAT SHALL WE TEACH THE PUBLIC REGARDING VENEREAL DISEASES?*

BRANSFORD LEWIS, M.D.
Professor of Genitourinary Surgery, Medical Department of the St. Louis University.
ST. LOUIS.

It is the united sentiment of modern students of this subject, that as a measure of public safety if for no other reason, the public should be taught certain facts regarding the venereal diseases. To me has been delegated the duty of assisting in the discussion of what should properly be brought within this category.

Such teaching should be considered under two headings: that by means of printed communications, and that by means of lectures. The scope of the instruction embraced in the printed matter necessarily will be smaller than in a lecture or a series of lectures. Teaching in this manner has lately been undertaken in Germany by the Society for Combating Venereal Diseases, the national organization of that country for sanitary prophylaxis. This society has issued for general distribution two circulars on the subject, one for women and one for men;[1] written in the simplest possible language, intelligible alike to the uneducated and to the educated. In these circulars the religious aspects of the question are not considered, the society deeming it advisable to leave their consideration to other hands. The circulars have been distributed free by the hundred thousand, in the German universities, factories and mercantile establishments of the Empire. They have aroused the interest and appreciation of the people whom they have reached, and must already have done much good, although so recently promulgated.

Since 1895 Professor Lassar has annually given public lectures at the University of Berlin on the same subject—not for the benefit of the medical students, but for those outside of that department, more especially.

While it is manifestly not desirable nor feasible to go into the subject to a profound degree, the curriculum of such teaching should embrace the fundamental truths of both the physiology and pathology of these affections. The simpler phases of genitourinary physiology is a proper basis on which to lay the foundation of instruction that is to safeguard the public against the many and obscure pitfalls of the so-called venereal diseases. Both youths and adults should know the rudiments of sexuality; of sexual immaturity and the consequences of imposing sexual activity on this delicate system when it is still undeveloped; of sexual maturity and its pregnant possibilities, both for good and for evil; of the sexual act, of impregnation and reproduction. The future of many an innocent girl is blasted because of lack of knowledge of even this much of her nature and being. The rudiments of sexual hygiene should be explained, and numerous superstitions that obscure the public mind should be exploded; one of the most prominent of which is the belief that it is injurious to the organs to go without intercourse for any length of time.

METHODS OF DISSEMINATING KNOWLEDGE.

A preliminary review of this kind paves the way to a better and easier understanding of the matters embraced in the further teachings.

The names and nature of the three diseases usually

---

* Read in the Section on Hygiene and Sanitary Science of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

1. THE JOURNAL A. M. A., April 14, 1906.

termed venereal should be given, indicating: First, that while gonorrhea, caused by the microbe called the gonococcus, is usually a local disease affecting the urinary tract, in many cases it is spread throughout the system, and its possibilities for disaster are great in either capacity; second, that chancroid is a purely local, though actively-ulcerating sore, incapable of giving rise to systemic effects, whether mercury be taken "to keep it out of the blood" or not; thirdly, that syphilis, inaugurated by the local sore called chancre, is always a systemic and constitutional disease, also, whether mercury be taken or not "to keep it out of the blood."

The next step in the teaching is one of the most important in the whole curriculum: the modes of dissemination of these diseases. It should be known that all three affections may be transferred either with or without venereal intercourse. That gonorrhea and chancroid are conveyed only by transferring some of the discharge (pus) of those diseases, while syphilis can be conveyed not only by transference of discharge from any of its manifold lesions at various parts of the body, but also by the blood of the syphilitic individual during the active stage, and that this contagious period lasts for three or four years.

Thus, the field of contagion for syphilis is much larger than for either of the two others; its scope is almost unending. While chancroid and gonorrhea are transferred almost exclusively by sexual intercourse, either legitimate or otherwise, syphilis is transferred, in addition to this mode, by means of the various household utensils used in eating or drinking, such as spoons, knives, forks, cups; smoking-pipes, cigars, towels; by the act of kissing. Many epidemics of syphilis have been started and spread by such innocent media, including hundreds and even thousands of persons, young and old. The very teaching of these methods of innocent contagion illuminates the ways in which they may be avoided.

The many fallacies and superstitions of the public with regard to these diseases should be met and exposed. The common saying that gonorrhea "is no worse than a bad cold," is one of the worst of these; that it is easily cured by the shot-gun prescription of the druggist-friend; that the disease is well when symptoms subside and discharge ceases; and that "curbstone advice" is of any value whatever in these matters, should all be confuted as energetically and as rapidly as possible. The disasters to which they lead are inestimable. The mercenary motives of quacks and charlatans should be exposed and their villainous teachings rejected.

BEARING OF THESE DISEASES ON GENERAL HEALTH.

The bearing of these diseases on the general health of the affected individual should be explained, both as it relates to the present condition and to the future. The far-reaching consequences and complications of these diseases, when related, make an impressive argument for their avoidance by the tempted public. The public should learn that gonorrheal infection extends not only into all the organs of the genitourinary system, of both male and female, but also, on occasion, involves the blood, the vascular, the lymphatic and the nervous systems, the joints and the eyes, and results in such sequelæ as complete closure of the urethral outlet through stricture; impotence, sterility (42 per cent. of gonorrheics becoming sterile, while 50 per cent. of all sterility is due to gonorrhea); and that syphilis causes not only the disfiguring and dishonoring lesions of the skin, the face, body and limbs, the loss of hair; attacks the digestive, vascular and lymph systems, the bones, muscles and special organs of the body, but also results in such destructive conditions as the ataxias, paralysis, nerve degenerations, bone necroses (resulting in saddle-nose and other disfigurements), insanity and imbecility. When these things are well known outside of the narrow confines of the medical profession, a potent influence is established for recognizing these diseases and doing what can be done for limiting their dissemination.

RELATION TO MATRIMONY AND HEREDITY.

The relations of the affections under discussion to matrimony and to heredity should not be overlooked. The intimacy of married life is such that it is almost inevitable that when one of the contracting parties is affected the other becomes infected also. Of married women who acquire gonorrhea, fully 85 per cent. are infected innocently, through intercourse with their husbands; and the same is no doubt true of the other two of these affections.

When it comes to heredity, both gonorrhea and syphilis display their appalling effects. As a prolific cause of so-called race suicide, voluntary abortions are as nothing when compared to these. Gonorrhea exhibits its malign influence by rendering its subjects, both male and female, sterile, preventing impregnation; while syphilis attains the same end by bringing about countless abortions, even with women who yearn for motherhood, whose fondest wish is that of rearing a family. Syphilis in either parent contributes to the same unhappy end. When the people learn of these influences they will be able to recognize the more readily the hidden meaning of repeated events of this sort, and to take the precautions that will change them. Fortunately, chancroid has no hereditary influence. While gonorrhea is not inherited, its calamitous effects are not delayed long after the birth of the child of a gonorrheic mother. Fully 80 per cent. of all blindness, we are told, originates in gonorrheal infection of the eyes of the child during parturition, not to mention the number of such infections of the eyes that occur in adult life.

If it is important to teach people the full nature of these diseases when they do occur, it is equally as necessary to impress on them the extent to which they exist, both among nations and among the people themselves. The nation that is exempt from venereal imputation has not yet been discovered. So far as statistics are able to determine it, syphilis prevails among urban populations to the extent of from 7 to 14 per cent. at the present time; and it is further estimated that upward of 90 per cent. of all men have gonorrhea at some time in their lives. Like pale death, that knocks with equal fate at cottage door and palace gates, these diseases are not respecters of class, age, color, condition or occupation.

LONGEVITY OF THESE DISEASES.

The longevity of these diseases, both with respect to their activity as diseases, and their infectiousness, should be explained. Gonorrhea is both active and contagious for an indefinite length of time, only ceasing in these respects when the organisms are killed out. The capacity of syphilis for doing damage is indefinite and scarcely limited by years, but its period of contagiousness is not longer, usually, than about four years.

MORTALITY.

The mortality of these diseases forms an interesting study, and a surprising one, in certain respects. As a direct cause of death, syphilis ranks far below gonorrhea.

although the contrary is, no doubt, the current belief among the people. The implacable gynecologist has enlightened us on the terrific mortality of gonorrhea, in his exposures of its relations to pus tubes, to peritonitis and other end-results in women. We are told that 65 per cent. of all gynecologic operations are due directly to gonorrheal infection, either within or without the pale of matrimony.

CURABILITY.

The curability of these diseases is, likewise, a subject worthy of elucidation for the people. Noeggerrath has said, "Once a gonorrhea, always a gonorrhea." While it is probable that few, at the present time, subscribe to this sentiment, it is a lamentable fact that the people in general are prone to swing too far toward the opposite extreme, and to believe in the triviality of the same condition. With adequate and comprehensive treatment directed, primarily, at the destruction of the gonococci wherever they may exist in the organism, followed by measures to heal and to restore the affected tissues, it is probable that by far the greater majority of cases of gonorrhea are cured permanently. The belief in the incurability of the diseases rests, probably, on the fact that the majority of physicians, as well as the people, set too low a standard of requirement on the term, cure. They look on the absence of discharge and of active symptoms as indicative of recovery, when as a matter of fact these form very poor testimony to that effect; there may be abundant gonococci in a posterior urethral or seminal vesical inflammation without any outward evidences whatever. It is, indeed, just such cases that lead the infected individual into making the disastrous mistake of having intercourse and spreading the contagion, whereas, if he had an active discharge he would not think of doing such a thing. Moreover, the person who treats himself on this plan—of trying merely to stop the discharge—is the subject of an endless number of recurrences, which he may interpret as new cases; and consider himself wonderfully successful in curing them in a few days, with his sure-cure prescription; while, as a matter of fact, he never cures any of them. He merely stops the discharge, remaining as potential as ever for the dissemination of the disease and for its recurrence in himself.

It requires three years, approximately, of very steady treatment for the cure of syphilis, even in cases of moderate severity; in other cases, that display evidences of rebelliousness, treatment should be continued for two or three or possibly more years in addition to this. With such persistent endeavor methodically carried out, a cure may be expected in the large majority of cases.

INDICATIONS OF RECOVERY.

The indications of recovery from these diseases is an exceedingly important feature of their study, and is one that, fortunately, has fairly clear means for identification. With reference to the gonorrheal infection, nothing short of clearing up of both first and second urines, with the exception of a possible few mucous shreds in the first, which shreds contain no gonococci and only a moderate number of pus cells, should be accepted as indicative of recovery. And, in isolated instances, even these strict requirements may be too lenient. I have seen a few cases in which both urines were perfectly clear, and yet massage of the seminal vesicles expressed pus from those sacs. If there is reason to suspect the accuracy of a belief in the recovery of a given case, tests may be made by having the patient drink beer, which will reawaken the gonococci into activity.

With reference to syphilis, the rule usually followed is, after treatment has been carried on for what is considered a sufficient length of time, to allow the patient to go two years without any antisyphilitic medication; if any indications of the disease appear, to give another year's continuous medication; if none appear, it is well to give an occasional short course anyhow, to make assurance doubly sure, if for no other reason.

The absolute necessity of making searching investigation into this question, by the various means at hand, before entering into matrimony or essaying such relations, should be taught the public. This they should be made to understand, even if they forget all else connected with these diseases.

DISCUSSION

ON PAPERS BY DRS. MORROW, HERDMAN, HOLTON, TUFFIER, CARRIER, WHITESIDE AND LEWIS.

DR. LUDWIG WEISS, New York, agreed that publicity is demanded, but asked how we are to reach the public, remarking in regard to the symposium held in 1904 at Atlantic City that one newspaper reporter received a telegram from his paper saying, "Don't touch it." He said that physicians read papers at medical societies, but that they are relegated to the archives. Publicity, he declared, is an educational necessity; the newspapers must tackle the subject. With the hospital and dispensary returns falsified in not calling venereal diseases by their true names, it is only natural, he said, that the New York Department of Health, in stating the causes of death in 30,000 cases for 1901, gives only 172 deaths from venereal diseases. He asked where are the pus tubes, where the sequelæ of mutilating operations on women, where the gonorrheal endometritis, where the joint diseases. He said that these diseases should be reported to boards of health without names of patients, stating only the sex and age. He said that as the morbidity from these diseases becomes known they will bear the stamp of official recognition and we would soon be able to draw conclusions as to the mortality. This source of publicity, he said, would greatly help to combat venereal disease.

DR. C. E. WOODRUFF, Detroit, said that his practice is in the Army, where medical men are naturally supposed to know a great deal about venereal diseases, because soldiers are reputed to have a great deal. He declared that he wanted to deny that first of all. He said that soldiers have less venereal diseases than an equal number of other young men from the same class of life. He stated that he is surgeon of an army post and has one ward which he devotes to venereal diseases, and for three weeks recently that ward was empty. He denied that there is so much crime and immorality in the Army as people are fond of stating. Army surgeons try to instruct soldiers regarding the dangers of venereal diseases. In reference to instruction to college boys, he said that he asked the president of a college in New England what he was going to do about the matter. The president said that he did not know. He had received a great many circulars, but none were entirely satisfactory. He had read the lectures of Prof. Eric Poutoppidon, of Copenhagen, and these were pronounced the best and were probably appropriate for his students.

DR. FERD C. VALENTINE, New York, said that all serious students of this momentous question must agree on some points. The first of these is that so long as mankind remains frail, as it has ever been, men will acquire venereal infections. Many of those infected were so unfortunate during alcoholic inebriation. Perhaps an equal number, especially of boys, were brought to prostitutes by other boys. Statistics on this question are as yet not obtained. Until recently a larger number than now were advised by their fathers to cohabit, under a belief in the physiologic necessity of the act. The majority, however, are impelled by the naggings of sexual desire to seek its gratification. These are facts to which, as scientific investigators, we can not close our eyes. All efforts to combat the etiologic factors will ever have to contend with them. It

is true that the majority are ignorant of the dangers of venereal diseases, and this ignorance is by no means limited to the lowest social strata. Indeed, physicians who devote their energies exclusively to the study of genitourinary and venereal diseases have among their patients not a few physicians. This may be explained by the fact that until recently venereal diseases received but scant consideration in medical colleges. Such a taboo rested on them, Dr. Valentine said, that he was once ruled from the floor for mentioning them in this Section. That occurred fourteen years ago. Since then the dangers of venereal infection have been more widely studied by the medical profession. A few courageous men dared to brave public opinion by forming the American Society of Sanitary and Moral Prophylaxis, whose prime purpose appears to be to overcome the ignorance which fastens on the state the Moloch of venereal disease. Dr. Valentine avowed himself an enthusiast for the society's objects, though he is not such an optimist as to think that venereal diseases will be entirely stamped out. He believes that the majority can be taught the need of very early and very active treatment of venereal diseases. Once this is generally understood, the greatest danger to the individual and the saddest results to the family will be minimized.

Behind the study of venereal diseases is the ancient question of prostitution, clandestine and public, and at the very outset we must acknowledge that, in our present light, clandestine prostitution is beyond study. This, he said, does not crush the hope that the future will bring an understanding of the problem which will lead to its management. Public prostitution, however, is coeval with written history. That it is likely forever to continue is perhaps beyond dispute. Its study, however, can tend but to reduce its dangers. Many excellent men attribute the growth of prostitution to the growth of communities. They hold that prostitution is the fungus of our social evils, of environment, of defective education, of the scarcity of honest work for girls and women. Dr. Valentine denied this, first, because it is untrue, and, secondly, because it is an insult to womankind. Its untruthfulness is shown principally by a self-evident fact. In the past decade innumerable avenues for work have been opened to women, yet prostitution has increased. Dr. Valentine denied the accepted view, because it stamps every woman as a possible prostitute. It means that virtuous women might become whores if their social condition, their environment, their faulty education or lack of honest employment led them to need. He insisted that if such women were thrown into the deepest abyss of despair they would rather starve than prostitute themselves. He explained that he does not deprecate the noble efforts made to educate, to elevate and to develop means for the procurement of honest work for women; on the contrary, he would gladly go further than the now proposed plan to this end. He declared that he would labor that women who work for a living be aided and guided to the mental and physical superiority for which they are manifestly intended.

It requires, however, no marked pessimism, he said, to see that the best-made efforts will not reduce prostitution. This does not exclude justice to the trebly unfortunate creatures to whom the first birthright of woman is denied. They are all defectives. Pauline Tarnowsky measured a large number of Parisian prostitutes and found all with the stigma of degeneration; no matter how well raised, how exquisitely educated or surrounded by whatever affluence, prostitutes tend to reversal to that savagery in which polygamy is the rule. Were this view accepted, the greatest of problems could be better studied. Concisely, then, he said, a mental or moral defect makes prostitutes. No reliance can be placed on the now advocated means to check the ravages caused by this evil. Pamphlets on the subject have no meaning to the unfortunate beings. It is in the nature of things that these females will weep hysterical tears in public. Among their associates they revile those who would reform them and defile the literature printed for their moral elevation. Occasionally well-meaning but misguided crusades are instituted against prostitutes. They lead to hounding them with the police. This is as sensible as maltreating the insane to heat the devils out of them.

The consciousness that we are not yet prepared even to reduce prostitution should not deter us from striving to limit its evils. To chase prostitutes from their chosen haunts drives them into all parts of a city. Thus disseminated, they multiply as foci of physical infection and moral contamination. To protect clean parts of cities the prostitutes should be left in the districts which they have selected. Thus congregated, they can become amenable to health board regulations. Systematic examinations of their genitals, even twice daily, as suggested, would be of no avail, for between two such examinations a prostitute can easily infect twenty men. Moreover, those who would conscientiously examine a female for gonorrhea alone know that it can not be done in less than ten days. Segregation would require the confinement in hospital of any prostitute who had infected a man. If detained until cured she would be prevented, at least during that period, from infecting others. Dr. Valentine emphasized these points: 1. The people primarily should be instructed in the gravity of venereal diseases. 2. The public should be taught that to escape the ravages of venereal infection early and active treatment is necessary. 3. The quacks who profit by the prevalent ignorance will have their robberies reduced when the public has been taught to understand them. 4. All public-spirited citizens, whatever their occupation, should be persuaded to join the crusade against venereal diseases, at least by becoming members of the American Society of Sanitary and Moral Prophylaxis. 5. Until public prostitutes be given the right to live in certain districts it will be impossible to do anything to protect them or to protect the public against them.

DR. SENECA EGBERT, Philadelphia, believes in education on this subject; he believes that it is practically the only way of reaching a betterment of conditions, but he does believe that before we give the public this special education they ought first to have the general education in public health or hygiene. Dr. Egbert said that a few months before, at the request of Dr. Hurty, he prepared a paper which considered the teaching of hygiene in this country. Among all the colleges in this country, how many, he asked, have instruction in hygiene for the students? Dr. Egbert knows of only one that gives practically every student a course in hygiene. In Harvard one can not get such a course, except a small optional one in anatomy. In fact, there is not a course compulsory on practically all the students in any of the colleges, save one. Every freshman at Princeton must attend the lectures and receive full instruction in hygiene or, as Dr. Egbert likes to call it, public health, and Dr. Woodhull, who gives these lectures, weaves into that instruction this special education that every one ought to have. There are about 114,000 college students in this country. If the students in our colleges to-day, who will mostly graduate in the next four years, were fairly and wisely instructed, not only in these matters of the sexual and social evil, but in the fundamental principle of vital resistance, development and immunity, and of the importance of living a clean, moral and wholesome life, not only for the mind's sake but for the body's sake, most of those men and women would be living centers for the spreading of this education to the community around each of them. And if these college graduates can be used as a nucleus, the opportunity for which, Dr. Egbert believes, is right at our hands, we will do a great deal. How many normal-school teachers in this country, he asked, get any instruction at all on general hygiene, not to mention sexual or social prophylaxis? In 1903 there were about 63,000 students in the various normal schools in the United States; of these there were less than 25 per cent. receiving any instruction in public health or hygiene, and Dr. Egbert ventured that there was none receiving instruction on moral prophylaxis. In 1900 30 per cent. of the population was under 14 years of age, and this is probably equally true to-day; also, approximately 50 per cent. of the total population of the country to-day is under 24 years of age. These young people are to be taught by the normal-school graduates, most of whom have no instruction in hygiene. It has been said there are 14,000,000 young men in the country to-day under the age of 30, and that 50 per cent. of those 14,000,000 have some venereal disease before they reach 30. If these are facts, Dr. Egbert asked if we have not here great opportunities to extend this educational work and to carry on the fight where we can hit the hardest. Dr. Egbert stated

that his data were collected early in 1904 and that since then courses in hygiene or public health may have been established in some of the colleges or normal schools that did not previously have them.

DR. L. DUNCAN BULKLEY, New York, thinks that we are making a magnificent crusade in this direction, but that there is one point that has not been emphasized enough: namely, that in some way or other boards of health should have syphilis, gonorrhea and chancroid on their list of reportable diseases. He believes that the moment those names appear on the public lists the mystery will largely vanish. The moment the number of cases existing begin to be tabulated, then there will be material for such medical work. Ten or fifteen years ago in his book on "Syphilis in the Innocent" Dr. Bulkley pleaded for that; he pleads for it every time that he can get an audience.

DR. J. N. HURTY, Indianapolis, confined his remarks to the matter of legal control. In that line nearly every speaker on this subject says nothing can be done. In Indiana they are trying an experiment. The last legislature passed a law that no person afflicted with a transmissible disease (meaning venereal diseases principally) shall be privileged to marry. The question is, how shall it be executed? Of course, penalties attend, and the execution of the law has been left largely to the State Board of Health. The State Board of Health prescribes the questions to be asked of every applicant to marry, and licenses must be issued for all marriages. The questions have been formulated and have been in use for over a year. They are not severe, not exacting for the beginning, and the first opposition has subsided. The answers to these questions must be sworn to, and it has been said that the law simply makes more perjury. Dr. Hurty does not believe this is the case any more than happens in giving sworn court testimony. Of course, there is some perjury. In one instance in Indianapolis a marriage was stopped. The young man confessed to the clerk, when he applied for his marriage license, that he had gonorrhea, but that he believed that he was cured, though he did not know. The clerk had the power under such condition to refuse a license. The applicant was examined and was found to be infected, and that marriage was prevented. Of course, there were heartaches, but perhaps not near so great as might have followed the marriage.

It is proposed to go one step further and to have all such cases reported. It will be a difficult matter, but it can be accomplished. Many of these patients go to drug stores and are never seen by physicians, but a great many of them can be recorded and their names should be properly classified to guide the clerks who issue marriage licenses. This will not cover the whole field—nothing like it—still, Dr. Hurty contends that it will do some good. This Indiana law designed to prevent the marriage of diseased persons was written by one of the highest judges, and for that reason the people of Indiana are confident that it is constitutional. Dr. Hurty suggested that while studying this important question of personal purity before marriage the medical profession assume a more serious attitude, stop all jokes and all light references to venereal diseases. Let no vulgar stories pollute the lips of the physician.

DR. WILLIAM LEE HOWARD, Baltimore, said that in his opinion there is one and only one way that this discussion or these discussions could benefit the people: that is through publicity. It has been remarked that these meetings should not be reported in the press. If these are truths that we are talking about, they should be published. He knows of no truth that does harm. It is false reasoning that does harm; it is the hiding of these things which produces the morbid curiosity in the young—introspection. They will meet or see a word that will send the young man to the libraries; and if it is only put before the young that every human being and beast that they see is the result of sexual gratification, and not sensual, the mystery will be cleared away, and they will look on these matters as they do on every ordinary condition. Dr. Howard emphasized the fact that it is not innocence that ruins a girl, but ignorance.

DR. M. H. BAILEY, Cambridge, Mass., said that instruction in hygiene has been given at Harvard College for the last four or five years and previously at irregular periods. Ten or eleven years ago, by invitation of President Eliot, an address on the same subject was given to students in Harvard College by Dr. Cook, former president of the Middlesex South Medical Society. During the past year practically all the freshmen in Harvard College were obliged to receive instruction on venereal diseases; that is, all those students who took English A—which means about 550 out of 670 or 700 freshmen—received instruction in plain language.

To delay the communication of such knowledge until the end of the freshman year is a great mistake. There is no time in his college career, Dr. Bailey said, in which a student is so likely to fall into just these dangers as in his freshman year. He feels that it is a part of his curriculum, as one might say—that he must know everything that there is to be known. If he could receive proper instruction before he goes to college it might give him a different view of things and save him much physical and mental suffering. Dr. Bailey did not agree with the statement that it would not make much difference if young men did know about these things. It does make a difference. He has many records of young men with whom it has made a decided difference. Such instruction should be given early. It should not be forgotten that the great majority of young men never go to college.

DR. PRINCE A. MORROW, New York, said that the Society of Sanitary and Moral Prophylaxis, organized in New York over twelve months ago, has been the recipient of a great many letters from teachers, fathers and even mothers, and the universal sentiment—especially of teachers—is that it is impossible to make any effective argument to young men against incontinent living so long as their minds are imbued with the idea of what has been termed the sexual necessity: that is, that sexual intercourse is necessary to health. Now the medical profession, Dr. Morrow declared, is responsible for this heresy, or it is by the laity held to be responsible, because all these young men state that they have imbibed this view on the authority of physicians. A number of teachers have written to Dr. Morrow, stating that so long as doctors tell young men that sexual intercourse is a necessity they can not do one iota of good in trying to teach them the principles of chastity and right living. Resolutions declaring continence to be not injurious have been passed by the Brussels International Congress some three or four years ago, by the German Society for the Prevention of Venereal Diseases, by the American Society of Sanitary and Moral Prophylaxis and by a number of state medical societies—the Georgia society and one or two others.

DR. C. H. COOK, Natick, Mass., said that about thirty-five years ago Frank H. Hamilton, in his "Principles and Practice of Surgery," said that the poisons of syphilis and gonorrhea are so widespread and have contaminated the blood of so many people that in his opinion they are retarding the physical and intellectual progress of the human race. If that were true then, Dr. Cook said, it must be equally so to-day, for no special effort has been made to control them. Some one has said that "the silence of the wise man does more wrong to mankind than the slanderer's speech." Concerning these subjects the members of the medical profession are the wise men and the wise women. If the sentiment of that quotation be true, Dr. Cook said that a great responsibility rests on our profession. He appealed to the older men and women present to recall the situation thirty or more years ago, when women first began to study medicine, and to recall their position at that time. Dr. Cook was then a student in Bellevue Hospital Medical College. At the clinics in Bellevue Hospital women were sometimes subjected to rude and almost insulting demonstrations, because they were considered out of place and lacking in womanly delicacy and refinement. He said that there were professors, notably Professor Sayre, who, in language not to be misunderstood, said that women had equal rights there with the men, and if necessary the men would be turned out. Dr. Cook said that many women were present in the section meeting, and no question whatever was raised about the propriety of the subjects discussed before the mixed audience. He believes that the public can be brought up to the same standard that women in the medical profession and nurses have attained and that

men have attained with them. It seems to Dr. Cook that there are only two questions for consideration: First, is it right that diseases which are causing more suffering and more deaths than any other diseases shall be allowed free course, with no efforts made to control them? Second, whether we are in the wilds of Africa, under the shadows of Harvard, on Commonwealth Avenue, on Fifth Avenue or anywhere else, there are certain subjects concerning which there is a common knowledge. Those subjects are matter of food for the preservation of the body, of clothing suitable for climate and temperature and of the propagation of the species. Every rational human being, sooner or later, is going to know about the relation of the sexes. He asked if the majority of boys and girls in the future, as they have in the past, shall come to this knowledge in a filthy, mysterious way, or if it shall be lifted to a clean, high, self-respected standard. He quoted Garrison to the effect that: "Talking creates zeal; zeal creates inquiry; inquiry creates opposition; opposition creates action; action creates union and union creates victory."

Dr. A. D. Lake, Gowanda, N. Y., said that the only question before us is how to improve the situation. He said that we should invite the clergy, the press, and the teachers to cooperate in the consideration and discussion of this important subject. If much good is to be accomplished in this direction, we must go outside of our profession and endeavor to create a public sentiment in favor of the restriction of this evil by law. When the people generally more thoroughly understand and appreciate the importance of this reformation, some means will be found to bring it about. Legislation is needed. The power which reaches the law-making source is an emphatic public demand, which will come only as the public are educated and understand its necessity. If the papers on this subject, which have been read here, could be published in the newspapers, or if they could become a part of the system of hygiene taught in our public schools, then we would have begun a crusade from which good results might be expected to follow.

Dr. H. S. Pomeroy, Boston, declared that in the last thousand years civilized society has been cursed by four great physical evils: Smallpox, the so-called Great White Plague, alcoholism, and the social evil. The discovery of that grand master, Dr. Jenner, has put smallpox back into the dark ages. Within the last ten years the light has been let into the public mind in regard to the Great White Plague. When our forefathers were living, it was considered a special dispensation of Divine Providence. Now, after years of fear, tuberculosis has been attacked in its stronghold; and, to-day, we are practically masters of it. In regard to alcoholism, also, the public is being slowly aroused; much is being done; a great deal more is going to be done in the next few years; and in regard to that, he said, we may report progress, thank God, and take courage. In regard to the fourth of these four evils we want more light. Legislation is all very well and it does help; but there is no legislation in a country like this which is of the slightest use beyond the extent to which that legislation is incited in the first instance, and carried out and backed up afterward, by public opinion. There is a little, he declared, which we, as physicians, can do toward prophylaxis directly, and toward curing these diseases; but what we can do individually in that way is a mere bagatelle compared with what can be done by the sentiment of the great American public. He believes that, as physicians, we might better discard for the next five years all our direct efforts toward prophylaxis and toward curing the disease and spend our time, our enthusiasm, our money, our efforts toward arousing a public opinion. He said that he has been criticized and condemned by one of the best men who ever occupied a chair in the Harvard Medical School, because he has committed himself in one of his books to the theory that children should be taught about these things. It is not a question of whether the child shall be taught or shall not be taught; it is not a question of teaching or no teaching; it is not a question of safety through innocence or through ignorance. It is a difficult thing to get safety through ignorance; The ignorance does not exist. There will be knowledge; and if that knowledge is not scientific and pure and sensible and reverent so that the child grows up with a reverential respect for the most important organs that the Master has given him, after the central nervous system, then the child will grow up with prurient ideas, with false ideas, with ideas which will incite to physical, mental and moral decay. The child has got to know. He is instructed every day. He is instructed by the dogs, by the cats, by the birds, in all sorts of ways; he is instructed by his comrades of the gutter. He will get information. He is curious; he has a right to be curious. There is an insatiable demand in his mind to know about these organs, their origin, uses and destiny. Something about them he will learn. It will be right and it will be safe; or it will be prurient, it will be wrong. It devolves largely on physicians to say what this shall be. Let us lift up our voices, he said, let us use our pens, let us use our influence when we are together, when we are apart, in medical circles and in the public, in our churches, on our school committees, among our friends, in society, everywhere that we can, for a scientific, safe knowledge of these matters, to be put into the child, at least, as early as the dawn of puberty; and then, even, some of us will live to see the time when the diseases of the social evil, instead of being perhaps from 60 to 75 per cent. of those wherein woman needs care, will be a very small percentage. Dr. Pomeroy believes that this time will come.

THE CHEMISTRY OF THE ORGANIC SILVER COMPOUNDS.*

W. A. PUCKNER.

Professor of Chemistry, University of Illinois School of Pharmacy.

CHICAGO.

Believing that a knowledge of the chemistry of medicines will tend to their more intelligent use in the treatment of disease, a brief account of the chemical behavior of some of the organic silver compounds proposed for use in medicine is here presented. While in recent years the country has been deluged with new organic remedies the information offered regarding them has been meager and, being almost exclusively furnished by the promoter of each new article, is not always clear and to the point. More particularly is there a dearth, especially in the English language, of systematic discussion of the many new remedies, the available literature consisting either of the incomplete statements found in books on chemistry or pharmacy, or else the rather more comprehensive treatises hastily compiled from the manufacturers' literature. It is, therefore, hoped that the following, while presenting nothing new, may contribute to some extent to a better interpretation of the therapeutic effect of the many silver compounds placed before the medical profession.

THE CONSTITUTION OF SILVER COMPOUNDS: SIMPLE SILVER COMPOUNDS.

When to a solution of silver nitrate there is added solution of sodium chlorid, or potassium chlorid, or almost any other chlorid, a white, curdy precipitate of silver chlorid is produced; a solution of any soluble iodid produces a precipitate of yellow silver iodid; addition of an albumin solution produces insoluble silver albuminate. Precipitates having the same composition will be obtained if, instead of a solution of silver nitrate, one of silver sulphate or of silver acetate is used. In many other ways silver salts show similar behavior regardless of the acid with which the silver is combined, and they are said to be peculiar to silver and are used to identify silver compounds. This similar behavior of different silver compounds is now generally believed to be due to the

* Read in the Section on Pharmacology and Therapeutics of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

separation (ionization) of the silver compounds, when in solution, into their constituent parts (ions) thus:

Silver nitrate into silver ions and nitrate ions, or

$AgNO_3 = Ag\cdot + (NO_3)'$.

Silver sulphate into silver ions and sulphate ions, or

$Ag_2SO_4 = 2Ag\cdot + (SO_4)''$.

Silver acetate into silver ions and acetate ions, or

$AgC_2H_3O_2 = Ag\cdot + (C_2H_3O_2)'$.

The dots and accents are used to indicate that these parts do not exist as such but are still combined with, or attracted toward, each other.

Since such solutions all contain identical silver particles or ions, it is but natural that they should show similar properties.

COMPLEX SILVER COMPOUNDS.

If, on the other hand, to a solution of silver nitrate considerable potassium cyanid is added, and if now to this solution a chlorid, bromid, iodid or albumin solution is added, no precipitation will occur. In general, such a solution will not show the behavior characteristic of silver solutions. The generally accepted explanation for this behavior is that the addition of the alkali cyanid caused the formation of another silver compound, thus: $AgCN + KCN = KAg(CN)_2$, which, when dissolved in water separates (ionizes) into potassium ions and silver cyanid ions, thus: $KAg(CN)_2 = K + (Ag(CN)_2)'$. Since such a solution contains no silver ions it is not surprising that it fails to show the properties of ordinary silver solutions.

But by appropriate tests it can be shown that such a solution containing the complex silver-cyanid ions does contain very small amounts of silver ions: that the complex ion itself undergoes to a slight extent dissociation into Ag. and 2 (CN)'.

Many other silver compounds have been prepared which, when dissolved in water, contain the silver in complex radicles or ions, which themselves, to a slight extent, dissociated to form silver ions. On this behavior of the complex silver compounds just indicated their proposed use in medicine is based. Solutions of simple silver compounds, such as silver nitrate, reacting to form insoluble compounds when mixed with solutions containing chlorids or albumin bodies, both abundantly found in the body fluids, the reaction between silver and chlorid, albumin, etc., occurs at once and hence the effect of silver will only be obtained superficially and there it will act as a cauterant. On the other hand, solution of complex silver compounds containing but few silver ions will be but slowly affected by the body fluids; hence they may penetrate deeper and exerting the specific action of silver compounds very gradually do not act as cauterants. This slow action of such complex silver compounds can, of course, occur only if the compound is undecomposed by the body fluids; in the same way that a chlorid may be added to an ammoniacal solution of silver nitrate without causing precipitation only as long as alkalinity obtains.

COLLOIDAL SILVER.

When an aqueous solution of silver nitrate or other silver salts is treated with a reducing agent, metallic silver is formed and being insoluble in water it separates out of the solution. But, under certain conditions, silver solutions may be treated with reducing agents, when no precipitate of metallic silver is formed, although the reduction plainly occurs. This reduction product when collected and purified is almost pure silver. It differs on the one hand from metallic silver, especially in being soluble in water; on the other hand its solutions fail to show many characteristics of silver solutions. While a solution of this substance is readily changed so as to show the behavior of solutions of ordinary silver salts, it differs in that no precipitate is produced by albumin solutions and that in the presence of such albuminous bodies no precipitation is produced on the addition of chlorids.

It is on this property that its use in medicine has been based. This form of silver is commonly known as colloidal silver because it is held back by certain membranes non-permeable to non-crystalline substances, such as proteins, gums, mucilages, and generally known as colloids.

As regards the chemical nature of this "colloidal silver" there is still much doubt. It was pointed out that analysis shows it to be nearly pure silver, yet all attempts to obtain a preparation containing 100 per cent. of silver have been unsuccessful. And some investigators believe that the so-called colloidal metallic silver really is a compound containing the silver in a complex molecule and that on this account the properties of silver compounds are not shown. This is especially true of a preparation known as collargolum; thus Hanriot[1] found it to contain only 87.3 per cent. metallic silver and concludes that its properties were due to the presence of an organic acid (see silver lysalbinate below) which he calls collargolic acid. More generally, it is accepted that in the process of manufacture the silver has been reduced to the metallic state, but that its separation as solid, insoluble silver has been prevented (postponed?) in some way. The silver being in the metallic state and not in the ionic condition is, of course, not affected by chlorids, albumin, etc., just as little as a silver coin would be.

Besides the colloidal metallic silver, a number of compounds of silver, such as the oxid, chlorid, carbonate, have been proposed for use in medicine in colloidal water soluble form. Here, too, the true chemical condition is still in doubt. It is generally held that in such substances the insoluble silver compound has been produced, but that its separation has been prevented or retarded by such bodies as albumin, gelatin, gums, etc. Other investigators hold to the belief that the silver is a part of a complex molecule and hence masked. Still others believe that the silver compound exists in an insoluble form, but that its precipitation is postponed indefinitely because of its fine state of subdivision and also because of the presence of the colloidal gelatin, etc.

CLASSIFICATION OF ORGANIC SILVER SALTS.

In the following a brief account of the many organic silver salts proposed for use in medicine is offered. The discussion of each article is usually confined to two particulars, namely, the chemical composition and the chemical properties, i. e., the behavior in the test tube. Often the method of manufacture and the patents governing the same must be taken up in order to make clear the probable composition of the article. To facilitate reference, an alphabetic classification has been adopted; and although these substances are almost exclusively known by coined names, yet it has seemed more rational to discuss them under their chemical titles, references to these being made whenever possible.

Actol: A trade name for silver lactate, which see.

Aktol: A trade name for silver lactate, which see.

Albargin: See silver gelatose.

Albargol: See silver gelatose.

1. Cr. d. l'Acad. des Sciences, vol. cxxxvi, pp. 680, 1448, and vol. cxxxvii, p. 122; also, Chem. Centbl., 1903, vol. 1, pp. 1916 and 1903, vol. ii, p. 280 and 548.

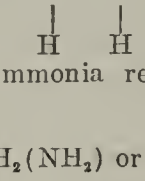
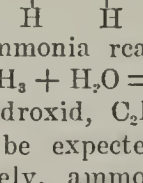
Argentamine: A trade name for a solution of silver nitrate in diaminoethane (ethyldiamine); see diaminoethane silver nitrate.

Argentol: A trade name for silver oxyquinoline-sulphonate, which see.

Argonin: See silver cascinate.

Argonin L.: See silver caseinate.

Argyrol: See silver vitellin.

Diaminoethane Silver Nitrate: Diaminoethane or ethyldiamine may be considered as an ammonia derivative of ethane in which two hydrogen atoms of ethane  or C_2H_6 have been replaced by two ammonia residues, NH_2 thus:  , $CH_2(NH_2).CH_2(NH_2)$ or $C_2H_4(NH_2)_2$.

Just as ammonia reacts with water to form ammonium hydroxid, $NH_3 + H_2O = NH_4OH$, so diaminoethane reacts to form a hydroxid, $C_2H_4(NH_2)_2 + 2H_2O = C_2H_4(NH_3OH)_2$, and, as might be expected, aqueous solutions of the two products, namely, ammonium hydroxid and diaminoethane hydroxid have very similar properties; thus, with silver salt both form solutions (compounds) which are not precipitated with chlorids. Based on this latter property of diaminoethane, and on the property that it does not precipitate, but rather dissolves, albumin, attempts have been made to use compounds of silver and diaminoethane in medicine. Argentamine (German patent No. 74,634) formerly was stated to be made by dissolving silver phosphate and diaminoethane in water. The silver phosphate solution having been found to be unstable the same name is now applied to a solution obtained by dissolving 10 parts silver nitrate and 10 parts diaminoethane in 100 parts of water. Chemically this may be considered as a complex silver compound, permanent only in alkaline solutions and then showing the characteristic properties of silver salts to a very limited extent and at the same time the alkaline properties of the solvent.

Credé's Antiseptic: See silver citrate.

Ethyldiamine Silver Nitrate: See diaminoethane silver nitrate.

Ichthargan: See silver ichthyolate.

Ichthargol: See silver ichthyolate.

Itrol: A trade name for silver citrate, which see.

Largin: See silver protalbinate.

Novargan: See silver proteid.

Picratol: See silver picrate.

Protargol: See silver proteid.

Silberol: See silver phenolsulphonate.

Silver Acetate: This is the silver salt of acetic acid, $HC_2H_3O_2$ or CH_3COOH, and its composition is $AgC_2H_3O_2$ or $(CH_3COO)Ag$. Its solubility in water is much less than that of silver nitrate; in all other ways it shows the properties of simple silver salts.

Silver Albuminate: See silver protein.

Silver Caseinate: Sodium caseinate, the sodium salt of casein, is obtained by reacting on casein with sodium hydroxid solution. If to such a solution silver nitrate is added and then alcohol, precipitates are obtained which have been taken to be sodium silver-casein, that is, a salt in which sodium is the basic ion, while the silver is a part of the acid radicle. A solution of such a compound will, of course, fail to show the reactions of silver compounds, and hence will not react with chlorids, albumins, etc., whence its use in medicine. Argonin (U. S. patent 575,277) is a trade name applied to such a sodium silver caseinate. It is claimed to contain about 4.3 per cent. of silver, to be slowly soluble in cold water, quickly in hot water, so that a 10 per cent. solution may readily be prepared which is neutral to litmus and not affected by chlorids, albumin, hydrogen sulphid or alkaline sulphids. Argonin L. or argonin, soluble, said to be a compound of similar composition, but containing 10 per cent. of silver, and to be readily soluble in cold water, has recently been offered for sale as an improvement on argonin. Recent investigations (see silver lysingenate) seem to indicate that this and other similar compounds, which form solutions that are neutral or alkaline, contain silver compounds in colloidal condition.

Silver Citrate: This is known also by the coined names *Itrol* and *Credé's Antiseptic*, is the normal silver salt of citric acid, $H_3C_6H_5O_7$ and has the composition $Ag_3(C_6H_5O_7)$. It occurs as a heavy white powder, contains about 63 per cent. of silver, and is almost insoluble in water, one part requiring about 3,800 parts for solution. While all silver salts are rather easily reduced, usually liberating silver in the metallic state, this tendency is somewhat more pronounced because citric acid itself tends towards oxidation, and hence acts as a reducing agent, thus the salt is decomposed with separation of metallic silver when boiled with water.

This case of decomposition is also illustrated by the manner of marketing *Itrol Credé proocculis*, a very finely powdered silver citrate. It is put up in opaque vials, sealed and containing only 0.5 or 1 gm. of substance, and it is recommended that if the vials are opened frequently the contents remaining after two weeks should be rejected. On the readiness with which silver citrate decomposes, its introduction in medicine was based. It was one of the precursors of colloidal metallic silver and has largely been abandoned in favor of the latter because of its insolubility.

Silver Eosolate: This is said to be silver acetguiacol-trisulphonate. The chemical makeup of such a salt may best be illustrated by its synthesis. From guaicol, $C_6H_4(OH)(OCH_3)$, the acetguaiacol, $C_6H_4(CH_3COO)(OCH_3)$, is obtained. This is then converted by treatment with strong sulphuric acid to the acetguaiacol-trisulphonic acid $C_6H(CH_3COO)(OCH_3)(SO_2OH)_3$ and from this the silver salt, $C_6H(CH_3COO)(OCH_3)(SO_2OAg)_3$ or $Ag_3(C_9H_7O_{12}S_3)$, is prepared. The properties of such a compound are indicated by its composition: it is a simple silver salt and should on the one hand show the characteristic silver properties, modified to a slight degree, if at all, by the acid radicle, while the acid radicle should possess the properties of a phenolsulphonate or sulphocarbolate. It should here be noted that at the same time that objectionable properties, disagreeable taste, insolubility, etc., of guaiacol are removed by sulphonation, that also its medicinal effect is decreased or destroyed.[2] As with sulphonates generally, we here have a water soluble, permanent salt.

Silver Ethylenediamine Salts: See diaminoethane silver nitrate.

Silver Gelatose: Under the title albargin a silver preparation was placed on the market which was prepared (German patent No. 141,967) by adding to a solution of "gelatose" a solution of silver nitrate, neutralizing and evaporating to dryness. The term gelatose is used to indicate the products produced by the hydrolysis of gelatin, also known as gelatin-peptone or gelatone. While the claims made by the manufacturer or his agents have been vague and confusing, it appears to be a simple mixture of silver nitrate and the decomposition products of gelatin. Its chemical properties are those of silver nitrate modified by the presence of the protein bodies, which, as was noted when discussing the colloidal silver compounds, have a tendency to retard or prevent the typical silver reactions.

Silver Ichthyolate: Compounds of ichthyol and silver have, from time to time, been proposed for use in medicine. Just as ichthyol is a complex mixture, so the composition of the ichthyol-silver compounds is indefinite; also, just as ichthyol largely is the ammonium salt of a mixture of acids, known as ichthyol-sulphonic acid, obtained by treating the crude ichthyol oil with sulphuric acid, so the ichthyol-silver compounds are, at least largely, salts in which silver is the basic or positive part and the ichthyol-sulphonic acid the negative part or acid radicle. Several methods resulting in widely differing preparations have been proposed (German patent Nos. 99,124, 112,630, 114,394). The article now on the market, ichthargan, also known as silver ichthyolate, silver ichthyol-sulphonate, is a brown powder, odorless and claimed to contain 30 per cent. silver and 15 per cent. sulphur in permanent combination. It is readily soluble and possesses on the one hand the properties of

2. Ther. Mon., 1899, p. 96; also Arch. f. Exp. Path. and Pharm., vol. 1, p. 340.

a simple silver salt, on the other hand the properties of the ichthyol derivative. It has been claimed that the process (German patent No. 114,394) which rendered the salt soluble, odorless and permanent also rendered the ichthyol less active or even inert.[3] Under the name *Ichthargol* a silver ichthyolate at one time was offered which was insoluble in water and contained 12 per cent. of metallic silver.

Silver Lactate: This is known also by the coined name *Actol*, or *Aktol*. It is the silver salt of lactic acid, $CH_3.CHOH.COOH$. Its composition is $AgC_3H_5O_3+H_2O$, and therefore it contains about 50 per cent. of silver. It is soluble in 15 parts of water. Lactic acid, or 1,2-hydroxy propanoic acid, in common with other 1, 2-hydroxy acids, being readily oxidized, and the silver in silver compounds being readily reduced to the metallic state, silver lactate is a decidedly unstable salt of silver. The ease with which the salt is reduced is shown by the discoloration which its solutions undergo. Its use in medicine has also been based on the tendency to set free metallic silver, as when gauze, ligatures and drains are impregnated with the solution and then exposed to light, so as to cause the reduction. It is one of the precursors of the colloidal metallic silver.

Silver Lysalbinate: C. Paal[4] has prepared two new organic silver salts which promise to throw much light on the chemistry of silver compounds. He has shown the formation of two bodies of weak acid character by treatment of egg albumin with dilute warm sodium hydroxid. These bodies, which he terms protalbinic acid (Protalbinsäure) and lysalbinic acid (Lysalbinsäure), are weak acids and form definite compounds with silver and other metals. Silver lysalbinate he concludes to be a simple salt of silver, which has the peculiar property that when treated with alkalies, silveroxid or hydroxid is formed, but which, because of the protecting action of the protein body, remains in colloidal solution. These experiments suggest the thought that many silver compounds of protein bodies which are said to contain the silver in a complex or masked combination really contain colloidal water-soluble compounds of silver.

Silver Nucleinate: Nargol is the trade name of a compound of silver and nucleinic acid. According to the patent this article is prepared from a purified nucleinic acid made from yeast fermentation residues (German patent Nos. 113,164, 118,050). It is claimed to contain 10 per cent. of silver, is readily soluble in water, yielding a faintly alkaline solution, which is not precipitated by chlorids or albumin. What was said regarding the chemical nature of silver caseinate and silver lysalbinate applies to silver nucleinate. While generally considered to be a complex silver compound containing the silver combined with the nucleinic acid in such a way as not to show ordinary silver reaction, it is possible that instead it is a colloidal compound of silver.

Silveroxyquinoline Sulphonate: Under the trade name Argentol, silver oxyquinoline sulphonate, also called silver hydroxyquinoline sulphonate and silver quinaseptolate, the silver salt of the sulphonic acid derivative of oxyquinoline is sold. Its formula is given as $C_9H_5N(OH)(SO_3Ag)$, and indicates that it contains about 32 per cent. of silver. It shows the properties of a simple salt of silver, modified by the slight solubility in water and by the character of the acid radicle. This acid radicle, still retaining its phenolic hydroxyl, possesses the properties of acting as a reducing agent when in alkaline solutions; thus when the salt is boiled with water it decomposes, with liberation of silver. On this reduction of the silver to the metallic state in alkaline solution the use of the argentol as a dusting powder for wounds and also as an intestinal antiseptic has been based.

Silver Phenolsulphonate: Under the trade name Silberol the silver salt of paraphenolsulphonic acid has been introduced; it is variously called silver phenolsulphonate, silver phenylsulphonate, silver sulphocarbolate. Its composition being $C_6H_4(OH)(SO_3Ag)$ or $C_6H_5O_4SAg$, it contains nearly 38.5 per cent. silver. It is very soluble in water, and in solution shows the properties of a simple silver salt on the one hand, on the other hand those of a phenolsulphonate or sulphocarbolate.

Silver Picrate: Silver picrate, or silver trinitrophenolate, is marketed under the name Picratol. Trinitrophenol or picric acid, $C_6H_2(NO_2)_3OH$, being a body of very decided acid properties, forms a well-defined silver salt. Its composition is $C_6H_2(NO_2)_3(OAg)+H_2O$, and it therefore contains about 30 per cent. of silver. It is claimed to be soluble in 50 parts of water, and, being a simple salt of silver, the solution shows all the characteristic properties of silver salts and also those of picrates.

Silver Protalbinate: Under the names Largin and Silver Protalbin, Lilienfeld, a silver compound has been introduced which is of the general nature of silver lysalbinate (see) and silver nucleinic (see). It is said to be obtained[5] by hydrolysis of nucleoproteids with alkalies, whereby a body soluble in alcohol and free from phosphorus (protalbin or protalbinic acid) is produced. An alcoholic solution of this product on treatment with ammonium-silver nitrate solution yields the silver compound largin. It is said to contain 11 per cent. of silver, to be soluble in 10 parts of water, yielding a slightly alkaline solution, which is not affected by chlorids or albumin. The statements regarding the chemical nature of silver caseinate, silver lysingenate and silver protein (see) apply here.

Silver Proteid: Protargol, or protein-silver salt, also known as silver protein and silver methylenealbumose, is a silver compound, obtained, according to the patents (German patent Nos. 102,455, 105,866, 118,353, 118,496), by treatment of insoluble silver protein compounds with a soluble albumose. The silver protein compound is said to be obtained by treating protein bodies, such as egg albumin, serum albumin, albumoses or peptones, with silver salts. The method of obtaining albumoses given depends on the treatment of egg albumin with formaldehyd, whereby a product is obtained which, dissolved in water, is not coagulated by heat. Protargol is yellow powder, contains about 8.3 per cent. metallic silver and is very soluble in water. No precipitation occurs on addition to the solution of albumin, chlorids or free hydrochloric acid. Addition of alkali sulphids gradually causes darkening and finally formation of a precipitate.

The chemical nature of this article is still in doubt. It is generally stated to be a complex silver compound in which silver forms a part of the protein molecule, forming solutions which contain no silver ions and hence do not show the ordinary silver reactions. On the other hand it is very possible that we are dealing with silver compounds, retained in the colloidal soluble form by the presence of the proteins.

Novargan, described by the manufacturers as a proteinate of silver, appears to resemble protargol closely in composition and properties.

Silver Vitellin: Argyrol and silver vitellin are names applied to a silver compound of a protein resembling vitellin, obtained from serum albumin by hydrolysis. It contains from 20 to 25 per cent. silver and is freely soluble in water. The solution is not sensibly affected by albumin, chlorids or free hydrochloric acid. The statements regarding the composition of compounds containing masked silver (see silver caseinate, silver lysingenate, etc.) are probably equally applicable to this compound.

DISCUSSION.

DR. S. SOLIS-COHEN, Philadelphia, said that he would discuss the therapeutic aspect. Physicians, he said, should consider, in both the external and internal applications of the metals and metallic compounds, the probability of developing the ionic state of the element. An atom set free from combination is by that very action rendered ionic, or is in a nascent state. It is thus prone to enter into a new combination and by reaction with the elements of the tissues produces certain definite chemical results. On the other hand, when preparations are administered in which the ionic state of the metallic atom is prevented or obscured, or is slow of development, certain other effects than those due to combinations of the metal with the tissue may be brought about; and it has seemed to Dr. Solis-Cohen that this is the explanation of the therapeutic action of colloidal silver as distinguished from the salts of silver. In the case of the latter, decomposi-

3. Frankel, S.: Arzneimittelsynthese, second edit., p. 621.
4. Ber. d. chem. Ges., vol. xxxv. pp. 2195, 2206.
5. Wien. klin. Wochft., vol. xl, p. 260.

tion of the salt and combination of the silver with the proteid molecule or with some atom acting as a negative ion takes place. In consequence, partial destruction of the tissues ensues as when mercury or any other metal combines with the cell. If enough silver enters into combination, the cell is completely destroyed; if but little combines there is a stimulation of the vital chemistry of the cell by which the damaged portion may be thrown off and regeneration occur. This, he said, seems to be the way in which mercury and iodin compounds bring about the substitution of healthy for diseased tissue in syphilitic degenerations of cells and perhaps in some inflammatory sequelæ. The chemistry of the masked silver compounds to which Professor Puckner referred, Dr. Solis-Cohen said, is to him *terra incognita*. He does not know of any literature on the subject which will enlighten anyone except the expert chemist, although he has seen more or less intelligible statements of the empirical composition of most of these compounds. He has seen therapeutic results, however, which show that some of these preparations at least have value altogether apart from what might be attributed to them from our knowledge of the action of the ordinary inorganic salts of silver. Dr. Solis-Cohen said that he could not explain this, and has seen no explanation which satisfies him; for the present he is content to accept and to utilize the fact. Some of these substances have bactericidal power especially as regards the gonococcus, but one of the most useful of them has little, if any, value as a germicide, yet it reduces inflammatory action and promotes absorption of chronic exudates. As to the colloidal salts in general, it is quite probable that in the organism they may play the part of katalytic agents, similar in many respects to the organic enzymes. The therapeutic value of colloidal silver may thus be largely due to katalytic action in taking up and again yielding oxygen, thus destroying toxins, bacteria or diseased cells—a chemical amboceptor action, to take an illustration made familiar by Ehrlich—and through such an action it may prevent or retard sepsis. It certainly, he said, has a definite therapeutic action and should be employed more extensively in larger and more frequent doses than we have been using. In regard to the external application of nitrate of silver Dr. Solis-Cohen agrees with Fraenkel that the cauterizing action is due to free nitric acid and that hence organic compounds which do not possess an acid element give us equal disintegrating, resolvent and absorbent effect, and in some instance antiseptic action also, without cauterization. In many cases this is to be preferred. The rules laid down by Fraenkel for the ideal silver compound are simple. They are four—two positive and two negative. Positively the compound should contain the largest amount of silver possible and should be soluble. Negatively it should be non-irritating and should not be decomposed by the tissues. There are some cases, however, in which we do wish decomposition of the agent in order to utilize the ionic effect of the metallic atom. Hence there are special uses for each type of compounds described, and Puckner's classification ought to aid us in deciding which class, and which agent of the class, to use in any given case.

Dr. W. J. Robinson, New York City, said that while we call collargol soluble silver, the adjective soluble is hardly correct. It does not make a true solution, only an exceedingly fine suspension. True, it is the finest suspension obtainable, but still it is a suspension and not a solution. That this is not merely theory, but fact, can be positively demonstrated by the aid of the ultra-microscope. A "solution" of colloidal silver in water, examined under the ultra-microscope, shows the beautiful, shining particles of silver, as clear and distinct as grains of sand. These can not be seen under the ordinary microscope. Dr. Robinson's opinion is that in acute gonorrhea the organic silver compounds are much superior to silver nitrate. In fact, in the acute stage of gonorrhea, silver nitrate, he thinks, should never be used. In chronic urethritis, however, silver nitrate seems to act best, and is still the remedy *par excellence* in spite of the multitude of organic compounds. Dr. Robinson believes that the nitric acid radical plays an important and hitherto unrecognized rôle. It can not be the silver alone that acts, for there are many compounds with a large silver percentage that are much less active than other compounds with a lesser silver content. Dr. Porosz of Budapest had been making experiments in treating gonorrhea with very dilute solutions of nitric acid, and he claims very good results. This goes to show the importance of the NO_3 radical.

Dr. C. S. N. Hallberg, Chicago, said that the relative percentage—amount of silver—ranges from about 10 to about 25 per cent., and he wished to know whether or not the preparations are correspondingly more potent on account of the silver percentage.

Prof. W. A. Puckner, Chicago, said that he did not attempt in any way to take up the therapeutic effect. The paper is intended as a conservative statement of the present state of knowledge for physicians who may wish to consult it. In reply to Professor Hallberg's query he said that the organic silver compounds vary from 5 to possibly 30 per cent. of silver. He has no doubt at all that their action is largely dependent on the amount of silver present. The silver ion is colorless; the ions of the complex silver compounds, so far as established, are colorless. Professor Puckner believes that the color of colloidal silver solutions is due to reduction processes. On close inspection it gradually shows various colors as the particles aggregate, so the color is due to that. In reply to Dr. Robinson's comment, he said that he tried to make a conservative statement of the present theories; it is generally believed that the silver is there in solution, possibly in the metallic form.

THE INFLUENCE OF X-RAYS IN THE TREATMENT OF LEUKEMIA AND HODGKIN'S DISEASE, WITH A REPORT OF TWO CASES.*

AUGUSTUS H. ROTH, A.B., M.D.
ANN ARBOR, MICH.

Since the therapeutic value of *x*-rays in Hodgkin's disease and leukemia is still in the experimental stage, and requires the report of more cases which have been under careful observation and treatment for longer periods of time, in order to arrive at definite conclusions, the two following cases are submitted with their detailed histories, and results of treatment; together with an account of some experimental observations concerning the action of *x*-rays on the blood and urine in leukemia.

HODGKIN'S DISEASE: REPORT OF A CASE WITH A SYMTOMATIC CURE.

Patient.—Mrs. R. came to the medical clinic of Dr. Dock, May 13, 1904, because of nodules in the sides of the neck and pain in the neck and thorax.

History.—The patient's family history is negative. She has had measles, scarlet fever and three attacks of "la grippe." Five years ago she noticed a mass on the left side of the neck above the clavicle. The mass was soft and puffy and movable beneath the skin. It became harder in about six weeks. At first there was no pain, but later she had intermittent attacks of pain of a sharp-shooting character. The skin over the mass became sore to the touch. In the winter of 1903 she had noticed a shortness of breath at times and a sort of a catch on inspiration; so that she breathed with considerable discomfort. During the three weeks before coming to the clinic she had been somewhat hoarse, and had increased difficulty in breathing at night. The patient said that other lumps or masses have appeared since the first one described. The order of appearance was as follows: (1) On the neck above the clavicle, (2) under left arm in axilla, (3) behind angle of the left jaw, (4) on the chest, (5) behind angle of right jaw. The last four occurred within four or five weeks. The patient used to weigh 160 pounds, she now weighs 139. She has a poor appetite, is habitually constipated, has no cough.

* From the Medical Clinic of Dr. Dock, University Hospital.

Examination.—Her frame was of moderate size; there was a fair amount of panniculus. Musculature was small and flabby. The skin was rather sallow, particularly on the abdomen. Linea albicantes were present. A few scratch marks were present. There was slight edema of the ankles. Over the thorax, enlarged superficial veins extend out to each mammary gland. The cervical lymph glands were enlarged on the right side; the largest was the size of a lima bean. Some of them were adherent to one another.

The right submaxillary gland was negative. The left submaxillary gland was the size of a robin's egg, firm and rather freely movable. Above the outer end of the left clavicle there was a nodular mass movable under the skin, hard over the larger nodules, not tender on palpation. The left axillary glands were enlarged; one was the size of a lima bean. The right axilla was negative. Inguinal glands were negative. The thorax was broad and fairly deep. Expansion was small and somewhat diminished over upper left portion.

Percussion: There was a marked relative dullness above the left clavicle caused by the mass described above. Just below the left clavicle down to the second rib, the resonance was diminished. There was a prominence on the upper part of the sternum from ⅛ to ¼ inch above the surface, rounded slightly, more on the left side, due to a thickening felt under the skin. Relative dullness extended over the area. There was a small area of resonance between this and the heart dullness. The percussion of front and sides was otherwise negative. There was good vesicular breathing over front and sides. Over the dull area, the inspiration and expiration were rather harsh. Percussion of back was negative. A few fine râles could be heard at bases on auscultation.

Heart: The apex could not be seen or felt. Sounds were strongest in normal area by stethoscope. There was no increase in dullness. A moderately strong, clear, soft-blowing systolic murmur could be heard along the edge of the sternum. The liver and spleen were not palpable.

Abdomen: Negative.

Urine: Examination of the urine was negative.

Blood counts: Red varied from 4,400,000 to 3,600,000; whites from 7,639 to 2,500; hemoglobin from 80 to 90 per cent.

Differential counts, 500 cells, were made as follows:

	May 7, 1904. Per cent.	May 28, 1904. Per cent.	May 18, 1905. Per cent.
Small lymphocytes	13.6	28	21.58
Large lymphocytes	1.4	8.7	8.56
Transitional	4.4	8.3	58.8
Polynuclear	79.0	48.	
Eosinophile polynuclear	1.6	7.	1.72
Eosinophile mononuclear	...	....	.72
Degenerate	...	....	8.

Treatment.—The patient was treated with *x*-rays every other day over the enlarged glands, from May 6 until June 10.

Course of Disease.—June 10 examination showed that the swelling above the left clavicle had diminished in size. Only two or three glands were adherent, the largest of these being about the size of a small almond. The swelling below the left ear had disappeared. Over the prominence on the upper part of the sternum, the skin was slightly red. The tissue felt thickened. There was no absolute dullness on percussion. The area of relative dullness seemed smaller than before. On the right it extended to the sternal line; dowward to the angle of Ludwig, or about 2 inches below the episternal notch; on the left to the parasternal line. The glands in the left axilla could no longer be felt. The patient left the hospital.

July 13: The patient returned to the hospital complaining of a sense of pressure in the region of the sternum. A gland could be felt above middle of clavicle about size of a pigeon's egg. The *x*-rays were given every other day and arsenic (Fowler's sol.) was administered internally.

October, 1904: The patient was discharged, the glands having returned to normal size.

Jan. 1, 1905: The patient returned to the hospital because of enlarged glands under the left arm and tenderness at times under the upper sternum and in the left supraclavicular space. On examination, the left supraclavicular fossa was found to be obliterated. Just above the left clavicle, there was a gland about the size of a pigeon's egg. Above the middle of the right clavicle, there was a gland the size of a lima bean with one or two smaller ones. High up in the left axilla, there was a gland about the size of a pigeon's egg and of a soft consistency. The prominence of the skin over the manubrium sterni was much less noticeable than on previous admission. There was still a thickening beneath the skin. The area of relative dullness under the upper sternum had not increased in size. There was bronchial breathing over this area, both on inspiration and expiration. The patient received *x*-ray treatments eight minutes in length over enlarged glands and upper sternum. A medium hard tube was used. She received 19 treatments, or a total exposure of 152 minutes. She left the hospital Feb. 5, 1905.

May 18, 1905: After an absence of three and one-half months, the patient returned to the hospital. She had been well most of the time during her absence, but in the middle of March the left side of the neck became swollen and the head could not be turned to left. She suffered great pain on swallowing, regardless of the kind or amount of food taken. Hot applications, poultices and blisters were tried without effect. In 3 or 4 days the swelling began to decrease in size and at the end of a week it was normal. This swelling involved the region between the ear and the glands above the left clavicle and extended around to the median line in front. About May 1, 1905, patient had another attack, in every way similar to the first, and lasting about the same length of time.

Examination by Dr. Dock showed the patient looking about the same as before.

About the middle of the left clavicle there was a prominence from ¼ to ⅜ inch above surface, measuring three inches transversely and 1 1/3 inches vertically. The skin over it was freely movable. The mass was of a moderately firm consistence, rounded and about the size of a small hen's egg. The lower border seemed to extend under the clavicle. Just above the middle of the right clavicle there was a gland the size of a large white bean. The prominence over the upper end of sternum was more marked than before and measured 3½ inches transversely and 2½ inches vertically. The subcutaneous tissue was thickened and tender on pressure. There was relative dulness corresponding to the prominence. No Wintrich's change of sound could be made out. Just under the left anterior axillary fold there was a gland much larger than at time of previous discharge from hospital. It was the size of a hen's egg, very firm, with a small lobule on its outer side. In the right axilla there was a gland just back of the pectoralis major about the size of a pigeon's egg, and freely movable. Above middle of right Poupart's ligament there was a gland about the size of a pigeon's egg, which was very tender on pressure. On the left side there was a gland about half as large as that on right.

Dr. Dock ordered *x*-rays given three minutes over each enlarged gland. The patient was treated with *x*-rays from May 19 daily until July 26, taking in all 50 treatments, each varying from 10 to 35 minutes in length, with a hard tube, 10 inches from the anode. During this time she was exposed to *x*-rays 1,068 minutes.

July 27: The patient was discharged from hospital, feeling well. The inguinal glands were reduced in size to normal. The gland in the left anterior axilla was small and hard. The right axillary gland was also small and hard. The masses above the middle of the left clavicle had disappeared. The prominence over upper sternum had nearly disappeared, there being still a slight thickening. There was no pain or difficulty in swallowing.

Examination of Gland.—On May 31 a small hard lymph gland was removed by incision of skin and fascia just posterior to the right sternomastoid, and was sent to Dr. Warthin's laboratory for pathologic diagnosis. It was found to be a Hodgkin's gland (lymphadenoma) of the D. M. Reed type. A detailed description of the microscopic sections made by Dr. Butterfield of the pathologic department, read as follows:

"The distinction between follicle and sinus is lost. The abnormal elements of the lymph gland are replaced by uniformly distributed cells and a delicate reticulum. The predominating cell possesses a large oval vesicular nucleus with one, or sometimes two, bright nucleoli. These cells vary somewhat among themselves in size and shape. The largest cells are fully from

three to four times the size of the small ones. The protoplasm is fairly abundant, non-granular and eosin-staining. A few of the nuclei are hyperchromatic, but mitoses are rather scarce, only two or three being encountered in a section. Scattered among them is a relatively small number of lymphoid cells of the usual type.

"Bordering on the reticulum, cells with large vesicular nuclei and protoplasmic processes are occasionally seen. Eosinophiles are not found in the sections examined. The connective tissue fibrils forming the mesh-like reticulum are delicate. Coarse bands and hyaline areas are absent. The capsule of the gland is thin and between its bundles of fibers are cords of cells of the lymphoid type. The periglandular fat is not infiltrated.

The predominating cell is usually regarded as being of endothelial origin and corresponds in all respects with the cells described by D. M. Reed, Longcope[1] and others.[2] The section resembles those described by D. M. Reed, but differs in the absence of eosinophiles.

This case is of interest owing to the enlarged lymph glands in the upper mediastinum causing difficulty in breathing and in swallowing, due to pressure exerted on the bronchi and esophagus. These pressure symptoms were entirely relieved by *x*-ray treatment, which caused a decrease in the size of the glands. The much enlarged superficial glands likewise were reduced in size, four different times, by application of the *x*-rays. Each time the patient was discharged with her glands normal in size, but without continued *x*-ray treatment, the glands gradually increased in size again. It is quite probable that the present symptomatic cure will be but temporary unless the *x*-ray treatment is continued often enough to prevent the glandular hypertrophy and hyperplasia.

The blood changes also make a further observation of this case of interest. Fully 10 per cent. of atypical lymphocytes were found in a differential count of 500—this pointing to the possibility that we are dealing with a transition from Hodgkin's disease (lymphadenoma of the D. M. Reed type) to a lymphatic leukemia. The lowest leucocyte count was 2,500 and the highest 7,640. So far there has been no further increase.

SPLENOMYELOGENOUS LEUKEMIA: REPORT OF A CASE UNDER X-RAY TREATMENT WITH CERTAIN BLOOD AND URINE FINDINGS.

Patient.—Mr. J. D. came to the hospital March 3, 1905, because of a dull, heavy feeling in the pit of the stomach, belching of gas and swelling of feet and ankles.

History.—The family history is negative, likewise the early personal history.

Present Illness.—During the last three years the patient has had a distressing, heavy feeling in the pit of the stomach, accompanied by belching of gas. During the past year the pain has come on daily and there has been a loss of 25 pounds in weight.

Examination.—Temperature 99, respiration 20, pulse 78. Present weight, stripped, 135 pounds; height, 5 ft. 8 in. The man's frame was of medium size; panniculus scanty. Muscles were of medium size, soft and flabby. The skin was smooth, dry, elastic, pale and slightly sallow. There was slight edema of the ankles, the left ankle being always swollen more than the right. There were no stiff joints, lymph glands were negative. Pupils were equal and reacted well. Both external jugulars were distended; there was moderate pulsation from clavicles to ears.

Thorax: The thorax is well formed, of fair length and breadth and epigastric angle of 90 degrees. Auscultation and percussion of lungs were negative.

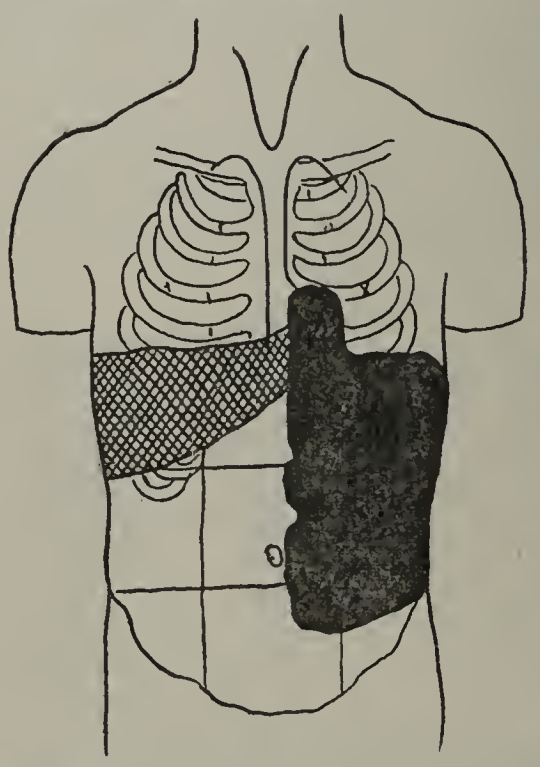
Heart: The apex was visible and palpable in fourth intercostal space, one inch outside of the parasternal line. Dullness was found to begin on the third rib, within 1 cm. of apex, and to extend to the left edge of the sternum. Apex sounds were clear; a soft blowing systolic murmur could be heard over the pulmonic valve, weaker over aortic. The second pulmonic sound was reduplicated.

Abdomen on level of ribs: There was a slight fullness in the left epigastric region between the nipple line and the ensiform appendix, extending to the left sternal line.

Palpation: The abdominal walls were rigid; the right side was negative; the edge of the liver could not be felt. On the left side a firm hard mass could be felt extending from the costal margin; the surface was smooth, border presented a somewhat rounded edge, and the mass descended with respiration. Two notches could be felt on the anterior edge. The mass extended over to the left and down to the level of the anterior spine of the ileum in the left parasternal line. This tumor extended into the left flank and could be felt almost to the midaxillary line where it became indistinct. The outline is shown in diagram. The splenic dullness began at the seventh intercostal space in the midaxillary line and extended straight around to the nipple line, filling Traube's space and being continuous with the dullness over the mass described above. No friction sounds could be heard on auscultation over mass.

Blood count: Reds, 2,500,000; whites, 135,000; hemoglobin, 70 per cent.

Differential count: Small lymphocytes, 2 per cent.; large lymphocytes, 0.4 per cent.; transitional, 2.2 per cent.; polynuclear, 42.6 per cent.; cosinophile polynuclear, 0.2 per cent.; eosinophile mononuclear, 0.8 per cent.; myelocytes, 45.6 per cent.; mast cells, 5.4 per cent.; degenerates, 0.6 per cent.



Diagnosis.—Splenomyelogenous leukemia.

Treatment.—*X*-ray treatment was begun March 20, 1905. The spleen alone and later the spleen and long bones were alternately treated. A hard tube was used, and the area treated placed 10 inches from anode. Each exposure varied from 7 to 15 minutes. During the course of treatment the patient was exposed to *x*-rays about 2,800 minutes. The leucocyte counts taken from time to time are shown in Table 1.

Course of Disease.—The blood condition was rapidly becoming worse at the time of patient's admission to the medical clinic of Dr. Dock; the leucocyte count increasing from 135,000 to 188,000 in four days, without treatment. Notwithstanding the treatment with *x*-rays, the leucocytosis increased until at the end of one month it reached a maximum of 365,000, and at the end of three months' treatment the count returned to about 135,000 again. The condition did not change much for the remainder of the year, the leucocyte count during that period never failing below 100,000 per c.mm. Then the count gradually diminished, falling from 146,420 to 57,320 in one month.

At this time it was deemed advisable to give Fowler's solution in conjunction with the *x*-rays. The Fowler's solution was given for two months, starting with 5 gtt. t.i.d. and gradually increasing until gtt. 15 t.i.d. were given. During this period the leucocytosis dropped from 57,320 to 4,680.

The count has remained normal for over one month, no medicines being given except gr. x. ferrous carbonate for the general condition. It is probable that the leucocyte count would have returned to normal without the use of arsenic, but in this case, as in other cases reported, arsenic seems to have been a valuable adjuvant to *x*-ray treatment.

1. Longcope: Bulletin Ayres Clin. Lab., Vol. 1.
2. MacCallum: "Specificity of Endothelium," Bull. Johns Hopkins Hosp., 1903; Johns Hopkins Hosp. Rep., 1904.

During the course of treatment, a series of differential blood counts were made at stated intervals after *x*-ray exposure, in order to study the immediate effects of the *x*-ray on the blood.

The results are tabulated in Table 2.

TABLE 1.—LEUCOCYTE TABLE.

Date.	Whites.	Hbg.	Date.	Whites.	Hbg.	Date.	Whites.	Hbg.
1905.						1906.		
3-16	135000	70	7-15	145150	70	2-12	101860	..
3-18	168000	70	8-26	153750	..	2-13	152783	..
3-19	184000	70	9-9	235000	..	2-14	178250	70
3-22	188000	..	9-20	235000	..	2-15	157870	..
3-26	270000	70	10-17	244400	..	2-16	150240	..
3-27	242000	..	10-22	228300	..	2-18	143875	..
3-28	248000	65	10-31	202000	70	2-19	129840	..
3-29	297000	..	10-31	178000	..	2-20	145150	..
3-30	248800	70	11-27	188440	..	2-21	146420	..
4-1	282000	..	12-8	140155	..	3-14	109500	70
4-2	282000	..	12-9	164230	..	3-15	94120	..
4-3	305000	70	12-11	181000	..	3-21	71300	..
4-5	310000	..	12-14	210000	72	3-22	61120	..
4-6	248000	..	12-14	187000	..	3-23	57320	*
4-7	311000	..	12-16	176000	..	3-27	54750	..
4-9	297000	..	12-17	192000	..	3-28	38195	..
4-12	360000	..	12-19	192255	..	3-29	36925	..
			1906.					
4-15	363100	..	1-1	131000	..	4-4	25464	..
4-16	378000	..	1-10	115860	..	4-5	16552	..
4-17	365500	70	1-12	98400	..	4-6	17061	80
4-18	342500	..	1-15	99125	70	4-9	13243	..
4-19	330500	..	1-26	165266	..	4-10	10443	†
4-20	294200	..	1-29	168170	..	4-11	8405	..
5-1	282000	..	1-30	270460	..	4-12	8150	..
5-15	274000	..	1-31	285230	..	5-16	4680	80
6-6	260000	70	2-2	140055	..	6-1	4800	‡
6-26	252000	..	2-7	124000	..	6-10	5220	..
7-7	133900	..	2-10	132415	..			
6-28	163500	..	2-7	101860	71			
7-11	165380	..	2-11	115865	..			

* Fowler's sol. given 5 gtt. t. i. d., 1 drop increase a day.
† Fowler's solution, gtt 15 t. i. d.
‡ Fowler's solution discontinued.

TABLE 2.—RESULTS OF X-RAY TREATMENT.

Date.	Time.	Time of Exposure.	Leucocytes Total.	Lymphocytes per cent.	Polynuclears per cent.	Eosinophiles per cent.	Basophiles per cent.	Myelocytes per cent.	Degenerates per cent.
3-27	9 a.m.	8.15	244400	2.4	48.2	1.	5.6	39.6	4.2
	11 a.m.	15 min.	282000	2.5	47.5	1.3	6.2	37.8	4.7
	1 p.m.	.....	300000	2.3	48.0	.5	4.0	36.2	9.0
	3 p.m.	.....	296800	2.8	46.0	.3	5.0	37.2	8.7
	8 p.m.	.....	282000	1.5	50.0	.7	6.0	35.8	6.0
3-28	9 a.m.	None.	248000	2.3	50.0	1.4	5.7	35.5	4.7
4-16	9 a.m.	8.3	278000	2.1	56.4	.7	5.0	32.2	3.6
	11 a.m.	30 min.	280000	2.6	54.8	.4	3.5	32.4	6.3
	1 p.m.	.....	302000	2.5	51.2	.3	4.2	34.0	7.8
	3 p.m.	.....	296000	2.6	54.6	.4	4.4	31.0	7.
	8 p.m.	.....	280000	2.8	53.8	.9	4.7	32.0	5.4

In Table 2 it will be seen that the exposure to *x*-rays, at one time 15 minutes and another 30 minutes, was followed by a gradual increase in the number of leucocytes which reached its maximum about 5 hours after the exposure. The number of degenerates increased in one instance from 4.2 per cent. to a maximum of 9 per cent. and in the other from 3.6 per cent. to a maximum of 7.8 per cent. Nearly all degenerates are disintegrating myelocytes, in many cases consisting only of a remaining network of fibrils. The increase in the number of degenerates seems related to the general leucocyte increase after exposure.

URINARY FINDINGS.

The quantitative estimation of the total phosphates and earthy phosphates was carefully made, in order to determine whether or not the destructive action of the *x*-rays on the white cells and tissues caused an increased elimination of earthy phosphates. As the table below shows, the quantity of earthy phosphates,is, if anything, slightly diminished. This may be due to the fact that the calcium salts are partly deposited in the kidney tissue, and may be the explanation of the calcification found by Warthin[3] in the kidneys of leukemic patients, treated for long periods with *x*-rays.

TABLE 3.—URINARY FINDINGS.

Date.	Amount in C.Cm. 24 hours.	Gms. Total Phosphates.	Gms. Earthy Phosphates.	Albumin.	Casts.
3-19	800	1.60	0.32	Trace.	Few granular.
3-20	750	1.40	0.38	Trace.	Few granular.
3.21	1500	1.25	0.40	Trace.	Few granular.
3-22	1250	1.8	0.29	Trace.	Few granular.
3-24	700	1.18	0.12	Trace.	Few granular.
3-25	1075	1.69	0.10	Trace.	Few granular.
3-27	700	1.78	0.20	Trace.	None.
3-28	1000	2.3	0.40	None.	None.
3-29	925	1.99	0.30	None.	None.
3-30	1175	.90	0.17	None.	None.
3.31	700	1.00	0.16	None.	None.
4-1	870	.70	0.17	None.	None.
4-6	1400	1.4	0.12	None.	None.
4-8	925	.88	0.20	None.	None.
4-10	1200	1.5	0.20	None.	None.
4-14	1050	1.4	0.11	None.	None.
4-18	1250	1.3	0.12	None.	None.

SUMMARY.

1. The beneficial therapeutic value of *x*-ray treatment in Hodgkin's disease is well demonstrated in the case reported. The decrease in the glandular enlargement was comparatively rapid, but the enlargement will probably recur unless *x*-ray treatment is persisted in.

2. In the case of leukemia, for a long time the *x*-ray treatment did not inhibit the further progress of the disease process, as is indicated by the great increase in the leucocytosis for three months after treatment was begun. After using the *x*-ray treatment systematically for over one year, the leucocyte count finally returned to normal. This was not accompanied by much decrease in the splenic enlargement. The use of arsenic as an adjuvant to *x*-ray treatment seemed of much benefit.

3. The immediate effect of *x*-ray treatment is to increase the number of leucocytes in the general circulation. This increase is accompanied by a large increase in the number of degenerate cells, most of which are disintegrating myelocytes. No toxic symptoms have developed during the long course of treatment. Although the leucocyte count has remained normal for a period of two months, the patient was advised to continue the use of the *x*-rays at intervals to prevent a recurrence of the blood condition.

Cornwell Place.

POLYCYTHEMIA.*

WILLIAM ENGELBACH, M.D.
AND
ORVILLE HARRY BROWN, M.D.
ST. LOUIS.

In 1892 Rendu and Widal reported the discovery of a peculiar condition characterized by the rare combination of chronic cyanosis, enlarged spleen and increased number of the erythrocytes occurring with primary tuberculosis of the spleen. In 1899[1] they reported two similar

3. International Clinics, Vol. V.

* Read before the St. Louis Medical Science Club.
* From the Jewish Hospital Dispensary and St. Louis University.

1. Rendu and Widal: "Splénomégalie tuberculeuse sans leucémie avec hyperglobulie et cyanose," Bull. Soci. méd. des hôp., III Ser., 1899, p. 528.

cases. In 1904 Turck[2] reported seven cases and reviewed exhaustively thirteen cases reported in the literature up to that time (Vaquez,[3] M. Martin and Lefas,[4] Cominotti,[5] Cabot,[6] 2; McKeen,[7] Saundby and Russell[8] 2, Rosengart,[9] Osler[10] 4). In 1905 Reckzeh[11] reported five cases, presented some experimental results on the production of this condition on animals and reviewed the literature of twenty-nine cases previously reported. This makes in all a total of thirty-four cases so far reported.

REPORT OF AUTHORS' CASE.

Patient.—Mrs. E. S., aged 40, housewife. Russian Jew.

History.—Family history was negative. Until her thirtieth year she had uninterrupted good health. From that time she dates the beginning of a chronic headache, vertigo and a noticeable diffuse redness of the skin. About five years ago she had a Ménière-like attack of vertigo, which was described as a "sudden rush of blood to the head," causing extreme vertigo and excruciating headache. This lasted about one minute and was suddenly succeeded by a syncopal sensation, without unconsciousness, followed by marked general weakness. A feeling of anxiety and premonition of death was marked during the attack. About this time she noticed for the first time a "lump in her side" (below the left costal arch). In 1902, she presented herself at the Jewish Hospital Dispensary, from the records of which we collected the following history and findings up to Dec. 10, 1905. Her complaint at that time was headache, vertigo, pain in the region of the ovaries, poor appetite, general weakness and a progressive loss of weight during the preceding two years.

Menstrual History: Three normal births (no puerperal hemorrhages). Menses were normal until two years previous when periods became irregular, being absent for two or three months and followed by a scanty menstrual discharge of from two to four weeks' duration, accompanied by more or less pelvic pain.

Physical Findings: Nutrition fair. Color good. Pulse 96. Temperature 99.4. Heart and lungs normal. Abdomen relaxed and tender on pressure. Spleen enlarged. No plasmodia in blood.

Gynecologic examination (Dr. Ehrenfest): "Uterus large; surface smooth. Cervix large, with small erosions. Adnexa normal. Curettement tissue, normal histologically." Quinin gr. v., t. i. d.; increased headache and vertigo. In 1903 she had a severe, prolonged hemorrhage following the extraction of a number of teeth. During the same year she was confined to bed for two weeks with severe cramps in the calves of the legs.

March 22, 1904: "Abdominal pain, headache, poor appetite and the usual menstrual disturbances" are recorded.

Dec. 6, 1904: "Spleen still enlarged. Liver in a state of ptosis. Pain in the cardiac region. Some cough and expectoration. Temperature 98.6." The following year she visited the dispensary occasionally still complaining of the above symptoms in more or less severity with no new physical findings.

On Dec. 10, 1905, she complained of the following: Ever constant headache; vertigo; burning and sensory disturbances of the skin; poor appetite; "cramps" in the abdomen; dragging pain in the back and left side; frequent burning micturitions; amenorrhea two months; insomnia; general weakness and debility. The cough and expectoration of previous years had been of short duration.

Examination.—This showed a poorly nourished and developed neurotic woman of small stature. There was diffuse dusky-red discoloration of the skin turning to purplish-red in hands and lips, increased by emotional influences. Pulse was 86; temperature 98.4; respiration slow and regular.

Scalp: The scalp was tender, more marked on the left side. The ears were a translucent red.

Face: There were mild diffuse cyanosis, dilated venules also on cheek and nose, and tenderness and hyperesthesia on the left side about the eye. The conjunctiva was injected. Pupils were equal and reacted to light and accommodation. Movements of the eye-lids and the eyes were normal. Fundus was dark red; the disc was pink, veins were large and dark blue. The lips were purplish red, the gums, dusky red. Tongue was clean, purplish red. Mucous membrane of mouth was dark red. The tonsils were not enlarged.

Neck: The veins were not dilated or pulsating, there was no murmur or hum, and no glands were palpable. The thyroid was not enlarged.

Chest: Lungs were normal; no emphysema. The apex beat was in the sixth left interspace in the nipple line, it was circumscribed, forcible and compared well with the pulse. The dullness extended to the apex beat on the left, to the lower margin of the third rib above and to the mid-sternal line to the right. Upper sternum was not dull. Sounds were pure, distinct and rhythmical; the second aortic was slightly accentuated. There was no arteriosclerosis. Blood pressure was from 135 to 140.

Fluoroscopic Examination (Dr. Carman): "No abnormal shadows over lungs on mediastinum. Heart reaches just beyond the nipple line, sixth interspace to the left and just beyond the midsternal line to the right."

The splenic shadow corresponded to the description below. Abdomen was relaxed, full in upper third, and tender on the left side. No ascites. Liver, superior border reached sixth interspace, the lower border one finger below costal arch in the mammary line; the margin was blunt, no irregularities, tenderness or pulsation.

Gall bladder was negative. The spleen was greatly enlarged, extending to the mid-line of the abdomen to the right and the lower pole reached to the level of the umbilicus; the notch was palpable on the right border just below the costal arch. Surface was smooth; consistency firm, there was tenderness on pressure; the organ was easily movable; there was no peritoneal friction rub. Hemorrhoids were present.

There was tenderness over the sternum and other superficial bones. The legs were not cyanosed; there were no varicose veins. The toes were slightly cyanosed and cold. Other findings were practically normal. There were no abnormal muscle or joint findings, no edema. Glands were not enlarged. Reflexes were present and equal; there were no other sensory abnormalities.

Urine (single specimens, not catheterized): Yellow color. sp. gr. 1,007. Albumin, a trace; albumoses negative; blood negative; sugar negative; urobilin negative; casts negative; epithelium and leucocytes present.

Blood Examination: Erythrocytes 10,909,000, leucocytes 9,600, hemoglobin above 120.

Course of Disease.—From December 10, symptoms did not materially change. Constant headache and vertigo more or less severe, and attacks of pain in the left side of the face, about the eyes and in the upper jaw were constant complaints. Pain in the left hypochondrium and back occurred frequently. Appetite was poor, and there was discomfort and pain in the stomach and sometimes abdominal "cramps." She vomited once, a yellowish substance containing no blood. There were the usual menstrual disturbances previously described. Prolonged scanty menses produced no change in blood findings. The diffuse cyanosis and enlargement of the spleen were sta-

2. Turck: Beiträge zur Kenntniss des Symptomenbildes "Polycythämie mit Milztumor und Zyanose," Wien. klin. Wochschr., 1904, Nos. 6 and 7.

3. Vaquez: "Cyanose accompagée d'hyperglobulie excessive et persistante." Société de biologie, 7, V, 1902; and "Hyperglobulie et splénomégalie," Bull. Soc. méd. des hôp., 1899, p. 579.

4. Martin and Lefas: "Tuberculose primitive et massive de la rate," Bull. Soc. méd. des hôp., 1899, p. 547.

5. Cominotti: "Hyperglobulie und Splenomegalie," Wien. klin. Wochschr., 1900, No. 39.

6. Cabot: "A Case of Chronic Cyanosis Without Discoverable Cause, Ending in Cerebral Hemorrhage," Boston Med. and Surg. Jour., 1899, vol. cxli, No. 29, and vol. cxlii, No. 11.

7. McKeen: "A Case of Cyanosis Difficult to Explain," Boston Med. and Surg. Jour., 1901, p. 610.

8. Saundby and Russell: "An Unexplained Condition of Chronic Cyanosis, with the Report of a Case," Lancet, 1902, p. 515.

9. Rosengart: "Milztumor und Hyperglobulie," Mitteilung aus den Grenzgeb. d. Med. u. Chir., 1903, vol. ii.

10. Osler: "Chronic Cyanosis with Polycythemia and Enlarged Spleen," Amer. Jour. of Med. Sciences, August, 1903.

11. Reckzeh: "Klinische und experimentelle Beiträge zur Kenntnis des Krankheitsbildes der Polyzythämie mit Milztumor und Zyanose." Zeitschr. f. klin. Med., 1905, vol. lvii, Nos. 3 and 4.

tionary. General weakness and debility was marked so that the patient was frequently confined to bed for a few days. Temperature was never above 98.6. Pulse ranged from 80 to 90. Respiration was never increased or irregular.

BLOOD FINDINGS.

Date.	Source of Blood.	Erythrocytes.	Leucocytes.
Dec. 10, 1905	Finger	10,009,000	9,600
Dec. 11	Finger	10,666,000	....
Dec. 25	Finger	10,908,000	6,600
Dec. 30	Finger	10,004,000	7,400
Jan. 14, 1906	Finger	9,608,000	8,400
Jan. 25	Ear	8,037,000	9,400
Feb. 25	Toe	10,320,000	8,500
Feb. 25	Ear	10,648,000	8,640
Feb. 25	Finger	12,584,000	7,800

Average of the three taken at same time, Feb. 25, 1906, 11,150,000 erythrocytes; 8,313 leucocytes.

Macroscopically the blood was deep, dark-red in color and very thick. It flowed sluggishly and spread with difficulty between cover glasses. Coagulation time, four minutes (1 mm. tube).

Hemoglobin:[12] Nine estimations taken at different times and from different parts of the body ranged between 180 and 200 per cent. One estimation from the ear was 150 per cent.

Color index, 1 or slightly above 1. Specific gravity, from 1065 to 1075 (one estimation of 1058 was made, but was considered low on account of technical error). The spectroscope gave bands of oxyhemoglobin.

Fresh Drop: The cells were crowded closely together; equal in size; symmetrically round in form; color dark, going to center of cell. No apparent increase in leucocytes. Polymorphonuclear cells predominated among the whites. Stained specimens invariably gave the following differential count: Lymphocytes, 11 to 14 per cent.; small, 11 per cent.; large, 3 per cent.; leucocytes, 9 to 11 per cent.; transitional, 6 per cent.; mononuclear, 5 per cent.; polymorphonuclear, 75 to 76 per cent.; eosinophiles, 1 to 1.5 per cent.; polychromatophylic erythrocytes, a few. Mast cells were not increased; there were no myelocytes or erythroblasts.

Treatment.—This has been entirely without results. Quinin, gr. V. t. i. d., increased vertigo and headache. Administration of salicylates, iron and tonics for a long time had no favorable effect. Caffein, bromids and sedatives did not decrease the symptoms. Nitroglycerin, 1/100 gr. every hour for two days produced no change in the symptoms. Valerianates, hydrastis, etc., did not alter the condition. Fowler's solution gtts. xxx daily for three weeks caused no change in the clinical symptoms or blood findings. Three *x*-ray exposures over spleen, of five minutes duration, and two exposures over the face produced no change in the symptoms or blood findings. We wish to take this opportunity of expressing our indebtedness to the authorities of the Jewish Hospital Dispensary for the privilege of reporting this case. Especially to Dr. J. Myer do we feel grateful for the many favors shown in connection with the preparation of this report.

NOMENCLATURE.

Enough of these cases have been reported to establish this condition as a clinical entity. On account of its obscure nature, however, the terminology has been variable. Some of the titles under which the cases have been reported are the following: "A Case of Marked Cyanosis Difficult to Explain." "Unexplained Condition of Chronic Cyanosis." "A Case of Chronic Cyanosis Without a Discoverable Cause." "Polycythemia and Enlarged Spleen." "Polycythemia, Enlarged Spleen and Chronic Cyanosis." "Polycythemia with Splenomegalie," etc., etc. Some writers have referred to it as "Vaquez disease." Since Osler's splendid article some of our own countrymen have suggested the name of "Osler's disease." Turck,[13] considering that the condition has the same relation to the erythroblastic myeloid tissue that myelogenous leukemia bears to the leucoblastic marrow suggests the name of "erythemia" or "erythrocythemia." Polycythemia, while it is only one of the cardinal findings and does not include the other constant findings or, as yet, an established pathologic basis, has become by usage a rather popular term for this syndrome.

ETIOLOGY AND PATHOLOGY.

On account of the variety of pathologic findings no definite etiology has yet been established. There are no constant predisposing causes in the cases so far reported. Heredity and previous diseases bear no relation to this condition. In three cases it followed tuberculosis of the lungs; malaria in one; syphilis in one; organic heart disease (postmortem) in one; primary adenoma of liver was present in one (Turck); malignant tumor of the thymus one case (Reckzeh[11]). The age at which it appears has been previously considered to be between thirty-five and sixty, but Turck's report shows that it occurs at early adult life. Reckzeh reported one case in a child of 10 years old. Weil reported two cases of congenital cyanosis with enlargement of the spleen in the absence of heart lesions, in one of which at autopsy pathologic changes of the thymus and bone marrow (macroscopically) were found. If these cases can be accepted it may be said that it does occur in infancy. As to sex Osler's report gives it as occurring most frequently in the males. But analysis of all the cases shows it to be about equally divided between the sexes.

Singularly enough, in the first three cases reported there was found a primary fibrocaseous tuberculosis of the spleen. Collet and Gallarandin reported a case of tuberculosis of the spleen which showed clinically a deep red skin, progressive emaciation and dark red blood. (No blood examination). Cominotti's[5] case presented at postmortem fibrous splenitis, small nodes of hyperplastic parenchyma cells in liver and caries of spine (no histologic examination). Scharold reports a case of miliary tuberculosis characterized clinically by pigmentation and cyanosis (no blood examination reported). Widal, regarding the pathogenesis, says that it is a functional activity of the marrow probably caused by the decreased function of the spleen due to tuberculosis of that organ. Vaquez says that the blood-forming organs must play a rôle, primarily or secondarily, on account of the polyglobulism. He thinks that the cyanosis is an accidental condition and need not necessarily be present. These findings led the French to conclude that primary tuberculosis of the spleen was the cause of this peculiar syndrome. Since then, however, many cases have come to autopsy in which no tuberculosis of the spleen or other organs has been found.

Turck in his conclusion says: "Naturally I can draw no positive conclusion. I can say that tuberculosis of the spleen, although demonstrated in some cases, will not explain the condition. The symptom complex has been reported with different causes. In some cases a splenic and in some a combination of splenic and liver involvement of a yet unknown character have occurred with the symptom complex. In my opinion, the most probable explanation of this syndrome is a primary hyperplastic affection of the erythroblastic myeloid tissue with histologic changes in the spleen (and liver not yet demon-

12. The blood was diluted with an equal amount of n/8 NaCl solution and the estimation of this dilution by Dare's hemoglobinometer multiplied by two. This method was proved to be accurate by numerous estimations on dilutions of normal blood.

13. Turck: "Splenomegalie Hyperglobulie und Zyanose," Mitt. d. Wien. Geselsch. f. inn. Med., 1902, Nos. 6 and 7, Wien. klin. Wochschr., 1902, No. 14 and No. 6.

strated.)" He argues in support of this theory that: 1. A number of cases have come to postmortem presenting no tuberculosis of the spleen. 2. No other one pathologic finding of the spleen reported will explain this condition, as the findings of that organ are variable. 3. In three cases the liver was found to be enlarged before the spleen. 4. No other organs than the liver and spleen have been found affected which would explain the condition. 5. The blood findings have shown a hyperplasia of the erythroblastic marrow, with also an accompanying hyperplasia of leucoblastic bone marrow. 6. A hyperplastic condition of the erythroblastic myeloid tissue has been found in some of the cases postmortem. 7. Rosengart found in one case blood cells and changes in the spleen and liver histologically (derived from hyperplastic erythroblastic myeloid tissue). The demonstration of the last two points, he thinks, has substantiated his theory that the changes in those organs (spleen, liver and bone marrow) are analogous to the changes which take place in them with hyperplasia of the leucoblastic myeloid tissue in myelogenous leukemia. Turck's blood findings, however, do not correspond with the findings of other writers. He found a leucocytosis and evidence of hyperplasia of the leucocytic myeloid tissue (increase of the granular leucocytes; polymorphonuclear, mast cells and myelocytes) and erythroblasts; and it is these elements which Rosengart found histologically in the spleen, that form a basis for Turck's hypothesis. With the exception of Cabot's one case, however, these blood findings do not occur in the records of other men.

Reckzeh[11] believes that the stagnation of the blood is the probable cause. He says that it is an established fact that the syndrome has occurred in tuberculosis of the spleen, but it is also a fact that it has occurred in absence of tuberculosis of the spleen. He reports a case of a malignant tumor of the thymus causing compression of the superior vena cava having cyanosis, enlarged spleen and polycythemia. His experiments on animals confirmed his belief that compression producing stagnation of the blood was sufficient to produce the syndrome. He says that diminished tonicity of the veins may result in sufficient stagnation of the blood to produce the condition. Turck[13] claimed that up to the time of his article all writers were certain that the blood findings were not those of stasis. Reckzeh's case, in which there was a demonstrable cause (malignant tumor of the thymus) producing a stagnation of blood might not be accepted, especially by the American writers, who have rather considered the absence of a mechanical cause as one of the positive findings. Furthermore, this case showed polycythemia only in the upper part of the body which was affected by the venous obstruction; the lower part giving a blood count which would be barely above normal (4,400,000, 6,800,000). The spleen in this case was hyperemic and only slightly enlarged. He had a slight degree of success in only two of his animal experiments. While he produced the clinical symptoms of dyspnea, cyanosis and venous dilatation in both, the polycythemia was only 6,000,000 in one case and 6,200,000 in the other.

Cabot's[6] one case presented at postmortem, meningeal hemorrhage and passive hyperemia of the organs. Zemlich[14] reports one case in which death took place from cerebral hemorrhage. Saundby and Russell[8] reported one case showing spleen of 1440 gm.; normal consistency, no tuberculosis, old mitral heart lesion; liver large and firm, 1890 gm., brain congested, arachnoid opaque; marrow of femur normal macroscopically (no histologic examination made). Russell suggests a careful examination of the suprarenal bodies in order to account for the extreme muscular weakness.

Further investigation consisting of careful clinical examination including a comparative analysis of arterial, venous and capillary blood taken from different parts of the body at the same time, estimations of the viscosity of the blood, blood culture and inoculations, etc., and complete histologic examination of bone marrow, spleen, thymus, liver, adrenals and other tissues will no doubt do much to clear up the pathology of this condition. Then the establishment of an anatomic basis will only open the field for more investigation on the etiologic factors producing the pathology.

ANALYTIC SUMMARY OF CLINICAL FINDINGS.

An analysis of twenty-five cases shows the clinical findings to be variable. Common to the majority of cases are cyanosis, enlargement of the spleen, headache, vertigo, and the blood findings of polycythemia without a positive mechanical or accepted anatomic cause. Diffused marked cyanosis occurred in twenty-one cases; localized or mild cyanosis occurred in three of the others. Dilated venules were common to practically all clinically, and venous congestion was a common postmortem finding. Enlargement of the spleen occurred in twenty-one cases, accompanied in the majority and preceded in a few by enlargement of the liver. In the majority of cases the splenic enlargement was moderate and in only two was the liver enlargement excessive. Localized pain and tenderness in the region of the spleen and pressure symptoms from that organ were reported in nearly all the cases. Headache of a chronic and constant type was present in twenty. Vertigo was noted in sixteen, and in five of these, paroxysmal attacks simulating Ménières disease occurred. Besides these symptoms, general weakness, disability and greater or less sensory disturbances were marked complaints. The blood findings in general showed polycythemia or polyglobulism. This increase of the erythrocytes and other elements of the blood is not confined to any localized area of the body, but is diffuse or generalized. The number of red cells varied from 5,300,000 (Cominotti[5]) to 12,000,000 (Cabot[6]); average 8,500,000 to 10,000,000. These were normal with the exception of a few cases in which erythroblasts and polychromatophilic cells were reported (Turck and Cabot). The leucocytes varied from 4,000 to 31,000. In half the cases they were not increased above normal. The differential count in the majority of cases was practically normal. Turck found in his seven cases an increase of the granular leucocytes (polymorphonuclear 92 per cent. in one case) and a decrease in the lymphocytes. The latter seems to be a constant finding in a greater or less degree. A few myelocytes were found in all of Turck's cases and in one by Cabot. Blood platelets were found to be increased in number. The hemoglobin percentage was usually markedly increased; the average was from 120 to 180 per cent. Cominotti reported one case in which it varied from 70 to 80 per cent; and Rosengart one case in which it was 200 per cent. Specific gravity was usually increased, varying from 1053 to 1083. Spectroscope examination, when made, showed oxyhemoglobin. Reckzeh found blood serum increased one per cent. in one case.

Among the less common symptoms, the following have been reported: Symptoms of cerebral congestion in a number of cases; edema of the brain, one case; cerebral

14. Zemlich: New York Med. Jour., Oct. 14, 1905.

hemorrhage, one; paraphasia, two; paralysis, two; one of which was hemifacial; neuralgia of face, two; tuberculosis of the lungs, one case; bronchitis, four; emphysema, not marked, two; dyspnea, three; edema of lungs, three. The heart was frequently found enlarged, with a systolic murmur at the apex in a few cases; the second aortic sound was accentuated in some cases and there were changes in the mitral valve in one; the heart was incompetent in all cases. Arterioselerosis was present in four cases; the pulse was not increased in frequency or arrhythmic; it was generally of high tension. Blood pressure was usually increased, but was not so high as might be expected, averaging from 135 to 140. Hemorrhages were not especially frequent. Epistaxes occurred in a few cases; constant oozing from gums in one case; hemorrhage (severe) after extraction of teeth, two cases; hemoptysis, one; hematemesis, two; bloody stools, there was a marked involvement of the liver. Indican occurred in two cases; in one in large amount. The specific gravity was usually low. Casts were present in some of the cases. In many of the cases the urine was normal. Among the symptoms of the special sense organs, the conjunctiva was injected in many cases. Fundus was usually deep red, the veins were generally enlarged, dark purple and sometimes tortuous. Tinnitus was not frequent. Besides cyanosis brown pigmentation of the skin occurred in some cases. Tenderness of the bones was marked in a few cases. Erythromelalgia occurred in the onset in one case. Glands were usually not affected, but were enlarged in one case—probably specific; there was regional involvement from malignant tumor of thymus in one case. The thymus was affected (postmortem) in two cases. Temperature and respiration were normal in the majority of cases.

REPORTED CASES.

Author.	Number of Erythrocytes.	Size and Form of Erythrocytes.	Normoblasts.	Polychromatophiles.	Number of Leucocytes.	Lymphocytes.	Leucocytes Mononuclear and Transitional. Per cent.	Polymorphonuclear. Per cent.	Eosinophiles. Per cent.	Mast Cells. Per cent.	Myelocytes. Per cent.	Hemoglobin. Per cent.
Turck, 1	9,965,000	Normal		Few.	33,800			90			1	140
" 2	7,500,000	Few microcytes										112
" 3	8,220,000	Many microcytes	Few.		12,300	6	11	75	Not included.	1.1		180
	10,625,000	Many poikilocytes	"		19,000	6	11	85	" "	2.3		180
" 4	8 430,0 0	Few microcytes	"		20,400			80	3	1.9		25 gm†
	9,670,000	" "	"		26,700			84	4	3.7		25 gm†
" 5	8.043,000	" "	"	Constant	16,500			81	Not+	Not	Few.	26 gm†
	9,350,000	" "	"	"	30,000			92	+	+	"	
" 6	7,704.000	" "	"	"	9,200			82	Not+	Not	"	20 gm†
	8,024,000	" "	"	"	12,100			90	+	+	"	
" 7	9,700,000	" "	"	Few.	31,500	4	6.8	87	6.8	1.4	"	19 gm†
	10,426,000	Few poikilocytes.	"	"	36,300	4	6.8			1.4	"	
	6,500,000	Normal			18,730				Few.			125
Reckzeh, 1	12,500,000	"			25,000							120
" 2	10,000,000	"			10,000	2	23	73				120
	10,800,000	"			10,200	2	23	75				
	Above 5,400,000	"			Tumor* ab've 6,200	6	18	80				100
" 3	" 7,100,000	"			" " 15,000	6	18					
	Below 4,400.000	"			" below 5,200	6	18					
	" 6,800,000	"			" " 12,000	6	18					
" 4	10,600,000	"			11,000	4	24	75	1			120+
" 5	10.200.000	"			11,000							125+
Osler, 1	9,952,000				4,000				1.8			120
" 2	7,172,000				21,800	14	4	79	.5			120
	10,200,000				23,000							125
" 3	10,616,000				5.100		11	59				120
	11,692,000				5,100							
" 4	8,250.000				8,300							
	9.252.000		Few.		5,800	15		80	3	.8	Few.	110
Cabot, 1	12,000.000		"		10,600						Few.	120
" 2	10,462,000				20,000							150?
Russe and Saundby	19,000,000	Normal			Not increased							120+
McKeen	9,380,000				9,000	18		74	2			120
	9,480,000											120
Zemlich	6,480,000				13,200	12	5	85	2.5			120+
	9,240,000											120+
Cominotti, 1	5,300,000	Few macrocytes			6,000							70
" 2	7,500.000				3,000							80
	5,500,000				7,500	47?	2	40	10			60
Engelbach and Brown	8,037,000	Normal	None.	Few.	6,600	11	9	75	1	Few		180
	12,584,000	"	"	"	9,600	14	11	76	1.5			200

* Malignant tumor of thymus gland.

† F. Miescher's

one; genital hemorrhage (not occurring at labor), three; hemorrhages of skin, one. Among the gastrointestinal symptoms appetite was usually poor; stomach symptoms frequent; vomiting occurred in a few cases; constipation was common. Genital symptoms were usually negative, but in three cases seemed to bear some definite relation to the onset of the disease. The condition followed early menopause in only one case, and was associated with irregularity of menses and menorrhagia in three cases besides the one reported in this article. The urinary findings were abnormal in about one-half of the cases; one case followed nephritis. Albumin was present in over half of the cases; in large amount in a few. Albumoses are not reported. Urobilin is reported present in the majority of Turek's cases and in a few others in which

COURSE OF DISEASE.

The general course of the disease is progressively worse, with remissions of short duration. The most acute case was one of three months (Turek). The average duration was from six to eight years. Vaquez reports a patient living after the presence of symptoms for ten years. In the case reported in this article the patient has had symptoms for eleven years and is still able to do housework except during acute exacerbations.

DIAGNOSIS.

A positive diagnosis is made on the findings of chronic cyanosis, enlargement of the spleen and polycythemia without an anatomic explanatory cause. The cyanosis may not be generalized as some patients have shown it

only on the mucous membrane. Enlargement of the spleen may be slight and was entirely absent in two otherwise typical cases. On account of the treatment and prognosis an effort to diagnose primary tuberculosis of the spleen should be made. Reckzeh comments on the impossibility of such a diagnosis even after an exploratory incision. He says that primary tuberculosis of the spleen occurs in acute cases, as reported in one case by Scharold, in which death took place in seventeen days. Also that in the chronic form there may be only a gradual enlargement of the spleen without temperature or any other general or local sign upon which to base a diagnosis. He further suggests caution as to exploratory operation on account of the hemorrhagic diathesis. The number of erythrocytes must be increased to at least 8,000,000 per cm. m. (Reckzeh), and this condition of the blood must be diffuse as to body location. (This limitation of the number of red cells and the distribution of the polycythemia would exclude one of Reckzeh's own cases as well as some that have been reported by other men).

Differential Diagnosis.—Other conditions causing chronic cyanosis must be excluded. Among these are abnormalities of development of the heart and aorta; patent foramen ovale and ductus arteriorus, stenosis of conus of pulmonary artery, imperfect ventricular septum, and congenital dilatation of aorta; organic heart disease, congenital or acquired; adhesive pericarditis; aneurism; emphysema; and eccentric causes; growths, exudates, etc., causing stasis of venous circulation from pressure. All other enlargements of the spleen are easily differentiated from this condition by the blood findings. Enlargements, displacements and deformities of the liver due to other causes must be differentiated because in some of the cases enlargement of the liver was the first sign discovered. A great many other conditions presenting abnormal increase in the number of erythrocytes must be excluded. An excessive elimination of the fluids from the blood, as severe diarrhea, dysentery, cholera and diabetes may show polycythemia. The use of Levicowater was produced it (Donke and Ewald[5]). Any condition causing impeded circulation may cause polycythemia, as well as cyanosis. Lauselt demonstrated this in organic heart disease. Arsangeli first claimed that it is produced by compression. Compression of bandages of an extremity has produced a slight localized polycythemia. Boston says that in cases of cyanosis there is likely to be an increase in the erythrocytes in the peripheral blood. In a case of anemia with cyanosis of the extremities the finger count was 4,600,000 and that of the ear 1,800,000. (This point must be considered in every blood examination.) Chronic lung disease has given polycythemia as high as 9,000,000 (Toisson, Vaquez, Pelet, Krehl, A. Tusti, Carnuhaci). Lues has also shown this increase in red cells (Verault, Meruer, Egger, Wolf, Koeppe, Jaruntawski, Schroeder). Addison's disease, besides having a pigmentation which may also be present in this disease, may have marked polycythemia (7,700,000, Neuman). Abnormally high red-cell count has been demonstrated in a paralyzed extremity. Obesity may also have this blood finding. Of the intoxications, carbon monoxid, ether anesthesia and phosphorus poisoning (Jaksch, 8,250,000) have shown increased number of red cells. The polycythemia of high altitudes and early infancy is well known. This condition is easily differentiated from other local and general conditions causing headache and vertigo by the presence of chronic cyanosis and the blood findings. It is also easily separated from other obscure blood diseases by careful blood examination.

PROGNOSIS.

The prognosis is absolutely bad as to cure. Nearly all cases have slowly progressed to a fatal termination.

TREATMENT.

The treatment has been very unsatisfactory. Quinin and arsenic produced no good results (Reckzeh). Ehrlich recommends a diet containing not more than 6 mg. of iron (Bunge table). Turk got good results in two cases from Fowler's solution—30 gtts. daily for a prolonged period. In both cases the red cells were decreased about 2,000,000 and the spleen decreased in size and symptoms subsided in one of them. Nitrites and aconite have been recommended to reduce the blood pressure. Osler observed the disappearance of headache after administration of the nitrites. Cabot says that the use of thyroid extract for three months produced no favorable results. Venesection has afforded a temporary relief, but has caused no marked change in the blood findings. Vaquez and Laubry[15] noted improvement of general symptoms in one case after three *x*-ray exposures at seven-day intervals, the blood findings remaining unchanged. Reckzeh reported three cases of splenectomy for isolated tuberculosis of the spleen resulting unfavorably and eight cases of isolated tuberculosis of the spleen resulting in a cure. Cominotti reported two splenectomies for this condition, one resulting unfavorably from late infection (52 days after operation). One patient survived the operation, but at the end of a year's time the blood findings showed polycythemia, with no increase of the leucocytes.[16]

ADDENDUM.—Since this article went to press another article on Polycythemia, with special relation to the etiology of "Migraine ophthalmique" has been reported by Köster.[17] He adds another case, reviews twenty-eight cases found in the literature, and gives some additional references.[18]

506 Mermod-Jaccard Building.

15. Vaquez and Laubry: "Cyanose avec Splénomégalie et Polyglobulie," Trib. Méd., 1904, No. 33.

16. Other articles on this subject are: Breuer: "Polycythaemie mit Splenomegalie," Mitt. d. Wien. Geselisch. f. inn. Med., 1903, No. 16. Weintraud: "Polyglobulie und Milztumor," Zeitsscht. f. klin. Med., vol. lv, p. 91. Preiss: "Hyperglobulie und Milztumor," Mitt. aus den Grenzgeb. d. Med. und Chir., vol. xiii. Zaudy: Wien: klin. Wochschr., 1902, p. 102. Schmidt, R.: "Erythrozytose (Hyperglobulie) und Milztumor," Münch. med. Wochschr., 1904, p. 1207. Kikuchi: "Fall von Polycythämie," Prag. med. Wochschr. Dr. Joseph Sailer reported 2 cases before Gen. Med. and Phys. and Surg., Feb. 13, 1905. Ascoli, M.: Riforma Medica, Dec. 21, 1904.

17. Münch. med. Wochenschr., No. 22 and 23, 1906.

18. Deruschinsky: Dritter Kongress russicher. chirurgen in Moskau, 18-21, xii, 1902; Collins: New York Med. Record, lxiv, 21, 1903; Frommherz: Münch. med. Wochenschr., No. 40, 1903; Zaudy: Schmidts Jahrb., vol. 286, No. 4, 1905.

Differential Diagnosis of Pneumonia and Pleurisy with Effusion.—Differentiation is sometimes very difficult, and in such doubtful cases Favitzky recommends Leube's sign for differentiating a cavity in the lungs from pneumothorax. Auscultation of the lungs in pneumonia reveals bronchial respiration, which is heard directly under the ear of the physician, and if the patient coughs numerous râles are to be heard simultaneously and close to the ear. In pneumothorax and in pleurisy with effusion the râles sound as if they were at a great distance from the ear of the examining physician. This peculiarity of auscultation is a certain sign for differentiating pneumonia from those cases of pleurisy which present the clinical picture of pneumonia, when even an exploratory puncture may not prove decisive. His communication is published in the *Russky Vrach.*, No. 20, 1906.

A STUDY OF ACUTE LEPTOMENINGITIS (*STREPTOCOCCUS PYOGENES*).*

E. E. SOUTHARD, M.D.

Assistant Professor of Neuropathology, Harvard University Medical School, Pathologist to the Danvers Insane Hospital, Second Assistant Visiting Pathologist, Boston City Hospital.

AND

R. R. STRATTON, M.D.

Voluntary Assistant in Neuropathology, Boston City Hospital.

BOSTON.

The present report comprises a series of human brain infections with *Streptococcus pyogenes,* together with the results of experimental inoculation of streptococci in the brains of guinea-pigs. The human cases have been studied histologically with particular reference to, first, the age of the exudations; secondly, certain prominent vascular lesions; thirdly, the neuroglia reaction. The guinea-pig tissues are of value mainly in the study of the exudation. The work has been carried on with methods like those employed in two previous studies, on infections with *Staphylococcus pyogenes aureus*[1] and with pneumococcus.[2]

We have little evidence to bring on the vexed question of the relationship of pneumococcus and streptococcus. The lesions reported here differ in no constant feature from those reported by Southard and Keene in 1905 for the pneumococcus.[2] The effects of the two organisms on tissues, so far as observable by the methods used, would place the organisms in one group.

We are under obligations to Professors Councilman and Mallory for direction of the work, to the various members of the City Hospital and the Danvers Insane Hospital staffs, named below, for the clinical sketches, to Dr. E. E. Tyzzer for his private case, and in particular to Drs. C. W. Duval and P. A. Lewis for supplying us with cultures in the course of their pneumococcus work in 1904-5.[3]

CASE 1.—G. K., male, aged 35, was admitted to Dr. J. Orne Green's aural service at the Boston City Hospital, March 31, 1900.

Clinical History.—Patient had had four attacks of chills and fever in past two years. Two weeks before admission there had been headache, malaise, severe pain in both ears, followed by bloody discharge two days later, and by a chill two days later. Pain in vertex of skull a little to right of median line, restlessness, insomnia, vomiting. Night before entrance, rigor for five minutes, followed by sweating, temperature 104. Both tympana were found perforated and remains of drum swollen. Tongue was coated and tremulous. Temperature rose to 103 and 105 and remained high during the day following. Leucocytes 16,000, April 5. Mastoid exploration: *Streptococcus pyogenes.* Improvement in headache, temperature 103. April 8, temperature 105.5, leucocytes 8,000. April 10, delirium, dilatation of pupils, vomiting, hiccough. April 11, muttering delirium, almost constant hiccough, fixed and dilated pupils, fibrillary tremor of neck and arm muscles, retraction and rigidity of neck. Death, April 12. Arms rigid four hours before death.

Autopsy Findings.—The autopsy, performed 10 hours after death by Dr. Fulton, gave the following head findings, with abstract of trunk findings: Calvarium normal. Sinuses normal. Dura slightly more tense than normal. Subdural space dry. Convolutions flattened. Scattered over the cortex are a few small yellowish opaque areas (2 to 3 mm. in diameter) set, as a rule, along blood vessels of the sulci. The material in these areas is tough and tenacious. The largest area (about 1 cm. in diameter) is on the mesial surface of the left frontal lobe. Yellowish-white fibrinopurulent exudate covers optic chiasm, optic tracts near chiasm, the cranial nerves, the under surface of pons and medulla, the superior vermis of the cerebellum. The exudate does not communicate with the auditory meatus. The ventricles contain from 30 to 50 c.c. of cloudy gray fluid and a small amount of pus in each posterior cornu. Choroid plexus is swollen and grayish. There is pus in lateral recesses of fourth ventricle. Mastoid operation in right ear. Left middle ear contains a slight amount of serous fluid.

Anatomic Diagnosis.—Acute leptomeningitis, encephalitis, and ependymitis. Mastoid operation (right side). Acute splenic tumor. Decubitus of right buttock. Echinococcus cyst of liver. Slight endaortitis. Chronic fibrous pleuritis.

Microscopic Findings.—Cultures from cortex, optic nerve, ventricles and lung gave *Streptococcus pyogenes.* Cultures from heart, spleen and liver were sterile, from kidney negative.

The cortex shows a deep meningeal exudate in which the phagocytic cells far outnumber the other types. The distribution of cells is irregular, since in a few foci about veins there are dense groups of lymphocytes. In a very few places there are fields with polynuclear leucocytes predominating. Vascular lesions are not prominent. The cortical tissue shows little evidence of lesion other than a swelling of the neuroglia cell bodies of the subpial layer. There is no evidence of multiplication of these cells.

The acute inflammation of the lining of the ventricle is shown by a diffuse infiltration with polynuclear leucocytes and an almost universal diffuse swelling of neuroglia cell bodies. The ependyma appears in places as a double or triple row of irregularly arranged cells. Among the ependymal cells is an occasional leucocyte.

The choroid plexus shows an exudate both within and between the folds. Connective tissue cells about the vessels within the folds are swollen. In places there is a dissection of the epithelial cells away from central fibrous tissue by means of polynuclear leucocytes. The vacuoles of the epithelial cells are often perfectly demonstrated, even in folds packed with leucocytes. Of the cells outside the epithelium, the majority are polynuclear leucocytes, mixed with desquamated epithelial cells and a limited number of cells of the phagocytic series. There are few cells of the lymphocyte series.

The cord shows a meningeal exudate in which polynuclear leucocytes are still numerous, but are outnumbered both by phagocytic cells and by cells of the lymphocyte series. In some places the lymphocytes exceeded the phagocytic cells in number. Cells of the plasma cell type stand out prominently, especially when they contain two or three nuclei. The phagocytic cells contain both fat and exudative cells. Of the included cells, lymphocytes and plasma cells are the most prominent; but polynuclear cells are also seen; and it was not rare to find cells of all three kinds engulfed in a single phagocyte. Some of the plasma cells escape inclusion and undergo a spongy vacuolation of the cell-body, which remains basophilic very late, together with a swelling of nucleus and clumping of chromatin.

At the points of deepest exudate the vessels have undergone extensive local lesions. All three coats of the arteries may be involved; the adventitia shares in the general meningeal exudate, emigrating leucocytes may be found sometimes in the muscularis, and the intima is often lifted by exudate cells. There are more polynuclear cells and deposits of fibrin about the arterial lesions than elsewhere. In the walls of the veins polynuclear cells and particularly plasma cells are prominent.

CASE 2.—J. D., male, aged 49, was admitted to Dr. J. Orne Green's aural service at the Boston City Hospital, May 30, 1900.

Clinical History.—Patient had had pneumonia at 30. There had been severe headache and a discharge from right ear for three weeks. On admission ear showed slight infiltration of

---

*From the pathologic laboratories of the Boston City and the Danvers Insane Hospitals.

*Read in the Section on Pathology and Physiology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

1. Southard, E. E., and Keene, C. W.: "A Study of Acute Hemorrhagic Encephalitis (*Staphylococcus pyogenes aureus*)," Am. Jour. Med. Sci., March, 1905.

2. Southard, E. E., and Keene, C. W.: "A Study of Brain Infections with the Pneumococcus," THE JOURNAL, vol. xlvi, Jan. 6, 1906, p. 13.

3. Duval, C. W., and Lewis, P. A.: "Studies on the Pneumococcus," Jour. Exper. Med., vol. vii, No. 5, August, 1905.

membrana tympani and looked convalescent. There was drowsiness and severe headache. Heart was enlarged to left. Arteriosclerosis. May 31, pain also in back and hips, increasing stupor, followed by unconsciousness at noon. Retention. Bloody urine drawn by catheter. Death, June 1, in coma with slight rigidity of extremities and moderate dilatation of pupils.

Autopsy Findings.—The autopsy, performed 54 hours after death by Dr. H. C. Low, gave the following head findings, including an abstract of the trunk findings:

Dura is only slightly adherent to calvarium. Vessels of dura are considerably injected. There is no sign of thrombus in any of the sinuses and no edema. Vessels of pia are considerably injected. There are few slight subpial hemorrhages over vertex. Near vertex, more especially near the posterior part, there is a fair amount of purulent secretion, and over the top of the cerebellum, between the posterior parts of the hemispheres and over nearly the whole of the base of the brain, there is considerable thick purulent exudation. On the under side of the right temporal lobe is a small place nearly 1 cm. in area where the cortex and meninges are adherent to the base of the skull. At this point a little pus came from the brain tissue. On cross section through both hemispheres at this point there is exposed in the right temporal lobe an abscess cavity about 3 x 3 x 4 cm. This is filled with thick yellow pus. About this for an area of from 1 to 2 cm. the brain tissue is soft and reddish and numerous dark red points fill nearly the whole of the rest of this lobe. No other abscesses are found in the brain tissue. In the ventricles there is a fair amount of thick purulent secretion which covers the choroid plexus.

Both middle ears are normal. The point where the brain and meninges are adherent to the skull is near the center of the right middle fossa just anterior to the eminence of the semicircular canals, and on chiseling away the bone from here, pus is found to be in some of the bone spaces. Just posterior to this, but a little more to the side, for nearly over the entire end of the external canal there is a slight amount of pus in the bone spaces. Mastoid cells have been scraped out in operation. Mastoid cells anterior to field of operation do not appear to be subject to any suppurative process.

Anatomic Diagnoses.—Acute leptomeningitis and ependymitis. Abscess of right temporal lobe. Suppurative osteitis of petrous portion of right temporal bone. Mastoid operation. Acute hemorrhagic cystitis. Healed pulmonary tuberculosis with localized tuberculous pleuritis. Chronic fibrous pleuritis. Slight chronic interstitial nephritis. Hypertrophy and dilatation of heart. Slight area of fatty change in mitral valve.

Microscopic Findings.—Culture from lateral ventricle gave *Streptococcus pyogenes.* The brain abscess contained a variety of organisms. Cultures from heart's blood, spleen, liver and kidney were sterile.

The histologic changes in the cortex are chiefly related to the underlying abscess. The meningeal exudate is slight and composed of mononuclear cells, mixed with a few polynuclear leucocytes. The mononuclear cells, as a rule, approach the plasma cell type. Compressed plasma cells sometimes occur singly or in pairs in the walls of small vessels in the nerve-cell layers of the cortex. For the most part there is very little sign of exudate in the deeper layers. The cells about the smaller vessels near the abscess are swollen and increased in number. Cells in apposition with the vessel walls are occasionally seen in mitosis. The nerve cells have undergone a variety of changes which are chiefly the product of edema—swelling and vacuolation, shrinkage and chromophilia, extrusion of nucleolus. The satellite cells occur often in groups of eight or ten, about the small pyramidal nerve cells, which are themselves, as a rule, in some degree altered. The satellite cells fail to show well-defined cell bodies or any sign of inclusions. There seems to be evidence that nerve cells may occasionally disappear from the midst of satellite cell groups. No mitoses were observed among the satellite cells in this case. Near the abscess there are a few nuclear figures in large cells, some of which had numerous vacuoles in their cell bodies outside the spindles. It is doubtful whether these figures occur in endothelial or neuroglia cells. There is little evidence of cell cavity. In the areas of frank hemorrhage here and there is a phagocytic cell containing blood globules.

The lining of the ventricle is macerated. There is rarely any evidence of proliferation in the lining cells. In places the wall is supplanted by masses of fibrin containing exudative cells. The vessels of the underlying tissue are dilated, sometimes to an unusual degree, and the sheaths of the veins are filled with cells of the lymphocyte series, including many examples of the plasma cell. Mitotic figures are scattered at rare intervals through the edematous tissue underlying stripped portions of the ventricular lining. One skein form was found in a highly vacuolated cell which lay free in a collection of blood globules. Otherwise the tissue shows merely degeneration or necrosis. In some cases the small cells near the nerve cells share their chromophilia, but in other cases the small cells appear to stain densely at a stage when the nerve cells are still fairly well preserved. The tissue under the ventricle appears to have been more directly subject to injury than the tissues about the subcortical abscess, so that there is here more sign of degeneration than of the cell proliferation seen about the abscess.

Case 3.—R. R., male, aged 53, was admitted to the service of Dr. A. L. Mason at the Boston City Hospital, April 21, 1901.

Clinical History.—Patient had been in bed three weeks before admission; malaise, weakness, headache, dizziness. On admission cheeks were flushed, slight left internal strabismus, pupils small; otherwise all signs were negative. The day after admission temperature rose to 102, patient became restless and noisy and tremor of extremities set in. April 24, ascites, dribbling of urine, mild delirium, Cheyne-Stokes respiration. April 26, incontinence of feces, rigidity of neck. April 29, patient unconscious and quiet, respiration rapid and superficial. Death.

Autopsy.—The autopsy, performed by Dr. E. E. Southard twenty hours after death, showed:

Head: Calvarium and dura normal. Longitudinal sinus filled with dark fluid blood. Subdural space shows marked increase of fluid; probably 300 c.c. leaks away. Pial vessels injected, pia over sulci opaque and tense from contained fluid. There is considerable web-like, thinly-spread opaque connective tissue in basilar region, especially around optic chiasm and in Sylvian fossæ. Brain substance is very soft; corpus callosum like Neufchatel cheese. All tissues are moist. Puncta cruenta distinct on section of centrum semiovale. There is about a test-tubeful of clear fluid in each lateral ventricle.

Cord: Much clear fluid under tense dura. Cord tissue is firm and well shaped, but over all is a thin, glistening, opaque-white deposit, slightly more marked in lumbar region. Foramen of Magendie and accessory foramina are occluded by this overgrowth. Middle ears normal.

Anatomic Diagnoses.—Basilar and spinal organizing meningitis. Internal hydrocephalus. Increase of subdural fluid. Edema of brain. Fatty degeneration of heart muscle. Slight fatty degeneration of renal epithelium. Congestion of spleen, liver, kidney, pancreas, bladder mucosa. Chronic pharyngitis. Hypostatic pneumonia. Chronic adhesive pleuritis. Chronic perisplenitis. Chronic interstitial orchitis.

Microscopic Findings.—Cultures from heart's blood and lung showed *Streptococcus pyogenes* and many other organisms. The liver showed *B. coli.* The tissues at the base show considerable variety in exudate. The looser tissues contain fibrin and polynuclear leucocytes, which outnumber the other kinds of cell. The adventitiæ of the vessels contain numerous cells of the lymphocyte series.

Intimal lesions, although prominent in arteries of smaller caliber, spare the larger arteries. The intimæ of the smaller arteries are lifted or completely dissected off by an exudate composed chiefly of cells of the lymphocyte series, among which are examples of the typical plasma cell. Between the loosened intima and the elastic layer of the artery there may be deposited a dense, deeply-stained sheet of fibrin. In late stages of the lesion, when the intima has sealed off, the appearances simulate a fibrinous transformation of the intima. The smaller vessels are often wholly blocked by masses of fibrin and desquamated cells. The nerve tissue beneath the exudate is edematous and shows nerve cells in various stages of injury, retaining, as a rule, well-staining nuclei. Single leucocytes invade the pons tissue for several millimeters. There are a few narrow marginal areas of nerve tissue replaced by fibrin

and leucocytes. The cord shows an exudate of cells of the lymphocyte series and well-developed vascular lesions resembling those at the base of the brain.

CASE 4.—H. W., male, aged 31, was admitted to the service of Dr. Henry Jackson at the Boston City Hospital, July 30, 1903.

Clinical History.—There had been persistent emesis without gastric pain or distress, three weeks. Dizziness, frontal headache, blurring of vision, swelling of feet and ankles, slight cough with expectoration. Stopped work two days before admission. Urine contained albumin and casts. Diagnosis, chronic interstitial nephritis. Discharged four days after admission. Readmitted Sept. 10, 1903. Heart enlarged; soft systolic murmur at apex transmitted to axilla. Heart and kidney signs grew gradually worse. Mind not clear. Oct. 14, 1903, erysipelas set in; developed rapidly to sloughing of eyelids with severe chills. Death Oct. 15, 1903.

Autopsy Findings.—The autopsy, performed five hours after death by Drs. R. E. Lee and E. E. Southard, showed:

Head (Dr. E. E. Southard): Scalp is everywhere edematous, ranging from 2 to 3 cm. in thickness. Tissues over frontal eminence and orbits are brawny and hard to turn back. Calvarium of normal thickness, without diploë. Dura of normal tenseness and thickness. Moderate injection of middle meningeal system. Sinuses filled with fluid blood and cruor clot. Meshes of pia distended with cloudy (fibrinous) fluid, without cellular exudate. Arachnoidal villi moderately well developed. Substance moist. Ventricles showed no increase of fluid. Interbrain, midbrain and bulb normal. Vessels at base normal.

Middle Ears: Right normal. Left contains greenish fluid pus with streptococci. Ethmoid cells normal. Orbital tissues are infiltrated with greenish pus containing streptococci. Eyes removed from behind show fairly clear conjunctivæ, with impression of opacity behind, especially marked in left eye.

Anatomic Diagnoses.—Chronic diffuse nephritis. Hypertrophy of heart. Slight fatty myocarditis. Erysipelas of face. Acute purulent conjunctivitis. Edema of pia and of substance of brain. Acute otitis media (*streptococcus*). Purulent infiltration of orbits (*streptococcus*). Slight bronchopneumonia. Chronic obliterative pleuritis (left). Fatty liver. Edema of glottis. Hydrothorax.

Microscopic Findings.—The exudate into the pial tissues consists of slight edema with exudative cells almost invariably mononuclear, mainly lymphocytes. There is an occasional polynuclear leucocyte. The only signs which can be connected probably with the septicemia are in some of the small arteries. These show desquamation of endothelium, with dense fibrin deposits on the elastica. The elastica in these arteries, which are in certain cases entirely plugged by leucocytic thrombi, fail to contract in the usual wave form, but remain smooth and flat. There is no considerable neuroglia reaction in the subpial layer or elsewhere.

CASE 5.—J. B., male, aged 19, was admitted to Dr. G. A. Leland's service at the Boston City Hospital, Dec. 30, 1903.

Clinical History.—Patient had had measles as a child. There had been discharge from right ear for six years, with occasional attacks of pain and fever. External abscess once opened by family physician. Two weeks before admission a similar attack was followed by severe, continuous, generalized headache. Temperature 102 two days before entrance. Pain localized in occipital region, radiating to interscapular region. Neck rigid. Leucocytes, 24,000. Right mastoid operation (Dr. Leland). Temperature dropped to 100. Leucocytes, 16,000. Slight rotary nystagmus, more marked in right eye. January 1: Right facial paralysis. January 3: Pupils dilated, right more than left; fundus examination showed haze of both discs with congestion of lamina cribrosa and venous engorgement. Vomiting. Restlessness. Second operation by Dr. Leland; exploration of cerebellum. Apparent improvement. Vomited once. Pain in occiput allayed by morphia. Wound dressed under primary ether, January 5. Afterward delirious, crying with pain in head. Morphia. Delirium once more, followed by coma, morning of January 6; respirations 6 to 8; pulse not countable and intermittent. Death.

Autopsy Findings.—Examination, limited to the head, made by Dr. E. E. Southard 2¼ hours after death; showed scalp veins filled with fluid blood. Tissues adjacent to lips of wound gray and chocolate-brown, edematous and friable. The necrosis involves the mastoid insertions of the right sternomastoid, splenius capitis, and trachelomastoid muscles; head drawn forcibly to the left. Rigor absent. Tissues warm.

Calvarium thin, rarely reaching .5 cm. Right temporal bone removed intact by sawing shows thumb-sized cavity of the mastoid exenteration and perforations made for exploration of posterior fossa cerebri (cerebellum and temporosphenoidal lobe).

Dura of the usual thickness, lightly adherent opposite bregma, can not be picked up readily with forceps. Small perforations are found in outer portion of right posterior fossa cerebri. Localized on dura covering posterior surface of petrous portion of temporal bone, involving meatus internus and aqueductus vestibuli, is a layer, .2 to .4 cm. deep, of granulation tissue with thick fibrinous greenish-gray pus. Sinuses contain fluid blood. Tissues about right superior petrosal sinus soaked in pus.

Pia shows moderate injection, chiefly of the large veins of sulci, over vertex and sides. Meshes of pia under interbrain floor are filled with tenacious greenish pus which follows both Sylvian arteries for a few centimeters into fossæ Sylvii and follows anterior choroid arteries for some distance. Optic nerves are held in edematous purulent fibrous tissue; nerves look redder than usual on section. Slender processes of fibrin containing pus enclose anterior communicating and anterior cerebral arteries; leaves of pia in this region are somewhat firmly united. Pituitary not grossly involved. Pia over pons is distended with plastic layer of greenish pus. Considerable clear fluid is found between pia and dura. Pia over cerebellum contains no pus except immediately over abscesses, but the subdural space of the right posterior fossa contains considerable purulent fluid.

Ventricles: The posterior horns of both lateral ventricles, the anterior horn of right lateral ventricle and floor of third ventricle contain slight plastic deposits of greenish pus and fibrin, apparently settled out of a considerable surplus of turbid brownish fluid distending the cavities. The ependyma of the ventricles is swollen, deeply velvety and peels away in a clinging layer .1 to .2 cm. thick. Fourth ventricle is lined with what resembles an early pyogenic membrane, which can be peeled away readily, leaving an edematous ependyma with deep red punctation.

Substance: Sulci of hemispheres are almost effaced. Substance is moist. Very little injection either of cortical or of central ganglionic vascular systems. The substance of the right cerebellar hemisphere external to flocculus contains a greenish abscess cavity 2 x 2 cm. across, of an indefinite depth. The edema and a slightly greenish color invade the dentate nucleus playing out vaguely. Injected tracks of director (used for exploration) are found in cerebellum and temporosphenoidal lobe. The abscess is just missed by the exploration. Interbrain, midbrain, and isthmus are normal on section. Weight (minus considerable fluid) 1490 gm.

Anatomic Diagnoses.—Mastoid operation. Exploration of cerebellum and temporosphenoidal lobe. Chronic otitis media. Abscess of cerebellum. Acute fibrinopurulent basal leptomeningitis. Pyocephalus internus. Edema of substance with flattening of gyri.

Microscopic Findings.—Culture from brain showed streptococci.

The cortical meninges at the vertex show a thin layer of large mononuclear cells of the phagocytic type. One of these occasionally contains a polynuclear leucocyte.

At the base the exudate is often 3 to 4 mm. thick and varies according to its relation with vessels. The free exudate shows numerous cells of the phagocytic series, together with polynuclear leucocytes and cells of the lymphocyte series in about equal numbers. The adventitiæ of the veins contain chiefly cells of the lymphocyte series. The tissue at the base is the only region examined in this case which shows marked lymphocyte infiltration.

The cerebellum shows an exudate which is deepest in the sulci between the outermost laminæ and beneath the superficial

pia mater. There is focal invasion of the molecular layer by leucocytes, either singly or in very small groups; but, beyond there, there is no evidence of either gross or selective injury to the nerve tissue. The exudate shows polynuclear leucocytes very prominently; but counting shows that they rarely exceeded the mononuclear exudative cells in number. Of these mononuclear cells the most prominent are large cells with eccentric vesicular nuclei, which are phagocytic for polynuclear leucocytes. About a few small veins are collections of cells of the lymphocyte series; for these cells the larger mononuclear cells fail to be phagocytic, save in rare instances.

The choroid plexus shows numerous cystic spaces about the larger vessels. The spaces contain granular material and numerous corpora amylacea. The acute inflammatory reaction fails to involve the central regions of the plexus, but is strikingly shown immediately below the ependyma in many folds. The deepest exudate occurs at the tips of certain folds, where the polynuclear leucocytes sometimes accumulate in masses and dissect off the epithelium. Numerous folds are wholly spared from exudate. It is not possible to give a reason for the variations shown. As a rule the epithelium is well preserved and shows many of its characteristic vacuoles. An occasional leucocyte is caught in emigration between the epithelial cells. Cells of the lymphocyte series are almost never in evidence. Between the folds there is considerable granular material with polynuclear and desquamated ependymal cells.

The floor of the fourth ventricle fails to show the pyogenic membrane suggested in the gross. The gross appearance was produced by an extensive local acute infiltration and formation of fibrin which permitted stripping off the superficial gray matter in a single mass. The fibrin collects particularly in the walls of small vessels, many of which are no longer pervious. The most prominent cells in the subependymal tissue are polynuclear leucocytes, some of which approach closely or seem to bury themselves in dying nerve cells. The neuroglia reaction does not go beyond swelling and process formation in the cell bodies.

At the edge of the abscess the intima of the arteries is raised by polynuclear leucocytes and may be stripped away. The large vessels remain pervious; it is probable that the smaller vessels become blocked at their origins. The abscess contains considerable fibrin. The polynuclear leucocytes far outnumber the mononuclear cells which are chiefly of the type with vesicular nuclei. The mononuclear cells in the free exudate are not very often phagocytic. The optic nerve shows edema and exudate of polynuclear leucocytes, together with a few phagocytic cells, in both the subarachnoid and subdural spaces.

Case 6.—C. W., a male, aged 52, was admitted to the service of Dr. J. L. Ames at the Boston City Hospital, Jan. 21, 1904.

Clinical History.—Gonorrhea at twenty-seven. Rheumatism for ten years. Heavy drinker. Little alcohol for four days. The day before entrance fell while riding on car platform, procured one drink of whisky, lost consciousness and was brought to hospital. On admission dull, tremulous. Showed systolic murmur at apex transmitted to axilla and systolic whiff in arteries. Arteriosclerosis. Reflexes normal. Delirium with motor excitement set in but was replaced later with prostration. Slight nystagmus and deviation of eyes to right; pupils equal, reacting to light. Pulse rose to 160, respiration to 60, temperature to 105. Some spasticity of arms and legs. Râles appeared over both chests. Death, Sept. 26, 1904.

Autopsy Findings.—The autopsy, performed four hours after death by Drs. R. L. Thompson and N. H. Gifford showed:

Head: Hair black and fairly thick. Scalp normal. Calvarium thin. Dura adherent to calvarium. Sinuses contain cruor clot. Arachnoidal villi are fairly well marked. Meshes of pia contain over 50 c.c. cloudy, greenish-yellow, fairly thin fluid. Greenish and yellowish-white, fine and coarse thread-like markings along pial sulci. Both small and large vessels are moderately congested. Vessels of circle of Willis show slight diffuse thickening. Convolutions are well rounded and of fairly soft consistence with slightly congested vessels. Ventricles contain a few c.c. clear and pale yellow fluid. Cysts (1 to 3 mm. in diameter) stud choroid plexuses of both lateral ventricles. Pons and medulla of reduced consistence. Substance on section shows nothing remarkable.

Spinal cord: Fluid turbid. Pia thick and greenish-yellow. Cord soft.

Anatomic Diagnoses.—Acute leptomeningitis and encephalitis. Acute bronchitis. Edema and congestion of lungs. Chronic mitral endocarditis. General arteriosclerosis. Chronic splenitis. Chronic fibrous pleuritis. Chronic fibrous pericarditis. Chronic external pachymeningitis. Apical scar of left lung. Cysts of choroid plexus.

Microscopic Findings.—Cultures from heart's blood, lung and brain showed pure *Streptococcus pyogenes;* from liver, spleen and kidney, *Streptococcus pyogenes* and *B. coli.*

The cortical meninges are edematous and contain an exudate of polynuclear leucocytes which enclose numerous pairs of streptococci. Numerous chains of streptococci lie free in the granular material deposited in the pial meshes. Large phagocytic cells are rare. Single polynuclear leucocytes are found at rare intervals imbedded in the intima of the arteries; mononuclear cells are still rarer in this locus.

The severest lesion in this case affects the large sulcal veins, whose walls may be distended with polynuclear leucocytes outnumbering the original cells making up the wall. In the neighborhood of the injured veins there is an accumulation of large mononuclear cells; but these fail to be phagocytic in many cases, either for polynuclear leucocytes or for bacteria. Next to the severely injured veins, the larger arteries also exhibit the deepest infiltration of the intima with polynuclear leucocytes. The spinal meninges show an early exudate with few large phagocytes. Vascular lesions were not prominent in the blocks examined.

Case 7.—L. H., a girl baby, born Dec. 25, 1904.

Clinical History.—Breast fed, had a cold at five weeks, but rapidly got well of it. The mother had sore throat, pain in back and legs, and fever when her child was about seven weeks old; the child at this time showed nothing but slight distension of the abdomen. A temperature of 104 appeared Feb. 23, 1905, throat and chest were negative. Admitted to Massachusetts Infants' Asylum with pulse 136, temperature 103, weight 5,000 gm. There was a slight red area on the left leg, attributed by the mother to a burn. The next day this red area had spread; the knee swelled; the head was held retracted. February 25, the whole left leg was swollen and tender but without increase of temperature, respiration shallow and grunting. The body temperature was maintained above 101. The leg improved; the morning of February 28, jaundice and convulsions appeared; general twitching, legs flexed, arms flexed across chest. The throat became filled with mucus. The chest showed râles, probably transmitted. March 1 the jaundice had increased, the head was held retracted, there was an occasional general twitching. The child vomited and failed to take food well. The eyes were fixed, the pupils dilated and sluggish. Death at midnight.

Autopsy Findings.—Examination 12 hours after death by Dr. E. E. Tyzzer showed: Murky limpid fluid beneath dura. Pial meshes contain murky bile-stained exudate. Exudate thick over cerebellum, thinner over cord. Murky bile-stained fluid exudate in ventricles.

Anatomic Diagnoses.—Acute cerebrospinal meningitis (*Stereptococcus*). Septicemia. Icterus (gall bladder and ducts normal).

Microscopic Findings.—Cultures showed *Streptococcus pyogenes* pure in heart's blood and liver, mixed with a *Staphylococcus* in spleen.

Cortex Cerebri: The meshes of the pia mater are distended with cells, of which the large mononuclear cells greatly outnumber the rest. The large mononuclear cells are phagocytic for numerous pairs and chains of streptococci. The inclusion of other exudative cells is frequent, but by no means so prominent as the bacterial phagocytosis. Large phagocytes of an omnivorous character are found, with vacuoles containing fat, mononuclear cells, polynuclear leucocytes and bacteria. Polynuclear leucocytes are frequent, but tend to show signs of degeneration. Cells which can be identified as belonging to the

lymphocyte series are not frequent. A few cells of the plasma cell type, occasionally with two nuclei, lie in the adventitiæ of the vessels.

Cerebellum: The exudate varies in character, but shows everywhere a certain number of polynuclear leucocytes. Colonies and chains of streptococci abound in the superficial pia mater, and as a rule are enclosed within cells, both within polynuclear leucocytes and within large phagocytic cells. The bacteria seem to pass through an eosin staining stage before complete digestion. Except in the deepest places of the exudate opposite the mouths of the sulci, the polynuclear leucocytes are outnumbered by the large phagocytic cells. It is not infrequent to find cells phagocytic for polynuclear leucocytes which are themselves phagocytic for bacteria. In the sulci the connective tissues are packed with large vacuolated cells which accommodate themselves readily to changes of shape in the spaces they occupy. There are a few cells of the lymphocytic series, often with vesicular nuclei or with chromatin not murally arranged; but cells of the finished plasma cell type are rare.

Spinal Cord: The large phagocytes containing several kinds of cells and bacteria are prominent in the looser tissues. The adventitiæ of the vessels contain also a moderate number of cells of the lymphocyte series. The arteries show intima occasionally lifted by edema, with rarely an exudative cell beneath.

CASE 8.—C. H., a hydrocephalic imbecile, aged 45, entered Dr. H. W. Mitchell's service at the Danvers Insane Hospital Oct. 13, 1905, and died Jan. 24, 1906.

Clinical History.—Dull at school. "Always ailing." Never could earn his living. Became vagrant several weeks before admission. Impairment of memory. Romberg sign absent. Gait fairly steady. Coarse tremor of fingers. Left pupil slightly irregular and without reaction. Knee jerks lively. Achilles reflexes brisk, with slight clonus. Plantars present. Spurious clonus of both ankles. Arm reflexes lively. Movements slow and listless. No spontaneous conversation. Memory poor. Limitation in range of thought. Lack of ideation. Fainting spell two weeks before death. Decubitus. Pneumonic area in right lung. Death.

Autopsy.—Autopsy, performed by Dr. E. E. Southard, showed:

Head: Hair is gray and thin. Scalp strips readily. Calvarium thin, without diploë. Dura not adherent to calvarium. Dura distended. Sinuses contain liquid blood. Arachnoidal villi in moderate amount. Dura strips readily from pia except over ascending frontal gyri, where, particularly on the left side, the dura and pia are gummed together by a plastic stringy yellowish-gray exudate, covering an area on each side scarcely larger than a dollar and thinning out gradually at edges. There is no gross connection between this exudate and the otitis media of the right side. Except at the vertex, the pia mater is without exudate or edema and shows a few fibrous streaks over sulcal veins. The substance of the brain, cerebellum, interbrain, pons and bulb, exclusive of fluid contained in the ventricles, weighs 960 gm. The fluid withdrawn from the ventricles measures 1,300 c.c. The sulcation of the brain is rich but chiefly superficial and gives the impression of an alligator skin bag. The pia strips readily from the substance. Many of the sulci run inward for a few millimeters and bend at right angles, assuming a position concentric with the hemisphere surface for a few millimeters. It is not possible to homologize the sulci found with the sulci of the normal brain. The Sylvian fossa is the sole landmark on the flank of the hemisphere. Incision of the ventricles and withdrawal of the contained clear liquid show basal structures of a normal appearance, but almost total absence of callosal and fornix tissue. The walls of the ventricles are thinnest above and thickest below and behind. At the vertex the cortex and underlying white matter measure in places no more than 1.5 cm. The walls of the ventricles are of smooth and normal appearance. The cerebellum is of normal appearance and consistence. Lower structures are grossly normal. Right middle ear contains semi-liquid yellowish-green pus communicating with a cavity 1.5 cm. in diameter, in the mastoid process.

Anatomic Diagnoses.—Purulent otitis media dextra. Localized purulent leptomeningitis (vertex). Congenital internal hydrocephalus, with atrophy of corpus callosum and fornix and with microgyria and thinning of cortical substance. Absence of diploë. Slight aortic sclerosis. Apical scar of left lung. Edema and congestion of posterior parts of lungs. Cholelithiasis.

Microscopic Findings.—Culture from left middle ear shows *Streptococcus pyogenes.*

Cortex Cerebri: Phosphotungstic hematein section shows diffuse loose meshed neuroglia tissue with delicate isolated fibrils running in all directions. In the cell layers of the cortex the fibrils are curly, but run, as a rule, radially. Just below the pia, they begin to run tangentially and unite in a thin, dense mat. The deposit is thickest at the bottom of the sulcus, and there are sometimes projections of glia into the pial tissues in this situation, recalling the picture of *Randsklerose.* Some of the cells of the subpial region show two or three centrosome-like bodies in a light space in the cell body. The gliosis is remarkably even and delicate and is not markedly perivascular.

Cortex with Exudate (Frontal Region): Hemorrhage, with numerous polynuclear leucocytes and mononuclear cells in about equal proportions. Many of the mononuclear cells are phagocytic for polynuclear leucocytes.

The neuroglia cells beneath the pia have swollen bodies; some have two or three nuclei.

Cortex from Various Regions of Right Hemisphere (Nissl Stain): Superior frontal, ascending frontal, ascending parietal, paracentral, calcarine, limbic, gyrus rectus, show unusual cell pictures characterized by an unusual relative cell richness suggesting the pictures presented by the cortex of lower animals. The richest cell picture is derived from the calcarine area. Right Ammon's Horn (eosin methylene blue, phosphotungstic acid hematein) shows a thin superficial fibrillary gliosis with delicate even fibrils, and centrally a regular rich felt work of even delicate fibrils with some stouter ones.

Choroid Plexus: Numerous concentrically-layered bodies, Villi few. Vacuoles few.

Caudate Nucleus: Nerve cells as wide apart as usual. The ventricle wall shows flattened cells having basal corpuscles (phosphotungstic acid hematein) but, as a rule, no cilia. There are no elevations like those in more acute internal hydrocephalus.

Cerebellum: Centrum album gyrorum apt to be slender.

Cord: Nissl sections show an occasional eccentric nucleus in anterior horn cells at several levels. Phosphotungstic acid hematein demonstrates no excess of neuroglia.

The striking point exhibited by this case is the reaction of the neuroglia to the acute leptomeningitis. This reaction is a cellular gliosis resembling in every detail the cellular gliosis of the normal adult brain. Although the case showed very slight resistance to the streptococcus infection of the middle ear, yet the cells of the meninges showed phagocytic tendencies resembling those of the normal adult meninges, and, so far as demonstrable, the polynuclear leucocytic exudate was in the process of clearing up by the mononuclear cells.

CASE 9.—J. O., a woman, aged 40, entered Dr. F. R. Sims' service at the Danvers Insane Hospital April 4, and died April 9, 1906.

Clinical History.—Headache, violence, delusions of persecution, incoherence, four days before entrance. Nursing child thirteen months old. Herpes of lips, skin lesions probably due to chafing, constant listlessness. Lay on right side with head retracted and drawn to left and eyes turned up and to the left. Gait tottering, with feet held wide apart. General tremor. Knee-jerks apparent. Babinski reflex doubtful. Limbs held rigid. Pupils widely dilated. Resistive, distractable, disoriented. Fever 103. Signs of pneumonia in right lung set in three days after admission. Death.

Autopsy.—Autopsy, performed by Dr. E. E. Southard, showed:

Head: Hair dark. Scalp normal. Calvarium thick, with abundant diploë. Two emissary vein foramina in parietal bones. Dura lightly adherent to calvarium in bregmatic region. Dura tense, not markedly injected. Sinuses contain liquid or freshly clotted blood. Superficial cerebral veins deeply injected. Dura and pia inter-adherent in region of arachnoidal villi, through yellowish, very fibrinous pus. Fine

superficial injection of vessels everywhere, but very little congestion of veins except at vertex. Pia externally smooth and only slightly moister than usual. The sulci and gyral surfaces are in a few regions filled with yellowish fibrinous pus: the upper two-thirds of both fissures of Rolando, the upper thirds of both ascending parietal gyri and, to a less extent, the upper thirds of both ascending frontal gyri, both superior parietal lobules, both fossæ of Sylvius. The circle of Willis is wholly concealed by fibrinous pus. The cisternæ of the base are filled with cloudy liquid. The middle two-thirds of the basilar artery is covered with fibrinous pus. The loci of origin of the fifth nerves are marked by masses of pus. The pia over culmen monticuli is swollen to a depth of .5 cm. with pus. The great horizontal fissure of cerebellum contains stringy yellowish pus.

Brain weight, 1,310 gm. Gyri a trifle flatter than normal. Substance everywhere equally reduced in consistence. The olives are no harder on palpation than the remainder of the medulla. Cerebellum softer relatively than cerebrum, softest in vermis which in places is almost diffluent. The line of Gennari in the cerebrum is hard to make out. There is no focal difference in consistence in the cerebrum, even in the areas of most marked suppuration.

Ventricles contain a normal or only triflingly increased amount of fluid which is cloudy. At the tip of each posterior cornu is a small mass of fibrinous pus. There is no pus in third or fourth ventricles.

Cord: On incision of the lumbar dura, considerable cloudy liquid flows out under slightly increased tension. Dura everywhere pinker than usual. Pia everywhere cloudy, but puffed out with yellowish fibrinous pus in cervical, middle thoracic, and lumbar regions notably behind. The root ganglia are frequently swollen.

Middle ears both free from pus. Cribriform plate apparently normal. Sphenoidal sinus filled with fibrinous pus. Nasal mucosa of right side swollen, injected, on left side apparently normal. Pituitary body soft, shows traces of pus on upper surface. Optic nerves, third nerves Gasserian ganglia (notably beneath), to a less extent seventh and eighth nerves, are surrounded by pus as they leave cerebral dura. Left retina excised; shows no injection.

Anatomic Diagnoses.—Acute cerebrospinal leptomeningitis. Serofibrinous exudate of vertex, Sylvian fossa, interpeduncular space, pons, vermis and horizontal fissure of cerebellum, pia of cord, origins of cranial and spinal nerves, Gasserian and spinal root ganglia. Acute purulent internal hydrocephalus and seropurulent exudate in cisternæ. General edema of brain and cord, particularly of vermis of cerebellum. Empyema of sphenoidal sinus. Edema of lungs. Bronchopneumonia of both lower lobes. Herpes labialis. Numerous minute hemorrhagic lesions of back and thighs. Acute splenitis. Acute and chronic nephritis. Slight aortic and mitral sclerosis. Extra cusp to pulmonary valve. Chronic adhesive pleuritis (bilateral).

Microscopic Findings.—Smear from sphenoidal sinus shows tremendous numbers of organisms, probably all streptococci. Smear from vertex shows great numbers of polynuclear leucocytes and mononuclear cells but no organisms. Smear from purulent fluid of basal cisternæ shows a very few pairs of small diplococci within leucocytes. The results of blood serum cultures confirmed the findings by smear.

Examination of the tissue in this case, showed a remarkable variety of pictures. Leptomeningitis, although fatal, was in the process of clearing up. This clearing-up was taking place from above downward. The pus at the vertex, about the longitudinal sinus and in pial meshes was sterile. The dominant cells were mononuclear. They contained numerous polynuclear leucocytes and fragments of nuclear material, besides considerable fat. No organisms could be found in these tissues. The picture thus resembled that in a healing leptomeningitis of meningococcal origin.

The pus at the base, on the contrary, contained a few pairs or short chains of an organism, which proved to be *Streptococcus pyogenes* in culture. The meshes of the pia at the base showed a higher proportion of polynuclear leucocytes than the pus at the vertex. Mononuclear phagocytosis was in process; but the healing must be regarded as in a far earlier phase than that of the vertex.

Traversing the bone at the base of the brain and examining the mucosæ of the sinus, a picture of acute inflammation is found. The polynuclear leucocytes here far outnumber the mononuclear cells and the tissues are filled with countless chains of streptococci. The general picture in this case anatomically resembles that in a meningococcus case of meningitis. The clearing up of the exudate takes place irregularly and from above downward.

GENERAL CLINICAL SUMMARY.

Seven patients were male, two female. Seven patients were over 30 years old; two of these over 50. One was nineteen, one an infant. Five cases showed otitis media.

	DURATION OF ACUTE SYMPTOMS.	DURATION OF CEREBRAL SYMPTOMS.
Case 1	4 weeks	24 days
Case 2	24 days	3 days
Case 3	4 weeks	4 weeks (8 days?)
Case 4	13 weeks	Brief
Case 5	Chronic middle ear (6 years), 24 days	24 days
Case 6	7 days	7 days
Case 7	7 days	7 days
Case 8	2 weeks	2 weeks
Case 9	10 days	10 days

As will be seen by comparison with the durations in a series of pneumococcus cases reported by Southard and Keene,[2] the durations in these streptococcus cases run a trifle greater than in the pneumococcus cases.

GENERAL ANATOMIC SUMMARY.

The brain lesions vary in character and distribution. The leptomeninges showed lesions in all cases. Cases 4 and 3 were exceptional. Case 4 showed distension of the pial meshes with a flocculent liquid exudate (which might readily simulate the so-called meningitis serosa). On the other hand, Case 3 showed an opaque tense pia mater of the vertex, with a thin web of organizing tissue at the base (simulating the appearance of a late meningococcal infection). The other seven cases all showed a more cellular exudate, variously described as thick, tenacious or fibrinous, and as opaque yellowish or greenish in color.

The distribution of the pial exudate is interesting. Except the hydrocephalic (Case 8), the base showed exudate in all cases, if we include the serous case (Case 4); if we include Case 4 as an exudative case, in all cases except Case 3 (organizing) and Case 5 (fulminant operative case). The cord is involved from the base, as a rule, the ventricles from the base or from abscesses of the substance adjacent to the ventricles.

The lesions of the brain substance are various. Flattening of the gyri stands in close relation with involvement and probably with actual distension of the ventricles. When flattening is absent, the substance is soft and moist and may be finely injected. No case of cortical flattening fails to show exudate in the ventricles; but in early stages of ventricular exudation the sulci may flare normally. Frank abscesses occurred in Case 2 (right temporal lobe) and Case 5 (right cerebellar hemisphere).

Cases 1, 2, 4, 5, 8 showed otitis media. Of these Cases 1, 2, 5 came to mastoid operation. Case 4 was an erysipelas case. The nasal sinuses were affected in Case 9. Of the others Cases 3, 6, 8, 9 showed lung lesions, which can not be certainly brought into relation with the leptomeningitis. Case 7 showed septicemia with icterus. Decubitus of one buttock occurred in Case 1, in multiple areas in Case 8, hemorrhagic cystitis in Case 2.

Of chronic lesions, whose relation to the infection

can not be asserted, the following occurred: arteriosclerosis in Cases 1, 4, 9; chronic pleuritis in Cases 1, 2, 3, 4, 6; chronic internal hydrocephalus in Case 8.

GENERAL SUMMARY OF MICROSCOPIC FINDINGS.

As in previous work with cases of *Staphylococcus pyogenes aureus* and of pneumococcus brain infections, alterations were found in several of the tissues. The lesions of the streptococcus series present a close resemblance to those of the pneumococcus series. Characteristic for both organisms are the lesions of the vessels. The vascular lesions (described in more detail in the paper on pneumococcus infections) may serve to distinguish the pneumococcus-streptococcus cases, as Dr. Councilman has suggested, from meningococcus cases, It would be less easy to distinguish these vascular lesions from those in tuberculous leptomeningitis, in which the occurrence of local necrotic areas might need to be considered in making a diagnosis from the tissues. With a sufficiently long series of cases, it might be possible to mark out, from the vascular lesions alone, the course of the disease leptomeningitis.

Not merely the vessel lesions, but also the meningeal exudates serve in their variety to show how complex is the question of the natural history of leptomeningitis. As indicated in the two former papers,[1, 2] the occurrence of exudates with numerous mononuclear cells of the lymphocyte series is in itself not sufficient to differentiate any one type of leptomeningitis, such as the tuberculous, the syphilitic, the general paretic. Plasma cells are ubiquitous. The meninges exhibit exudates of a very variable character in many infections and toxic conditions. Perhaps it is not immediately necessary to ascribe the variations of exudate to different qualities of pathogenic agent. It will be desirable to work out first the time relations of a few organisms.

GENERAL SUMMARY AND REMARKS.

The foregoing cases of streptococcus brain infection are of interest in comparison with the cases of pneumococcus brain infection described last year. The main results may be stated in connection with those of the pneumococcus study.

As with the pneumococcus series, the questions of main interest are brought up by the varying extent and effect of lesions like (1) arteritis and phlebitis, (2) the cellular infiltration of the meninges with its variation in respect to phagocytosis and (3) the attendant cellular and, in certain cases, fibrillar gliosis.

Clinically viewed, the cases are of various duration and run a trifle longer than the pneumococcus cases. The relation of streptococcus meningitis to lung lesions is less suspicious than that of staphylococcus or pneumococcus brain infections to lung lesions. The part played by lung lesions in bringing about meningitis has probably been overestimated. The streptococcus cases seem to be more pronouncedly "cerebral" or "meningitic" from the very start of acute symptoms than are the pneumococcus and staphylococcus cases, which are a little more "primary."

Anatomically viewed, the streptococcus cases preserve their resemblance to the pneumococcus cases, even to the production in some cases of small abscesses. Particular attention may be called to the case simulating meningitis serosa (Case 4). It would be well to review the cases of this disease to be found in the literature and exclude those without bacteriologic examination.

Considered histologically, the streptococcus cases again resemble the pneumococcus cases. The same relations of bacteria to leucocytes, of leucocytes to cells of the macrophage type are shown in the two series. The intimal infiltration of the arteries and the intimal proliferation and exudative lesions of the veins run parallel in the two cases. The occurrence of early fibrillar gliosis (in the sense of the production of new fibrils by the swollen neuroglia cells) is important. The interpretation of early fibrillar gliosis is not easy, since it is necessary to exclude extraneous causes (old age, arteriosclerosis, chronic active lesions) for its occurrence.

An extensive series of guinea-pig inoculations, which need not be reported in detail, confirmed the main result, viz.: the parallelism in action of the two organisms, pneumococcus and streptococcus. Orbital inoculations simultaneously in numerous animals with histologic examination of animals killed on successive days were employed as in previous work. The inoculations of the strains used, as a rule, produced no clinical sign, despite the suppuration present. As in the human cases, each of the lesions found is apparently wholly curable taken by itself.

The reversible character (to use a phrase from books of logic) of the phenomena is shown in the strikingly various pictures presented by the exudate in Case 9 taken from the vertex downward.

Indeed, it is rare to find in streptococcal, as in other forms of acute leptomeningitis, any single lesion which is necessarily incurable. It is probable that in many cases the patients die of toxemia. This toxemia may vary with the extent of the exudate. The amount of exudate which we see at an autopsy may mislead us in our idea of the proportions of the toxemia, since wide reaches of the pia mater may be sterile, though other parts contain multiplying organisms. Differential studies of the exudate in several places are essential if we are to get a fair sample of the conditions. Such studies might readily assume clinical importance.

The early glioses found in several cases are of some importance both in general and clinically. These glioses will be best considered in connection with those in tuberculous meningitis in a subsequent paper.

THE EARLY DIAGNOSIS OF ABDOMINAL HEMORRHAGE.*

H. S. HOLLENBECK, A.B., M.D.
CHICAGO.

The need of a means of detecting abdominal hemorrhage promptly, surely and safely has long been felt, and the inadequacy of present methods is so generally recognized that no discussion of that phase of the subject is necessary at this time.

Serious abdominal injuries are comparatively common, and it is well known that a large percentage of them are fatal. In those cases of abdominal injury in which severe hemorrhage results the majority of the patients die within an hour, while in other cases, in which the injury may have been just as severe, the hemorrhage may be insignificant and yet sepsis may follow. The signs of sepsis do not appear at once, but are delayed, so that by the time a positive diagnosis can be made in the majority of cases operation is useless.

---

*Read in the Section on Pathology and Physiology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

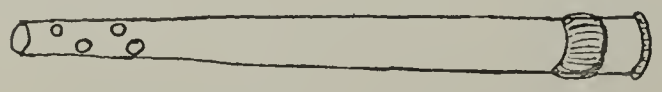
* From the Department of Physiology, Northwestern University Medical School.

To complicate the problem of diagnosis, the majority of cases of abdominal injury are found to be without definite external sign, thus rendering obscure the nature and severity of the injury, while the ordinary signs of hemorrhage are manifestly unreliable in the presence of shock, which is the usual condition presented in cases of severe abdominal injury.

In every such case the possibility of sepsis must be recognized and preparations should be made for its proper treatment. The most favorable time for the removal of septic material is immediately after it is introduced. Unfortunately, the symptoms which render possible a diagnosis and insure the necessity of operative procedure do not appear for some time after the injury, during which time the germs are rapidly multiplying and increasing in virulence.

Confronted by these conditions, and recognizing that the life of his patient depends on his early diagnosis of sepsis, the surgeon has felt himself forced to the expediency of an exploratory laparotomy as the only positive means of an immediate and accurate diagnosis available to him.

This method of solving the problem is clearly open to serious objections, for, in the first place, it is unscientific to take so serious a step as a laparotomy until all other available means of diagnosis have been exhausted. In the second place it is sometimes impossible to obtain the consent of the patient or his friends for an immediate operation. In the third place it would add



much to the condition of shock of the patient, who might already be in a critical condition, and the procedure might serve only to prove that no operation was necessary, as has happened repeatedly in the past.

It is the purpose of this paper to show that there is an aid to diagnosis which has heretofore been overlooked and which may in any case be used to determine whether or not the injury has caused abdominal hemorrhage.

DESCRIPTION OF INSTRUMENT.

The instrument used consists of a trocar about three inches long, the cannula having a lumen of one-sixteenth of an inch in diameter and a needle which just fits into the cannula, but is longer, so that the point projects (Fig. 1). One end of the cannula is thin, but not pointed, while the needle has a triangular point which projects from the end of the trocar at one end and a handle which can be held firmly between the thumb and finger at the other end. One end of the cannula is fitted for the attachment of an aspirator or a hypodermic syringe. Near the opposite end are several holes in the side of the tube about the diameter of the lumen of the tube and far enough apart to avoid weakening of the trocar (Fig. 2).

With the needle in place, the instrument can be inserted into the abdominal wall and by careful manipulation forced through it and the parietal peritoneum. The needle can then be withdrawn and the aspirator attached. The side holes insure an opening for the entrance of fluid, should the one at the end be occluded by pressing against the wall of the intestine.

The instrument may be kept sterile and ready for emergency use by being placed in a tube filled with alcohol and properly sealed. The alcohol may be used for preparing the field of operation and thus avoid a delay.

EXPERIMENTS.

Exp. 1.—Anesthetized dog. The instrument was carefully inserted into the abdominal wall until it seemed that the parietal peritoneum had been pierced, leaving the point free in the peritoneal cavity. The abdomen was then opened by a median incision near the point of insertion of the trocar and careful inspection showed that the trocar had penetrated to the peritoneal cavity without perceptible injury to the peritoneal covering of the intestine. Several more punctures were then made and in no case was the intestine punctured or injured. A series of similar punctures were tried successively on five other dogs, all of which verified the results obtained above.

Exp. 2.—A series of observations were made to determine the manner of entrance of the trocar. One edge of an abdominal incision being turned back, a puncture was made so that the trocar came through at a point where the intestine touched the wall; as the point came through the parietal peritoneum the intestinal wall was pushed before it without apparent injury, owing to the resistance of the wall and its free mobility. This result was verified without exception in a series of experiments on other dogs. These experiments seem to show conclusively that with careful manipulation there is practically no danger of puncturing the intestine. If there is uncertainty as to whether or not the trocar is through the wall, a test can be made by partially withdrawing the needle, if the point is in the peritoneal cavity it will be relatively freely movable, and if it is not through, it will be more fixed.

Exp. 3.—Having satisfied myself as to the practicability of passing the trocar into the peritoneal cavity I proceeded to the problem of detecting hemorrhage. Another dog was anesthetized and by means of a small incision hemorrhage from the spleen was produced. Three minutes later a puncture was made four inches away, a glass syringe attached to the trocar and blood drawn off. Punctures were made at other points on the same side and in each case blood was obtained. In another dog hemorrhage from the liver was produced and four minutes later blood was obtained from several points on both sides. These results were verified by a series of tests made at a later time. So long as the blood remained in a liquid state it could always be detected, but here another problem suggested itself, for the blood may clot within a very short time after the injury.

Exp. 4.—Anesthetized dog. Trocar inserted and 1 ounce of water injected, then some of it was withdrawn with syringe. It was perfectly clear. This was repeated, using various amounts of water, showing that normally there is no discoloration of the water. Hemorrhage from the liver was produced which ceased in two minutes. In thirty minutes the blood had all clotted as shown by an incision.

The trocar was inserted four inches from the border of liver and 40 c.c. of water injected. A syringe-full was then withdrawn and it was dinstinctly blood-tinged. Repeated experiments showed that clotted blood in the peritoneal cavity may be detected invariably by the discoloration of the water.

The evidence seems conclusive and demonstrates the ability to detect at once blood in the peritoneal cavity, whether fresh or clotted.

In a large per cent. of all abdominal injuries there is hemorrhage; therefore the value of the above method is apparent at once, since by it the diagnosis of hemorrhage can be made absolute in less than three minutes after the patient is seen.

The usefulness of the instrument would not be limited to the detection of hemorrhage, but could be demonstrated in case of rupture of the bladder, for in that case there would be an abnormal amount of fluid in the peritoneal cavity and it could be tested for urea. Furthermore, in cases of rupture of the bowel a fecal odor would be obtained from the fluid injected and withdrawn. The instrument might also be applicable to

hemorrhage in case of the rupture of the uterus, for this is sometimes suspected long before it can be demonstrated.

It is not intended that this instrument shall replace the other methods of diagnosis, but that it should be combined with them. The history of the case should be taken with great care as to the precise manner of the injury and the exact nature of the object causing it. and these points duly considered with reference to their probable results, as it might indicate the point at which the puncture should be made.

SUMMARY.

1. Present means of diagnosis of abdominal hemorrhage are inadequate.
2. An accurate diagnosis can not be made soon enough without an exploratory laparotomy.
3. Exploratory laparotomy involves unnecessary risk.
4. Experiments show that (a) an exploratory puncture is practicable; (b) it would diagnose hemorrhage.
5. Exploratory puncture is a simple and safe procedure.
6. It renders possible a prompt and accurate diagnosis of abdominal hemorrhage.

DISCUSSION.

DR. S. J. MELTZER, New York City, said that a trocar with a side opening was employed by him for experimental and practical purposes more than twenty years ago. It is a purely practical question. Abdominal hemorrhage can be well diagnosed without puncture by a trocar. The sudden onset of severe pain in the abdomen, symptoms of shock and collapse, an area of dullness and a history of trauma are sufficient for the diagnosis. If the blood is hidden, the trocar might not reach it, or trocar might get into the lumen of some part of the gut instead of into the thin layers of blood between the coils of the viscera. The possibility of infection has also to be taken into consideration. The prevailing view in medicine and surgery is rather against the employment of a probatory puncture under such circumstances.

EXPERIMENTS ON VENOUS BLOOD PRESSURE AND ITS RELATIONS TO ARTERIAL PRESSURE IN MAN.*

HENRY SEWALL, PH.D., M.D.
DENVER.

The use of artificial schemata for teaching the mechanical principles of the circulation is properly considered one of the most valuable of our laboratory methods.

As arterial pressure—the driving force of the blood—is a function of three variables, the output of the pump, vascular elasticity and peripheral resistance, when these factors are known, the calculation of the blood velocity and blood pressure in any part of the vascular circuit would appear to be a matter of gratifying simplicity. But when we study the hemodynamics of the living animal, especially when in clinical work the vascular apparatus departs more or less from normal, deductions made from principles established by the use of artificial machines will lead us far astray from the truth. The error involved is not in the teachings of the schema as a schema, but in our poor logic in trying to measure the workings of a very complex living machine by those of a very simple artificial one.

Bayliss and Starling[1] have done the good service of demonstrating on animals departures from such a course of circulation events as might have been predicted by a mere student of mechanics. They show, for example, that injection of salines into the circulation of a living animal raises the venous pressure proportionately more than the arterial; that capillary blood pressure depends more on venous than on arterial pressure; that a fall of arterial pressure does not necessarily involve a fall in capillary pressure.

A recent clinical case of mine illustrates the point of view which is here emphasized. A woman, about 63 years of age, whose heart, lung and kidneys are essentially sound, has, during the past ten years, frequently broken down with attacks marked by subjective misery, by constipation, by great diminution in the volume of urine passed and occasionally by the expectoration of pure blood. While she seemed to be approaching such a crisis her arterial blood pressure was found very high—about 170 mm. Hg. Her venous pressure was moderately high. Administration of nitroglycerin for a few days was followed by a lowering of arterial pressure and an even more marked lowering of venous pressure, and the patient felt much better.

The explanation made of the clinical history is as follows: The root of the disorder lies in the high arterial blood pressure. The left ventricle gradually fails, particularly when harrassed as the result of worry and mental and physical overstrain on the part of the patient, and the residual blood at the end of systole gradually so accumulates as to engorge by back pressure the pulmonary circuit; hence the occasional hemoptysis. The elevation of venous pressure and passive congestion leading to the accumulation of gouty metabolites and diminished urinary secretion are but links of the same chain. Dilatation of the peripheral vessels by means of nitroglycerin drains into these capacious channels the excess of blood and relieves stagnation in the heart and veins.

The phenomena of the venous circulation can not be deduced from a knowledge of arterial blood pressure, since this contributes but a single factor out of several which determine venous blood flow. Venous blood pressure, like the arterial force, is determined by the ratio of input to resistance offered to output.

Broadly speaking, the input and the venous pressure vary directly with mean arterial blood pressure and inversely with contraction of the arterioles. The output varies inversely and the venous pressure directly with the resistance to flow. This factor is made up of the resistance, positive or negative, offered to the entrance of blood into the right auricle, to which must be added the influence of the intrinsic contraction of the veins, their compression by variable external forces, as muscular pressure and mechanical stretching, and especially by the influence of gravity.

It is becoming more and more obvious that the facts of the circulation demand a functional division of the venous system in which the splanchnic area forms one group of vessels and the external veins another. The latter are subject to every influence of environment, capable of a rapid normal variation between the extremes of dilatation and complete emptiness; the former are relatively shut off from external stimuli and have a capacity which, uncontrolled by vasomotor regulation, would accommodate all the blood in the body. Physiologists have appreciated the importance in the circulation of this potential splanchnic abyss ever since the

* Read in the Section on Pathology and Physiology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

1. Bayliss and Starling: "Observations on Venous Pressures and Their Relations to Capillary Pressures," Jour. Physiol., 1894, vol. xvi, p. 159.

discovery by Ludwig and Cyon,[2] forty years ago, of the function of the depressor nerve. This nerve, it will be recalled, is a delicate twig having an independent course in a limited group of mammals and passing out of the vagus and superior laryngeal nerves to end in the heart. The nerve is purely afferent in function; stimulation of the central end of the divided nerve causes a steady lowering of arterial blood pressure to the extent of from 30 to 50 per cent., which is dependent on reflex inhibition of tone in the splanchnic arterioles.

Clinicians do not seem to have been impressed with the pathologic importance of the splanchnic vascular apparatus until Leonard Hill[3] demonstrated the extraordinary effects of gravity on its circulation, particularly in subjects weakened by toxic agents. The work of Oliver[4] and others has emphasized the functional su-

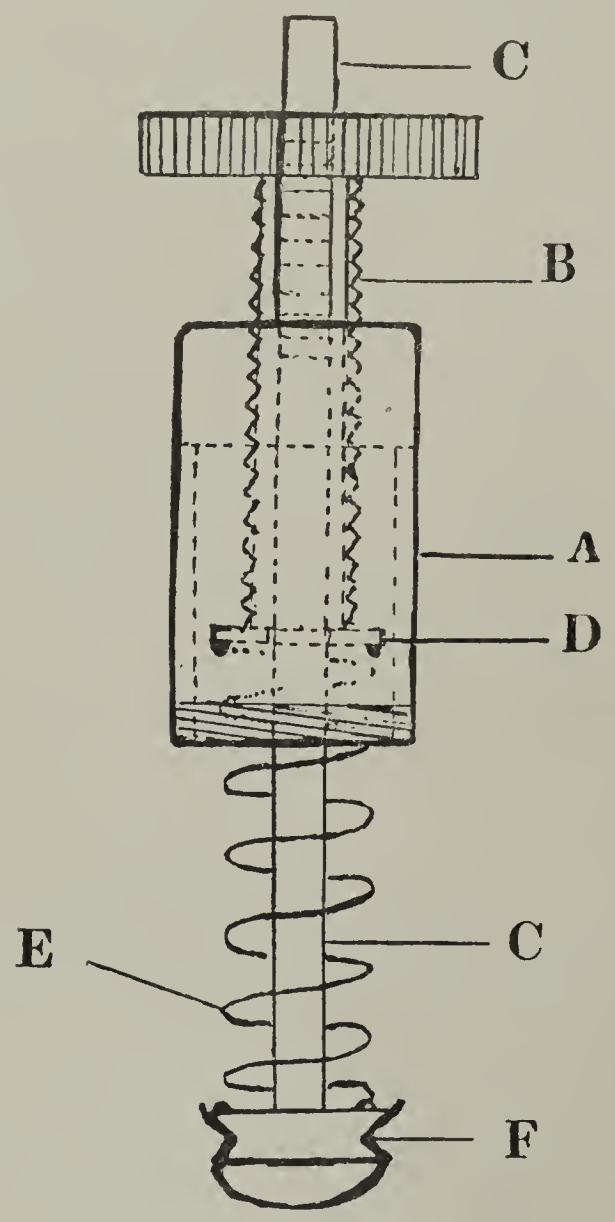


Figure 1.

premacy of splanchnic circulation, and Abrams[5] has recently devoted a monograph to the cause and treatment of splanchnic neurasthenia.

Briefly stated, the relation of the so-called splanchnic reservoir to the general circulation is as follows: In the normal individual, peripheral resistance to the blood flow in the various districts of the body is so co-ordinated that mean arterial blood pressure shall vary within but narrow limits. If the vasomotor mechanism controlling the splanchnic area is enfeebled the circulation therein is correspondingly released from physiologic control and is subject to gravitation. In the erect position, therefore, a man's blood tends to settle in the abdominal vessels, but, while lying supine, the force of gravity no longer impedes the return of the blood to the heart. It is obvious that the fate of the general circulation depends in a peculiar way on the irritability and power of the splanchnic vasomotors. This mechanism must compensate by increased activity for every excess of intravascular pressure locally brought to bear on it; but, on the other hand, abnormal elevation of general arterial blood pressure is prevented through the depressor nerve whose normal stimulus probably consists in the mechanical strain of the contracting ventricles and which is to inhibit the vasomotor centers for the splanchnic area.

That the apprehension of these principles has not been general is to be suspected from the discordant results that comes out of the researches of those who have investigated the postural variation of the arterial blood pressure in the human subject.

It will not be disputed that, to maintain the mean arterial tension, outflow of vasomotor nerve energy must be greater, to compensate the drag of gravity, in a man in the erect position than when recumbent. If there is overcompensation for the force of gravity, the arterial blood pressure in the upright position may be expected proportionately to exceed that found when recumbent. While if the more or less pathologic condition of undercompensation prevails, it is easy to understand how the general arterial blood pressure may be higher when measured in the recumbent than in the upright position. That it is the abdominal vascular system especially and not that of the lower limbs which acts as a blood reservoir was ingeniously demonstrated by Oliver,[4] who, under certain conditions, caused a marked elevation of the arterial pressure in the recumbent position by compressing the abdomen with a considerable weight (28 pounds). Essentially the same results have been obtained in another way by Erlanger and Hooker[6] in their admirable researches on blood pressure in man. As a matter of fact, my own observations bearing on this point seem to show that in vigorous subjects systolic arterial pressure is slightly higher in the upright than in the supine position, while in the majority of those who are "neurasthenic," particularly in those with flaccid abdominal walls, the results are very much reversed.

A clinical fact of considerable interest finds an interesting explanation when considered in the light of the foregoing discussion. Now and then it is found in people with organically sound hearts that the radial pulse on one or both sides completely disappears when the arms are extended above the head. I have found it so especially in subjects of passive pulmonary tuberculosis and neurasthenia. But the occurrence is so frequent in cases exhibiting well-compensated valvular disease of the heart that its cause deserves special investigation I have noted the pulse failure in mild grades of uncomplicated mitral insufficiency, mitral stenosis and aortic insufficiency. Occasionally the phenomenon is so marked that the elevation of the arm to the horizontal, the forearm being bent at a right angle, causes pulse failure. The cause can not lie in abnormally low arterial pressure, for I have found the pulse to fail in two individuals in whom the systolic pressures averaged 140 and 160 mm. Hg, respectively. The pulse never fails with the arms held vertically while the subject lies su-

2. Ludwig and Cyon: Arb. aus d. phys. Anstalizn. Leipsic, 1866, p. 128.

3. Hill: "Influence of the Force of Gravity on the Circulation of the Blood," Jour. Physiol., 1895, vol. xviii, p. 15.

4. Oliver: "Blood and Blood Pressure," London, 1901.

5. Abrams: "The Blues (Splanchnic Neurasthenia)," 1904.

6. Erlanger and Hooker: "An Experimental Study of Blood Pressure and of Pulse Pressure in Man," Johns Hopkins Hosp. Rep., vol. xii, 1904.

pine, but when he is sitting or standing. Slight mental excitement or physical exertion may faintly restore the pulse which has disappeared. The explanation of these facts seems to be contained in results which I, assisted by D. W. Steiner,[7] elicited more than twenty years ago in a study of the physiology of the depressor nerve. When the arm is elevated the circulation can be maintained through its arteries only through some compensation which implies increased output of heart or increased vascular tone. When blood drains out of the elevated arm it must be accommodated by a dilatation of the vascular circuit, unless there is a rise of arterial pressure, for which I can find no evidence. In mitral lesions, at all events, there can be no reason to suppose the excess of blood is accommodated in the heart itself.

A consideration of the publication last referred to[7] renders very plausible the suspicion that even the small excess of resistance offered to the arterial circulation by elevation of an arm is felt by the heart and that this organ, through the depressor nerve, whose existence in the human economy can not be doubted, complains of the increase of strain, from which it is immediately relieved by a reflex depression of the vasomotor center. It is entirely open to conjecture that in valvular heart disease there is developed a heightened irritability of the depressor nerve mechanism and that part of the benefit which clinical observation shows to accrue from prolonged rest following acute conditions of cardiac disease depends on ample time being given for the modification of depressor nerve lability.

A fortiori, it may be suspected that in a loss of this irritability lies the explanation of many of those mysterious ruptures of compensation with which the clinician has to deal. The theory just suggested attempts to explain only pulse failure in persons having strong, though physically imperfect, hearts and vigorous vasomotor mechanisms. When the pulse fails in the elevated hands of those who are constitutionally weak, though with normal heart valves, it seems more reasonable to presume that the enfeebled vasomotor system, instead of normally reacting to the stimulus of diminished pressure in the brain and increased pressure in the arterioles, allows the latter to dilate to escape the strain.

According to the views already enunciated, the two groups of cases may be easily distinguished by the manner in which the arterial blood pressure reacts to change in the position of the body. In the normal vascular system the hydrostatic strain on the splanchnic vessels incident to the erect position is fully compensated by their increased tonicity, so that when the recumbent position is assumed the rate of blood flow into the right auricle is not materially changed. Whereas in the weak vascular system the blood column, in the upright position, settles in the splanchnic veins to such a degree as to lower arterial pressure; then when the recumbent position is assumed gravity no longer impedes the passage to the heart of this retarded stream and arterial pressure is raised by the excess of blood added to the circulation.

The following are a few extracts from actual clinical observation on two groups of patients, in both of which there was failure of one or both radial pulses when the arms were elevated. The arterial pressures were taken with the Stanton instrument, having a cuff three inches broad and measuring only systolic or maximal pressures. It will be noted that in the individuals with valvular lesions the systolic pressures were above normal and offer no explanation of the pulse failure.

1. INDIVIDUALS WITH VALVULAR DISEASE BUT PRESUMABLY STRONG VASOMOTOR SYSTEMS.

CASE 1.—Mr. R., aged 54, has slight degree of mitral insufficiency, and slight but palpable arteriosclerosis. The left radial pulse disappears when arms are held up and back. Arterial pressure, sitting, is 161 mm. Hg., recumbent, 154 mm. Hg.

CASE 2—Mr. J., aged 21, has slight degree of mitral insufficiency. As the arms are elevated first the left and then the right pulse disappears. Arterial pressure, sitting, is 142 mm. (The pressure, when recumbent, was somewhat lower, but the record has been lost).

CASE 3.—Miss Z., aged 23, has a slight degree of mitral stenosis. On elevating the arms, first the left, then the right, radial pulse disappears. Arterial pressure, sitting, is 138 mm., recumbent, 129 mm.

All the above were vigorous looking persons.

2. INDIVIDUALS WITHOUT VALVULAR DISEASE BUT WITH EVIDENCES OF VASCULAR WEAKNESS.

CASE 1.—Miss S., aged 23, rather an athletic girl with a normal heart but decidedly neurasthenic. Right radial pulse disappears when arms are elevated. Arterial pressure, sitting, is 100 mm., recumbent, 122 mm.

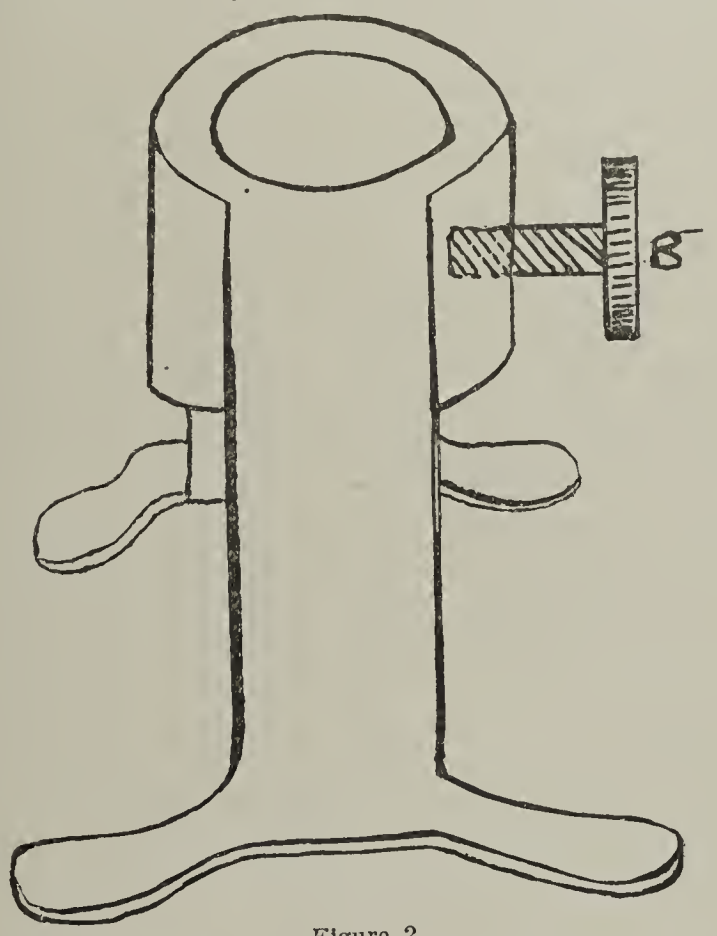


Figure 2.

CASE 2.—Miss H., aged 27, is a neurasthenic. Pulse is weakened and occasionally disappears when arms are elevated. Arterial pressure, sitting, is 113 mm., recumbent, 125 mm.

CASE 3.—Mr. G., aged about 63, has a weak, intermittent heart, suspected of slight myocarditis. He is a somewhat active man of affairs. The abdomen is flaccid, pulse and heart beat weak and left radial pulse disappears when arms are elevated. Arterial pressure, sitting, is 119 mm., recumbent, 137 mm.

INSTRUMENTAL METHOD OF MEASURING VENOUS BLOOD PRESSURE.

When a vein, as of the hand, is obliterated by the pressure of a finger and the blood is wiped out of the vessel in the direction of the heart as far as the first valve, the vein segment remains empty until the finger pressure is relieved. Obviously, if the occluding finger could be replaced by a recording instrument capable of exerting variable pressures on the vein the blood pressure within the latter could be determined with precision. The in-

7. Sewall and Steiner: "Study of Action of the Depressor Nerve and a Consideration of the Effect of Blood Pressure on the Heart Regarded as a Sensory Organ," Jour. Physiol., 1885, vol. vi, p. 162.

strument to be described was constructed with this object and has been called a *spring blood pressure gauge*. Not until after my instrument was made and the greater part of my observations were completed was my attention attracted to the monumental work of Oliver[4] and to his description of a very similar apparatus demonstrated by him in 1898.[8]

The spring pressure gauge is represented in section in Figure 1, magnified two diameters. A brass cylinder, A, one-half inch in diameter and seven-eighths long, is plugged at one end to the depth of one-fourth inch to afford a broad bearing to the screw B, which passes through it and which is long enough to have a movement of about three-fourths of an inch. The screw is bored through the center for the passage of the aluminum piston rod C. The lower end of the screw B is swivelled to a small disk of metal, D, three-eighths inch in diameter, which, of course, moves to and fro with the motion of the screw, but is prevented from revolving by two projections from its periphery, which move in slots let into the inner surface of the cylinder A. From the outer margin of the under surface of the disk, D, project four small eyelets which serve to support a spiral spring, B, made of fine steel wire. The other end of the spiral, which, when without tension, is nearly one inch long, runs through similar eyelets in the upper surface of the ebonite pressure button, F. The length of the spring and hence the zero point of the scale, can be adjusted by screwing it into or out of the eyelets. The aluminum rod, C, is screwed into the pressure button, F, and passes up through the hollow screw, B. Whenever the disk, D, and the pressure button, F, are approximated, the tension of the spring varies proportionately, and the piston rod, C, projects above the screw, B. The screw has twenty threads to the inch, and a half inch of the upper portion of the piston rod, which is flattened for the purpose, is ruled in ten divisions. When the spring is not in tension the upper mark of the rod scale is level with the top of the screw head. The instrument is calibrated by the aid of a mercurial manometer.*

It has been found that pressures obtained by the application of an unyielding disk to vessels of various size and depth in the tissues vary widely, though the vascular tension may really be the same.[9] Much more accurate results are obtained by interposing an elastic cushion, containing air or water, between the pressure button and the vessel. In the instrument this purpose is accomplished by tying over the pressure button the tip of a small rubber finger cot, leaving a small air chamber at the bottom of the button. Unlike Dr. Oliver, I find that with the small pressure values which frequently have to be measured in the veins, the error of tissue resistance is a factor of considerable importance, even with the use of the elastic pressure pad. In my observations, therefore, I have always sought to apply the pressure over a point on the vein having a firm foundation.

In using the instrument on another person it is held freely in the hand, the pad is pressed down on a vein, which is then wiped empty, and the pressure is relaxed until the blood begins to flow under the pad, the piston is then pressed against the side of its bed with a finger, the instrument is lifted and the pressure read off. In making observations on one's self the instrument is supported in a stand or pedestal whose feet are curved to embrace the vein (Fig. 2). Pressure may then be accurately varied by turning the screw, B.

*The instrument can be obtained from J. T. Hoyt, mechanic to the physiological laboratory, College of Physicians and Surgeons, New York, or from Messrs. Flint and Lomax, Denver.

8. Oliver: Jour. Physiol., vol. xxi, p. 11; and vol. xxiii, p. v; also "A Few Jottings in Physiologic Medicine," Jour. Balneol. and Climat., October, 1903.

9. Sahli: "Diagnostic Methods"; also Oliver's "Blood and Blood Pressure."

It is worth noting that when the vein is occluded by the minimal force necessary to cause its collapse blood will gradually ooze past the obstruction and, collecting against the closed valve ahead, will slowly fill the vein peripherally, and when the tide has reached the pressure button this will be lifted suddenly by the filled vein. When the vein has been occluded as described it is very probable, as suggested by Erlanger and Hooker, in explanation of certain results of their own, that its inner walls stick together by a certain force of cohesion. But there is probably left at each end of the vein-slit a capillary pore through which the blood percolates; and as the vein central to the area of pressure gradually fills the contact adhesion is suddenly overcome.

EFFECT OF GRAVITY ON VENOUS BLOOD PRESSURE.

The fundamental part played by gravity as a resistance factor in the venous circulation has already been noted. According to Oliver,[4] the pressure of a column of blood increases at the rate of about 1.9 mm. Hg. for every vertical inch. It hardly needs mention that, in measuring venous pressure, allowance must always be made for the relative positions of vein and heart on a vertical scale. I have followed Gaertner[10] in assuming that the point of mean venous pressure in the right auricle lies behind the angle formed by the top of the fifth left cartilage with the sternum. Most of my measurements were made with the hand vein from three to four inches below this point. My records of venous blood pressure were all, when necessary, corrected to this level; therefore, in them the element of gravity is eliminated.

The following observation shows how a small excess of blood thrown into the right auricle may be supposed to alter the general venous blood pressure: With the left arm resting on a table, the pressure gauge was applied to a vein of the left hand with just sufficient force to keep it occluded for a period of over one minute. Then the right arm was actively extended above the head; the blood pressure was so increased that the resistance of the gauge was overcome in three seconds. The increase of venous pressure in the left hand thus caused by elevation of the right arm can not be reasonably ascribed to increased flow through the capillaries, but must be due rather to an elevation of pressure in the superior vena cava and presumably in the right auricle, which perceptibly impedes the entrance of blood from the system at large. This is a very important conclusion which will be reverted to in the section on the effect of digestion.

It should be noted that these observations were carried out on a man of 50 with a structurally sound but slightly weak and sometimes irregular "tobacco heart." While sitting quietly at a table elevation of the legs on a chair caused no decided increase of venous pressure in the hand, the excess of blood flowing from the legs being accommodated, no doubt, in the abdominal vessels. Oliver[4] found, as might have been expected, that in the recumbent position the hand-vein pressure was markedly increased by raising the legs to the vertical. The clinically important question of the effect of bodily position on venous pressure was not especially considered.

EFFECT OF EXERCISE ON VENOUS BLOOD PRESSURE.

Oliver and others have noted the physiologic fact, of great importance for clinical purposes, that local muscular exercise markedly accelerates the circulation in the corresponding areas. This fact is strikingly illustrated in the following experiment: The venous pres-

10. Gaertner: Muench. med. Wochschr., 1903, No. 47; abstracted in Amer. Jour. Med. Sci., 1904, p. 907.

sure in the resting left hand of a man of 50 averaged 3.4 mm. Hg. This hand was then exercised by alternately clinching and relaxing it for half a minute. The veins appeared first to diminish in size and then rapidly filled. The pressure taken immediately after the exercise had risen to 5.3 mm. In a man of 27 the pressure, under similar conditions, rose from 3.8 to 5.4 mm. There can be no doubt that this increase of venous pressure and blood flow was due to increased input of blood following local arterial dilatation. The increase of pressure persisted for a considerable interval—a minute or more—after cessation of the exercise. When both hands were supported at the same level, exercise of one had no material effect on the venous pressure in the other. In the experiment in which the venous pressure in one hand was shown to be raised by elevation of the other above the head, the increase of pressure in the former was much more considerable when the muscles of the elevated arm were alternately contracted and relaxed.

Gentle exercise of the whole body, such as walking about the house, is followed by a more or less marked rise in the venous pressure of the hand according, apparently, to the state of the circulation at the beginning of the experiment; thus, 1, average pressure before exercise, 3.4 mm.; average pressure after exercise, 4.2 mm. 2, average pressure before exercise, 4.2 mm.; average pressure after exercise, 4.5 mm.

Violent and exhaustive exercise, such as rapid stooping of the body with general contraction of muscles, except those of the member in which blood pressure was taken, was followed in a vigorous young man by decided elevation of venous pressure in the unexercised hand; thus: Venous pressure in the right hand before exercise, 3.9 mm.; venous pressure in the right hand shortly after exercise, 5.3 mm.

These results illustrate the fact that, though, as found by other observers, arterial blood pressure may or may not rise as a result of exercise, according to its violence, venous blood pressure, and presumably pressure within the right auricle, always does so. This is evidence for the belief, supported in other directions, that the exercise dyspnea of patients with cardiac disease, and probably of healthy people in high altitudes, is largely a sign of right-heart strain.

EFFECT OF TEMPERATURE ON VENOUS PRESSURE AND VEIN CONTRACTION.

The relatively slight musculature of the veins has led to under-estimation of their contractile function. In comparing the veins with the arteries as contractile mechanisms it is only fair to consider the ratio of muscle mass in a given section of vein to the mean blood pressure it must react against, with the similar ratio in a corresponding artery. The subject of vein physiology seems to have received very limited attention. Bancroft[11] studied the veins in the hind limbs of cats and rabbits. No marked decrease in the caliber of the veins was produced by clamping the aorta, the vein becoming simply flattened and flabby. But stimulation of the sciatic nerve caused marked contraction which was irregularly localized. The effect of the stimulation was much influenced by the conditions of exposure of the vein and the vasomotor apparatus was very subject to fatigue. A study of the human veins demonstrates: 1. That the vein may be emptied either passively by failure of inflow or actively by its own contraction. 2. That in the relaxed and partially filled vein, at least when held horizontally, the blood may flow freely past a valve in either direction. 3. That the closure of a vein valve is usually, if not always, produced by active vein contraction, primarily of the vein segment peripheral to the valve and probably secondarily by that central to it. It seems reasonable to suppose that abnormal dilatation (varicosity) of veins depends on failure of vein contractility to make the valves sufficient. 4. Vein contraction can be sharply localized. 5. The normal master stimulus of venous contractility is cold, especially when associated with light friction. 6. The contractile manifestations of the veins vary greatly, probably from introduction of a fatigue element. 7. It is possible that innervation of the skeletal muscles is accompanied by contraction of the corresponding veins.

In the superficial veins and those of the lower limbs the musculature is said to be relatively well developed. "Flattened and circularly arranged muscle cells are met with at the inner surface of many of the larger valves."[12]

In persons in whose arms the superficial veins are prominent, the veins contract and the valves become more or less visible on exposure of the arm to cool air. If now the arm is slightly brushed from wrist to shoulder by a single pass of the other hand, the veins thus irritated may become completely invisible, or still appear as white cords, though their course is plotted by the valves, each of which is held shut by a droplet of blood kept in place by the contracted vein central to it. The contractile power of the vein may still keep the droplet of blood in place over the valve for a time when it is opposed by the influence of gravity through elevating the arm. When a vein is dilated, mechanical irritation of a limited segment sometimes causes a tonic local contraction of that part. When the blood is smartly brushed out of a full vein up to a given valve and then prevented from re-entering below, the emptied segment of vein seems to be actively contracted and sharply marked off from the full vein terminated by the closed valve beyond.

When the hand is soaked in cold water for a minute, the veins contract and become nearly or quite invisible. But at the same time the skin of the hand becomes very red. There is no accompanying change of arterial pressure in the arm. The congestion of the hand is evidently produced by capillary engorgement due to increased resistance offered to the flow of blood by the contracted veins. The venous pressure falls somewhat after this procedure, but is not nearly so low as when measured in a vein of the same degree of distension when the skin is pale. That is, in the first case the ratio of inflow to resistance in the veins is much greater than in the second. In other words, when a vein becomes smaller by active contraction of its walls the pressure within it tends to rise; when the diminution of its size depends on diminished arterial inflow the venous pressure always falls.

The localized contraction of veins is well illustrated after immersion of the hand and half the forearm in cold water. For minutes after the removal of the member the veins remain small or invisible over the area which had been chilled, while just above it the veins of the arm, fed from the deeper tissues, may be fully dilated; the result is especially striking if a slightly constricting band is laid round the upper arm.

As is familiar to all, soaking the hand in warm water

11. Bancroft: "The Venomotor Nerves of the Hind Limb," Amer. Jour. Physiol., 1898, vol. 1, p. 477.

12. Huber, Bohm, Davidoff: "Text-Book of Histology," 1900.

causes the skin to redden and the veins to dilate. Simultaneously the venous pressure is increased for a time, but the elevation of pressure seems to pass away while the veins still continue dilated. The results of such experiments depend largely on the state of the circulation at the beginning of the observation. It is worth noting that prolonged immersion in hot water exerts something like a paralyzing effect on the contractile mechanisms of the veins. The veins of the heated hand fail to contract under conditions of gravity, etc., to which those of the other hand adjust themselves.

Experiments on the veins elicit more decided results when performed on rising in the morning than after the fatigues of the day. It is obvious that venous pressures to be compared together must be measured under the same conditions of external temperature.

THE INFLUENCE OF RESPIRATORY MOVEMENTS ON VEIN VOLUME AND PRESSURE.

My attention was directed to this subject by the statement of Gaertner[10] that "negative pressure within the thorax produced an increase of pressure within the right auricle." I was astonished to find that the veins of the hand and forearm actually swelled in inspiration and diminished in expiration. The inspiratory swelling of the veins is accompanied by an increase of blood pressure within them. It is a familiar fact that when the arm is inclosed in a plethysmograph it tends to diminish in size during inspiration and increases during expiration. It is to be inferred, therefore, that any excess of blood in the veins during inspiration must be drawn directly from the arteries. The correctness of this deduction is easily demonstrated. Though the respiratory rise and fall of the veins is sometimes plainly obvious to the unaided eye, it may best be demonstrated when magnified by a lever formed of a strip of stiff paper about one-quarter of an inch wide and four inches long and gummed on one side. One end of the paper strip is stuck to the skin close to the vein across which it rests in close contact. Under favorable conditions such an arrangement demonstrates that the blood flow in the peripheral veins is far from being a steady stream. There is usually a more or less marked vibration of the lever synchronous with the arterial pulse, more obvious in one phase of respiration than another. Sometimes this cardiac pulsation of the lever is striking in its magnitude and is then, as will be shown later, evidence of dilatation of the arterioles.

With the beginning of inspiration the lever begins to rise, reaching its maximum height a little after the beginning of expiration. Although under exceptional conditions the lever movements are plain during ordinary respiration, it usually requires forced inspirations to bring them out. If, while the lever is showing marked respiratory oscillations, the brachial artery at the elbow is clamped by pressure of the thumb, the lever movements instantly cease. If the vein supporting the lever be clamped proximal to it the respiratory motions continue plain until the vein becomes so distended that it no longer responds to the increase of internal pressure. But when the vein is clamped distal to the lever, provided the hand is held in such a position that the next proximal valve is sufficient, the respiratory motion of the lever at once ceases. When the arm is bent at the elbow and the forearm is held horizontal it is easy to demonstrate in some individuals that, when the veins are relaxed and only partly filled, the current of blood may readily pass the valve in a peripheral direction. To accomplish this, one of the veins of the forearm is clamped several inches peripheral to a valve and partly emptied by raising the arm; with deep inspiration the blind end of the vein fills as if there were no valve at its junction with the larger trunk.

The inspiratory swelling of the veins can usually be demonstrated only under conditions in which the veins are relaxed, moderately full, and when the arterioles are presumably fairly dilated. In numerous instances I have found the inspiratory lever motion in persons whose hands have been reddened by immersion in warm water when the lever had shown no motion immediately before applied to the contracted vein of a cool, pale hand. The inspiratory wave is apt to be more obvious in the evening when the veins are relatively relaxed; and, according to the state of peripheral circulation, it is common to find the phenomenon to a decided degree on one day when, in the same person, it had been absent on a previous trial. As the respiratory movement of the veins is investigated progressively from the hand to the arm, the inspiratory swelling seems to fail before the elbow is reached, and sometimes it is possible to see even a partial collapse of the arm veins due to the aspirating force of a deep inspiration. The same respiratory motion is to be obtained, though with more difficulty, from the veins of the feet. In this case the advent of the wave seems delayed considerably after the beginning of inspiration. It is sometimes found that respiratory oscillations of blood pressure are plainly transmitted through the capillaries with but little cardiac pulsation and *vice versa*.

The following interesting results were obtained from an adult female patient lying in the coma of cerebrospinal meningitis. The hands were warm and the veins distended. The paper lever resting over a vein of the hand showed regular pulsations of considerable amplitude and synchronous with the radial pulse. There was an immediate fall of the lever with each intermission of the pulse. The lever swept down instead of up, and, therefore, the vein became smaller with each inspiration. In time the patient was seized with a series of general convulsions. Preceding by several seconds each convulsion, the cardiac motion of the lever diminished in amplitude, the lever gradually descended and the vein became visibly smaller. These facts were interpreted to mean that the tetanus of the voluntary muscles was preceded by general spasm of the arterioles. The phenomenon was of practical value as indicating the administration of chloroform in time to abort convulsions.

In order to determine how general might be the occurrence of this inspiratory venous wave, one hundred persons were investigated. All but one were adults, ranging from 17 to 75 years of age. Sixty were males and forty females. About half were noted as in good health, while those forming the other half represented a considerable variety of chronic disease. There was found to be a decided inspiratory swelling of the veins on the hand or lower forearm in 44 cases; a slight swelling in 16, making a total of 60. No respiratory movement could be seen in 25 cases. The movement of the lever was both up and down in different periods of the same inspiration in 4 cases and the vein diminished in size (shown by downward movement of lever) in inspiration in 11 cases.

Not to prolong this discussion needlessly, it may be said that, while there was failure of lever movement in about one-fourth of the healthy subjects, no downward inspiratory movement (showing uncompensated aspiration by the thorax) occurred except in persons suffering

from some disease of the circulatory apparatus, such as arteriosclerosis, uncompensated heart disease, or active pulmonary tuberculosis.

The thought at once suggests itself that the respiratory wave of venous pressure is but the propagated respiratory wave of the arterial blood current. From the physiologic point of view, the transmission of such pressure changes through the capillaries must have important relations to the nutrition of the body.

The still disputed question as to the origin of the respiratory waves of arterial blood pressure, whether due to variable output from the heart or to rhythmic vasomotor contraction, is not settled by this investigation; though the fact that the inspiratory swelling of the veins is much more pronounced with costal than with diaphragmatic breathing, and also the apparent delay in the appearance of the wave in the foot veins (though this point has not been very definitely studied) are both strong evidences in favor of the generally accepted belief that the respiratory wave of arterial blood pressure has a mechanical origin, and is due primarily to the relative excess of blood entering the heart by aspiration during the phase of inspiration. On the other hand, the near coincidence in time between the beginning of inspiration and the commencement of the inspiratory swelling of the veins makes it seem that some other factor must be involved. If it were permissible to assume a slight vasomotor inhibition beginning with inspiration all the phenomena would find an explanation. That the arterioles may dilate with inspiration was especially well illustrated in the person of a man, aged 40, who was recovering from a severe break in compensation due to aortic insufficiency. The paper lever applied to a hand vein showed well marked oscillations corresponding with both pulse and respiration. When the breathing was deepened the amplitude of the cardiac oscillations of the lever was increased, especially in the phase of inspiration.

EFFECT ON BLOOD PRESSURES OF PROCESSES FOLLOWING THE INGESTION OF FOOD.

It would be fruitless to discuss from an *a priori* standpoint the changes in arterial, venous and capillary blood pressures that might be expected to attend the digestive process. Dilatation of the splanchnic vessels and the loss of material from blood by secretion into the alimentary canal must, it may be supposed, be compensated by somatic constriction and by absorption of material from the intestines. But as the study of the blood pressure in different positions of the body has shown how insidiously physiologic merges into pathologic distribution of blood mass, still more, according to my observations, is weakness in the compensating mechanisms of blood distribution manifested during digestion. According to Oliver,[4] during the first stage of digestion lasting about half an hour, the splanchnic vessels dilate, the somatic arteries contract with elevation of arterial pressure, and the venous pressure falls. Also, "after the lapse of twenty or thirty minutes the splanchnic area rapidly diminishes, and in about an hour settles down again. . . When the splanchnic area diminishes the systemic arteries and arterioles dilate, the mean arterial pressure falls, and the venous pressure rises."

Such a distribution of digestive events is little supported by actual observation of digestive processes in man and animals. My own observations on arterial pressure were unfortunately limited by the use of an instrument measuring only systolic pressures; nevertheless, in connection with the venous pressures, they have a certain value.

My observations on the changes of blood pressure accompanying digestive activity were made on 21 individuals, of whom seven were normal and fourteen, inmates of the Denver and Arapahoe County Hospital, suffered from various lesions of the heart and arteries. In the former class the venous pressures taken within half an hour of the termination of a meal rose in five and fell in two cases. The maximum arterial pressure usually increased slightly (2 to 10 mm. Hg.), but fell in three instances. In a robust but gouty man having abnormally high arterial and venous pressures, the former fell from 1 to 2 mm. fifteen minutes after a hearty lunch, but in two and a half hours rose from 3 to 5 mm., while the venous pressure rose very slightly at the first observation, but dropped to about one-half its first value at the second.

Two individuals on whom many observations were made at various hours on successive days illustrate the two classes of digestive reaction:

1. In the first, a female, aged 40, the effect of a meal is usually to cause the veins to become smaller and the venous pressure less; even if the veins maintain their size the pressure within them falls after meals. This fall of pressure may amount to 30 per cent. or more of the original. The lower pressure continues for about two or three hours and then the pressure gradually ascends, but may not have reached normal in four hours. The changes found in arterial pressure were believed to be within the errors of observation. A number of conditions, such as time of day, the amount of food taken, etc., may affect the relations of the pressure curve. Thus, on one occasion the usual evening dinner was anticipated by a noonday dinner, succeeded in some five hours by a light supper. After supper the usual fall in venous pressure was replaced by a rise. In the light of the discussion to follow, this rise may be looked on as a sign of cardiac fatigue.

2. In a man of 50, having a weak and irregular "tobacco heart," the digestive process was associated with the opposite effect on venous pressure. The pressure rose immediately after a meal and continued high for about three hours, when it gradually returned to the resting state. The former individual feels warmer in the morning than in the evening and her venous pressure is higher in the morning before breakfast than in the evening before dinner; with the latter subject these conditions are reversed. The former becomes cool or chilly after a full meal, the latter becomes warm and flushed. So far as my inquiries have led, in those who experience a sense of warmth on eating, the effect of a meal is to raise the venous blood pressure, while in those who feel cool or chilly the venous pressure falls. That these results have an important constitutional basis is suggested by the adage quoted by Dr. Oliver: "If you eat to be cold you will live to be old." The postprandial rise of venous pressure can be explained either as the result of increased inflow of blood through dilated arterioles or of diminished output from the veins caused by elevation of blood pressure within the right auricle.

On *a priori* grounds it would seem absurd to expect unwonted flushing of the somatic system when the energy of the body is employed with the digestive process. On the contrary, experimental evidence is distinctly in favor of the view that rise of venous blood pressure occurring as a result of digestion is due wholly to relative damming back of the blood in the surface veins, follow-

ing the elevation of pressure in the right auricle which probably accompanies the excessive inrush of blood from the abdominal viscera.

The rise of venous pressure during digestion, therefore, would appear to be a sign of weakness of the cardiac-respiratory apparatus. On a former page the observation was made that the mere elevation of one arm quickly produced a rise of pressure in the veins of the other hand. It is evident, then, that a very minute increase of blood flow into the superior vena cava can raise perceptibly the pressure within that channel and presumably within the right auricle as well. But there is not wanting direct evidence that the intra-auricular blood pressure mounts *pari passu* with that of the peripheral veins when these become distended during digestion, and it is wholly reasonable to assume that the former phenomenon stands to the latter in the relation of cause and effect.

Gaertner[10] describes a method for estimation of pressures within the right auricle of the human subject. The method consists in elevating the arm, bent about 120 degrees at the elbow, and noting the height at which a chosen vein just collapses to the level of the surrounding surface. This height above or below the mean point of entrance of blood into the auricle is assumed to represent the positive or negative hydrostatic pressure within that viscus. Many observations have led me to the conclusion that the method is impracticable as applied to the hand veins of most persons, but in the individual most thoroughly studied in the present research a large vein crossing the left radius two or three inches above the wrist showed very clearly a change of volume with change of elevation. It was found, according to this test, that, as the blood pressure in the veins of the hand rose after the ingestion of food, there was a somewhat parallel rise of pressure within the right auricle.

In the fourteen clinical cases representing well-marked lesions of the circulatory apparatus, the change of blood pressures following within an hour of dinner led to no general conclusions. In five cases there was a slight or moderate fall in venous pressure, in three a corresponding rise. In three cases there was a great fall of about 50 per cent. and in three a great rise. It is worth noting that a great rise of venous pressure and a drop of 10 mm. in arterial pressure occurred in an individual suffering from a very large aneurism of the ascending aorta. Another great rise in venous pressure after eating occurred in a man who died a few days after, suffering from mitral stenosis, aortic stenosis and the familiar signs of extreme break in compensation. His arterial pressure was too irregular to be estimated.

The evidence when sifted points to the conclusion that with well-compensated valvular lesions of the heart, with or without involvement of the kidneys, and in arteriosclerosis the ingestion of a meal is followed, at least during the first hour, by a more or less decided fall in venous blood pressure. At the same time there is usually a drop of from 5 to 15 mm. in the systolic arterial pressure. In the majority of these cases there was arteriosclerosis and the arterial pressure was abnormally high, ranging from 140 to 220 mm. In view of this fall of venous pressure in well-compensated pathologic circulations, it would seem at the outset ill advised to ascribe the rise of pressure so often found in normal subjects to functional heart weakness. But if there is truth in the hypothesis formulated on a preceding page that a hyperirritability of the splanchnic dilating mechanism tends to develop in the pathologic heart, the results submit to reasonable explanation.

Though the problems of circulation belong in their last analysis to the field of chemistry, it is to the mechanics of the circulatory apparatus that the physician in actual practice must apply his efforts for the amelioration of disease. We are now in a position to ascertain the normal and pathologic variations of both arterial and venous blood pressure, and pallor or congestion of the skin serves as an index of the state of the superficial capillary circulation. The investigation of a considerable number of persons, both in health and with disease of the circulatory apparatus, shows that, while in normal individuals there is a somewhat wide variation of blood pressure in similar vessels, these variations fall within prescribed limits and the ratio of pressure in arteries and veins is fairly constant. Pathologic cases, on the other hand, fall into well-marked groups, and, while it would be indiscreet to draw general conclusions from the relatively meager data at hand, the following tentative classification may be permitted of the pathologic circulation as based on actual observation. All the subjects were from adult life:

GROUP I. THE RATIO OF MAXIMUM ARTERIAL TO VENOUS BLOOD PRESSURE INCREASED.

The ruling anatomic condition here was one of arteriosclerosis with cardiac enlargement, with or without valvular lesion. Arterial pressure is increased and venous pressure is positively lowered. A considerable proportion of cases belonging to this group present no palpable signs of arterial degeneration, but the cardiac dilatation found is evidence of long-continued arterial overstrain. It seems probable that in these cases either tonic arterial spasm is produced by some toxic agent circulating in the blood, as is suggested by Dr. W. H. Thompson[13] to explain the high tension observed in certain forms of nephritis, or that the circulation has been hampered by an increase in the viscosity of the blood.

In cases presenting well-compensated mitral insufficiency in early life, the venous pressure was somewhat raised as well as the arterial, but in older subjects with arteriosclerosis there was both a positive rise in arterial and fall in venous pressure, although in these and other cases of arterial degeneration the veins were often large and flabby. Persons belonging to this class are characterized by a pallor of the skin roughly proportionate to the departure above and below normal of arterial and venous pressures, respectively.

GROUP II. THE RATIO OF MAXIMUM ARTERIAL TO VENOUS BLOOD PRESSURE DECREASED.

This class embraces that familiar group of cases in which there is abnormal increase of resistance to the lesser circulation, with or without involvement of the left side of the heart. It includes a wide variety of both functional and organic disorders. It is probable that all cases of heart disease with gradually failing compensation enter this category. Two persons showing slight but positive signs of mitral stenosis, perfectly compensated, have both abnormally high venous pressures: while one, a large man of 40, has an arterial pressure of 112 mm., and the other, a woman of 23, has an arterial pressure of from 130 to 140 mm.

In two chronic cases verified by autopsy, the obstruction was wholly between the right and left sides of the heart. In one there was atrophy of the right lung with an old, nearly-obstructing thrombus of the right pulmonary artery. In the other there was marked sclerosis

13. Thompson: "Possible Cause of High Tension Pulse in Nephritis." Trans. Assoc. Amer. Phys., 1904, vol. xix, p. 14.

of the pulmonary artery and a pericardial effusion. In the former the skin was deeply congested, and in the latter it was pale. In a man of middle age coming to autopsy from uncompensated lesions of mitral and aortic valves the skin had been warm and congested; while in another patient of about 62 years with a break in compensation from mitral insufficiency the skin was markedly pale. It is difficult to see how pallor of the skin co-existing with high venous pressure can be explained except as a result of spasm of the capillary vessels themselves. In all these cases the venous pressure was high to very high and the arterial pressures were within normal limits.

Omitting consideration of such anatomic causes of obstruction to the venous circulation as are involved in emphysema of the lungs, pneumonia, etc., there is a very interesting class of cases presenting high venous pressures which, at the outset, present "functional" disorders characterized by symptoms of the gouty diathesis. Their clinical features recall the statements of Balfour[14] and of Gairdner: "Venous congestion, as it is usually termed, has been recognized by all physicians since the day of Galen as the first condition essential to the formation of the gouty diathesis."

Of several such cases which have been under my study one is in the person of a full-blooded active man of 55, of highly gouty heredity, who for several years has noted increasing dyspnea with exercise. About six months ago there were obvious, though faint, signs of mitral insufficiency with slight cardiac dilatation. The patient was greatly benefited by a course of Nauheim baths, but some weeks later complained of a feeling of tension in his veins, though the heart murmur had disappeared. I found his venous pressure about double the normal, while the maximum systolic pressure was but 103 mm. sitting and 112 mm. recumbent.

In a subsequent paragraph attention will be called to the signs of cardiac insufficiency, such as dilatation and the presence of mitral regurgitation, as arising, not primarily from high arterial resistance, but from excessive input of blood into the heart. That is, the cardiac changes, whether of failure or of compensation, are brought about by heightened intracardiac pressure, not in the phase of systole, but in that of diastole of the heart.

I have elsewhere called attention to reduplication of the first sound of the heart as evidence of abnormal elevation of blood pressure in the right ventricle. The sign, commonly manifested by a partial splitting of the first sound, is usually well marked in this whole class of cases, especially in conditions of fair compensation.

Two other cases belonging to this category deserve especial mention. One, represented by a man of 30, robust in figure, with a high color, has extensive, though quiescent, tuberculous infiltration of the lungs, and is well enough to do clerical work. He is extremely susceptible to "colds" and manifests other symptoms of the gouty diathesis. His venous blood pressure measured about twice the normal, and the maximal arterial pressure sitting was 126 mm., recumbent about 133 mm. It is worth noting, in passing, that in changing from the sitting to the recumbent position the arterial pressure reached its maximum of 136 mm. immediately and then gradually fell to 128 mm.; on resuming the sitting position the pressure fell unduly at first, to 120 mm., and then gradually rose to 126; the results probably chiefly represent the adjustment of the vasomotor mechanism to the strain of gravity. Such graduated changes of blood pressure with change of position are not uncommon. This patient's urine was high in color, specific gravity was 1030. There was no albumin, but there was a considerable sediment of casts of the hyalin and granular variety, the former being fairly dense and of medium breadth. The granules were coarse and not readily dissolved by a 4 per cent. solution of piperazin and, therefore, were not uratic.

The other case is that of a man of 41 who leads a professional life of phenomenal physical and mental activity. He has long suffered at times from attacks which are especially characterized by pain and swelling in the small joints and in the sheaths of tendons. The veins of his hands are usually distended, though the extremities are at the same time commonly subjectively cold. On examination the hand veins were turgid and their valves, for the most part, were incompetent. The venous pressure was considerably above normal. Arterial pressure, sitting, was 124 mm., recumbent 116 to 123 mm. I am told that two or three years ago this man's arterial pressure was found by a competent observer, using the Riva-Rocci instrument, to measure about 160 mm. The significance of this fact will appear later.

I am permitted to report the results of numerous urinary examinations made by others in this case. The urine usually is of high specific gravity and contains great numbers of hyalin and granular casts, but no albumin. It is a curious fact that during a recent severe attack of tonsillitis the casts completely disappeared from the urine and returned only after recovery from the disease.

These cases present, so far as I know, the first evidence indicating a specific relation between gouty metabolism and nephritis marked by the appearance of casts without albumin in the urine.

GROUP III. THE RATIO OF ARTERIAL TO VENOUS BLOOD PRESSURE NOT MATERIALLY CHANGED, BUT BOTH PRESSURES ABNORMALLY HIGH.

This class probably includes cases of all kinds characterized by plethora. Thus, in a young woman with well-marked chlorosis, though the veins were inconspicuous and the skin cool, the venous pressure measured about twice the normal and the maximum arterial pressure was over 146 mm. Her heart was somewhat dilated and hypertrophied.

The following three cases suggest the hypothetical career of the gouty subject as it will presently be traced. A somewhat robust professional man, about 40 years of age, who for years has suffered at times from typical attacks of gout and who has enjoyed immunity for ten months following a course at Carlsbad, presents a venous pressure some three times as high as normal, with an arterial pressure of 160 to 170 mm. No signs of arterial degeneration are manifested. A man of 57, addicted to alcohol some years ago and accustomed to strenuous physical exertion, recently became short of breath with exercise and dizzy with change of position. He has a retinal hemorrhage, and his venous pressure is easily three times the normal and the arterial pressure ranged on one occasion from 188 mm. sitting to 220 mm. recumbent; on another from about 175 mm. sitting to 188 recumbent. The sclerosis which is probably present is not obvious in the visible arteries.

It may be said, in passing, that in four individuals with retinal hemorrhage kindly sent to me by Dr. E. C. Rivers for examination all apparently had high arterial

14. Palfour: "The Senile Heart," p. 161.

pressures and at least two had correspondingly high venous pressures. Finally, in a female patient of about 72, obese in figure, who for years has complained of gouty manifestations of the most varied sort, with undoubted degeneration in the larger arterial trunks and showing edema of position, the arterial pressure ranges from 200 to 215 mm., while the venous pressure is but slightly, if at all, above normal. In none of the cases, except as cited, were there distinct urinary signs of nephritis nor was there any history of syphilis.

A number of the cases described above seem to me to mark, like milestones, the course of the biologic career of the gouty subject, using this term as generic for an extensive group of troubles which Professor Chittenden[16] has recently described as disorders of "intermediary metabolism." Starting with a metabolic dyscrasia which pathologic chemistry is rapidly illuminating, the first physical derangement of the circulation is manifested by a positive and relative increase of the venous blood pressure. This leads to augmented inflow into the heart with tendency to increase the amount of residual blood remaining in the ventricles at the end of systole. The heart may react by hypertrophy to this diastolic elevation of intracardiac pressure or it may simply dilate and its valves become insufficient. The gouty subject in this stage belongs to Group 2. The hypothesis further assumes that the accumulation of toxins in the blood irritates the peripheral vessels, possibly capillaries as well as arterioles, so as to cause in them a tonic spasm. This must give rise to heightened arterial pressure. For a time, as illustrated in Group 3, venous pressure also remains high, possibly from associated plethora, it may be from resistance offered the inflow of blood to the heart. Finally, the arteries, figurately speaking, resent the strain imposed on them and their vital tissues are replaced by insensitive matter and arteriosclerosis is established. The accompanying cardiac changes, whether of compensation or degeneration, form but necessary links in the chain of events.

In this connection attention may profitably revert once more to the case described at the beginning of this article. The patient, a woman of 63, is a typical member of Group 1, although her arterial pressure is out of all proportion to the insignificant amount of sclerosis evident. Until recent years she has been a woman of extraordinary vigor, but up to the time of her menopause she was periodically prostrated by attacks of headache, from which, since then, she has been free. It is a justifiable suspicion that the recurrent headaches were but the youthful symptom of that gouty diathesis which has since developed in other directions with more palpable signs.

GROUP IV. THE RATIO OF ARTERIAL TO VENOUS BLOOD PRESSURE NOT MATERIALLY CHANGED, BUT BOTH PRESSURES ABNORMALLY LOW.

There can be no doubt that a large variety of cases could be properly included in this group, though I have not especially followed the subject. In a young man and a young woman, each recovering from an acute exacerbation of an old rheumatic mitral disturbance, the arterial pressure measured 100 mm. in the one and 110 in the other, and the venous pressures were from one-half to one-third of the normal. More or less of the same condition is manifested by certain members of the neurasthenic type. In a patient having very high venous and normal arterial pressure whose death was unexpected and found to be due to pulmonary atheroma and pericardial effusion, the arterial and venous pressures began to fall more than twelve hours before dissolution. Toward the end, even in death from mitral stenosis, the surface veins are drained, the jugulars alone becoming distended.

16. Chittenden: "Some Problems of Intermediary Metabolism," the Shattuck lecture, 1903.

SUMMARY.

1. It is worth insisting that our knowledge of the circulation must be built up by induction from specific facts and not by deduction from general laws.

2. The venous system falls functionally into two natural divisions, the somatic and the splanchnic. In the superficial vessels of the former the blood pressure is easily measured and is determined partly by local causes and, in part, by the conditions of circulation elsewhere in the body. The channels of the latter have a capacity capable of accommodating the entire blood mass. The general arterial blood pressure is probably regulated chiefly by conditions determining the splanchnic circulation. Arterial pressure is raised by contraction of the splanchnic vessels and lowered by their dilatation. In the upright position blood tends to gravitate into the splanchnic area, but in the normal human subject there is a compensatory vascular contraction which somewhat overbalances the effect of gravity, so that, at least, the maximum arterial pressure is slightly higher in the upright than in the recumbent position. In debilitated subjects the vasomotor compensation may be deficient and the arterial pressure is decidedly lower in the upright than in the supine position. This postural draining of the blood is often evidenced by failure of the radial pulse when, in the erect position, the arms are elevated above the head. In the lower animals undue elevation of arterial blood pressure is prevented by reflex inhibition of the vasomotor center for the splanchnic area, the afferent branch of the reflex arc being the depressor nerve whose peripheral filaments find their stimulus in the strain of the contracting heart. The frequent failure of pulse in the elevated wrists of subjects of valvular heart disease who have high blood pressure makes it probable that an essential functional peculiarity of such disease is the development of a heightened irratibility of the depressor reflex.

3. Venous blood pressure may be raised either by increasing the inflow into or decreasing the outflow from the veins. The former result may be attained by local exercise of the member examined, the latter by elevating one arm while the venous pressure is measured in the hand of the other.

4. Muscular exercise, either local or general, increases venous blood pressure and presumably pressure within the right side of the heart.

5. Intrinsic contractility of the superficial veins plays an important part in their physiology. It is probably through such contraction that the valves are brought into action. The natural external stimuli to venous contraction are cold and light mechanical irritation. Venous pressure is lowered by cold which causes contraction of the arterioles and is raised by heat which dilates them.

6. The superficial veins of the extremities normally dilate and the pressure within them increases as result of inspiration. The respiratory movements of the veins correspond with the respiratory changes in arterial blood pressure. Transmission of cardiac pulsation into the veins is of frequent occurrence.

7. As a result of the processes attending digestion the pressure in the veins of the hand sometimes falls, at

others rises. The former result is probably a sign of most perfect physiologic compensation. The rise of venous pressure during digestion is probably due not to increased inflow from the capillaries, but to elevation of pressure within the right auricle, due to excessive input of blood from the splanchnic system. It may be looked on, therefore, as a sign of relative physiologic weakness.

8. Cases of disease which involve the apparatus of the circulation, when compared with normal subjects, can be naturally distributed among four distinct classes: (a) The ratio of arterial to venous blood pressure is increased. This is due to positive elevation of arterial pressure produced in some cases by disorders such, possibly, as vasomotor spasm or increased viscosity of the blood or in others by arteriosclerosis. (b) The ratio of arterial to venous blood pressure is decreased. This is usually due to positive elevation of venous blood pressure either by physical obstruction to the output from the right heart or by functional changes involved in the so-called gouty diathesis. Abnormally high venous blood pressure, not accounted for by mechanical causes, is a clinical sign of disorder of intermediary metabolism. (c) The ratio of arterial to venous blood pressure is not materially changed, but both pressures are abnormally high. Such a condition is found in general plethora, also persons in a certain stage of the gouty dyscrasia belong to this class. (d) The ratio of arterial to venous blood pressure is not materially changed, but both pressures are abnormally low. Cases of simple asthenia probably mostly fall within this class. The condition has been noted in individuals recovering from a break in compensation attending mitral insufficiency.

Although one and the same subject may, at different stages in the development of his dyscrasia, as in gout, occupy a place now in one, now in another of these classes, the discernment of the circulatory attributes by which the allotment must be made on any specific occasion, is of the utmost pathologic interest and therapeutic importance.[17]

DISCUSSION.

DR. S. J. MELTZER, New York City, said that the fall of the blood pressure during each inspiration can be explained as being due to an inhibition of the vasomotor centers. The distension of the lung during each inspiration which causes an inhibition of the inspiration causes at the same time also an inhibition of the other centers of the medulla oblongata.

PROF. W. P. LOMBARD, Ann Arbor, Mich., stated that he has done considerable work along this line. He believes that we are not dealing here with mechanical effects. The peripheral blood vessels are influenced by the vasomotor nerves, and are acted on by the vasomotor as well as the respiratory center. He has watched a little mirror resting on the veins on the back of the hand, and has seen a point reflected in it fluctuate rhythmically. It moved forward and back at intervals of from 7 to 14 seconds, then stopped for a time, and then started again, often with a jerk.

17. More than 125 persons have been investigated in conducting these researches. I am indebted for assistance to numerous friends and students, of whom special mention may be made of Dr. Shuler Craft and Messrs. C. C. Fuson and R. B. Biotz.

Supply and Demand.—It requires no argument to show that the medical profession is overcrowded. There are many successful men who are overworked, and there are many unsuccessful ones who would be underworked if they were the only doctors in a town of ten thousand each, but the great majority of physicians are directly influenced by the law of supply and demand, and there is no question but that each average physician could take care of at least twice the population that now falls to his lot.—*Medical Times.*

THE TREATMENT OF THE INTRACRANIAL COMPLICATIONS OF MIDDLE-EAR SUPPURATION.*

EDWARD BRADFORD DENCH, M.D.
NEW YORK.

The statistics given in this paper are taken from my own operating book, it being my purpose to record here simply personal experiences and to deal very little with the general literature of the subject, owing to the small time allotted for the discussion of so important a topic.

The intracranial complications which may follow a middle-ear suppuration are, first, epidural abscess; second, brain abscess; third, sinus thrombosis, and, fourth, general meningitis. The meningitis may be either of the serous or the purulent type.

From my own private statistics I can report 40 cases of epidural abscess, 14 cases of brain abscess, 44 cases of sinus thrombosis and 5 cases of general meningitis. This list refers simply to cases operated on. Of course, some cases of meningitis were met with which were considered inoperable, but these statistics deal simply with cases operated on.

Of the 40 cases of epidural abscess, 4 died: one of pneumonia, secondary to sinus thrombosis, two of general meningitis—in one of these cases the meningitis occurring over one month after the evacuation of the epidural abscess—and one of diabetes.

Of the 14 cases of brain abscess, 10 were located in the tempero-sphenoidal lobe, and of these 4 were cured and 6 died. The 4 remaining abscesses were located in the cerebellum, and all of these cases terminated fatally.

There were 44 cases of sinus thrombosis, of which 10 died and 34 were cured. Of the 44 cases the internal jugular was not excised in 28, and of this number there were only 4 deaths. The causes of death were as follows: One died of pulmonary thrombosis, one of diabetes, one of septic pneumonia, and in the remaining case the cause of death is unknown. Of the 16 cases in which the internal jugular was excised, 10 recovered and 6 died. The causes of death in these cases were as follows: One died of hemorrhage into the spinal canal, one of general pyemia, which condition was present before the operation was performed, a pneumonia coincident with the acute middle-ear inflammation rendering operation absolutely impossible until a very late date; two died of double pneumonia, one of gangrene of the lung and one of gangrene of the tissues of the neck.

Of the 5 cases of general meningitis operated on, one recovered as the result of subdural drainage; in the 4 remaining instances, treated both by subdural and ventricular drainage, death followed in every instance. These statistics would go to show that both epidural abscess and sinus thrombosis are conditions which are not ordinarily attended by any great mortality if subjected to operative interference early.

Out of 40 cases of epidural abscess, in only two was death due to general meningitis. This would seem to indicate that in epidural abscess Nature makes an effort to wall off the area of meningeal inflammation from the general cranial cavity and thus effect a spontaneous cure. The possibility, however, of late infection of the general meninges in these cases must be borne in mind. This is evidenced by one of the fatal cases reported, in which the general meningitis did not make its appearance until the mastoid wound was practically healed. It is prob-

* Read in the Section on Laryngology and Otology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

able that where a fatal meningitis occurs at such a late period the meningitis is due to infection through the wound. In the case cited, the patient had been treated at the dispensary and her hygienic conditions at home were not of the best. There was abundant opportunity for reinfection of the wound while at home.

Regarding the treatment of these cases of epidural abscess, very little need be said. It is simply necessary to evacuate the pus and to expose the infected area freely by removing the overlying bone in every direction until firm dural adhesions are reached. I do not advocate the removal of bone until healthy dura is seen, as there is danger of reinfection of this healthy dura. The bone should be removed until the line of adhesion between the dura and bone can be made out; in other words, the entire abscess cavity should be exposed, but exploration should not go beyond this point. Simple packing of the wound with either iodoform or sterile gauze completes this operation.

In considering the cases of sinus thrombosis, in 28 out of 44 cases, in which it was not necessary to excise the internal jugular, death resulted in but four instances. In other words, sinus thrombosis recognized early and operated on early will be almost certainly cured. It might be argued from the causes of death in the four fatal cases in which the jugular was not excised, that excision of the jugular would have prevented the fatal termination. This may possibly have been true of the case dying of pulmonary thrombosis, although I think that such a conclusion would be rather far-fetched. In the case where the septic pneumonia was the cause of death the pneumonia would certainly not have been averted by ligation of the jugular, while ligation of the jugular in the case of the patient dying of diabetes certainly could not have prevented the fatal termination.

Of the 16 cases in which the internal jugular was excised, a fatal termination followed in 6. In the 2 cases dying of double pneumonia and in the one dying of gangrene of the lung, pulmonary infection had already taken place before the cases came under observation. In the case dying from hemorrhage into the spinal canal the cause of death was entirely independent of the condition of sinus thrombosis, and consequently the case should not be considered a fatal case of sinus thrombosis. In the case dying of gangrene of the neck the systemic infection was present from the incipiency of the disease, and, although jugular excision was performed as soon as the symptoms indicated involvement of the vein, the operation failed to save the patient's life.

We are brought here face to face with a very important question and one which has been the subject of much discussion; that is, whether in every case of sinus thrombosis we shall place a ligature around the internal jugular prior to opening the sinus, or whether we shall follow the older practice of exploring the lateral sinus first and resort to excision of the internal jugular in case this seems to be demanded by the condition of the sinus. Much is to be said in favor of each plan of procedure. Personally I do not believe that it is necessary to place a ligature about the jugular as a preliminary step in every case where we wish to explore the lateral sinus, or in every case where we find a clot within the sinus.

My own plan of procedure is to expose the sinus from a point just above the bulb to a point well beyond the knee, exposing at least an inch, and, better, an inch and a half of the lateral sinus. Pressure on the sinus at its lower portion is then made and the sinus opened. If a clot is found, this is removed by means of the curette, the incision in the sinus wall being gradually extended backward until free hemorrhage occurs from the torcular end of the sinus. If necessary the bony covering of the sinus is removed as far back as the torcular. As soon as free hemorrhage occurs it is checked by means of pledget of iodoform gauze inserted between the sinus wall and the skull. Pressure is then removed from the lower end of the sinus, and if free hemorrhage does not occur from below a curette is inserted into the sinus and the clot removed from the bulb, care being taken, prior to this procedure, to apply pressure on the internal jugular in the neck so as to prevent the possible entrance of air into the vein. If the removal of the clot from the lower end of the sinus is followed by free hemorrhage, this is taken as presumptive evidence that the jugular bulb does not contain a clot. This free hemorrhage is, by no means, absolute evidence that there is not a clot in the jugular bulb, and that such a clot may not extend downward into the vein. From the series of cases reported, however, in which this plan has been followed, it must be conceded that this view is well taken. In fact, I have seen several cases in which free hemorrhage did not take place from below, and in which the jugular was not interfered with, recover completely after clearing out the clot from the sinus. Free hemorrhage occurring from below, a plug of iodoform gauze is inserted into the lumen of the sinus, packed firmly down into the bulb, and the remainder of the wound dressed in the ordinary manner. If hemorrhage does not take place from the bulbar end of the sinus, I believe that the surgeon should always proceed to excise the jugular immediately, unless the condition of the patient does not warrant this procedure, or unless the case has been under observation for only a few hours, and has shown no evidences of general septic infection. In either of these events it is better to return the patient to bed for a few hours, allow him to rally from the shock of the first operation, and subsequently to excise the jugular, if necessary. In cases where the general condition of the patient is good, jugular excision should be performed at the first operation, if free hemorrhage does not take place from the bulbar end of the sinus.

In performing the operation, it is well to place the initial ligature about the vein as low down as possible. The vein is most superficial just beneath the omohyoid muscle. In some cases, however, it is necessary to ligate the vein lower, that is, just above the clavicle, and in two instances, I have placed a ligature about the vein less than half an inch above the innominate vein. The excision of the vein should be complete from its lower point of section to a point as close to the base of the skull as possible. I usually divide the upper end of the vein well above the posterior belly of the digastric muscle. All tributary veins must be divided between two ligatures during the procedure of excision. Any enlarged glands lying along the course of the vein, and in severe cases these glands are always present, should be thoroughly removed.

It has been my own practice to close the wound in the neck by interrupted sutures in all of these cases except where very severe infection of the cervical tissues is present. The tissues of the neck are not sutured layer by layer, but the sutures are passed simply through the skin, and the dead space in the neck is drained either by a wick of iodoform gauze or by a thin cigarette drain. The upper portion of the wound, at the base of the skull, where the upper end of the jugular is divided, is left

open, and a strip of iodoform gauze is carried down to the severed jugular, so as to drain thoroughly the upper portion of the wound and to prevent infection of the lower portion from above. Primary union has taken place in over 50 per cent. of these cases.

The results of operative treatment in brain abscess are much less satisfactory than are those in the conditions which we have already considered. My own statistics show but four recoveries out of fourteen cases. This, of course, is a very high mortality. The diagnosis of brain abscess is, in many cases, so obscure that the abscess is only evacuated at a very late date. Where localizing symptoms are present, such as aphasia, sensory or motor paralyses, or cerebellar symptoms, the surgeon may be able to locate the abscess with a certain amount of exactness. In a very large proportion of cases, however, the diagnosis must depend on indefinite symptoms, such as persistent headache or sleeplessness, a septic temperature in cases of acute abscess, or a persistent, subnormal temperature, in cases of chronic abscess, general emaciation, and in some cases, optic neuritis. The blood count in these cases is of considerable value in arriving at a diagnosis. We almost invariably find an increased percentage of polymorphonuclear cells on examining the blood. If suppuration in every other part of the body can be excluded and there is a history of aural suppuration, such an increase in the polymorphonuclear cells, together with other symptoms, would warrant the surgeon in exploring the cranial cavity.

The majority of abscesses of otitic origin are located in the temporo-sphenoidal lobe. The next most frequent site is the cerebellum, and I have seen one case where the abscess was situated in the second frontal convolution.

In exploring the temporo-sphenoidal lobe, the surgeon may expose the dura either by removal of the tegmen tympani, or, after removing all foci of suppuration from the middle ear, the temporo-sphenoidal lobe may be explored through the squamous plate of the temporal bone. Unless at the time that the mastoid operation is performed there is caries of the tympanic roof, and removal of this carious bone exposes diseased dura, I do not think that the tympanic roof should be the site chosen for the exploration of the temporo-sphenoidal lobe. If diseased bone is found in this region, naturally the surgeon would follow up the path of infection to the meninges, and through these to the brain substance. In the absence of such signs, however, I believe that in the evacuation of a temporo-sphenoidal abscess the brain should be exposed by an appropriate incision made above the zygoma. The cranial cavity is easily entered at this point, a large area of bone can be quickly removed by means of the rongeur, the dura quickly exposed and incised, and the brain substance explored in every direction. After an opening has been made above the zygoma, it is then perfectly feasible to remove the roof of the middle ear and mastoid cavities, thus enlarging the exposed dural area.

For exploring the brain a long, sharp, narrow-bladed knife is the best instrument, or some prefer a grooved director. If the knife is used, incision should be made parallel to the convolutions, rather than across them, so as to avoid unnecessary hemorrhage. As soon as pus is encountered, either by the knife or the director, a long, narrow-bladed retractor should be slipped along the exploring instrument, until the abscess cavity is entered. Gentle traction should then be made on the brain, and the second blade of the retractor should be slipped into the cavity and the retractors separated. In this way the operator is able not only to thoroughly evacuate the abscess, but to also obtain a fairly good view of the interior of the cavity.

This procedure appeals to me rather more than does the introduction of the encephaloscope for purposes of exploration. I much prefer the cautious introduction of a sterile finger into the brain abscess cavity, to the introduction of the encephaloscope.

I am not in favor of washing out these abscess cavities at the time of operation unless, on examination, there seems to be a fairly dense wall to the cavity. Under these circumstances, the cavity may be washed, either with a weak bichlorid solution or a normal salt solution.

The method by which these cavities are to be drained is a matter of great importance. In three of the successful cases reported the cavities were simply packed lightly with either sterile or iodoform gauze. In one of the successful cases gauze was inefficient, and the patient made a prompt recovery when rubber drainage tubes were substituted for the gauze. At present I believe the best method is to introduce a rather large cigarette drain into the cavity; on the removal of the cigarette drain the walls of this canal will be found to be fairly firm. The cavity can then be easily cleaned under direct illumination through the encephaloscope, and the cigarette drain can either be replaced or the cavity packed lightly with boric acid gauze, sterile or iodoform gauze, according to the choice of the operator.

From the experience of McEwen and others, it would seem that the less frequently these abscesses are disturbed or redressed, the better. I must say that in my own cases, however, the dressings have been changed either daily or every second day. The cause of death in my cases has invariably been a general meningitis. In some of these the infection was clearly through the subdural space, in others through the ventricles.

With reference to the exploration of the cerebellum, the cranial cavity may be opened either just below the superior curved line, the opening being first made with the chisel and then enlarged with the rongeur, or the mastoid wound may be simply extended backward so as to expose first the lateral sinus, and then the cerebellum. The cerebellar fossa is undoubtedly more easily opened by the elevation of a flap of pericranium, so as to expose that part of the occipital bone lying beneath the superior curved line. The anterior border of this flap should correspond to the incision for opening the mastoid; the posterior border should be close to the median line. In this way, after the cranial cavity has been entered, the bone may be removed forward toward the mastoid wound until the exploratory opening and the mastoid wound are joined. This gives a very large field of exploration, and enables one to carry on exploration with the utmost thoroughness. The only drawback to the procedure is the profuse hemorrhage which occasionally occurs from the emissary vein. This, of course, can be readily checked by plugging the foramen with a bit of sterilized wood. If the vein is large, however, it is rather difficult to expose that portion of the cerebellum lying just posterior to the sinus. It is for this reason that, in most cases, I prefer to enter the cerebellar fossa behind the mastoid foramen rather than to work backward from the original mastoid wound.

The technic of draining a cerebellar abscess is precisely the same as that described in speaking of temporo-sphenoidal abscess.

The treatment of an otitis meningitis is, perhaps, the most unsuccessful problem with which the otologist has to deal. Otitic meningitis may be either of the purulent or serous variety.

These cases, however, are not entirely hopeless. I have already reported, before the American Otological Society, a case of otitic meningitis which recovered after subdural drainage. At the Seventh International Otological Congress at Bordeaux, Lermoyez[1] has reported two cases of otitic meningitis, the one cured by the complete radical operation with craniectomy and lumbar puncture, and the second relieved by radical operation, craniectomy incision of the dura mater and repeated lumbar punctures. The generalizations of Lermoyez are exceedingly good. He believes, first, that the purulent focus in the midle ear should be thoroughly cleared out; second, that intraeranial pressure should be relieved by means of repeated lumbar punctures. Failing in this, that a sufficient area of the skull should be removed to relieve intracranial pressure rapidly followed by incision of the brain substanee, in case the symptoms persist.

In my own practice, I have followed all these suggestions; that is, I have employed lumbar puncture, craniectomy, subdural drainage and ventricular drainage. In only one case has operative treatment been successful, namely, a case of chronic suppuration in whieh subdural drainage was employed.[2] In a few cases, where ventricular drainage was resorted to, the symptoms temporarily subsided, only to recur after a short time, and in all instanees, a fatal termination followed. I am inclined to believe that the best plan of treatment is to relieve the pressure first by early lumbar puncture in cases of meningitis, and, failing in this, to relieve the increased pressure by a free craniectomy, followed by incision of the dura and of the cerebral substance. If the ventricles contain much fluid ventricular drainage will be established without any speeial effort on the part of the operator. If ventricular distension is not sufficient to admit of their free drainage after brain substance has been penetrated for a distance of an inch, I am inclined to believe that it is better surgery simply to incise the brain substance, and relieve tension in this way, rather than to attempt to drain the ventrieles by deeper incision.

In cases of otitie origin, the region chosen for exploration in craniectomy is usually that region just above the external auditory meatus. Here the descending horn of the lateral ventricle lies at about a depth of an inch and three-quarters below the surfaee of the temporo-sphenoidal lobe; that is, I am speaking now of normal conditions, and where the ventricle is distended with fluid the brain substance is compressed and the ventrieular cavity opened before the brain substance is penetrated to this depth. If the ventriele is opened, I believe that a cigarette drain inserted into the ventrieular eavity affords the most perfeet form of drainage.

Otitic meningitis, either of the purulent or serous variety, is, apparently, the condition which has most baffled the efforts of the surgeon. While the results of operative treatment are far from encouraging, I believe that it is only by persistenee along these lines that the condition will finally be controlled. Better teehnie and perhaps earlier operation, will undoubtedly save many eases which were formerly considered hopeless.

1. Transactions Seventh Int. Otological Congress, Bordeaux, 1904, p. 348.
2. Transactions of the American Otological Society, 1896, vol. vi, p. 315.

DISCUSSION.

Dr. Charles Ballance, London, England, said in regard to the varieties of meningitis that there are cases of meningitis serosa, cases of tuberculous meningitis and cases of suppurative meningitis. He thought this is the best classification because the various forms of meningitis which produce suppuration can not be very well separated. Meningitis serosa often occurs in relation to acute mastoid cases and the symptoms are characteristic; they are a rise of temperature, slowing of pulse, vomiting, drowsiness, stability of the pupil and some redness of the optic disc. The condition can be relieved at once by lumbar puncture, which in many cases ought to be employed more than it is. In meningitis serosa lumbar puncture may save some patients from meningitis purulenta, hence it is an operation to bear in mind. With regard to cases of tuberculous meningitis which arise from infection of the temporal bone, he had reported one case in which there was vomiting, squint and paroxysmal headache, as a sequence of tuberculous disease of the temporal bone. The patient recovered entirely after complete ablation of the local disease. The question arises, Can anything more be done? He thought there ought to be drainage of the subarachnoid space, not of the subdural space, and provision for drainage from the ventricle. In suppurative meningitis, to which Dr. Dench referred, a remarkable series of cases has been published. In one case the patient was dying of suppurative meningitis, and the operator exposed the occipital lobes, opened the subarachnoid space and introduced gauze drainage. Whether he opened the ventricles or not Dr. Ballance did not know. At any rate, after a desperate illness, this patient entirely recovered. Methods for treatment of purulent meningitis are encrusted with conventionality. In many cases of suppurative meningitis the infected meningeal spaces ought to be drained by means of operation; also an antitoxic serum which corresponds to the organism that has produced the suppurative meningitis within the skull should be employed.

Another question Dr. Dench referred to was treatment of abscess of the brain. Dr. Ballance disagreed with him in the statement that temporosphenoidal abscess is twice as frequent as cerebellar abscess. The experience in two hospitals in London is that cerebellar abscess is twice as frequent as temperosphenoidal abscess. Brain abscess being much more frequent in the young than in the old, the posterior fossa is more often involved than the middle fossa. With regard to treatment of brain abscess, the pathway of infection from the meninges into the brain is the pathway through which drainage should be effected. When the infection has crossed the meninges and reached the cortex, it is unable to produce a very wide destruction in the cortex because the cortex is vascular and is rich in connective elements. Consequently, as a rule, there is a rather narrow channel through the cortex by which the infection passes from the meninges into the white matter. In the white matter this condition is reversed and dissolution of the white matter is widespread. The ideal surgical treatment is to drain the abscess through the stalk. By that means the difficulties surgeons have to combat in securing good drainage of an abscess in the liquid texture of the brain are entirely overcome, the patient gets well rapidly and there is no danger of meningitis. Another point Dr. Dench spoke of is venous infection. Infection of the great channel of the lateral sinus commonly occurs, and the first indication of danger is not clotting of the blood, but the decomposition of the clot. Dr. Ballance maintained that clotting in the sinus is an effort of Nature to prevent the extension of the disease, and therefore that it is distinctly beneficial, and the question whether the vein should be dealt with or not is a question of what organism is going to infect the clot. Is it one that will produce a local abscess if injected into the arm, or is it an organism that will produce a spreading gangrenous cellulitis if injected into the arm? If the organism is a cause of local suppuration, that abscess, when present in the sinus, can be incised, and there is no fear but that the patient will get well. If the organism is a cause of spreading infection

here will be a spreading septic clot, which may even reach the eart. Under the latter circumstances it is the duty of the urgeon to deal with the internal jugular vein, and he thought he best plan is to divide it as low down in the neck as possible and to ligature all its tributaries, and then to bring it ut in the highest part of the neck incision and suture it there. Vhy cut it off at the base of the skull? Within the vein here must be infection. The wound in the neck in a certain umber of cases would not become infected if the internal ugular were used as a drainage tube.

As to the time of operation, if there is doubt as to the type f infection, he would say do the operation. One of his first ases, published in 1889, interested him much with reference o the question whether the mastoid and vein operation hould be done first. One night he was called to a nurse, vhom he knew, who was about 25 miles from London. He ound her in a cottage, and he had very few things with him, ut with a knife which he borrowed and with some silk threads ie tied the internal jugular vein. He put her in a carriage nd drove her to London to a surgical home, and at 5:30 the ext morning did the complete mastoid operation, turning out suppurating clot from the sinus as far back as the protuberince and completing the operation on the vein. She conalesced rapidly. The ligation of the vein before the journey nay have prevented the occurrence of septic pulmonary mbolism.

MR. HAMILTON A. BALLANCE, Norwich, England, said that one very interesting case of lateral sinus pyemia, which illustrates the use of antitoxic serum in these cases, was that of a woman who had an otitis and subsequently lateral sinus pyemia, on whom he operated in the usual way, and she was very gravely infected. She had abscesses in the kidney, in two joints, in one tonsil and in the subcutaneous tissue. From every one of these abscesses the *Streptococcus pyogenes* was obtained. The effect of antitoxic serum in this case was marked. She also had an attack of facial erysipelas due to the streptococcus. He believed the use of the antitoxic serum in this case was the means of saving her life.

DR. N. H. PIERCE, Chicago, said that it is very difficult to make a differential diagnosis in many cases between septic purulent meningitis and serous meningitis. Even the fluid which is drawn off in lumbar puncture may give very little evidence as to which kind of meningitis it is and the only way to make a diagnosis sure is to wait; if it is serous meningitis the patient gets well immediately, but if it is septic meningitis the patient is pretty sure to die. Therefore, all cases of meningitis should be treated as if they were serous in character. Lumbar puncture should be made very early and sufficient fluid drawn off for bacteriologic, microscopic and chemical examination, and not only that, but a sufficient quantity to relieve the pressure within the meningeal spaces. Yet patients recover who have the most apparently hopeless cases of septic meningitis. He reported a case of septic meningitis in a child 10 years old, which resulted in recovery, about a month after an operation for mastoid abscess, whose temperature rose to 107.5. This patient recovered with drainage through the arachnoid spaces, after a prolonged course. He had used the streptococcus serum in a number of these cases, not only in sepsis arising from ear diseases, but sepsis arising in other parts of the body; for instance, in a case of laryngeal phlegmon, with absolutely no apparent beneficial results. The matter of streptococcus serum is an unknown quantity at present. The chances are there are many germs which have the morphologic qualities and characteristics of the streptococcus, but which vary in their intrinsic nature very much; that is the only way the variance in the results following the use of antistreptococcus serum can be explained, obtained by different observers. Regarding the treatment of the jugular bulb and sinuses, he believed the jugular should not always be tied in these cases nor the sinus opened for purely exploratory purposes. If the process going on in the sinus from the wound can be controlled, tying the jugular is unnecessary. He believed that the jugular should first be tied whenever a curette is to be introduced down toward the bulb or when the bulb is to be exposed or when the wound is not co-extensive with the thrombus. In marked general symptoms of sepsis, the jugular should be tied when the thrombus is palpable and approaching to the bulb.

DR. F. L. JACK, Boston, spoke of one minor point to be considered in the treatment of brain abscess, that is, the methods employed for the establishment of drainage. It seems to him drainage is most important, and in his experience gauze has been very efficient, acting very much as a rubber stopper would in the sinus leading to the abscess. He thought that was the only dressing that could be employed at a time when he had a number of cases, and they resulted fatally without exception. He discovered that the cause of death in some of the cases was lack of drainage, and he determined that in the next brain case he would insure perfect drainage. He used the old-fashioned rubber drainage tube, which he does not suppose is used at all in these days, and the patient recovered. Since then he has employed this open method, has avoided using gauze in every case, and has had very much better results. Gauze ought not to be used for drainage in brain abscess. He differed a little from Dr. Dench in the statement that an opening through the attic tympanum is insufficient to drain properly the temperosphenoidal abscess. It may be insufficient in some cases, but in his hands in three or four cases it had been entirely sufficient. It had enabled him to remove the bone from the roof of the attic tympanum and the roof of the auditory canal, to find almost the spot where the inflammation extended from the attic through the bone and through the dura, and he had been able with the small knife Dr. Dench described in two cases to find the exact spot and put the knife into the abscess cavity. In these cases he found it simple enough. He trephined the bone and opened from the squamous portion, and had two or three patients recover. One instance of recovery from suppurative meningitis was unique, and up to two or three years ago a similar case had not been in the City Hospital. He was called to see a man moribund, having a history of suppurative middle ear disease and extension of pus into the cranial cavity, undoubtedly a meningitis, from all symptoms. The man was *in extremis* and he declined to operate, the conditions at the house being unsatisfactory. The man, Dr. Jack learned afterward, recovered. A year after that he had an inflammation in the other ear and a meningitis which killed him. At the autopsy the remains of the meningitis on the opposite side were found.

DR. E. B. DENCH, New York City, referring to what Mr. Ballance said about streptococcus serum, said that in one of the fatal cases he had reported the streptococcus serum was used without benefit. The method of entering the cranial cavity must depend on the nature of the case.

TUBERCULOSIS OF THE MIDDLE EAR AND MASTOID.*

E. A. CROCKETT, M.D.
BOSTON.

In this paper I shall report a few cases of tuberculosis of the middle ear and mastoid, all drawn from private practice and observed over a considerable period of years. Of course, under the favorable circumstances of private practice we may expect a more favorable prognosis, both from the increased vitality of cases treated under such favorable conditions and from the fact that the hygienic surroundings can be made as perfect as possible. Still the general conclusions of this paper are true as regards a great many hospital patients seen in the last 16 years, as well as the few cases herein reported.

I am sure that cultures taken with special reference to the bacillus of tuberculosis as a routine measure in a large series of cases will show a large number of such infections, which clinically show no diagnostic symp-

* Read in the Section on Laryngology and Otology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

toms. They constitute the majority of the severe mastoid cases seen in infants. It is, of course, decidedly more difficult to isolate the tubercle bacillus than the ordinary septic organisms commonly seen and the absence of the bacillus can not be regarded as proof positive of the absence of the disease unless the pus or other septic material is injected into a guinea-pig and the results noted, but in the the extreme cases there can be no doubt as to the diagnosis, without culture, from the unmistakable clinical signs.

First and most important of such symptoms in my experience has been the appearance of a small glandular swelling in front of the tragus either before or coincident with a middle-ear discharge. This gland is free from parotid involvement in its early stages, but later comes parotid and subzygomatic induration with or without local abscess formation and in extreme cases after weeks or months the formation of postural abscess and infection of the glands in the neck. In the severe type the process is very apt to begin in the middle ear or temporal bone and to be attended by an early facial paralysis on the affected side and later by the formation of large sequestra either of the mastoid or petrous portion or both. In this case the ossicles are apt to slip out easily and may be often found in the syringing fluid; and there may also be tuberculous processes in other bones of the body. The clinical picture thus presented, in the extreme cases, of the early parotid swelling and subzygomatic induration following or prior to the discharge of the ear in infants or young children and followed by facial paralysis, postaural abscess and general infection of the glands of the neck, with malnutrition and emaciation is so typical that the diagnosis can be almost always made by a superficial observation. The prognosis in such a case without operation is absolutely bad, although a few undoubtedly recover after sequestra are formed and the process thus self-limits itself. Many die from exhaustion due to general septic infection, malnutrition or tuberculous involvement of other parts of the body, especially general miliary tuberculosis or tuberculous meningitis. I will endeavor to show by this series of cases that these bad results are rare under treatment, even in extreme neglected cases. Much more commonly seen than these severe infections is an infection of the middle ear without involvement of other tissues or of the mastoid, evidently proceding *via* the Eustachian tube and generally, though not always, a complication of pulmonary tuberculosis. Here the process begins with the general appearance of an ordinary otitis media acuta with a red, infiltrated membrane, but without very much pain or general systemic disturbance. This perforates itself and until it becomes infected by other organisms the discharge is of a sero-sanguinolent character. The perforation rapidly enlarges in these cases and involves the malleus and incus until these two ossicles are completely necrosed so that they fall out or come away in syringing the ear.

It has been my experience that it is impossible to check one of these cases short of the complete destruction of the membrane and partial destruction of the malleus and incus.

I cite two typical cases of this class of infection:

Case 1.—P., healthy looking boy, aged 5½ years, was first seen on Nov. 7, 1903.

History.—There was well marked tuberculous history in his family, but he did not at this time, nor has he at any time since, shown any signs of any other tuberculous infection.

Examination.—His left ear was normal, his right ear showed a double perforation anterior and posterior to the malleus with a slight serous discharge.

Treatment.—The ear was put on dry treatment with the use of boric acid powder. The perforation rapidly increased in size under treatment and destroyed about half the malleus and the whole of the incus in the course of about one year's time.

A culture taken from the discharge of the middle ear showed tubercle bacillus. As soon as this diagnosis was made treatment was changed to wipe dry and powder with a combination of iodoform and boric acid, equal parts. The ear gradually stopped discharging after this treatment had been faithfully carried out three months. This child has been seen within three months with a recurrent discharge from this ear which still showed tubercle bacillus, the ear having been perfectly dry prior to this time for more than six months.

Present Condition.—The condition now is a large perforation showing the head of the stapes, smooth membrane of the middle ear without granulation and about half the malleus hanging down without any membrane attached to it. The boy is now 9 years old and in splendid health. He has been out in the open air for five months without any impression being made on the discharge of the ear.

Case 2.—S. C., aged 20 years, had been in Texas with pulmonary tuberculosis and the process had been supposed to be checked.

Course of the Disease.—Patient was first seen in 1900 with what was apparently an ordinary acute inflammation of the middle ear. This rapidly increased until without pain the process had destroyed the drum, malleus and incus, after which the ear ceased discharging and has now been dry nearly three years. Tubercle bacillus was isolated in this midlle ear also, the pulmonary process is apparently checked and the patient has been at work in the North for three years and is in good general condition.

As illustrating the severer type of tuberculosis the following may be of interest:

Case 3.—M. R., aged 4 years; lived in a suburban town; one of a large family of children; all the other members of the family in good health.

History.—First seen in 1895. A family servant had pulmonary tuberculosis and had remained some months in the house before the diagnosis had been made. When this child was first seen his general condition was excellent. He had a discharging ear, with a postaural abscess perfectly painless to pressure and not red.

Operations.—The first operation performed was done by the family practitioner, who merely opened the abscess. About two months after this the discharge from the abscess was very foul and I did a mastoid operation, removing a large sequestrum comprising most of the mastoid portion of the temporal bone.

Postoperative History.—Within a year a sequestrum comprising a portion of the cochlea, a carious malleus, a tuberculous sequestrum of the lower end of the radius and a portion of one rib had been removed at successive operations. The total length of time of the extension of the process was about three years. He lived largely out of doors and has had no trouble of any sort for about five years. He is now about 15 years old and in good physical condition.

Case 4.—N., aged 1½ years; was first seen in 1896.

History.—This baby's aunt had a very rapid pulmonary tuberculosis and had been very much attached to the child, often held it in her lap and kissed it, the family not recognizing the danger of such procedure. The child lived in an apartment in a suburban city under only fairly favorable conditions. The child first showed a cold abscess over the mastoid before the discharge from the middle ear was noticed.

Operations.—Between the time the child was 1½ and 5 years of age five successive operations were performed, two on the mastoid, one on a tuberculous sequestrum in the forearm and one for the removal of the last phalanx of the toe, and the process microscopically was diagnosed tuberculous in each instance.

Postoperative History.—The ear did not stop discharging

until the child was 8 years old, when sequestrum was removed from the external auditory canal comprising a considerable portion of the cochlea. This child is now also in excellent condition and has no sign of tuberculous process anywhere.

CASE 5.—T. P., aged 7 months; lived on a large estate in the country and had never been in a city or public conveyance of any kind since he was born.

History.—The parents were both healthy. There was no tuberculous history in the family. The child lived inland at an altitude of about 400 feet and under the most perfect hygienic conditions, but a family servant had tuberculosis and had been allowed to remain on the place until she died, although not in the house occupied by the child. Another possible source of infection in this case was afforded by a sick horse recently imported from Texas. This horse was shot for some gland disorder, but not before two of the grooms had become infected with large glands, the extent of which I do not know. When first seen this child showed a discharge from both middle ears, with numerous granulations, swollen parotid on both sides, postaural abscess on one side and innumerable gland masses in the neck, some of which had broken externally and were discharging pus. The first point of infection noted in this child had been the to me very characteristic one spoken of before of the small gland anterior to the tragus.

Operations.—This child was operated on almost persistently for two years. I did two mastoid operations on it and removed 16 glands from one side of the neck, exposing the internal jugular for about 1½ inches; a general surgeon removed 18 glands from the other side of the neck and a portion of one rib. The child suffered badly from malnutrition, and when it was nine months old it weighed only one pound more than its birth weight. It was kept in the open air for two years during this operative period. The process in both middle ears was also destructive and the malleus and incus in one ear and the malleus in the other ear came away in the syringing fluid.

Present Condition.—This child is now 4 years old and except for its innumerable scars and pretty decided deafness, he is as healthy a child as one would wish to see. The middle ears are both dry.

CASE 6.—A more recent case and one to illustrate what surgery may do even in the most desperate conditions is that of a 10-months-old baby seen last October for the first time.

History.—This child weighed only 9 pounds 8 ounces and presented clinically infantile atrophy. It weighed 7 pounds at birth. The source of infection was not known, but the right ear began to discharge at three months, followed almost immediately by a well-marked parotid swelling which shows at the present time. The facial nerve was paralyzed; within five weeks there was involvement of the glands of the neck, many suppurative, and there have been five or six operations for their removal. Before I saw it a postaural swelling developed.

Operation.—There was a question in the mind of the attending physician whether the child would survive etherizing, as it had nearly died from collapse following one of its operations, but it seemed to me wise to give the child the benefit of the doubt. It was etherized and two large tubercular sequestra removed. The child stood the operation well and the mastoid wound healed rapidly. The temperature came down nearly to normal, once previously having been 101 to 102 degrees.

Present Condition.—The middle ear is still discharging somewhat. The glands of the neck have nearly all disappeared; the facial paralysis still remains. The child gained two pounds the first month following the operation and now weighs 15 to 16 pounds and will, in my opinion, go on to complete recovery. It has been kept in the open air through the whole of the last winter, but has remained in the town where it was born.

I merely wish to prove by the history of this case that no matter how severe the tubercuIous infection, the bone lesion limits itself very easily and if the process is attacked wherever it may manifest itself that ultimate favorable result may be obtained, provided the knife is resorted to freely and frequently. And further, that the prognosis in fact of the tuberculous process in the neighborhood of the ear is fully as favorable in infants, if not more so, as the prognosis of the ordinary septic process commonly causing mastoid diseases in children.

Of course, combined with the special surgery, such a case needs hygienic surroundings, the best of food and open-air treatment, but as far as my experience goes such open-air treatment will be just as successful in the immediate vicinity of Boston as it will be in Maine or the Adirondacks. The immediate treatment is confined to the use of nourishing food and tonics, but much improvement can be obtained in the middle ear processes by the use of dry treatment and iodoform powder and by the use of iodoform powder and gauze in all the open wounds. These cases are the only ones which, in my experience, show marked improvement by the use of iodoform gauze instead of plain gauze.

298 Marlboro Street.

DISCUSSION.

DR. STERLING RYERSON, Toronto, said that his experience has been disastrous. In some cases under observation, disease in the middle ear has been the primary or initial symptom in connection with tuberculosis, and in other cases there has been manifested the ordinary pulmonary tuberculosis followed by a condition in the middle ear. He thinks that all the textbooks say that tuberculosis of the middle ear is a rare disease. He read an article in the *Annals of Otology* in which it is stated that out of 100 cases of discharge from the middle ear 64 had the tubercle bacillus. Very few physicians in practice investigate the discharge from the middle ear, and Dr. Ryerson would not be surprised if the condition were found to be much more frequent than is generally supposed.

DR. G. P. POND, San Francisco, agreed with Dr. Crockett regarding the importance of the fresh-air treatment. The sooner physicians realize that it is not so much the Adirondacks or Maine or southern California, as good food, fresh air and satisfaction with their surroundings that benefits patients, the sooner they will get to the successful treatment of such cases, not only tuberculosis of the ear, but tuberculosis of other parts as well.

DR. CULLEN F. WELTY, San Francisco, stated that he had seen several double perforations and they have always been associated with tuberculosis of the lung. He thinks that every one of these patients ought to be operated on. Practically the only thing that can be done is operation, and the sooner this is done the better the chance for complete recovery. He repeated Politzer's statement: "If you find incipient tuberculosis in a patient who has acute otitis which lasts for more than six weeks, he should be operated on at once."

DR. F. L. JACK, Boston, said that he did not understand that Dr. Crockett laid any great stress on the importance of removing infected glands in the neck, and asked what his experience has been, whether if not removed they have subsided or disappeared in favorable cases. Dr. Jack also asked if he explains why the gland in front of the tragus is affected? It is about one of the first symptoms of this disease, almost before there is evidence of middle-ear trouble.

DR. E. A. CROCKETT, Boston, said that he thinks removal of the infected glands in the neck absolutely essential, but that it is more important to attend to the ear portion of the operation first. For instance, in the last case, many operations had been performed on the child's neck, without the ear being touched, and after each child nearly died. At the time he removed the sequestra there were a half dozen glands on the side of the neck. Two months after the operation they had disappeared. Many glands will do that if the original focus is removed, and those that do not should be promptly operated on. Dr. Crockett believes operation should be pushed to the limit of the child's strength, otherwise one can not deal with the disease. So far as open-air treatment goes, it has been successful in the cases he has observed. In the case of a baby that only weighed ten pounds, with a daily temperature of 102, he found no difficulty in having it sleep out of doors on a covered porch last winter. He thinks that if a child is

well protected from a direct draft and put in a fur sleeping rug there will be no difficulty even with an infant that is in poor condition. This child's nurse slept out also, to take care of it, and she received almost as much benefit from the open-air treatment as the child did.

PLEURITIC EXUDATES IN CHILDREN.*

MELINDA KNAPHEIDE-GERMANN, M.D.
Gynecologist to Blessing Hospital.
QUINCY, ILL.

I do not find the literature on this subject very extensive. While attending lectures in Paris I observed many interesting cases in the "Hôpitaux Des Enfants Trouvés," which I had the privilege of visiting daily for a month in company with the physician in charge. Since then it has been my fortune to encounter a number of cases in my own practice. Last winter, especially, pleurisy seemed very prevalent, accompanying as well as following the different forms of acute pneumonia. We seldom find pleurisy a primary disease. In my experience effusions of the right side predominate over the left. Pleuritic exudate, either serous or purulent, is common in infancy and childhood; more particularly the latter, especially before the fifth year of life. As the chest wall at this age is more resilient than in the adult, large exudates are better borne, producing fewer pressure symptoms.

ETIOLOGY.

The etiology is at times obscure, the majority of cases being attributed to the different inflammatory processes of the lung. In some, however, there is no other exciting cause than an exposure to cold and dampness, which, by reducing the constitutional power of resistance, establishes avenues of infection.

Under ordinary conditions the pleural cavity represents an enormous lymph sac, containing only a small amount of fluid, which escapes from the blood vessels and is carried off by the lymphatics. In pleural inflammation the lymphatics are not able to carry off the excess of fluid, and it accumulates. This may be first serous in nature, later becoming purulent.

Bacteriologic examinations of the fluid, whether serous or purulent, often show an absence of micro-organisms. Again, as stated by Netter, we may recognize three groups of acute or subacute pleurisy, caused by the tubercle bacillus, the pneumococcus and the streptococcus. The tubercle bacillus is at times difficult to find. Pneumococcus pleurisy is often secondary to inflammatory processes of the lung. It may, however, be primary. The exudate is usually purulent, but the prognosis is very favorable. Streptococcus pleurisy is the typical septic form, which may occur either from direct infection of the pleura through the lung in bronchopneumonia, or in cases of streptococcus pneumonia. It may also follow infection of more distant parts. This is the most serious and fatal of all forms. Here, too, the fluid is purulent.

SYMPTOMS.

Pleurisy with effusion is often very acute in its onset. The symptoms resemble pneumonia, and in many cases a pulmonary process is co-existent, the symptoms of the one being masked by the other. A high temperature is present, increased respiration, rapid pulse and pain, which in young children is referred to the abdomen. In infants convulsions are often among the initiatory symptoms. Dyspnea is at times very marked, the dilated nostrils and the drawing inward of the infrasternal region show a decided disturbance of the respiratory function. The babe will favor the affected side by lying on it. The white blood count is rarely increased except during the febrile stages. These early symptoms are followed in a few days by the lessening of pain and the temperature having a decided morning remission.

PHYSICAL SIGNS.

The physical signs of fluid in the pleural cavity in children differ somewhat from those in adults. Inspection shows a lack of movement of the affected side on inspiration, which is apparent in even very young children. If the fluid is large in amount there is in addition to the impaired motion a bulging of the affected side. The individual intercostal spaces do not always bulge. On the contrary, the chest may be full of fluid and a retraction of the spaces exists which increases on inspiration. In left-sided exudates the displacement of the heart is more marked, the impulse being seen in the third and fourth right intercostal spaces, sometimes as far out as the right mammillary line. The heart is not so much displaced in effusions of the right side, the impulse being seen in the fourth interspace between the left mammillary and mid-axillary lines. The liver and spleen are at times displaced downward, resembling an enlargement of the organs. This, however, is not so marked in the child as in the adult.

PALPATION.

By palpation we find complete absence of vocal fremitus in older children, while in infants the cry fremitus is lacking, although it may persist with large exudates if there are conducting bands of adhesion between the lung and chest wall.

PERCUSSION.

The percussion note shows marked variations from slight dulness to absolute flatness, according to the amount of fluid present. Great skill must be exercised in percussing the chest of a child, owing to its elasticity. A layer of fluid may exist between the lung and the chest walls, in which case skillful percussion will reveal dulness, while more forcible percussion brings out the pulmonary note of the underlying lung. When the exudate is small in amount, the dulness is first detected in the back, its upper limit being higher than in front. When the patient assumes the upright position, it has the letter S curve, beginning at the vertebral column, extending upward from the spine diagonally across the back and reaching its highest point in the axillary region, then descending rather abruptly toward the front to a point a little below the sternum. Changing the position of the child will reveal movable dullness when fluid is present. Pulmonary resonance will be heard above the line of effusion, while below there will be dulness varying to flatness, depending on the thickness of the layer of fluid between the lung and the percussing finger. The resistance to the percussing finger is peculiarly wooden in character. On the unaffected side resonance is increased, often becoming tympanitic.

AUSCULTATION.

Auscultation may reveal an absence of breath sounds or distant tubular breathing. Bronchophony is increased and is at times very pronounced. Moist râles and friction sounds are often heard, which are probably transmitted from points above the level of the fluid.

* Read in the Section on Diseases of Children of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

DIAGNOSIS.

The classic signs of fluid in the pleural cavity are flatness on percussion, absence of vocal fremitus and absence of respiratory sounds. Dr. Louis Faugéres Bishop of New York, in a paper on diagnosis and treatment of fluid in the pleural cavities, says that the fact that so much is dependent on the absence of sounds makes the diagnosis difficult, for it is well known that it is next to impossible to persuade some patients to breathe properly.

PROGNOSIS.

Prognosis in serous pleurisies is good at this age, unless we find some of the virulent micro-organisms present. Serous exudates are of especial interest when they contain such pus organisms as the pneumococci. The difference between purely serous pleurisy and pyothorax is simply a matter of degree; at times the upper layers of an exudate are serous and the lower purulent. In cases of this kind we apprehend severe symptoms. If the pleuritic exudate occurs on both sides the prognosis becomes grave. When effusion is extensive, compressing the lungs and displacing important viscera as the heart, there is danger of asphyxia. When the fluid is not readily absorbed and likely to become purulent, the prognosis is more unfavorable on account of the prolonged pressure on the lung, with its corresponding ill effects on the general condition of the child.

TREATMENT.

The treatment of serous exudate will vary according to the amount present. If there is no displacement of important viscera and little disturbance in the respiratory function, as well as in the circulation, an expectant treatment is all that is required. If, however, the exudate is large and absorption is delayed, the chest should be aspirated. The physical signs should guide us where to aspirate, but usually the point of aspiration is in the fourth or fifth interspace in the mid-axillary or posterior axillary line. It is well to make a bacteriologic examination of the fluid to determine which form of organism, if any, is present. If one of the more benign forms is found, no further treatment will be necessary, unless there be a re-accumulation, when a second aspiration must be resorted to. If, however, we find streptococci there is danger of the fluid becoming purulent and requiring treatment.

EMPYEMA.

When a pleural exudate has become purulent it is spoken of as an empyema. This condition is more common in the first three or four years of life than a serous effusion. It is caused by the invasion of the pleura by pus-producing organisms. Empyema does not present its characteristic signs at first, but develops in most cases from a serous effusion. We find several intervening stages between the serous and the purulent exudates. The pathologic and bacteriologic causes vary, depending on the micro-organisms present. In cases of streptococcus infections the inflammation may be purulent at the start. Primary empyema may occur through an injury to the pleura from without, the infection taking place through the wound. In cases in which we find no evidence of disease in the neighboring organs the pleura has been secondarily involved by some virus in the blood or lymphatics.

SYMPTOMS.

We find the same pressure symptoms in empyema as in serous effusion, but in addition those produced by pus, as fever which may be high and often associated with chills. The fever assumes the septic type, cachexia, anemia and prostration soon becoming very prominent. Leucocytosis is very pronounced, being the most important symptom in the differential diagnosis from a purely serous exudation. The latter condition shows a scarcity of leucocytes.

DIAGNOSIS.

The diagnosis of empyema depends on the signs of fluid in the pleural cavity, also on the number of leucocytes present; but a diagnosis can not be made definitely without the use of an aspirator. In all cases the aspirator should be freely used. One of the greatest sources of error is the practice of resting content with a single negative puncture. The consequences of neglected empyemas are often serious.

I mention a few lesions with which empyemas may be confounded: Acute unresolved pneumonia. The frequency of bronchial breathing, vocal resonance and normal tactile resonance over a pleural exudate which is frequently present makes a diagnosis difficult. Aspiration alone will clear the diagnosis, often several punctures being necessary. 2. Serofibrinous exudates.—In serofibrinous exudates a diagnosis distinguishing it from the purulent form is difficult. Pronounced leucocytosis favors empyema; however, it will be safest to use the aspirator as guide. Aspiration may at times be necessary to diagnose a case from chronic adhesive pleurisy. 3. Atelectasis.—An occlusion of the bronchi in children may be caused by a simple bronchitis. The symptoms of this condition may closely resemble those of empyema; here, again, it will be necessary to resort to aspiration.

PROGNOSIS.

Recovery without surgical interference very seldom takes place, the patient succumbing to prolonged suppuration. In infants under one year mortality is highest. Pus when present should be removed at once, since the longer it remains the more it endangers the function of the lung whose expanding power is more or less impaired. The patient also loses strength rapidly from the fever due to suppuration and absorption of toxic material.

TREATMENT.

The fundamental rule in treating empyema is to consider it an abscess, removing the pus as early and thoroughly as possible, and securing ample drainage as long as the secretions persist. The fever subsides almost immediately and the condition of the patient improves at once. The method of procedure varies. Aspiration may at times give permanent relief, but often it fails. There is some difference of opinion as to whether it is better simply to incise an intercostal space or, in addition, to remove a portion of one or more ribs. I am in favor of the latter, as the indications are twofold, first, to make an opening large enough to permit of the insertion of one or two fingers to break up any adhesions which may be present, and, second, to permit thorough drainage. In favorable cases of empyema operated on early, the lungs expand in a normal way within a very few days.

I might mention the puncture method with hydraulic drainage of Bülau. Here a permanent outflow of pus is established, negative pressure being produced in the chest by suction on the fluid which thus favors expansion of the lung. The advantages claimed for this method are that the operation may be performed easily

and without anesthesia and through a very small opening. The idea is good, but the results have been favorable in only a few cases, its effectiveness being uncertain. When the expansive power of the lung is deficient it is impossible to remove all the pus, since it drains off in quantities corresponding to the space which can be filled with expanding lung tissue. Then, too, the drainage tube may become clogged with coagula, thus interfering with the success of the operation and necessitating a resection of the rib.

THORACOTOMY.

The technic of thoracotomy with resection of one or more ribs, according to Joseph D. Bryant, is as follows: After taking thorough antiseptic precautions, employing local or general anesthesia as the condition of the patient requires, select the sixth or seventh rib and make an incision in the axillary line about two or three inches in length down on the middle of the rib in the long axis. Through the periosteum bisect the primary incision at the center with a horizontal one the width of the rib, raising from the bone on both surfaces, with a periosteotome, the periosteum together with the surrounding tissues, being careful not to open into the pleural cavity. Exsect an inch or an inch and a half of the bone, dividing it with a saw or rib forceps, arrest the hemorrhage and then make a suitable opening through the intervening structures into the pleural cavity, permitting the fluid to escape. Division of the intercostal vessels should be avoided. Irrigation is dangerous and ought to be used very cautiously. Normal salt solution or Thiersch solution is best used for cleansing the wound. One or two drainage tubes should be inserted, just reaching the pleural cavity, and should be fastened so that they can not escape within. Antiseptic dressings should now be applied and changed as often as indicated by the amount of discharge.

As the discharges decrease in amount the lungs expand and the abscess cavity diminishes; the tubes may gradually be removed, the patient completing recovery in from two to six weeks.

CASE SUMMARIES.

Case 1.—A child, about 2 years old, was taken ill suddenly last winter. Vomiting, a high temperature, and evidently severe pain in the right side of the chest were the first symptoms. The temperature ranged from 104 to 107. A diagnosis was made for lobar pneumonia. At the end of a week the temperature dropped suddenly, but this was only for one or two days, when it again ascended, differing from the temperature at first in that it now had the morning remission ranging from 99.6 in the morning to 105.5 in the afternoon. There being considerable dulness present, after waiting a few more days I decided to aspirate, removing but a small quantity of a serous fluid, sufficient, however, to assist resorption, for the child began to improve at once, making complete recovery without further surgical interference.

Case 2.—A child about 4 years old was taken with the usual symptoms of pneumonia, viz., fever, pain, cough and dyspnea. After the usual time, although the temperature was lower and the pain less, dyspnea increased and convalescence was not established. The temperature now assuming the septic type, on aspiration I found pus, and thoracotomy with resection of two ribs was performed by Dr. Knapheide and myself, when more than one pint of purulent fluid was evacuated. The usual antiseptic dressings were applied. The patient made a splendid recovery in about four weeks.

Case 3.—A boy about 5 years old a few years ago had empyema. I wished to aspirate. After sterilizing the field, I cautioned the little fellow to remain quiet while inserting the needle. He promised, but just as the needle had entered the intercostal space he moved suddenly, causing the needle to break. The parents had objected seriously to an operation previous to this, but now two indications for operation confronted me, viz., to find the needle and to find the pus. The parents consented to search for the needle; fortunately we found both, but the pus first. I performed thoracotomy, resecting a portion of two ribs. The boy made a good recovery.

Case 4.—A baby less than a year old was taken suddenly last winter with a high temperature and severe pain in the right side of the chest, moaning with every inspiration. Respirations were rapid and labored. The little fellow insisted on lying on the affected side. Inspection, percussion and auscultation revealed pneumonia. The temperature ran continuously high, ranging from 104 to 106, at the end of a week. It dropped suddenly and was practically normal for about two days, when it again climbed. It then assumed the remittent type, low in the morning and highest about 4 p. m., the temperature not being the same every day. This continued for about a week, when I decided to aspirate. Pus was found, and he was taken to Blessing Hospital, where thoracotomy with resection of one rib was performed. The little fellow rallied from the operation and did well for three days, when the temperature ascended again, profuse diarrhea set in and he succumbed.

DISCUSSION.

Dr. John Lovett Morse, Boston, disagreed with Dr. Germann on several points. In the first place a serous pleurisy is extremely rare in infancy. There have been but two cases in the Infants' Hospital in the last ten years. Serous pleurisy almost never has an acute onset in childhood; dry pleurisy does. Fluid not infrequently causes only slight dulness, while at times, especially on the left side, there is no dulness, but tympany, even when the pleura is full of fluid. Several points in the differential diagnosis between solid lung and fluid in the pleura were not brought out. The point of greatest importance is a sense of marked resistance on the affected side. In pneumonia there is a certain amount of resistance, but never marked. When there is fluid there is a marked sense of resistance. Next in importance is the presence or absence of displacement of the heart and next the presence or absence of tympany in Traube's space, when the effusion is on the left side. The presence or absence of fremitus is of some importance. The amount and character of the respiration and voice sounds are of comparatively little importance and as a rule can be disregarded. He was glad that Dr. Germann emphasized the importance of early operation. Nothing makes so much difference in the prognosis of empyema as the time at which the operation is done, not only on account of the importance of avoiding marked compression of the lung, but also on account of dangers of sepsis from continued absorption. It is perfectly possible to have a normal temperature in empyema. It should be remembered, therefore, that empyema cannot be ruled out because the temperature is not elevated.

Dr. T. W. Kilmer, New York City, recalled the teaching of Dr. Holt in pleurisy with effusion, that in the presence of bronchial breathing over a very large area of lung there is fluid in nine cases out of ten, which he regards as one of the most valuable signs in the diagnosis of pleurisy with effusion. Dr. Kilmer has never been able to locate satisfactorily the apex beat except by the use of the stethoscope in the examination of infants. In his hospital service in New York pleurisy with effusion has been treated by rest, exclusion of liquids, and giving gr. 5 to 15 of sodium salicylate during the day. They endeavor to have the children absorb their own fluids.

Dr. Thomas S. Southworth, New York City, said that as many of these children are in a rather precarious condition when brought for treatment, and inasmuch as an incision through the skin and pleura can be made very rapidly and the tubes introduced quickly, without causing much pain, incision is often much the simplest and safest procedure. Occasionally in cases in which the lung has long been bound down he does resection. When the infection is a pure pneumococcus infection which yields more rapidly than a mixed infection, the simple incision is sufficient in the larger number of cases in infants.

Dr. William J. Butler, Chicago, said that concerning the differential diagnosis of pneumonia and pleurisy, Dr. Morse

sed a point of much importance, that of resistance to per-ssion over areas of fluid compared with the far less resist-ce common to pneumonia. Tympany over fluids is some-ng he had not had opportunity to observe, at least, in cases which effusion of any amount existed. He could conceive at that is possible when the effusion is so slight as to be mpletely obscured by the resonance of the lung and hollow dominal viscera. He does not think difficulty in differential agnosis between pleurisy and pneumonia so frequently ises as does that of the character of the fluid in pleurisy, d, as Dr. Morse says, it is almost always purulent in very ung infants. It is always desirable to determine the char-ter of the fluid which is present and this can only be done th certainty by the needle.

DR. JOHN LOVETT MORSE, Boston, did not agree with Dr. ilmer's treatment of pleurisy by restriction of liquids and at-mpted absorption, because he thinks the main object of eatment must be to keep up the nutrition. This cannot be ne if the amount of fluid is restricted. He thinks it wiser feed the children entirely with regard to their nutrition, id to draw out the fluid if necessary. He thoroughly ap-roves of resection of the rib, and not of incision, which does ot seem to be a satisfactory operation. Resection takes very ttle longer and causes but little, if any, more shock.

DR. T. W. KILMER, New York City, said his reference was children of from four to six years of age, in whom it is an dvantage to have them absorb their own fluids. He believes ne nutrition element is a very important factor, but in the ew York hospitals many patients of this age are treated with uch more benefit by restricting the amount of fluid than by llowing a child to drink all the water desired.

DR. MELINDA K. GERMANN, Quincy, Ill., regretted that she ould not coincide with the statement that there is no such hing as serous pleurisy in children. She recalled a number of ases in which she had aspirated and withdrawn a serous fluid rom the chest. In empyema she had never seen a case in hich there was not temperature. She had used salicylate of oda treatment with good results. She did not advocate imple incision, unless the strength of the child does not per-ait resection. Too much stress cannot be placed on the care-ul examination of young children. Conclusions can be drawn nly from objective symptoms, because they have not the aid f speech to make known their sufferings.

Clinical Notes

REPORT OF CASES OF UTERINE FIBROIDS ASSOCIATED WITH GALLSTONES.

ALBERT VANDER VEER, M.D.
ALBANY, N. Y.

With the desire of impressing on the profession at large the importance of studying carefully all complications that may be present in a case of uterine fibroid, I report the following cases in four of which the history of biliary colic was pronounced, but in the others not so distinct.

For a number of years I have gradually become convinced, and am now fixed in my belief, which experience has confirmed, that, when opening the abdominal cavity for any operation, unless the patient is so weak that it is unsafe to make further examination, or to operate, the appendix should be thoroughly explored, and though there may have been no history of appendiceal trouble, still, if this structure is anatomically incorrect, or. if normal in position, has given the history of any previous attacks, I make it a rule to remove it.

As time passes, I am yet more strongly impressed with the belief that this rule is a good one, saving the patient possible further operative intervention.

For about eight years I have convinced myself that it is also good surgery to examine the gall bladder, and, if gallstones be present, to remove them. I feel disposed to insist on this, except, when, as before stated, the patients condition is so feeble that the risk is too great.

I am not aware that there is any pathologic relation between the gall bladder and pelvic troubles, or associated with uterine myomata, but the cases I have seen have been so pronounced that it has seemed proper to place them on record. When we consider these cases they certainly present some strikingly illustrative points regarding the thoroughness with which we should do our abdominal work. The performance of the operation of cholecystotomy is not a prolonged one, and is very easily accomplished. When once the hand of the operator is in the peritoneal cavity the incision can be made very quickly, the gall bladder, if not too contracted, and far back, is easily brought up into the wound and reached in this manner.

It took many years to convince the general practitioner that the surgeon could be of assistance in his abdominal cases and reports of cases of rare complications are yet in order to bring before him more clearly what and how much can be done by the general surgeon in the treatment of lesions, no longer medical, but assuredly surgical. How many operations can be done on one patient at one time is yet a subject for close study by both the medical man and the consulting surgeon.

CASE 1.—Mrs. C., aged 60, entered Albany Hospital, May 2, 1902.

Diagnosis.—Papillomatous ovarian cyst; cholelithiasis.

History.—She gave a family history of a sister and niece having died of sarcoma of the ovaries and mesentery. The patient had been ill for more than a year with gradual enlargement of the abdomen and more or less pain.

Operation.—On opening the abdomen there was an escape of a large amount of yellowish serous fluid. There were cysts connected with each ovary. The right broad ligament was clamped; the left broad ligament was sutured at once; then the appendages with the cystic tumors were removed and a supravaginal hysterectomy was done. An enlarged gland in the mesentery closely attached to the rectum was removed and the walls of the rectum were sutured over. There were extensive adhesions to the wall of the bladder and to the anterior wall of the uterus. In removing the latter a large portion of the posterior wall of the bladder was included. This opening in the bladder was closed with silk sutures. Hemorrhage was controlled. The gall bladder was found to contain many gallstones—over 100, and the usual cholecystotomy was done. The appendix was also removed. The wounds were closed with silkworm gut; a glass drainage tube was introduced into the bottom of pelvis and also into the gall bladder.

The patient bore the anesthetic very well. Drainage from peritoneal cavity subsided quickly and the gall bladder closed in about two weeks. She left the hospital in good condition June 8, 1902.

Pathologic Report from the Laboratory.—Multilocular ovarian cyst with secondary papillomatous and carcinomatous degeneration.

Subsequent History.—The patient did well for a time, then the old symptoms returned with increased severity, and on May 25, 1903, I made an incision through the old scar and removed a sarcomatous cyst, somewhat flattened and larger than the fist, from the mesentery. Similar growths in the pelvis were not disturbed. A large amount of ascitic fluid was removed. She was tapped by her family physician at her own home, Sept. 13, 1903, and again October 17, when the doctor wrote me that he had withdrawn over ten quarts of fluid at one time, ill-looking and tinged with blood. After this last tapping careful examination revealed two large growths in right side of abdomen, about the size of the ones I removed at first operation. After these tappings the patient felt weak for a day

or two, then comfortable, with a good appetite, but each time the cyst began to fill again rapidly, and she ultimately died of exhaustion.

Case 2.—Mrs. H. G., aged 35, entered Albany Hospital Dec. 1, 1902.

Diagnosis.—Cholelithiasis; uterine myoma.

Family History.—Her father and mother both died of valvular disease of the heart, aged 64 and 58 years respectively. A brother died of typhoid fever, aged 31; a sister died at confinement of acute Bright's disease; three sisters are living and well. There was no history of so-called hereditary disease.

Personal History.—This patient has had attacks of biliary colic since childhood, never severe until four years ago, when character changed entirely, growing more severe, and she passed stones. Slight shooting pains were experienced occasionally through the abdomen, low down toward the umbilicus, and when on her feet she experienced a very weak feeling until thoroughly rested.

Operation.—Dec. 3, 1902. On opening abdomen multiple fibroids were found low down in the pelvis and very adherent to the surrounding parts. The ovaries and tubes were cystic, the right tube containing some pus. The right ovary and tube were adherent to wall of peritoneum. There was also a mass, the size of a hen's egg, in which were involved right ovary, fimbriated extremity of tube, appendix and head of cecum. The left side was free from adhesions. The left broad ligament was ligated in the usual manner, the right was clasped with clamp, and the tumor removed as quickly as possible. The right ovary and tube were dissected out of the mass and removed. The cecum was closed over with Lembert sutures, all bleeding points were controlled, a piece of omentum was ligated, and the stump of the pedicle was sewed over. The gall bladder was then explored through the median incision and several gallstones were found. The usual incision for cholecystotomy, 4 c.m. long, was made, using right hand inside of peritoneal cavity as a guide. The gall bladder was brought up into the wound, sutured to the peritoneum and surrounding structures by means of silkworm-gut sutures and several catgut sutures. The gall bladder was aspirated and 4 ounces of bile were drawn off. The gall bladder was incised and 50 stones, the largest the size of a marble, were removed by means of a scoop. A long glass drainage tube was inserted into the gall bladder and packed with iodoform gauze. The patient took the anesthetic well and left the table in good condition.

Postoperative History.—The patient was somewhat slow in convalescing. She was very cholemic and had a train of nerve symptoms marked by decided delusions, yet ultimately made a perfect recovery.

Case 3.—Mrs. S. W., aged 37, entered Albany Hospital January 8, 1903.

Diagnosis.—Pregnancy, gallstones, bicornate uterus.

Family History.—This was negative save that maternal grandmother died, aged 80, of cancer.

Personal History.—In the fall of 1892 she began to feel increased distress about the pelvis, and while regular in her menstruation yet noticed enlargement in the right side of abdomen. It was thought she might be suffering from extrauterine pregnancy. She had had several marked hemorrhages. Menstruation was regular, and an exploration was advised, a positive diagnosis of gallstones also having been made.

Operation.—On Jan. 12, 1903, I did a dilatation, curettement, supravaginal hystereetomy and cholecystotomy. On vaginal examination the left side of the cervix was found badly lacerated and the usual repair was done. A very distinct mass could be felt on the right side. A sound passed well up in the left cornu of uterus, but could not be introduced readily on the right side. The patient was then placed in Trendelenburg position and usual median incision was made. Careful examination now disclosed a double uterus, the right containing a fetus of possibly two months' pregnancy. She had previously been curetted, had cervix repaired in another hospital and had had some pelvic peritonitis following. Both sides of the uterus were carefully freed from adhesions. The right ovary and tube were enlarged, with evidence of pyosalpinx present. It was decided to do a supravaginal hystercetomy, after consultation with her husband, and also to remove the appendix. On examination of the gall bladder it was found to contain a number of gallstones, and the usual cholecystotomy was done. A number of stones were removed and the patient made a good recovery from both operations.

Case 4.—Mrs. L. R., aged 30, entered Albany Hospital May 5, 1904.

Diagnosis.—Dermoid cyst of ovary, associated with gallstones.

Family History.—Negative.

Personal History.—There was pain in the right hypochondriae region, severe at times and associated with vomiting.

Operation.—An incision 4 in. long was made in the median line between the umbilicus and the symphysis. A left ovarian cyst was found and removed in the usual manner; appendectomy was also performed.

The median incision revealed the gall bladder bound to the liver by numerous adhesions. The field of operation was walled off by tampons. On opening the gall bladder there was an escape of mucopurulent material. The gall bladder was mopped out, four stones were removed, the bladder was stitched to the abdominal wound and a glass drainage tube was inserted in the gall bladder, with iodoform gauze packing. This sinus continued and did not close under any line of treatment.

Second Operation.—June 21, 1904, a second operation, anastomosis between gall bladder and duodenum, was done for closure of sinus. The Murphy button was used. A few Lembert sutures were placed around the button to prevent leakage. There was slight soiling of the peritoneum. A glass drainage tube was used.

The patient made an excellent recovery, has since given birth to a healthy child and is in good condition.

Case 5.—Mrs. E. P., aged 38.

History.—Family and past history were negative. For the past two months the patient has suffered considerably with pain in the right side, associated with irregular menstruation. The bowels were constipated; there were no attacks of colic. Micturition was frequent and painful.

Operation.—On Nov. 21, 1903, I did a curettage and ligated hemorrhoids. I also did a suprapubic hysterectomy for fibroid, appendectomy for chronic appendicitis and cholecystotomy for removal of a number of gallstones. Recovery.

Case 6.—Mrs. C. G. Family history negative.

Operation.—On June 2, 1903, I did a left salpingo-oöphorectomy and cholecystotomy, with removal of three large gallstones. The patient recovered nicely.

I have cited these few cases from some which have occurred in my practice to illustrate the difficulty we believe at one time existed, in operating on the gall bladder and like organs, while operating on the pelvis. But while one needs to study carefully regarding the endurance of the patient, yet when the peritoneal cavity is opened, careful examination of these suspected organs should be made and operative intervention resorted to, if gall stones are present. This is in contradiction of many of our beliefs in the past.

28 Eagle Street.

A SIMPLE CONTRIVANCE FOR THE RELIEF OF HAY FEVER.

A. C. HEATH, M.D.
ST. PAUL, MINN.

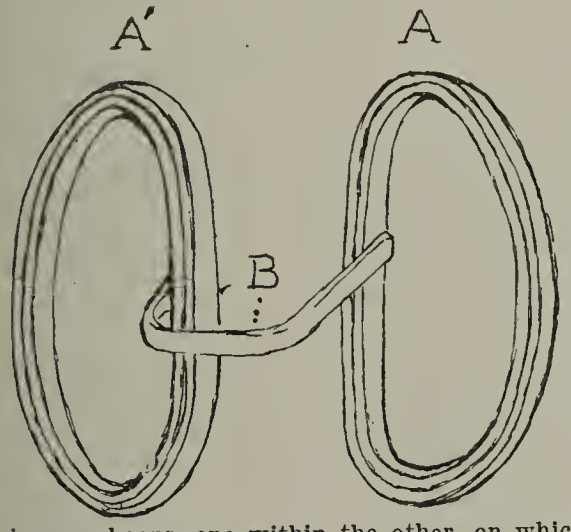
During the hay-fever season of 1905, I experimented very carefully on a number of hay-fever patients, trying to prove undeniably that the atmosphere at this time is laden with some irritating substance which could be removed from the air by filtration or some similar process. The mode of investigation consisted in the use of an ordinary chemical laboratory water bottle. This bottle was fitted with two glass tubes, to one of which was attached rubber tubing. The water bottle was half filled

th water, then the glass tubes were so arranged that ıen suction was applied through the rubber tubing the mosphere so breathed eame through the water in this ttle. This apparatus worked on the principle of the ırkish pipe or water pipe. By this means, it was hoped remove from the air, when it passed through the ıter, any material which might be suspended in it.

With this apparatus it was neeessary for the patient inspire carefully through the nose and to expire rough the mouth. The suceess of this method was demıstrated in two people who were so sensitive to golden d that they were thrown into paroxysms of sneezing and ughing when near it, when they inspired air through ıe water bottle, although the air was taken from the idst of a bunch of golden rod, in a few minutes they ere comfortable and the irritation seemed to eease.

This year I have made a small appliance, shown in ıe accompanying illustration, which fits in the nostril, ıe purpose being, so to speak, to filter the air as mueh as ossible without interfering with respiration.

This appliance consists of two rings eonnected by a nall band. Over these rings is stretehed fine grass nen or chiffon (silk). It was found that to get the best esults this material must have a fine mesh (one hundred r more threads to the inch). These two rings are



A', two rings or hoops, one within the other, on which the cloth r filter is stretched for right nostril. A, the same for left nostril. 3, small connecting nose-piece or bridge to be used as a handle vhen inserting or removing rings.

laced one in and aeross each nostril, perhaps a half an nch from the external opening and so placed that all air espired must pass through the grass linen, chiffon, or vhatever fabric may be used. They do not interfere vith respiration and can be worn very comfortably. One nan wore his eontinually for twenty-four hours, at busiıess and during sleep. These rings were used in a ıumber of severe eases and in every one relief was apparent in from fifteen minutes to an hour.

Sometimes the applianee was diffieult to use if the patient began when his nose was so blocked that he could not breathe through it at all; if, in sueh a ease, however, the patient will persist until he ean establish nasal respiration to a sufficient degree the nasal irritation passes away very rapidly.

Most of the patients on whom I have tried this applianee are people who under my direetion have used Dunbar's pollantin and the aetive principle of suprarenal glands with little success. I firmly believe that this sort of an applianee will give the hay-fever patient great relief. These sufferers, especially those who have hay asthma, get considerable relief at night by putting a wet handkerchief over their faces and trying to breathe through it. This fact suggested to me the possibilities of the above described eontrivance.

I have made the rings which hold the filtering fabric sometimes of eork and hard rubber, but usually of German silver. It is not necessary to have the two rings connected by a bridge except that in this way it makes it easier for the patient to insert and to remove the rings. When the appliance is made in this way and is in position there is a small band or wire passing across the septum where the septum joins the upper lip. This is hardly noticeable.

The rings are so made that fresh grass linen or chiffon can be applied whenever desired, this fabric being put on the rings in the same way that linen or cloth is put on the embroidery hoops used by women in their fancy work.

This filtering fabric, when in use, soon becomes moistened by the secretions of the nose, but this adds much to the filtering power of the applianee; the moisture aiding the filter in holding back any pollen or substance suspended in the inspired air.

SUCCESSFUL DELIVERY OF TWINS IN PLACENTA PRÆVIA.

E. L. DEWEY, M.D.
WHITING, IND.

History.—Mrs. M., aged 34, multipara, eight months pregnant; was well during this pregnancy until labor pains set in Aug. 27, 1906. She arose and prepared breakfast as usual. Labor pains set in with profuse bleeding about one hour after getting up.

Examination.—I saw her about thirty minutes after the onset of the hemorrhage. Pallor and weakness were marked. Pulse was 112. Abdominal palpation gave evidence of twin pregnancy. One fetus was in the L.O.A., the other in the L.O.T., at the fundus, face downward. The fetal heart sounds were plainly audible on auscultation. Vaginal examination showed profuse hemorrhage; the os was soft and admitted three fingers. The occiput was presenting. The margin of the placenta overlapped the os, and was posterior.

Diagnosis.—Placenta prævia, complicating twin pregnancy.

Treatment.—I decided to operate at once and sent for assistants; in the meantime I tamponed the vagina with sterile gauze and gave a hypodermic injection of morphin sulphate, ¼ grain.

Operation.—Under chloroform anesthesia, and with strict aseptic precautions, I dilated manually, ruptured the membranes, performed version and rapidly extracted infant number one; the other infant was delivered in like manner. I gave them to assistants to resuscitate; this was accomplished after twenty minutes.

There was one placenta, which I removed manually. Time consumed from the beginning of the anesthetic until the operation was completed, ten minutes.

The patient made a good recovery.

The infants were both males, weighing about five pounds each, and are strong and healthy.

REMARKS.

It seemed to me that this was a case in which active interference was imperatively required without delay. The patient had lost an enormous amount of blood, and was in an anemic and exhausted condition. Labor had set in and it would have been impossible, by expeetant treatment, to prevent further hemorrhage.

The infants were living and would certainly have perished if the hemorrhage had continued or if the labor had been prolonged.

The vagina and pelvis were large and roomy. The os was soft and easily dilated. These points were the indieations for operation in this case. Cervical laeerations were slight and did not need repair.

New and Non-Official Remedies

THE FOLLOWING ARTICLES HAVE BEEN TENTATIVELY ACCEPTED BY THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR INCLUSION IN THE PROPOSED ANNUAL, "NEW AND NON-OFFICIAL REMEDIES." THEIR ACCEPTANCE HAS BEEN BASED LARGELY ON EVIDENCE SUPPLIED BY THE MANUFACTURER OR HIS AGENT, BUT TO SOME EXTENT ON INVESTIGATION MADE BY OR UNDER THE DIRECTION OF THE COUNCIL. CRITICISMS AND CORRECTIONS ARE ASKED FOR TO AID IN THE REVISION OF THE MATTER BEFORE FINAL ACCEPTANCE AND PUBLICATION IN BOOK FORM.

THE COUNCIL DESIRES PHYSICIANS TO UNDERSTAND THAT THE ACCEPTANCE OF AN ARTICLE DOES NOT NECESSARILY MEAN A RECOMMENDATION, BUT THAT SO FAR AS KNOWN IT COMPLIES WITH THE RULES ADOPTED BY THE COUNCIL.

W. A. PUCKNER, SECRETARY.

(*Continued from page 1195.*)

GUAIAMAR.

GUAIACOLGLYCERYLESTER.

Guaiamar, $C_6H_4.OCH_3.O(CH_2OH.CHOH.CH_2),1:2, = C_{10}H_{14}O_4$, is the monoguaiacol ester of glycerin.

It is prepared by the reaction of two molecules of sodium hydroxide, one of guaiacol and two of monochlorhydrin at from 140° to 150° C. (284° to 302° F.). When the alkaline reaction has disappeared, the mass is diluted with water which leaves the greater part of the glycerin ester undissolved. The portion dissolved in the water solution may be extracted from the latter by ether.

It is a white, crystalline, non-hygroscopic powder, melting at 75° C. (167° F.) and having a bitter, aromatic taste. It is soluble in 20 parts of water at the ordinary temperature, but dissolves best in warm water; it is soluble in alcohol, chloroform, ether and glycerin. Its solutions are neutral to test paper. It is decomposed by soluble hydroxides and carbonates and by strong acids.

Actions and Uses.—The chief value of guaiamar arises from the liberation of guaiacol, partly in the stomach and partly in the intestinal canal, being split up by the gastric and intestinal contents with the assimilation of one molecule of water into guaiacol and glycerin. By this evolution of guaiacol it is believed to exert a useful antiseptic action in the intestinal canal. Moreover, it is asserted that it is absorbed by the skin as readily as by the alimentary canal and that it is without effect on the sound tissue, but becomes effective at the location of the diseased part. It is said not to interfere with the normal process of digestion, but, on the contrary, to be followed by decided tonic action.

It is recommended as a substitute for guaiacol in all cases where the latter is indicated. In the form of ointment it has been recommended in acute articular rheumatism.

Dosage.—0.3 to 1.3 Gm. (5 to 20 grains) in capsules or dissolved in warm water. Locally, in the form of 25 per cent. ointment with wool fat (lanolin), by itself, or combined with belladonna, zinc or mercurial ointment, etc.

Manufactured by Mallinckroat Chemical Works, St. Louis. U. S. patent No. 599,125.

GUAJASANOL.

DIETHYLGLYCOCOLL-GUAIACOL HYDROCHLORIDE.

Guajasanol, $C_6H_4(OCH_3)(CH_2N(C_2H_5)_2.COO).HCl = C_{13}H_{19}NO_3HCl$, is the hydrochloride of diethylglycocollguaiacol.

It is prepared by the action of chloracetylchloride on guaiacol and decomposition of the product with diethylamine.

It forms small, colorless, prismatic crystals, melting at 183° to 184° C. (361.4° to 363.2° F.), having a slight odor of guaiacol and a bitter saline taste. It is soluble in its own weight of water and in 25 parts of alcohol, but insoluble in ether.

The solution in water should be clear, colorless, and gives a white precipitate with silver nitrate. The oily base separates on the addition of an alkali hydroxide. When incinerated on platinum it leaves no residue.

It is incompatible with alkalies and their carbonates.

Actions and Uses.—It is antiseptic and anesthetic. It is readily absorbed and splits off guaiacol in the organism with marked facility. Its antiseptic power is said to be about equivalent to that of boric acid.

Guajasanol has been recommended for the treatment of tuberculosis, both internally and subcutaneously. It is also recommended as a deodorant and is said to have given good service in putrid cystitis.

Dosage.—1 to 3 Gm. (15 to 45 grains) in wafers; subcutaneously, 3 to 4 Gm. (45 to 60 grains) in 20 per cent aqueous solution; locally it may be used in from 0.1 to 2 per cent. solutions.

Manufactured by Farbwerke, vorm. Meister, Lucius & Bruening, Hoechst a. M. (Victor Koechl & Co., New York). U. S. patent No. 624,722.

HEDONAL.

METHYLPROPYLCARBINOL URETHANE. PENTAN-2-OL-URETHANE.

Hedonal, $CH_3.CH_2.CH_2.CH(CH_3)O.CO.NH_2 = C_6H_{13}O_2N$, is a urethane differing from ethyl carbamate, U. S. P., in that the ethyl radicle has been replaced by the radicle of methylpropylcarbinol (pentan-2-ol) $CH_3.CH_2.CH_2.CHOH.CH_3$.

It is prepared by heating the secondary methylpropylcarbinol or pentan-2-ol, $CH_3.CH_2.CH_2.CHOH.CH_3$, with urea nitrate under pressure (U. S. patent No. 659,202), also by other methods (German patents Nos. 120,863, 120,864, 120,865).

It is a white, crystalline powder, having a faint aromatic odor and taste, melting at 74° C. (165.2° F.), and boiling at 215° C. (419° F.). It dissolves in 120 parts of water at 37° C. (98.6° F.) but is more soluble at higher temperatures and is readily soluble in alcohol, ether, chloroform and other organic solvents. It is readily volatilized with the vapors of water or alcohol, and when boiled with alkalies is split up into its constituents methylpropylcarbinol, ammonia and carbon dioxide.

On boiling with dilute sodium hydroxide, ammonia is evolved and recognized by the odor and the usual reagents; if then an aqueous solution of iodine in potassium iodide is added, and the mixture allowed to cool, the odor of iodoform derived from the alcohol is distinctly manifested.

It is incompatible with alkalies, their carbonates and bicarbonates.

Actions and Uses.—Hedonal appears to have a greater hypnotic effect than ethyl carbamate. It is said to be followed by no after-effects and is oxidized in the body to urea and carbon dioxide. It is recommended in insomnia due to mental overwork or nervous excitement occurring in the course of neurasthenia or hysteria. It is claimed to be particularly useful preliminary to anesthesia, a hypnotic dose being given and anesthesia effected with chloroform after the patient has been asleep for an hour.

Dosage.—1 to 2 Gm. (15 to 30 grains), administered dry, followed by a swallow of water, or in wafers or capsules.

Manufactured by Farbenfabriken, vorm. Friedr. Bayer & Co., Elberfeld, Germany (Continental Color & Chemical Co., New York). U. S. patent No. 659,202; German patents Nos. 11,496, 120,863, 120,864, 120,865.

HELMITOL.

A name applied to Hexamethylenamine Methylencitrate (which see).

Manufactured by Farbenfabriken, vorm. Friedr. Bayer & Co., Elberfeld, Germany (Continental Color & Chemical Co., New York). U. S. patent. U. S. trademark No. 39,580.

HEMICRANIN.

A mixture of 5 parts of acetphenetidin (phenacetin), 1 part caffeine and 1 part citric or tartaric acid.

Dosage.—0.5 to 1.0 Gm. (8 to 15 grains).

Manufactured by Farbenfabriken, vorm. Friedr. Bayer & Co., Elberfeld, Germany (Continental Color & Chemical Co., New York) U. S. trademark, No. 27,151.

HEMOGALLOL.

Hemogallol is an organic iron compound produced from blood by reduction of its hemoglobin by means of pyrogallol.

Fresh defibrinated blood suitably diluted with water is mixed with an equal volume of a saturated solution of pyrogallol which

causes the precipitation of a voluminous precipitate which is separated, washed with water to remove pyrogallol, and finally with alcohol.

It is a reddish-brown, almost tasteless powder, insoluble in water, alcohol, etc.

It does not show the spectroscopic bands of hemoglobin between D and E.

Actions and Uses.—It is hematinic.

Hemogallol is recommended in anemia, chlorosis, chronic nephritis, diabetes and in convaleseence.

Dosage.—0.25 to 0.5 Gm. (4 to 8 grains), one-half hour before meals in powder with sugar or in tablets.

Manufactured by E. Merck, Darmstadt (Merck & Co., New York). U. S. patent No. 541,096.

HEMOQUININE.

COMPOUND ELIXIR OF THE SO-CALLED PEPTONATE OF IRON, MANGANESE AND QUININE WITH ARSENIC, SCHIEFFELIN.

Each 30 Cc. (one fluidounce) is said to contain 2.16 Gm. (34 grains) of so-called peptonate of iron (made by adding ammonio-citrate of iron to freshly preparted peptone of egg albumin) and 0.54 Gm. (8½ grains) of so-called peptonate of manganese together with 0.3 Gm. (5 grains) of quinine peptonate (equivalent to 0.15 Gm. (2.3 grains) of quinine sulphate), and 0.08 Gm. (1/9 grain) of sodium arsenate in a menstruum containing 20 per cent. of alcohol with glycerin and aromatics.

Dosage.—8 Cc. (2 fluidrams) three times a day.

Prepared by Schieffelin & Co., New York. U. S. trademark No. 38,512.

HEROIN.

DIACETYL-MORPHINE.

Heroin, $C_{17}H_{17}(C_2H_3O_2)_2NO = C_{21}H_{23}O_5N$, is a synthetic alkaloid obtained by the acetylization of morphine.

It is prepared by heating morphine with acetylchloride, washing the product with water and dilute solution of sodium carbonate and crystallizing it from alcohol.

It is a white, odorless powder, having a bitter taste, an alkaline reaction and melting at 173° C. (343.4° F.). It is practically insoluble in water or ether, sparingly soluble in cold alcohol, but readily soluble in hot alcohol; it is soluble also in chloroform and in benzene. It forms salts with acids which are soluble in water. On prolonged warming with mineral acids it is saponified, splitting off acetic acid and reforming morphine.

A solution of 1 part of heroin in 100,000 parts of water becomes distinctly turbid on addition of solution of iodine. Its color reactions are similar to those of morphine, with the following exceptions: It does not liberate iodine from iodic acid and does not at once produce a blue coloration with potassium ferricyanide and ferric chloride. No blue color is produced by the addition of ferric chloride to a neutral solution (1 in 100) made by the careful addition of dilute sulphuric acid. Its solutions reduce potassium permanganate.

Action, Uses and Dosage.—See heroin hydrochloride.

Manufactured by Farbenfabriken, vorm. Friedr. Bayer & Co., Elberfeld, Germany (Continental Color & Chemical Co., New York). U. S. trademark.

HEROIN HYDROCHLORIDE.

DIACETYL-MORPHIN HYDROCHLORIDE.

Heroin hydrochloride, $C_{17}H_{17}(C_2H_3O_2)_2NO.HCl$, is prepared by dissolving diacetyl-morphine in dilute hydrochloric acid, concentrating the neutral solution by evaporation and crystallizing.

It is a white, crystalline, odorless powder, having a bitter taste, showing a neutral reaction with congo and melting at 230° to 231° C. (446° to 447.8° F.).

It is soluble in 2 parts of water and soluble also in alcohol, but insoluble in ether.

Its aqueous solutions are precipitated by alkaline hydroxides, the precipitate being soluble in excess of the reagent, and by alkaline carbonates. In other respects the reactions are the same as those given under heroin (which see).

It is incompatible with alkalies and their carbonates, tannic acid and other precipitants of alkaloids. It is decomposed by mineral acids, particularly when heated.

Actions and Uses.—When given in small doses heroin hydrochloride has apparently no effect on any of the vital functions except respiration, which it renders slower, the volume of the individual respirations being increased, but usually not sufficiently to compensate the slowing, the result being a diminution in the total amount of air respired. In large doses it may produce dizziness, nausea and occasionally constipation, and, in poisonous amounts, twitching of the extremities, great exhaustion, and dimness of vision may be added. The temperature becomes subnormal and the pulse rapid and thready. The habit is readily formed and leads to the most deplorable results. It is said not to produce costiveness. (This is not true, according to some observers.) It is readily absorbed from all mucous membranes. It lessens irritability of the respiratory center, thus allaying cough, but does not depress the respiration as much as morphine.

On withdrawing the drug from habitués there is said to be a tendency to respiratory failure which may be dangerous.

Heroin and its hydrochloride are recommended chiefly for the treatment of diseases of the air passages attended with cough, difficult breathing and spasm, such as the different forms of bronchitis, pneumonia, consumption, asthma, whooping cough, laryngitis and certain forms of hay fever. It has also been recommended as an analgesic, in the place of morphine in various painful affections.

Toxic symptoms should be treated by the administration of caffeine hypodermically and of hot coffee by the stomach. To avoid respiratory failure in the treatment of heroin addiction, it has been suggested to substitute morphine for the heroin and then treat the patient for morphine addiction.

Dosage.—0.0025 to 0.005 Gm. (1/24 to 1/12 grain) to adults 3 to 4 times a day, the maximum dose being 0.01 Gm. 1/6 grain. To children it may be given in doses varying from 0.0002 to 0.001 Gm. (1/300 to 1/60 grain), according to the age. Hypodermically it may be administered in the form of a 2 per cent. solution in the same doses. It has been applied locally to the throat, to the uterus on tampons, and by suppository for painful pelvic affections generally, but there is no evidence that it produces any local anesthetic action.

Manufactured by Farbenfabriken, vorm. Friedr. Bayer & Co., Elberfeld, Germany (Continental Color & Chemical Co., New York). U. S. trademark.

HEROMAL.

HEROIN AND HYPOPHOSPHITES IN MALT EXTRACT, SCHIEFFELIN.

Each 8 Cc. (2 fluidrams) is said to contain: Heroin 0.0013 Gm. (1/48 grain), sodium hypophosphite 0.03 Gm. (½ grain) in a menstruum of malt extract with 6 per cent. of alcohol.

Dosage.—8 Cc. (2 fluidrams) every three or four hours.

Prepared by Schieffelin & Co., New York. U. S. trademark No. 37,010.

HEROTERPINE.

ELIXIR OF HEROIN AND TERPIN HYDRATE, SCHIEFFELIN.

Each 8 Cc. (2 fluidrams) is said to contain: Terpin hydrate 0.13 Gm. (2 grains), heroin 0.0026 Gm. (1/24 grain), in a menstruum containing 32 per cent. of alcohol with glycerin and aromatic essential oils.

Dosage.—4 to 12 Cc. (1 to 3 fluidrams).

Prepared by Schieffelin & Co., New York. U. S. trademark No. 36,181.

HETOL.

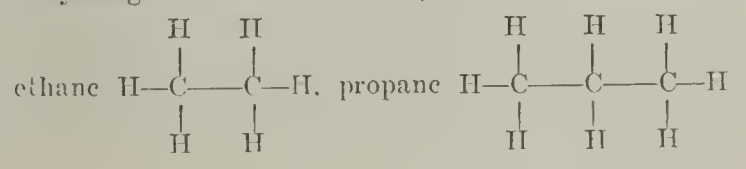
SODIUM CINNAMATE, MERCK.

A name applied to sodium cinnamate (which see) prepared synthetically.

Manufactured by Kalle & Co., Biebrich a. Rh. (Merck & Co., New York).

(To be continued.)

Ane.—Puckner states that this ending denotes a saturated hydrocarbon, i. e., a compound in which the carbon atoms are united by single bonds or valencies, thus:



THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

103 Dearborn Avenue . . . . Chicago, Ill.

Cable Address . . . "Medic, Chicago"

Subscription price.....Five dollars per annum in advance

[*For other information see second page following reading matter.*]

SATURDAY, OCTOBER 20, 1906.

EPONYMIC DISEASES AND SYMPTOMS IN MEDICINE.

The revolt against the labeling of diseases or symptoms with the name of their discoverers, or those who have brought them prominently before the profession, is a perennial one. Seldom a year passes that editorials on the subject do not appear, and current articles often contain comment on the subject. Needless to say the comment is usually unfavorable to the use of proper names in this manner. Minor,[1] for example, in a recent paper, says, in speaking of the so-called "Kœnig's sign," "It seems to me a regrettable tendency in the literature of our profession to attach to diagnostic methods or symptoms the names of individuals."

As in all questions, so in this one, analysis shows that both advantages and disadvantages may be discerned, according to the point of view. The argument usually advanced against attaching proper names to diseases or symptoms is that they are not descriptive, and that the name of a disease or symptom should give some idea of its nature. It is further argued, and with some plausibility, that, on account of this lack of descriptive quality, it is difficult for students to remember the names of eponymic diseases, and an already complicated subject is rendered still more complicated. The subject is not devoid of its humorous aspects. One almost shudders to think what might have happened if the Smith or the Jones family had been eminent in medical discovery. If it is difficult for the student to remember the difference between Paget's disease and Addison's disease, how much more difficult to recollect how F. X. Smith's disease differs from the affection of his colleague, P. Arthur Smith. It has, indeed, happened that occasionally one observer has had his name attached to two diseases. There are, for example, two Paget's diseases; Paget's disease of the nipple and osteitis deformans.

The use of proper names has of recent years, we think, degenerated in many instances into an abuse. In some instances mistakes have been made in attaching the names of two, or even three, men to a discovery, generally the name of the true discoverer and the name (to use the terms of high finance) of the promoter. The Klebs-Loeffler bacillus, the Heinecke-Mikulicz operation, the Stokes-Adams syndrome, and the Charcot-Marie-Tooth form of muscle atrophy are examples of these hyphenated appellations. It is, of course, sometimes a difficult matter to decide who deserves the most credit, the discoverer or the promoter. The discoverer's description, while leaving no doubt of his discovery, may be vague and meager, couched in somewhat obscure terms, and buried in one of the comparatively mute and superlatively inglorious tenth-class medical journals with which the world is flooded. The promoter may considerably extend our knowledge of the disease, and usually succeeds in dragging it into the limelight of professional publicity. Another objectionable practice of late years has been the naming of modifications of operations. This is certainly carrying the matter too far, especially when the modification is trivial and involves no change in principle. The grotesque and the ridiculous here enter as a possibility. One could imagine reading of Brown's modification of Jones' operation for Morton's disease of the foot. Jones had probably suggested resecting one inch of the head of the fourth metatarsal bone, Brown modifying the operation by suggesting that one inch and an eighth should be removed.

The advantages of attaching proper names to diseases and symptoms are mainly historical and educational. The study of the history of medicine in this country has, of late years, been encouraged to some degree, but it is questionable whether it has been encouraged enough. Question the German student of average intelligence, and you will usually find that he has a fair idea of who the living medical celebrities are and what they have done, and that he knows something about the Germans, at any rate, whose names are attached to diseases and symptoms. Ask an intelligent American medical student who Bigelow was, or where Austin Flint came from, and the chances are that he will not know. What pleasanter way of teaching the history of medicine than as an incidental to the study of the various branches? The anatomist could bring into his branch a good deal of history, for it is full of proper names; Galen, Fallopius, Glisson, Spigelius, Malpighi, Bowman, Bigelow, Gasser and many others could be named. The same is true of physiology, of obstetrics, of surgery and of medicine.

From the historical and sentimental standpoint, then, we believe that the labeling of diseases and symptoms is legitimate, and of distinct advantage, but, at the same time, we can not help seeing that the labeling may be, and often is, done with poor judgment. The use of proper names should be restricted to actually new discoveries; new diseases, new symptoms and signs, or new principles of treatment, and the name should be a corollary of the real, scientific name. The naming of unimportant modifications is bad, and multiple naming is worse. That whole pages of editorials will stop disease naming of this kind we doubt excessively, for the *pruritus publicitati* is as strong in medical men as in other men, but much of the celebrity and credit which comes to the discoverers in medicine is of the postmortem variety.

1. Amer. Jour. Med. Sciences, 1906, vol. lxxxii, p. 523.

POSTMORTEM EXAMINATIONS OF BURNED BODIES.

From time to time physicians are called on to make examinations of dead human bodies that have been burned more or less extensively. The general questions that lead to such examinations may be stated summarily as follows: Is death due to burns or did the burns occur after death from other causes? In the latter case is death due to natural or unnatural—criminal, suicidal or accidental—causes? In many cases burning may have advanced so far that the autopsy can give only negative results so far as many points may be concerned. The first main question—is death due to burns?—may be answered positively by the demonstration of: (1) changes in the skin that safely can be assumed to have been caused by the action of heat on a living body; (2) presence of soot- and coal-particles in the respiratory tract due to aspiration and of diffuse inflammatory and necrotic changes in the pharyngeal and laryngobronchial mucous membrane from the breathing of hot air and gases; (3) presence of carbon oxid in the blood and organs, a condition generally but not necessarily always of vital origin.

The most essential early changes in the skin as the result of reaction to heat are redness and the formation of vesicles and bullæ. Now redness only will be found rarely, because usually the effect of the heat will have been too extensively destructive and, in the second place, such redness fades away rapidly after death. The presence of real blisters, filled with fluid, provided with a red marginal zone, and situated on parts of the integument that are free from edema and marked hypostasis, as a rule means vital changes. The application of heat to the skin after death may cause the formation of small, flabby vesicles with serous contents, but without hyperemia. Hence, under certain circumstances especially, great care must be used as to the interpretation of cutaneous alterations.

Occasionally severe burning, with shrinking and contraction of the parts, may cause breaks in the skin, often provided with smooth margins and not unlike incised wounds; the bottom, however, is formed by the subcutaneous tissue which generally is ragged and burned, and such breaks are to be regarded as of postmortem or agonal origin. At this time may be mentioned, too, the fissures and fractures of bones that may result from heat and that must be understood if the examiner is to avoid confusion with traumatic lesions. Thus as the top of the head is destroyed extensive cracks and fractures may develop in the crumbling and calcined cranium, due, in part at least, to the formation of intracranial gases. So far as known these fractures do not appear to extend very far into normal bone and do not seem to involve the base of the skull to any extent as a rule, but this is a point on which we seem to lack definite information. Similar fractures are also encountered elsewhere, e. g., as longitudinal, transverse or oblique cracks in the long bones. Articular surfaces also may show numerous cracks.[1]

In all examinations of burned bodies careful attention must be given to the internal organs, because these may contain important changes of various kinds. The presence of soot- and coal-dust along the respiratory tract down into the bronchi is a good sign of the burning having taken place during life. Loosening of the superficial epithelium of the mouth, throat and larynx has been interpreted as due to necrosis by inspiration of hot gases and secondary reactive desquamation; hence, a vital phenomenon. The presence of CO in the blood and organs, as a rule, indicates that burning took place during life, and, in the absence of signs of violent death or internal disease, that death is due to carbon oxid poisoning. In such cases the blood is liquid and light red, and the internal organs and muscles will also be light red.[2] Recently certain observations have been published that indicate that CO may pass into the body through the intact skin.[3] Strassmann and Schultz point out that in postmortem diffusion of coal gas into the body there is a decidedly unequal distribution of the gas, so that there may be a marked contrast between the color in superficial and deeper parts, to say nothing of chemical and spectroscopic differences. At all events extensive postmortem diffusion takes place only after exposure to CO gas for a long time and in closed spaces. Careful consideration of the external conditions consequently may throw much light on this question in a given case.

Burned bodies may assume peculiar positions. It has been shown that if the burns are extensive as the body lies on its back the arms become strongly abducted and supinated; they may be lifted upward and backward; there is strong flexion at the elbows and at times also in the wrists and fingers. The lower extremities are flexed at the hips and knees and often abducted. If the body lies on the side or stomach very peculiar positions may be assumed. These often highly dramatic as well as abhorrent positions are not the result of vital phenomena, as not uncommonly is believed to be the case by laymen, but due to muscular contractions from coagulation by heat; the directions of the movements are explained by the fact that superficial muscles are affected first and possibly also to differences in the susceptibility to heat of the proteids of various muscles.[4]

These brief considerations are intended to be in no sense complete, but simply to emphasize the complexity

1. This and other features of interest in connection with burned bodies are discussed by Harbitz, Norsk Magasin for Lägevidenskaben, 1906, lxvii, p. 521.

2. Concerning spectroscopic and chemical demonstration of CO in the blood, etc., see appropriate works on chemistry and legal medicine.

3. See Wachholz and Lemberger: Vierteljahreschr. f. gerichtl. Med., 1902, xxiii, p. 223: also Strassmann and Schultz: Berl. klin. Wochenschr., 1906. No. 48.

4. Mayer: Ueber den Einfluss hoher Hitze auf die Stellung von Leichen und über Wärmestarre, 1898.

of the problems that may be presented by burned bodies and that it may require a high degree of special knowledge and expert training to investigate them intelligently and lay bare the true state of facts. Unfortunately the American system of medicolegal practice is not calculated to lead to the development of experts in this line of work, the necessity for which in the interests of justice is evident to all. We believe, further, that the custom of not having postmortem examinations in cases of accidental death in general, which include many cases of burning and death from burning, is an unfortunate one, because it deprives medical science of a rich opportunity for observations the results of which would be of the greatest importance in interpreting the findings in suspicious cases.

EXPERIMENTAL ARTERIOSCLEROSIS.

The efforts to solve experimentally some of the problems presented by arteriosclerosis met with but little success until Josué[1] demonstrated that intravenous injections of adrenal extract produce in rabbits sclerotic changes in the aorta. Josué's results have been confirmed and extended by other investigators in Europe as well as in this country. A brief summary of the American work in this line will serve to show how the matter stands at present.

Pearce and Stanton,[2] injecting three minims every other day of a 1 to 1,000 solution of adrenalin chlorid, obtained sclerotic areas in the aorta and small aneurismal bulgings due to degenerative changes and calcification in the smooth muscular fibers of the media. They emphasize that the earliest changes occur in the muscular fibers of the media which appear to be selectively affected as if by a toxic substance with special affinity. Later there occurs mechanical breaking of the elastic fibers and aneurismal dilatation. Klotz[3] obtained the same general results. He also places the earliest change in the muscle cells and elastic tissue; there develop fatty changes and later calcification.

While Josué and others placed the earliest changes in the intima, the authors mentioned are inclined to regard the intimal changes, which are not constant, as secondary, and thus to support the well-known theory of Thoma that in arteriosclerosis the primary lesion is in the media.

The mechanism of the action of adrenalin in causing aortic sclerosis in rabbits can not be said to be clearly understood. The early changes speak in favor of a toxic effect, and the distinctively focal character of the sclerosis suggests interference with the vasa vasorum which so far appear to have been normal structurally. Loeb and Githens[4] obtained hardly any sclerosis with pyrocatechin, a product of the adrenals, which raises the vascular pressure. The limitation of the lesions to the aorta (and the myocardium, Pearce) is as yet without adequate explanation.

When we come to compare the experimental with human arteriosclerosis we find that there is considerable analogy, but also marked differences. Klotz calls attention to the fact that the experimental disease anatomically resembles most a form of sclerosis of the arteries of the extremities (femorals, tibials, iliacs, radials, brachials), described especially by Moenkeberg,[5] which occurs mostly after 50 and is characterized particularly by the limitation of the degenerative and calcareous changes to the media.

Undoubtedly further studies will furnish additional data that may help us to understand better human vascular sclerosis. Other substances, e. g., nicotin and digitalin, are being tried. It is interesting to note, also, that Koranyi found that iodin, when given simultaneously with adrenalin, prevents largely the sclerosis that results when adrenalin is given alone. The importance of Josué's original demonstration is evident; it has given the experimenter the means to study arterial changes under conditions that he can control to a very considerable extent.

1. Presse Médicale, 1903, x, 798.
2. Jour. Exp. Med., 1906, viii.
3. Jour. Exp. Med., 1906, viii, 504.
4. Am. Jour. Med. Sci., 1905, October.

AN AMERICAN DOCTOR OF THE OLD SCHOOL.

It is usually thought that the picture so graphically and touchingly given by Ian MacLaren of the doctor of the old school in "By the Bonny Briar Bush" describes something that is entirely of the past and that can not be found in actual existence at the present day. Any such opinion, however, does not take into account the depths of sympathy in certain natures which prompts them to think rather about others than themselves. There is at least one striking example in our own day of sacrifices quite equal to those of Weelum MacClure, made for a people whose needs are quite as great and whose possibilities of returning anything like adequate rewards for services done them are even less than the Highland population which the Rev. Mr. Watson has described with such feeling. The hero of the story is Dr. Wilfred Grenfell, whose labors for the bodies and souls of the fisherfolk of the Labrador Coast have become very well known in recent years.

His introduction to the American public came in Norman Duncan's "Dr. Luke of the Labrador Coast," which, after running serially in one of our important magazines, had an extensive sale in book form. This proved an excellent introduction to Dr. Grenfell's own "The Harvest of the Sea," which dealt with his experiences in Labrador among the fisherfolk. Norman Duncan's further books have thrown still more kindly light on the subject, and one excellent result has been that the North Coast, as it is called, has become much better known and has received a much larger number of vis-

5. Virchow's Archiv., 1903, clxxi, 141.

itors than ever during the last two or three summers. Not a few of these have gone with the deliberate idea not only of seeing the scene of Dr. Grenfell's work and of coming in contact with some of the kindly fisherfolk whom he and others have described so takingly, but also with the hope of meeting the genial doctor himself.

It is understood that Dr. Grenfell is to visit the United States next month partly in the interests of his patients, the fishermen, and partly in order to put himself once more in touch with such advances in medicine as may prove helpful to him in his work for these needy folk. Physicians generally will doubtless rejoice at the possibility of being brought into personal contact with this interesting medical worker.

THE EARLY DIAGNOSIS OF TYPHOID FEVER.

In the fight against the spread of typhoid fever the early recognition of the disease is of great importance. The Widal reaction, great though its value is, does not usually appear until the end of the first or the beginning of the second week. Of late years, blood cultures have been used in hospitals a good deal, and it has been found that the typhoid bacilli can often be isolated from the blood very early in the disease, and long before the Widal reaction has appeared. The usual method of blood culture, however, requires large quantities of blood and culture media, and can not well be applied outside of hospitals with properly equipped laboratories. About five years ago Conradi[1] discovered that bile *in vitro* hinders the coagulation of the blood, and of late he has applied this knowledge to perfecting a method of cultivating typhoid bacilli from the blood. This method has the advantage, possessed also by the Widal method, that the apparatus needed is simple, and that the preliminary steps can be taken by a man untrained in bacteriology. Conradi's outfit consists of a small sterile bottle of bile to which a little peptone and glycerin has been added, a special blood lance, and a sterilized pipette. The physician obtains the blood by lancing the ear, only one-half to two centimeters being necessary, inoculates it into the bile mixture, and returns the inoculated flask to the laboratory, where, after an incubation of sixteen hours, the bile is reinoculated on to lactose-litmus-agar. Conradi claims that a positive diagnosis can be made in thirty hours in the great majority of cases. The method, if on further investigation it proves to be feasible and successful, might well supplement or even supplant the Widal method, and should certainly be looked into by the workers in the now numerous board of health laboratories.

ABUSE OF THE TUBERCULOUS.

One distressing feature of the tuberculosis problem is that patients bring hardship on themselves and others by seeking climatic treatment without full knowledge of conditions that await them. Thousands are leaving home without adequate means of support and are becoming burdens on communities which do not deserve the responsibility. We have referred to this several times and we now repeat the warning because of a protest, published in *Charities,* from C. H. Gilchrist, superintendent of associated charities, Phoenix, Arizona. Indigent consumptives are still pouring into Arizona and New Mexico to such an extent that Mr. Gilchrist says the conditions force the necessity, either of excluding all tuberculous persons or of denying all assistance to the indigent who come. Neither course, he says, is righteous or Christlike, but relief must be had from the present conditions. Phoenix receives yearly tubercular tourists to the number of one-fourth of its population, and a large proportion of these are either indigent or speedily become so. All possible avenues of employment are overcrowded. *Charities* thinks that physicians are chiefly to blame for this state of affairs and suggests that they should not recommend removal to other climates without warning patients of the stern conditions that will face them if they are without means of support. Physicians can not be held responsible for the action of persons who have simply received the general advice to go to the southwest, but economic conditions demand that physicians spread this warning whenever occasion arises.

1. Münch. med. Wochschr., 1906, vol. liii, p. 1654.

Medical News

ILLINOIS.

Communicable Diseases.—Two cases of smallpox are reported from Hillary, Vermillion County.——An epidemic of diphtheria has reached such dimensions in Brimfield that schools have been ordered closed and public meetings have been prohibited.——Four cases of scarlet fever and 5 cases of diphtheria are reported from Moline.

Warning to License-Issuing Officers.—The State Board of Health has called the attention of mayors, chiefs of police and license-issuing officers of municipalities of Illinois to the fact that in issuing licenses to itinerant vendors of medicine who do not hold licenses as such, issued by the State Board of Health, they are approving and giving their sanction to a direct violation of the state law.

Personal.—Dr. Jonathan Dearborn, Mount Sterling, celebrated his eighty-first birthday, October 6.——Dr. Augustus H. Malm, Princeton, coroner of Bureau County, by virtue of a provision of the state law, will also take the office of sheriff of the county for two months. The law provides that if the sheriff dies within a year of the next succeeding election, the coroner shall fill out the unexpired term.——Dr. S. S. Beaupre has been appointed health officer of St. Anne, vice Dr. D. Henry Pelletier.

Coroners Want Legislation.—The legislative committee of the Illinois Coroners' Association asks that the following matters which have been customs heretofore, to be put on the statute books:

1. To compel witnesses to answer questions under a penalty for refusing.
2. Autopsies to be held and paid for on the order of the coroner.
3. A *per diem* fee for the coroner when inquests extend over one day.
4. To compel physicians to report cases to coroner, and a penalty for failure to do so.
5. Penalty for removing or disturbing a dead body without authority from the coroner.
6. Undertakers not to inject embalming fluid into a body until the coroner allows, under penalty.
7. Undertakers not to use any fluid containing arsenic or strychnin under any circumstances.
8. Coroner to be allowed the same fee as the sheriff for serving subpenas.

Chicago.

Personal.—Dr. Arthur R. Reynolds has returned to Chicago and resumed practice.——Dr. Howard Crutcher, chief consulting surgeon of the Alton System, will, it is reported, move to Mexico, Mo.

Phthisis Camp.—On October 3 the first month of the tuberculosis camp at Dunning ended. Ten men and women are under treatment, and more are expected. Another portable house, which will accommodate four more patients, is almost ready for occupancy.

Appeals for Report of Births.—The health officer reports that at present the health department has a record of only about 60 per cent. of the births in Chicago, and legislation is required which will make it necessary to present a certificate of birth before a child can enter the public schools.

Claims Fulfilment of Gift.—The Presbyterian Hospital has filed a claim for $50,000 against the estate of the late Marshall Field, who, it is claimed, made a tentative bequest of that amount conditional on the donation of $400,000 to the institution by other persons. It is related that this money has been raised by other persons.

Deaths of the Week.—During the week ended October 13 there were 528 deaths reported, 38 fewer than during the preceding week and 51 more than for the corresponding week of 1905. The respective annual death rates per 1,000 are 13.43 and 14.40 and 12.49. Consumption led the death causes with 74, followed by acute intestinal diseases with 62; pneumonia with 48; violence (including suicide) with 46; heart diseases with 39; Bright's disease with 36; cancer with 24, and nervous diseases with 23.

IOWA.

Railway Surgeons Meet.—At the thirteenth annual meeting of the Iowa Association of Railway Surgeons, held in Des Moines, September 27 and 28, Dr. Smith A. Spillman, Ottumwa, was elected president, and Dr. Elbridge H. King, Muscatine, vice-president; Dr. Albert B. Deering, Boone, was reelected secretary, and Dr. E. C. McMeel, Delmar, treasurer.

Communicable Diseases.—Diphtheria is reported to have broken out in the Odd Fellows' Home for Orhpans, Mason City. ——Five cases of typhoid fever are reported near James.—— Typhoid fever is reported to have been prevalent in Sioux City. More than 30 cases have already been reported.—— Scabies is said to be prevalent in the public schools of Keokuk. ——Fifteen cases of diphtheria, with one death, have been reported in Mason City.——From Sweetland Center eight cases of typhoid fever in one family have been reported.

Circular of Warning.—Scott County Medical Society has taken up a commendable project and has had printed 2,000 copies of a circular prepared by Dr. Charles H. Preston, Davenport, dealing with the responsibility of physicians in the matter of instruction of the youth as to the danger incurred through sexual license. This circular has already been placed in the hand of the police matron and the physicians of Davenport, and is at the disposal of parents and others who may desire it. In Dr. Preston's opinion, the pamphlets should also be placed in the hands of factory owners, employers of labor, teachers of advanced schools, etc., where they would be, as a rule, well received, and do much good.

Personal—Dr. Harry R. Irish, Forest City, has been appointed commissioner of insanity, vice Dr. William H. Jones, resigned.——Dr. Thomas F. Desmond, Webster City, sustained a dislocation of the shoulder and hip by being thrown from his carriage at Ackley, September 26.——Dr. Delmer L. Davis has been appointed professor of chemistry in the Sioux City College of Medicine.——Dr. William P. Crumbacker, superintendent of the State Insane Hospital, Independence, was assaulted by an employé of the institution and severely injured. ——Dr. Robert E. Conniff, for many years president and a member of the State Board of Health, was thrown from his buggy in Sioux City, October 4, and seriously injured, three ribs being broken.——Dr. and Mrs. Henry C. Hunter, Sheffield, have returned from Europe.

KENTUCKY.

The State Meeting.—At the fifty-sixth annual meeting of the Kentucky State Medical Association, held at Owensboro, Oct. 10-12, 1906, the following officers were elected for the ensuing year: President, Dr. D. M. Griffith, Owensboro; vice-presidents, Drs. John H. Blackburn, Bowling Green; Milton Board, Hopkinsville, and J. T. Reese, Cynthiana; secretary-editor, Dr. Arthur T. McCormack, Bowling Green; treasurer, Dr. W. B. McClure, Lexington; orator in medicine, Dr. Clarence H. Baught, Richmond; orator in surgery, Dr. J. T. Quinn, Henderson; delegates to the American Medical Association, Dr. J. N. McCormack, Bowling Green, and Dr. W. W. Richmond, Clinton. The next meeting will be held in Louisville. A further report of the meeting will be published in The Journal next week.

MARYLAND.

Illicit Disposal of Dead Bodies.—The State Board of Health has been making investigations and finds that in various parts of the state dead bodies have been disposed of secretly and illegally for several years. The law requires an official record and a burial permit. The evil is said to be greatest in Baltimore County and in the suburbs of Baltimore, where the matter has assumed the form of a menace to public health. Since May detectives, working under the instruction of Dr. John S. Fulton, secretary of the board, have discovered 44 secret illegal burials in the county, 22 of which were near Highlandtown. Many of the bodies were buried only a few inches beneath the surface of the earth and became uncovered by the action of the rain. On October 12 Dr. Fulton swore out warrants against 20 residents of the county, charging them with having violated the law.

Baltimore.

Deaths of the Week.—The deaths for the week ended October 13 were unusually numerous, numbering 220, as compared with 176 for the corresponding week for 1905, the annual death rate for whites per 1,000 being 16.82 and for colored people 33.70. The notable increases in death causes were from pneumonia and consumption.

Sir Almroth E. Wright.—So much interest was evinced in the lectures of Sir Almroth E. Wright, mentioned in last week's issue, that two additional lectures were given, one being a demonstration of methods. Prof. William H. Welch, in summing up the lectures of Dr. Wright, places his achievements on a par with those of Pasteur and Behring, who had worked along the same line, namely, that of immunization. Dr. Wright left Baltimore October 12 and returns to Europe this week.

Keiber in Baltimore.—Dr. Franz Keiber, professor of anatomy in the University of Freiburg, spent several days in Baltimore last week, looking up methods of research in the Baltimore laboratories. He was the guest of Prof. Franklin P. Mall and was tendered several dinners and also a reception at the Johns Hopkins Club. From Baltimore he goes to the Smithsonian Institution, in Washington, and thence to the Rockefeller institute, in New York City, sailing for Europe October 27.

Must Accept Vaccination Certificates.—The city solicitor has given an opinion that the school board must accept certificates of vaccination from physicians in private practice, showing that pupils in public schools have been successfully vaccinated. He has also decided that health department officials have a right to enter the public schools at any time and examine the arms of the children, and, if they are not found to be properly vaccinated, to require that the same be done either by the health warden or by a private physician.

Hebrew Hospital Festival.—At the thirty-ninth annual Succoth festival of the Hebrew Hospital and Asylum, October 7, $2,800 was collected for the institute. It was announced that the widow of the late president had increased her donation for the erection of a new hospital building from $75,000 to $80,000; that in addition she had donated $4,000 for the erection of a memorial room, to be dedicated to the care of professional nurses, and that in addition she proposes, when the new hospital is built, to endow a room in memory of her late husband, at a cost of $4,000.

Personal.—Dr. Henry M. Hurd, professor of psychiatry in the Johns Hopkins Medical School, and secretary of the new Johns Hopkins Hospital, has been given a year's leave of absence and will spend it in travel in Europe, leaving about November 15. His place will be taken by Dr. Rubert Norton, formerly house physician in the hospital.——Dr. G. H. Whipple has been appointed assistant pathologist at the Johns Hopkins Hospital, vice Dr. C. H. Bunting, resigned to accept the position of professor of pathology at the University of Virginia.——Dr. J. Whitridge Williams has been made director of the dispensary with Dr. Thomas McCrae as assistant.—— Dr. Pearce Kintzing has returned from abroad.——Dr. Joseph C. Hemmeter returned from abroad October 11, after an absence of five months.

NEW YORK.

New York City.

Bellevue's Demand Questioned.—The request of the president of Bellevue and the Allied Hospitals for an increase of $226,559 over last year's appropriation has been refused, and the institution has been called on to account for the delay in erecting the new nurses' home.

Aid to the Injured.—The board of education will give sixteen courses of five or six lectures each on "First Aid to the Injured" during October and November in its public lecture

centers. These lectures will be illustrated with stereopticon views and practical demonstrations, and at the close examinations will be held and certificates of efficiency will be awarded by the Society for Instruction in First Aid to the Injured.

Contagious Diseases.—There were reported to the sanitary bureau for the week ending October 6, 346 cases of tuberculosis, with 154 deaths; 199 cases of diphtheria, with 22 deaths; 121 cases of typhoid fever, with 25 deaths; 49 cases of scarlet fever, with 3 deaths; 32 cases of whooping cough, with 15 deaths; 30 cases of measles, with 2 deaths; 12 cases of cerebrospinal meningitis, with 11 deaths, and 11 cases of varicella, making a total of 800 cases, with 232 deaths.

Personal.—Dr. Louis A. Stimson arrived from London after a twelve days' voyage on the yacht *Aphrodite*.—Dr. and Mrs. William B. MacCracken sailed on the *Minneapolis* for London October 13.——Dr. Charles Laight sailed for the Mediterranean on the *Princess Irene* October 13.——Dr. Julius L. Amster, while driving along East One Hundred and Eighty-ninth Street, was struck by a car, which completely demolished his carriage and threw him out, sustaining a broken shoulder, several fractured ribs and internal injuries.

Park Milk Stations.—Health officials have long admitted the beneficence of the Nathan Straus milk stations and recognized the crying need for an extension of the work. At last an application has been made for an appropriation of $20,000 with which to establish permanent pasteurized milk stations in ten small parks of the poorer districts. It is hoped that in time the city will furnish the 10,000 quarts of pasteurized milk per day which it is estimated will be necessary to supply the entire infantile demand of the tenements.

City Noises.—At a recent meeting of the Society of Medical Jurisprudence Dr. Darlington read a paper on "Noises and Their Control," in which he expressed the opinion that little could be done to suppress many of the unnecessary noises unless the people themselves helped by arousing public sentiment, forming an anti-noise league, demanding the help of taxpayers, etc. A resolution was presented to the board of trustees of the society requesting that the police commissioner be asked to enforce the ordinance regarding unnecessary and illegal noises.

School Children Need Medical Attention.—The committee on the physical welfare of school children has made an appeal for more money in order that a large number of medical inspectors may be appointed for the purpose of making a more thorough physical examination of school children. There are now 209 school inspectors, and it seems that 300 or 350 would be required for the proper examination of all school children, as there are some districts where the work is far beyond the capacity of the inspectors. The board of health is getting out a double postal card, one to the parent telling what ails the child and requesting that the family physician be consulted, and the other to the family physician stating what the board of health has done in the way of treatment for the child. In order to facilitate the better feeding of school children the Association for Improving the Condition of the Poor has placed in the field a visiting cook, who goes to the homes of the pupils and shows the mother in her own kitchen, with the utensils at her command, how to prepare food in the most nourishing and practical ways. There is need for a number of cooks who would teach mothers in this way.

PENNSYLVANIA.

Philadelphia.

Vital Statistics.—During September 2,933 births and 1,850 deaths were reported.

Civil-Service Examinations.—Examinations will be held during November for the position of chief resident physician to the Philadelphia Hospital at a salary of $4,000, and assistant resident physician to the Municipal Hospital at a salary of $800.

Bacteriologic Laboratory Report.—The report of the bacteriologic laboratory of the health bureau for September shows that 580 specimens were examined for diphtheria bacilli; 416 examinations were made of typhoid fever blood; 372 examinations were made of milk, and 114 of sputum. The laboratory supplied 2,251,000 units of antitoxin, made 6 disinfection tests and 90 chemical analyses.

Medical Inspection.—During September 3,317 inspections were made by the medical inspectors, excluding schools; 365 fumigations were ordered, and 17 cases were observed that required special diagnosis; 3,887 visits were made to the different schools throughout the city, and 485 children were excluded from the schools; 173 cultures were taken for examination, 94 injections of antitoxin were made, and 1,392 vaccinations performed.

Diseases Show Decrease.—Reports received by Health Commissioner Dixon show a steady decrease in diphtheria and scarlet fever cases since January of this year. In the first month of the year 1,042 cases of diphtheria were reported; February, 885; March, 852; April, 703; May, 688; June, 546; July, 437, and a slight increase over July during the month of August. The scarlet fever report is as follows: January, 879; February, 875; March, 758; April, 687; May, 701; June, 517; July, 378; August, 350.

Pure-Food Law Attacked.—The Grocers' Association of Philadelphia has attacked the constitutionality of the dairy and pure food commission before the Supreme Court in Pittsburg. They base their assertion on article 27 of the state constitution which prohibits state inspection of foods, and merchandise. Attorney-General Carson, who defended the commission, states that he does not think the grocers' association has any grounds for the attack, as the food commission was not violating the state constitution.

Hospital Reports.—During September the Mount Sinai Hospital admitted 48 patients, making, with the 22 patients under treatment at the beginning of the month, a total of 70 treated. Of this number 40 were discharged cured, 5 improved, 8 left without permission and 3 died, leaving 26 patients under treatment at the end of the month. In the out-patient department 3,505 visits were paid. Of the total visits 945 were by new patients. Of the new patients, 191 skin, 8 diseases of the nerves, 47 gynecologic, 64 nose, throat and ear, 237 children, 42 were medical, 232 surgical, 211 eye cases and 150 dental. In the emergency ward there were 277 cases treated, 23 being patrol cases.——The report of the Stetson Hospital for September shows that a total of 1,455 patients were treated at the daily free clinics. Of these 593 were surgical cases. There were 254 cases of eye disease, 304 of ear, nose and throat trouble.

Health Report.—The number of deaths reported for the week ended October 13 aggregated 493, an increase of 91 over the number reported last week and an increase of 125 over the number reported in the corresponding week of last year. This large increase is attributed to the sudden cold weather of the past few days. The principal causes of death were: Typhoid fever, 10; whooping cough, 9; diphtheria, 7; tuberculosis, 68; cancer, 36; diabetes, 5; apoplexy, 13; paralysis, 6; endocarditis, 7; heart disease, 45; acute respiratory diseases, 38; enteritis, 34; cirrhosis of liver, 5; Bright's disease, 39; congenital malformations, 10; premature births, 16; congenital debility, 12; accidents, 5; accidental traumatisms, 10, and marasmus, 10. There were 203 cases of contagious disease reported, with 19 deaths, as compared with 183 cases and 18 deaths during the previous week.

Medical Inspection in Schools.—Dr. A. C. Abbott, chief of the bureau of health, states that he is well pleased with the work of two nurses in their attendance at the schools and favors increasing the force to eight. The work of the assistant medical inspectors has been criticised on the grounds that, as the inspectors have to report contagious diseases in addition to the school duties, disease might thus be transmitted. Dr. Abbott meets this assertion by the statement that he has yet to learn of a single case of disease being transmitted as a result of the visits of the medical inspectors. The latter begin their day's work by visits to the schools, and with the exception of a few kinds of cases, do not see the patients until they are convalescing, securing their early information from other members of the family. The inspectors are required to disinfect themselves and adopt other precautions, so that the danger of contagion is reduced to a minimum.

TENNESSEE.

Sanitarium Opened.—Drs. J. McChesney Hogshead and Darius N. Barrett, Chattanooga, have opened a sanitarium at that place, devoted especially to diseases of the eye, ear, nose and throat.

Medical Society Meeting.—The sixteenth annual session of the Eastern Tennessee Medical Society was held in Johnson, October 4 and 5. The following officers were elected: President, Dr. Walter S. Nash, Knoxville; vice-president, Dr. H. H. Campbell, and secretary and treasurer, Dr. William M. Copenhaver, Bristol.

Cruelty Charges Baseless.—At a meeting of the board of trustees of the Western Hospital for the Insane, Bolivar, called to investigate the charges of cruelty to patients, which had been preferred against the assistant physician and three at-

tendants, the trustees concluded that the charges had been grossly exaggerated and had been sustained in no single instance.

Sentenced for Criminal Practice.—Dr. John L. D. Walker, Chattanooga, charged with illegal criminal practice, who was convicted by the lower court and the decision affirmed by the Supreme Court, is reported to have been sentenced to imprisonment for 11 months and 29 days in the workhouse. The prosecution was at the instance of the Hamilton County Medical Society.

Tuberculosis.—At a session of the State Board of Health in Nashville, October 2, the general question of the eradication and prevention of tuberculosis in state institutions was discussed. The committee appointed to look into the question of tuberculosis in state prisons submitted a verbal report, and more time was extended to the committee and its powers enlarged, so that it might make the same investigations in all state institutions.

Personal.—Dr. George G. Benson, Nashville, was seriously injured in a runaway accident, October 1.——Dr. A. L. Sharber has resigned as house physician of the Nashville City Hospital, and Dr. R. W. Grizzard, Jr., has been elected to succeed him. Dr. Sharber has accepted the chair of anatomy in the University of Tennessee.——Dr. James J. Teas, Waverly, has been elected secretary and treasurer of the Humphreys County Medical Society, vice Dr. Claude C. Sullivan, resigned.

Colleges Open.—The College of Physicians and Surgeons, Memphis, opened October 1. Prof. Rhea P. Carey made the opening address and Dr. Heber Jones acted as master of ceremonies.——Memphis Hospital Medical College opened for its twenty-seventh annual session, October 1. Dr. Frank Jones has been selected to fill the chair of clinical medicine and diseases of the chest, vice Dr. Dudley D. Saunders, resigned.——The University of Tennessee, Nashville, opened October 1. Dr. Guffin W. Bull delivered the opening address on "Appreciation, Application and Addition." Dr. E. M. Sanders has been elected assistant to the chair of gynecology and placed in charge of the anatomie library.——The University of Nashville opened October 1. Dr. W. G. Ewing, dean of the university, delivered the opening address, and an address was also made by Dr. Hugh Paggett, the recently elected professor of medicine.——The Medical Department of Grant University, Chattanooga, opened October 3. Among the new members of the faculty are Dr. J. McChesney Hogshead, instructor in anatomy; Dr. Darius N. Barrett, instructor in neurology; Drs. Joseph W. Johnson and J. B. Fields, assistants to the chair of practice of medicine, and Dr. William A. Duncan, assistant to the chair of surgery.

TEXAS.

Diphtheria.—An epidemic of diphtheria is reported to be prevalent in Deport, Lamar County.——Many cases of diphtheria are said to exist in the West Side addition to Taylor.

Personal.—Drs. Jesse M. Pace and Charles M. Rosser have been sworn in as members of the board of health of Dallas.——Dr. Z. T. Bundy, Milford, has been appointed surgeon of the Confederate Home, Austin, vice Dr. G. Horace Gilbert, resigned to accept a position as assistant physician in the State Insane Asylum, Austin.

Tabor Endorsed.—At a meeting of the Dallas County Medical Association October 1, resolutions were unanimously adopted endorsing the recommendation that the incoming governor continue in office the present state health officer, Dr. George R. Tabor, whose service has proved entirely satisfactory and reflects unusual credit on the medical profession.

Pasteur Institute Report.—Dr. Benjamin M. Worsham, Austin, superintendent of the State Pasteur Institute, reports that during the first fiscal year 81 patients were treated without the development of a single case of hydrophobia, and that during the second year 254 patients were treated, 226 of whom came from Texas, with 2 deaths. The total fees collected were $2,410 and the disbursements were $1,039.36.

Hospital Notes.—An effort is being made to establish a hospital at Yoakum by Dr. Charles H. Brueur of Crete, Neb. An organization was effected at the meeting September 26, trustees elected and the question of the purchase of a building considered.——The Physicians and Surgeons' Hospital of Greenville has been incorporated with a capital of $10,000. The Southern hotel property has been purchased and the building will be remodeled for hospital purposes.

State Health Officer's Report.—In the biennial report of Dr. George R. Tabor, state health officer, he directs attention to the fact that four years ago 75 per cent of the populated counties of Texas were infected with smallpox, but that the disease was rapidly decreasing. Yellow fever has not appeared in Texas this year, and when it was prevalent in Louisiana last year it was kept out of Texas at a cost of less than $30,000. He bears testimony to the efficient services rendered by the Texas quarantine officers on the borders of Louisiana, Arkansas and Indian Territory. The operating expenses of the department for two years amounted to $45,372, or less than for the previous biennium.

Medical Colleges.—The Medical Department of Fort Worth University opened for its thirteenth annual session, in its new building, October 2. Dr. Frank Gray, dean of the department, presided.——The College of Physicians and Surgeons, Dallas, opened for its fourth annual session October 1.——The Medical Department of the University of Texas, Galveston, opened for its sixteenth annual session October 1. Dr. J. F. Y. Payne, professor of obstetrics and gynecology, delivered the opening address.——The Southwestern University Medical College, Dallas, opened for its fourth annual session October 1, in its new building.——Baylor University College of Medicine, Dallas, began its sixth annual session October 1 in its temporary quarters at the Good Samaritan Hospital.

State Hospital Reports.—The superintendent of the Southwestern Insane Asylum, San Antonio, in his fifteenth annual report states that the average number of inmates during the year was 737. Patients were cared for at an average daily cost per capita of 42 cents. During the year 70 patients were admitted, 45 patients discharged and 23 deaths occurred.——The State Lunatic Asylum, Austin, in its forty-fourth and forty-fifth annual report, showed that during the fiscal year ended Aug. 31, 1906, the total population of the institution was 1,171, and that during the year 59 deaths occurred. During the biennium ended August 31, 232 patients were discharged from the institution, 155 of whom had been on furlough for several months. Tuberculosis caused 36.2 per cent. of the total number of deaths. Dr. Worsham believes that the laws governing the admission of patients should be changed and modified, that court trials should be done away with and that laws similar to those governing epileptics would meet the requirements and be much less expensive. He also recommends, in addition to the regular appropriation, an appropriation for $85.000 for a new building to accommodate 500 new patients, and also recommends that separate provision be made for the criminally insane.

GENERAL.

Erie Railway Surgeons Meet.—The fifteenth annual convention of the Association of Erie Railway Surgeons was held in Chicago, October 10 and 11. New York was selected as the next place of meeting, and the following officers were elected: President, Dr. Daniel A. Currie, Englewood, N. J.; vice-president, Dr. Frank D. Bain, Kenton, Ohio, and secretary-treasurer, Dr. Jere A. Allis, Upper Montclair, N. J.

Want Public Health Department.—At a meeting of the Conference on Home Economics, held at Lake Placid in September, according to *Science*, it was proposed that the Public Health and Marine-Hospital Service be asked to issue a popular bulletin for the information of the public on health matters as the Department of Agriculture does in its domain. The conference decided to communicate to President Roosevelt its approval of this plan and also of the establishment of a national department of health to coördinate and to extend the work done in this line by the government.

Yellow Fever in Cuba.—Dr. von Ezdorf reports that 6 new cases of yellow fever, with 2 deaths, occurred during the week ending October 2. Two of these cases were from Guanabacoa, which is a town located across the bay of Havana. One of the cases was discovered in the general wards of Covadonga Hospital and no precautions in the case had been taken. In none of the cases could the source of infection be traced. It is evident, Dr. von Ezdorf states, that the disease is spreading, and that unknown foci of infection are scattered over the city of Havana, and in two suburbs, Guanabacoa and Vedado. The sanitary forces in Guanabacoa have been increased and medical inspectors are daily inspecting the non-immunes in and around the suspected districts. The fumigating and oiling forces in Havana, which at the beginning of the month had been decreased, have also been increased, so that there are now 150 men in the fumigating brigades; 110 men compose the oiling forces and 30 men are for cleaning of ditches and making drains.

Harvey Society Lectures.—The second course of lectures under the direction of the Harvey Society of New York will be given at the Academy of Medicine building, 17 West Forty-

hird Street, New York, Saturday evenings at 8:30. The ectures are open to the public and all interested are cor-lially invited to attend. The program is as follows:

October 20: Prof. A. E. Wright, London, "Therapeutic Inocula-lon with Bacterial Vaccines."

November 3: Prof. C. A. Herter, New York: "The Common Bac-erial Infections of the Digestive Tract and the Intoxications Aris-ng from Them."

November 17: Prof. W. T. Porter, Boston: "Vasomotor Reflexes."

December 1: Prof. J. G. Adami, Montreal, "The Myelins and Po-ential Fluid Crystals of the Body."

December 15: Dr. S. J. Meltzer, New York: "The Factors of Safety in Animal Structure and Animal Economy."

January 12: Prof. F. G. Benedict, Middletown, Conn.: "Metab-olism During Fasting."

January 26: Prof. E. B. Wilson, New York: "Recent Studies of Heredity."

February 9: Prof. G. S. Huntington, New York: "The Genetic In-terpretation of Variations in the Genitourinary Tract."

February 23: Prof. W. T. Councilman, Boston: "The Relation of Certain Leucocytes to Infectious Diseases."

March 9: Prof. Friedrich Müller, Munich, "Neuroses of the Heart."

CALIFORNIA FUND.

RELIEF COMMITTEE OF PHYSICIANS OF SAN FRANCISCO.

LANE HOSPITAL, SAN FRANCISCO, Sept. 28, 1906.

The Relief Committee of Physicians of San Francisco respectfully submit the following, its first report. In doing so it begs to extend sincere thanks not only in its behalf, but in the name of the profession of this city and surrounding country, to all who have contributed so nobly and generously in assisting our afflicted brethren.

We desire to express our grateful appreciation to all who have aided us, namely:

May 10	Brooklyn (N. Y.) Medical Society	$1,500.00
	St. Louis Med. Soc., per Dr. Geo. Homan, Pres.	600.00
May 11	Norfolk District (Mass.) Medical Society	407.00
May 12	Governor's Relief Committee of Hawaii, per James F. Morgan, Esq.	1,000.00
	Dr. W. J. G. Dawson, Eldridge, Cal.	50.00
	Dr. G. L. Simmons, Sacramento, Cal.	50.00
	Dr. S. B. Knox, Santa Barbara, Cal.	10.00
May 17	Dr. Chas. L. Allen, Trenton, N. J.	25.00
May 18	San Joaquin County (Cal.) Medical Society	60.00
	Ventura County (Cal.) Medical Society	37.50
May 19	Fresno County (Cal.) Medical Society	200.00
	Essex District (Mass.) Medical Society	200.00
May 21	Dr. R. W. Sturgis, Tanners Creek, Va.	5.00
May 23	John B. Jackson, Esq., Pittsburg, Pa.	2,500.00
	Hon. John Weaver, Mayor, Philadelphia, Pa.	2,500.00
May 24	Oregon State Medical Society	500.00
	J. A. Folger, Esq., San Francisco	1,000.00
May 26	Dr. F. C. E. Mattison, Pasadena, Cal.	50.00
May 28	Pasadena Med. Society, per John E. Janes Clerk	322.00
	Dr. Chas. T. Kuhn, San Francisco	5.00
	Monroe County (N. Y.) Medical Society	216.00
May 29	Riverside County (Cal.) Medical Society	70.00
	M. J. Breitenbach Company, New York	500.00
	Dr. A. Gude & Co., Leipzig, Saxony, Germany.	500.00
May 30	Dr. H. O. Walker, Detroit	200.00
	Dr. J. L. Robinson, Reno, Nev.	60.00
May 31	S. W. Kentucky Medical Assoc., Paducah, Ky.	100.00
	Miss Lilla C. Wheeler, Portville, N. Y.	300.00
	County Med. Soc., Coleman, Texas (Dr. S. N. Aston, Secretary)	5.00
June 1	Spokane Physicians, Spokane, Wash.	111.75
June 2	Santa Clara (Cal.) County Medical Society	600.00
	Dr. R. W. Gardner, Orange, N. J.	100.00
	Smith, Kline & French Co., Philadelphia	100.00
	St. Louis Medical Society (second donation)	262.70
June 4	Mrs. D. G. Bartnett, Pacheco, Cal.	10.00
	Santa Barbara Co. Med. Soc., per Dr. Wm. T. F. Flint	85.00
June 7	American Medical Association fund	4,495.32
	Chicago Medical Society	4,000.00
	Philadelphia Committee	1,999.50
	Placer County Medical Society, Grass Valley, Cal., per Dr. J. T. Jones	80.00
June 14	Orange County Medical Society, per Dr. H. S. Gordon, Secretary	58.50
	Portland Chamber of Commerce, Portland, Ore.	1,000.00
	Dr. Wm. J. G. Dawson, refund on Pullman berth	2.50
	Dr. Ella P. Downing, San Francisco	5.00
June 15	Dr. C. L. Muller, Nevada City, Cal., per Dr. J. T. Jones	20.00
	W. W. Herron, Esq., Mobile, Ala.*	100.00
	Dr. H. E. Stroud, Phoenix, Ariz.*	25.00
	McLean County Med. Society, Bloomington, Ill.*	90.00
	New York Academy of Medicine and Medical Sciences, New York*	3,000.00
	United Protestant Churches of Williamsbridge, N. Y.*	124.56
	Dr. Lefferts A. McClelland, Brooklyn*	5.00
	Minnesota State Nurses' Association*	66.00
June 18	Monterey County Physicians, California	105.00
	Physicians of the Boroughs of Manhattan, Bronx and Richmond, N. Y., per Dr. Chas. H. Richardson, Treasurer	3,000.00
	Monroe County (N. Y.) Medical Society	19.00
June 19	Chamber of Commerce, N. Y.*	5,000.00
June 21	Bartow County (Ga.) Medical Society	9.50
June 22	Riverside County (Cal.) Medical Society	30.00
	Nevada County (Cal.) Medical Society	5.00
June 28	Dr. M. A. Craig, Lower Lake, Cal.	5.00
	Unknown donor, Sydney, Canada	1.00
	Santa Clara County (Cal.) Medical Society	25.00
June 29	Chautauqua County Medical Society	71.29
July 2	Central Willamette Medical Society, per Dr. W. A. Trimble, Albany, Ore.	25.00
July 9	American Medical Association fund	2,000.00
July 16	Kings County (N. Y.) physicians (through Red Cross)	600.00
	New York Medical Society (Dr. C. H. Richardson, Treasurer)	1,000.00
July 23	Dr. H. O. Blake, care Darien Gold Mining Co., Panama, per Frank S. Betz, Hammond, Ind.	15.00
July 24	Santa Clara County Medical Society, per Dr. Wislocki	20.00
July 27	Yellowstone Valley Med. Soc., Billings, Mont.	24.00
Aug. 1	Dr. F. M. Pottenger, Los Angeles, Cal.	5.00
Aug. 13	Dr. L. Lebus, Ross Valley Cal.	10.00
Aug. 21	St. Louis Medical Society	36.00
Sept. 4	American Medical Association	3,000.00
Sept. 12	Dr. Henry Hertel	5.00
		$44,324.12

* Through the Finance Committee.

STATEMENT.

RECEIPTS.

Donations		$44,324.12
Sale of instruments		122.55
Sale of books		201.48
Sale of desks and chairs		323.01
Other sales		16.50
Dr. P. M. Jones, secretary State Medical Society, payment of note	$581.35	
Dr. P. M. Jones, payment on note	618.65	1,200.00
		$46,187.66

DISBURSEMENTS.

Money distributed to physicians (321) on notes, $2,856	$23,512.80
Purchase of instruments distributed to physicians	613.06
Purchase of books distributed to physicians	203.00
Dr. P. M. Jones, secretary State Medical Society, on note, for purchase of furniture	1,200.00
Freight and cartage	127.99
Advertising notices in newspapers	25.00
Printing: Physicians' directory, application blanks, etc.	31.00
Sundry expenses: Stationery, etc.	42.40
Salaries	795.00
Purchase of office desks and chairs for distribution	618.65
	$27,168.90

Receipts	$46,187.66
Disbursements	27,168.90
Balance on hand	$19,018.76

DR. W. I. TERRY, President. DR. EMMET RIXFORD, Treas.
DR. GEORGE W. MERRITT. DR. JULIUS ROSENSTIRN.
DR. LUCY M. F. WANZER. DR. HERBERT MOFFITT.
DR. THOS. W. HUNTINGTON. DR. JOHN GALLWEY.
DR. M. O. AUSTIN. DR. GEORGE H. EVANS.
DR. PHILIP KING BROWN. DR. JAS. WARD.
DR. F. K. AINSWORTH. DR. FRED W. LUX, Secretary.

CANADA.

University News.—Two students of Toronto University, since the opening of the 1906-1907 term, have been killed at football.——For engaging in the annual "rustle" 35 medical students of Toronto University have been fined $5.——The Undergraduates' Society of McGill University and the McGill Medical Society will amalgamate.

Prevalent Diseases.—There are 231 or more cases of typhoid fever reported in Fort William, Port Arthur, The Sault, Copper Cliff, Rainy River and Parry Sound. There were 25 deaths from the disease in September.——To prevent the spread of disease among the school children of Montreal the local board of health has issued printed instructions to each school teacher, to aid them in coöperating with the medical inspectors.——It is not the intention of the government of Canada to remove the 7 or so cases of leprosy at D'Arcy Island, B. C.

Cereals in Potted Meats.—The inland revenue department has published an analysis of potted meats and bologna sausage. In 23 samples purchased in the open market in the province of Quebec and 23 in the maritime provinces, there were found corn starch and meal from cereals. In the province of Ontario 37 samples had been so manipulated, the majority of these being of Chicago manufacture, but some were from Toronto, Montreal and Vancouver. In the opinion of the chief analyst the terms "potted" and "deviled" do not justify the addition of flour or cornmeal. Of 32 samples of bologna and other sausage 11 contained dyes and 5 preservatives.

Hospital News.—During September 282 patients were admitted into the wards of the Montreal General Hospital and 285 were discharged. There were 21 deaths, 9 of these occur-

ring within three days of admission. The outdoor consultations numbered 3,730.——St. Michael's Hospital, Toronto, will build large additions. When completed the hospital will have 300 beds.——The graduating exercises of the Training School of Grace Hospital, Toronto, took place last week. One hundred and ten nurses have been graduated from this institution up to the present time. The hospital treats annually about 1,355 patients.——St. Michael's Hospital, Grace Hospital and the Western Hospital will shortly ask the city for a grant of $50,000 each.——The Canadian Northern Railway is taking steps toward the establishment of a series of hospitals thoroughly equipped with every modern requirement at the divisional points of the system, presumably at Port Arthur, Rainy River and Winnipeg.

FOREIGN.

Ophthalmologic and Gynecologic Missions.—The French minister of the interior has appointed Darier, the well-known ophthalmologist of Paris, to go to Germany and study the arrangements for the hygiene of the eyes in the schools and instruction in ophthalmology. He has also sent Platon of Marseilles to study the arrangements for teaching gynecology.

The Semmelweis Memorial.—At Budapest, in Hungary, on September 30 a tablet was placed to mark the house where Semmelweis was born and a statue of him was unveiled in a public square. The ceremonies included a series of addresses in the university hall in which he was extolled as one of the greatest pioneers in the whole history of medicine and one of the greatest martyrs to his convictions. He died at last, it is said, of a broken heart, because his views met such constant opposition and ridicule.

Black List of Medical Grafters.—The German medical press has commenced the compilation of a black list of those medical authors who write articles on the products of the manufacturing chemists and others for pay, and those who publish articles in various journals, alike or similar in form. An article by an author on the black list will not be accepted by the representative medical journals, and such an article encountered elsewhere will not be abstracted in reviewing. A similar list would be of value in other countries.

MSS. of Physicians from the Earliest History of Medicine.—The Berlin Academy of Sciences has been examining the rich material of ancient medical MSS. in its library, and has just published the first volume of a descriptive catalogue, devoted to works dealing with Hippocrates and Galen. The work has been in charge of Professors H. Diels and G. Schöne. After the complete catalogue is issued it is proposed to publish all the MSS. in full. Professor Heiberg of Copenhagen is to help in this task, especially with the Egyptian papyri.

To Differentiate Harmless from Serious Albuminuria.—Hingston Fox of London sent a communication to the recent Congress of Insurance Examiners stating that it is possible to distinguish between the harmless, transient form of albuminuria and the albuminuria due to an actual kidney affection. The harmless kind is the result merely of a deficient coagulating power of the blood. By administration of calcium lactate the blood is rendered less fluid, and the albumin vanishes from the urine in the harmless, hematogenic form of albuminuria, while it persists unaffected in the renal variety.

Postgraduate Course on Medical Aspect of Accident Insurance.—A free postgraduate course is being held this month at Berlin which deals with accident insurance as it affects the physician, the treatment of the results of accidents by the neurologist, by the surgeon, etc., the special features of official and private accident insurance, and insurance of the physician against accidents. The attendants at the lectures, in groups of six, were given practical instruction in examining victims of accidents, in making out certificates of injury from accidents and in estimating the amount of damage to the earning capacity, etc.

Pension for Tuberculous Government Employé.—An employé of the French government postal and telegraph service was stationed at Bastia. He was in robust health when he arrived there, but he died a year or so ago from tuberculosis. His widow applied for a pension on the ground that the office in which her husband had to work was insanitary, and that he was compelled to work with a person known to be a consumptive, and that the two employés who had preceded him had likewise died of tuberculosis. She demanded the pension accorded to widows of government employés dying from accidents resulting from the exercise of their professional duties. Appeal to the highest authorities gained her the pension and has started a widespread movement for the sanification of the post and telegraph offices.

Damage Suits Terminating in Favor of the Surgeons.—Professor Berger of Paris was recently sued by a couple whose child he had been operating on. He had undertaken a series of plastic operations to restore the face of the child, but for certain medical reasons was obliged to abandon the attempt. The parents sued him for not having completed the task, but the court dismissed the case. Dr. Aubeau of the same place was also recently sued by a woman for $10,000 damages on account of an indispensable gynecologic operation which he had successfully performed. She claimed that the operation had been too complete. He entered a counter suit, claiming 1 franc damages for her abusive pursuit. The woman's case was dismissed and the physician was awarded the damages he asked. An editorial in the *Gaz. Méd. Belge* says that times are becoming brighter; ten years ago the courts would in all probability have decided differently.

First International Conference on Cancer.—The opening of the Institute for Cancer Research at Heidelberg, September 25, was celebrated by an international gathering of cancerologists—a notable assembly. The institute is the first separate and endowed hospital and laboratory for the study and treatment of cancer yet erected in Germany, and von Czerny expects to devote his entire time to it. The transactions of the conference are to be published in full in a supplementary number of the *Zeitschrift f. Krebsforschung*. The opening address was by von Leyden, who reviewed the history of cancer and its treatment, and declared that he had always been an advocate of the parasitic origin of cancer. It is becoming generally accepted now, however, he added, that the cell itself is the parasite. It assumes the properties of a parasite, and thus are harmonized the conflicting views in regard to the cellular and the parasitic origin of cancer. Experiments in his laboratory have demonstrated that the chemical characteristics of the cancer cell differ materially from those of the normal cell. The cancer cell generates an enzyme of toxic action which spreads around and causes proteolytic processes that reduce the resisting power of the environing cells before the encroachments of the cancer cells. In referring to the conference none of our exchanges mention any communications as specially epoch-making.

The Traumatic Epidemic in Russia.—Under this heading the *Russische med. Rundschau*, iv, No. 8, 1906, quotes Schbankoff of St. Petersburg to the effect that conditions in Russia at present are more radical and more horrible than during the French Revolution, although just at present the disease process has assumed a more latent form. The traumatic epidemic, an epidemic of murder and deeds of violence of all kinds and in their most bestial forms is pathologic and deserves the greatest interest of physicians. The appearance of a new class of men is described, "the so-called Hooligans," all from the cities, who serve indiscriminately the government or the revolution, wherever there is murdering and robbing going on. All the old ideals and principles are crashing around one's ears, and life seems not worth the living, there is nothing left to live for, and people turn and rend each other or commit suicide. The traumatic epidemic has spread to the peasants in some regions and fathers shoot down their families, feeble old women strangle others still more feeble, all are too excited to work, and no one is sure of the morrow. The article concludes with the statement that the further spread of the epidemic seems to have been checked for the moment and that possibly the contagium may be destroyed by the vigorous antiseptic measures now being used or that Russia may develop in its own body an effectual antitoxin. The Journal wishes to inquire whether conditions in Russia are not too serious to be treated in this facetious and flippant manner.

The Ruined Doctor.—Under this title the *British Medical Journal*, Sept. 29, 1906, comments on letters from medical practitioners appearing in newspapers complaining of the insufficient remuneration which rewards the labors of the medical profession. This state of affairs is attributed to various causes, some finding it in the competition of hospitals, others in that of the consultant or prescribing chemist. One writer believes the falling off in medical incomes is due to the influence of hygienic measures in diminishing the prevalence of zymotic diseases. The *British Medical Journal* is of the opinion that British physicians are at present passing through bad times, their incomes during the last three years having fallen off 25 per cent. The chief causes of this are said to be, first, the gradual dying down of the epidemic of influenza of 1900 and the mild winters; second, the depression of trade resulting partly from the frightful cost of the Boer war. It is thought to be extremely probable that with the revival of trade and the freer circulation of money medical practice will regain its normal level of prosperity. Furthermore, infectious

diseases come and go in tidal waves, and there does not seem to be need for any immediate fear that the profession will suffer from permanent want of employment, especially in view of the fact that man is still far from having attained to mastery over the microbe, and is as unwilling or unable as ever to control those passions and appetites which engender in him a perennial crop of ailments, all of which contribute to the support and maintenance of the medical profession.

The German Naturforscher Congress.—The seventy-eighth annual assembly of the Association of German Physicians and Scientists (*Naturforscher*), was held at Stuttgart, September 16 to 22. It is similar in scope to the associations for the advancement of science in other countries, but it has always been distinguished by the large numbers of men who are actual leaders who are willing to leave their work and mingle with the younger set, to give the youngsters and the rank and file of the medical profession, in particular, the benefits of their ripe experience and to promote interest in science by illuminating subjects from all sides. One of the medical subjects relating to accident insurance, for instance, was treated in turn by a psychiatrist, a neurologist, a gynecologist, and a surgeon. The principal medical themes discussed in the joint meetings of the medical and surgical sections were "Operative Treatment of Brain and Spinal Cord Affections;" "Position of Human Stomach;" "Achievements of Modern Research on Syphilis," and "Epidemic Cerebrospinal Meningitis," all presented by from 4 to 6 speakers, each from a different standpoint. In one of the two general sessions Garré described the present status of transplantation in surgery, reporting much original and pioneer work; Spemann did the same for embryonal transplantation, and Korschelt for transplantation and regeneration in the animal kingdom in general. A number of national societies, such as that for pediatrics, for history of medicine, for pathology, for legal medicine, for neurology and for urology, hold their annual meetings in connection with the "Naturforscher" congress. The king of Württemburg presided at the opening of the congress and threw open the doors of the opera house for a gala performance of the "Barber of Seville." Many of the members took advantage of the excursions to Tübingen to become better acquainted with this rather out-of-the-way nest of able and vigorous scientific workers. An editorial in the *Deutsche med. Wochschr.* remarks that the Naturforscher congress, or something of the kind, to keep the various specialties from drifting too far apart and too far from the fundamentals of all specialties, would have to be invented if it did not already exist. It affords a gathering place for those men whose interest is not exhausted by the study of separate single questions, but who strive to keep in touch with science at large. The congress next year will convene at Dresden, with Naunyn in the chair, during the last half of September.

Second International Congress on School Hygiene.—THE JOURNAL gave a brief description of the important First International Congress on School Hygiene, which proved very successful and far-reaching in its effects. The second international gathering of the kind is to be held in London, Aug. 5 to 10, 1907, and the official preliminary announcemnt has just been received through diplomatic channels. The success of the congress is already ensured by the prominence and enthusiasm of those promoting it, and by the patronage of the king; Sir Lauder Brunton is president, and the 53 men on the permanent international committee are leaders in medicine, hygiene or pedagogy the world around. There are four Americans on the list, President N. M. Butler of Columbia University, President G. Stanley Hall of Clark University, Prof. W. T. Porter, M.D., of Harvard, and Professor Bergstrom of Indiana University. The recent death of Herman Cohn removes from the list one of the most zealous workers for hygiene in the schools. The preliminary announcement says in regard to the first congress:

> One of the happiest results of the Nuremberg Congress was that teachers, medical men, architects, engineers, administrators, officials and manufacturers appreciated how intimately their work and duties were correlated, and also learned how greatly each was indebted to the other and the interests of all served by promoting the congress. One of the aims of the congress was to coördinate the efforts of these various workers and to aid each separate investigator to enjoy results and experiences collected from wide areas and great populations under the most diversified conditions of race, town, country, climate and social condition.

The officers of the congress appeal for active coöperation in the preparations for the congress, emphasizing the vast importance of hygiene of body and mind in the schools as one of the most potent factors in the vigor, happiness and prosperity of a nation. They state:

> The first step to be taken is the formation of a local committee for each particular town or district, which committee should approach the authorities of the education department and the treasury, the leaders of educational movements in town or country, the presidents or chairmen of educational committees, teachers of experience, philanthropists who are interested in educational movements, and medical men who have experience in treating children, engineers and architects, and any other citizens whose assistance would be desirable.
>
> This committee, when formed, should report forthwith to the London bureau the name and address of the chairman and secretaries. These local committees will be coördinated from London under national committees. Their aim should be to do all in their power to promote the success of the congress by diffusing information, by letters, circulars or announcements in special and technical journals, and by press notices. They should also endeavor to obtain the coöperation and support of governments, municipal or educational authorities, and committees of institutes and societies, and induce them to participate by delegating representatives to the congress or by sending representative exhibits of local interest or manufacture, or scientific appliances or inventions to the school of hygiene exhibition which is to be arranged.

Contributions are invited from the representatives of governments or societies, or from individuals. Suggestions are requested at once for the general discussions. The subjects will be announced early, so that there will be time for collective investigation and observation. The first program, with a list of the various national committees, the subjects of reference for general discussion, and details as to the arrangements of the congress, will be issued early in 1907. The subscription for membership is $5 for America. All communications relating to the school hygiene exhibition, which will be arranged in conjunction with the Royal Sanitary Institute, should be directed to the secretary of that institute, Margaret Street, London, W. Other correspondence should be addressed to Dr. James Kerr, general secretary, Parkes Museum, London, W., England.

Fourth International Congress of Insurance Examiners.—This congress convened at Berlin, September 11-15, with a large attendance. The questions that aroused most interest were tuberculosis, accidents and internal affections, syphilis and alcohol, in their relations to life insurance. The alcohol problem was finally dismissed with the adoption of a resolution that no discrimination should be made between drinkers and abstainers, but that persons employed in positions which expose them particularly to danger of intemperance, such as waiters, barkeepers, persons employed in hotels, and the like, must pay an extra premium. The necessity was pointed out for paying special attention to the heart functioning and the blood pressure in passing on an obese applicant. It was proposed to collect statistics in regard to the obese insured, noting their manner of life, their diet and consumption of alcohol. The presiding officer, Florschütz of Gotha, presented statistics from the great Gotha life insurance company which showed the ultimate fate of 1,428 healthy persons insured in the society, in comparison with 1,428 persons who were healthy when first insured but who had had a parent or brother or sister die recently from tuberculosis. The chest measure of the persons in the latter group was considerably less than that in the first group, with a still greater difference in regard to their waist measure and their weight. It was also noticed that those in the second group did not seem to grow stronger with increasing age, like those in the other group. In the second group 36 per cent. had a tuberculous family history; in the first group, 17.7 per cent. The lessons learned from these figures have been heeded by the company to such good effect that the mortality from tuberculosis among their insured has dropped from 107 per cent. in 1867-1880 to 86 per cent. in 1881-1895. The mortality in the two groups of 1,428 each was 12 per cent. of the total mortality in the first group, and 24 per cent. among those in the second group. Poels of Brussels stated that he had kept track of all the candidates rejected by a Belgian insurance company on account of suspicion of tuberculosis, and had noticed that the mortality had been exceptionally high among them, confirming the judgment of the examiners. Martius remarked that the examiner must individualize each case, whether he thinks that the old diagnostic measures are sufficient or supplements them by Freund's sign of premature rigidity of the superior aperture of the thorax, Rothschild's sign of the early ossification of the sternal angle, Stiller's floating rib, or draws modern serology to his aid. The family tendency to tuberculosis must be considered as higher the greater the number of relatives affected. Also if the applicant is the only child or one of two, if the other children have succumbed young to infectious diseases. In regard to the influencing of an internal affection by an accident, Feilchenfeld of Berlin urged the examiner always to ask himself these seven questions: 1. Did the accident cause the internal affection? 2. Did the internal affection cause the accident? 3. Has the accident roused

up a latent internal affeetion? 4. Has the aceident aggravated the internal affeetion? 5. Has the internal affection aggravated the effeets of the aceident? 6. Has the aecident had any influence at all on the internal affection? 7. Is it possible to deeide the actual relations between the accident and the internal affeetion? By weighing these points the examiner will be less liable to lay undue stress on either the aceident or the internal affection. In answering the questions it is well to separate all internal affeetions into four groups, the periodieally reeurring (like gallstones), the constitutional and affections of certain organs with an insidious course, especially the heart, kidneys and spinal cord. The possibility of a traumatic origin is generally eonceded in this group. The fourth group comprises the constitutional diseases sueh as syphilis or tubereulosis, with a local lesion developing at the point of the injury. The next group ineludes the ehronie internal affeections which—aggravated by the aecident—first make themselves manifest after it, sueh as the functional neuroses, apoplectie phenomena or hemorrhage from the lungs. Three points must also be borne in mind: to determine the accident (suddenness, and physieal as well as psychie stress); to determine whether the aëeident affeeted parts in the vieinity of the internal affeetion, and to determine the continuity of the symptoms (scientifie basis for the assumption of a time connection between. aeeident and internal affection). What he calls "indemnity hysteria" he likened to querulent mania, a disturbanee of the mind resulting from the accident with a tendency to paranoia. The most successful eure is to refuse all indemnity absolutely or to give the patient a lump sum. In regard to syphilis Tiselius stated that he had found an exeess of 75.6 to 28.5 per eent. in the mortality of syphilitics insured in 9 Seandinavian and 17 English insuranee eompanies. On his reeommendation all the Swedish eompanies arbitrarily added five years to the age of all syphilitic eandidates. Some speakers stated that the importanee of syphilis had been underestimated hitherto, but others insisted that the kernel of the whole matter lay in whether a thorough course of treatment had been taken (preferably the Fournier-Neisser methods). The congress adopted further a resolution urging effeetual vaecination laws in all countries.

The *Deutsche med. Woehenschrift* for September 27 eontains a full report of the congress. The next one will meet at Vienna in 1909.

LONDON LETTER.

(From Our Regular Correspondent.)

London, Sept. 15, 1906.

Prosecution for Cruelty to a Child in Neglecting Medical Advice.

Cases in which parents have been indicted for manslaughter, beeause it has been shown at an inquest that a ehild has died who might have been saved by medieal adviee which they negleeted to procure, are not uneommon. They often oeeur among the "peeuliar people," "Christian scientists" and other cranks, who believe that it is wrong to seek medical aid. But no case like the following has ever oecurred before in this country, in whieh a parent was proseeuted for failing to have an operation performed on a child. A woman was summoned by the National Society for the Prevention of Cruelty to Children for neglecting her son, a boy aged 8. He was a cripple and had been operated on four times in Guy's Hospital when he came under the notiee of the soeiety in December, 1905. In August he was examined by a physician, and an officer of the society subsequently read to the mother a eertifieate given by the physician stating that the boy was suffering from a neerosis of the left thigh bone and that an operation was necessary to save limb and possibly the child's life. The mother refused to have the operation performed and declared that she would eontinue to use a mueh advertised proprietary ointment whieh she said was making the ehild better. In eross-examination, the physician admitted that the ehild had been well eared for. The magistrate said that before the society had taken these proeeedings they should have called in a specialist, from whom a mother was entitled to know whether a fifth operation was neeessary. The magistrate dismissed the case, but refused to allow eosts to the defendant because that would be assuming that she was altogether right.

Diet Values.

In the seetions of physiology and ehemistry of the recent meeting of the British Association for the Advancement of Seience, held at York, an important joint discussion took place on the factors which determine minimal diet values. Dr. F. Gowland Hopkins, who introduced the subjeet, said that the animal, and especially the human body, is capable of astonishing degrees of adjustment in respeet to food. Therefore, so far as immediate results are eoncerned, it is not easy to observe the effeets of variations in diet values. Again, it was diffieult to estimate the quality of different human employments in respect of energy expended. Voit has determined that for the average body under average eonditions the standard for moderate work was 3,050 ealories and 118 gm. of proteid. Professor Attwater inereased these figures to 3,500 and 125, respectively, while Professor Chittenden has redueed them to 2,600 and 55. There is nothing in Chittenden's results to show that Voit's standard is too high, for the body ean largely adjust itself to eireumstances. Experiments have shown that this adjustment is of a fundamental sort. The work of the internal organs requires expenditure of more energy than has been supposed. A small diminution of food from the ordinary quantity taken by a person results in no loss of power, but produees a loss of vivacity or what the Amerieans ealled "snap." This illustrated the fact that the total caloric value expended is not all used usefully, but a good deal superfluously. Another important point is that the form of the proteid is of importance.

Death from Eating Icecream.

An inquest was held on the body of a child, a girl, aged 8. She had eaten some ieeeream wafers bought from an Italian in the street, and died on the following day. The physieian who attended her said that death was due to diarrhea from eating ieeeream, probably made under insanitary conditions. The health offieer examined the premises where the icecream was made and found in the utensil in whieh the iceeream was made eorners and angles containing fermenting and decomposing milk. He said that there had been many cases of ptomaine poisoning in the district and that many children had died after eating iceeream. The vendor was fined $4 and costs.

London, Sept. 22, 1906.

The London County Council and Street Refuse.

The London County counеil has passed some very drastic by-laws as regards street refuse, which are as follows: No person shall (1) swеep or otherwise remove from any shop, house or vehicle into any street any waste paper, shavings or other refuse, or being a eostermonger, news vendor or other street trader, throw down and leave in any street any waste paper, shavings or other refuse; (2) throw down and leave in any street for the purpose of advertising, any bill, placard or other substanee; (3) throw down and leave in any street, any bill, placard or other paper whieh shall have been torn off from any bill posting station. No person shall deposit in any street or public plaee, to the danger of any passenger, the rind of any orange, banana or other fruit, or the leaves or refuse of any vegetable. No person shall throw, plaee or leave any bottle or any broken glass, nail or other sharp substance (not being road material) on or in any street or public place in such a position as to be likely to cause injury to passengers or animals or damage to property. Any person who shall offend against any of these by-laws shall be liable for each offense to a fine not exceding $10.

Prof. Ronald Ross' Investigation of Malaria in Greece.

At a lncheon given to Professor Savas of the University of Athens, at the University Club, Liverpool, Prof. Ronald Ross dealt with the subjeet of malaria in Greece. He said that at the request of the Lake Copias Company the Liverpool school had investigated the prevalenee of malaria in Greece. He went out to that eountry in May, 1906, and found a very serious state of affairs. The population was practieally confined to the valleys, the mountains being uninhabitable. In these valleys he found a good deal of malaria. The statistics of the country showed that in a population of two and one-half millions there were 250,000 eases of malaria every year, of whieh 1,760 were fatal. Last year the number of eases inereased to 960,000 and the deaths to 5,916. Malaria is eheeking the development of rural life in Greeee and is a very serious thing for the nation. Professor Ross is of the opinion that it was malaria which checked the life of aneient Greece and that the disease was introduced, or at all events reinforeed, at the time that natives of Asia were brought into the eountry. He commended the movement initiated by Professor Savas for dealing with malaria. The latter delivered a brief address in whieh he thanked the Liverpool Sehool of Tropical Medicine for their efforts on behalf of Greece.

Race Failure and Race Suicide.

At the annual eongress of the Sanitary Inspectors' Association, Sir James Crichton Brown delivered an eloquent address dealing with this and other subjects. He pointed out that there

is a close relation between undesirable social conditions and a high birth rate. The wives in the districts of least prosperity and culture have the largest families and the morally and socially lower classes are reproducing with the greatest rapidity. Thus the birth rate in towns inhabited by the affluent varies from 15 to 20 per 1,000, while in manufacturing towns it varies from 35 to 39. At present we are confronted with a reduced fertility in the more intellectual, more cultured, more prosperous, more thrifty and more cleanly classes of the community, which can not be accounted for by the variation in the mean age of the possibly productive wives. This decline must be ascribed to physical degeneration or to the wilful and systematic prevention of child bearing, race failure or suicide.

The Gospel of Recreation.

Turning to another subject, the president remarked that over-fatigue is one of the great dangers of the day, and that the ease by which it is induced is perhaps one of the signs of degeneracy. The tough old blades, who did not know they had a liver or appendix and never went a mile from home except to earn a little money, are all but extinct, and it has become the duty of every physician from time to time to preach the gospel of recreation. The struggle to acquire property, to win applause, to earn bread is fiercer than ever. The pressure of labor has been transferred from the muscles to the nervous system, for physical energy is supplied by steam and electricity, and it is nerve energy that is needed to control machinery. The indications, he said, are that the nerve tissue that supplies energy is more easily exhausted than it used to be. An evil of the present day is forcing the pace of labor. "Rushing" is finding its way to Great Britain. According to Professor Oliver, he said, it is beginning to show its injurious effects at the northeastern ports. The riveters paid by the piece work so strenuously that at the end of a week of the usual number of working hours they are practically exhausted and are compelled to take an extended rest, and many spend Saturday afternoons in bed. Professor James of Harvard, he said, affirmed that Americans show in their countenances intensity, rapidity, vivacity and a "bottled-lightning expression," very different from the stolid cheeks, codfish eyes, and slow inanimate demeanor seen in the British Isles. Notwithstanding the codfish eyes, there is in Great Britain an increase of nervousness, and the word neuasthenia, unknown to Webster, is daily on every physician's lips. Innumerable hard workers suffer in the course of their work from nervous depression in its protean shapes—from "morning tire," as it is termed, from morbid irritability, from listlessness and inability to fix attention, from apathy and langor, from anomalous sensations and strange fancies, from headaches and prostration, from tremors and baseless apprehensions, from despondency and weariness of life. These occurring during arduous work, show that recreation is necesary. The love of Nature and an appreciation of its healing power appeared to be increasing among the working and middle classes, while they appear to be dying out among the affluent. The latter still gather in choice regions of natural beauty, but they approach them from the big hotel or bathing establishment or saline spring point of view and not from the Wordsworthian. Absorbed in bridge and golf, "the harvest of the quiet eye" no longer delights them. Rapid locomotion is the craze, which involves blindness to natural beauty, motoring being in relation to scenery what bolting is in relation to food. With all its faults, the newspaper is one of the bulwarks of society of the present epoch. It is the antidote to corroding egotism; it gives world-wide horizon to the purblind and short-sighted. It thrills the torpid nerves like a Faradic current; it plays in turn on the whole keyboard of human temperament.

LONDON, Sept. 29, 1906.

Extraordinary Case of Morphin Poisoning.

An inquest was held at Brighton on a man, aged 43, who had died from an overdose of morphin. He had lived in China, where he acquired the morphin habit, and accustomed himself to very large doses. He used to take as much as 60 grains in the day. By means of a telegram and affixing the title "doctor" to his name he obtained two gross of pills, each containing two grains of morphin. He took this enormous quantity within twenty-four hours, and two hours before death he swallowed 100 of the pills. After a period of excitement, paralysis of the respiratory center ensued and ended fatally. The symptoms were of a tetanic character and the usual comatose state did not develop.

Mischief Wrought by Antivaccinationists.

The report of the medical department of the local government board for 1904-5 contains an account of a smallpox epidemic in the union of Dewsbury. The board of guardians have set themselves up as systematic opponents of vaccination and refused to discharge their duties with regard to it. At the same time the surrounding sanitary authorities have been remiss in providing hospital accommodation for dealing with the inevitable consequences. For many years outbreaks of smallpox have occurred from time to time in Dewsbury. In 1892 there were 272 cases and 45 deaths; in 1903, 240 cases and 17 deaths; in 1904, up to September 14, there had been 260 cases, and Dr. Wheaton, who was sent down to report, found that the epidemic was fast passing beyond the control of the sanitary authorities. The town smallpox hospital was overfull and its administration was completely disorganized, while no provision could be made for the numerous cases occurring in the surrounding districts. At Dewsbury there was no efficient disinfection of the clothing of "contacts" and no provision for the reception of people from infected houses while these were being disinfected. For lack of hospital accommodation smallpox patients were being kept in their own homes while their families were maintained in quarantine at the expense of the authorities. Nurses had not been provided and convalescents were in attendance on the sick. The conditions arising when several cases of smallpox occurred in the same house were such as would hardly be thought possible in a civilized country. In one small bedroom Dr. Wheaton found three adults suffering from smallpox, and a healthy woman occupied the same bed as a woman suffering from the disease. Finding the guardians utterly impracticable, the local government board conferred the necessary powers on the Dewsbury town council, by whose prompt action as a vaccination authority the plague was shortly stayed. But in the year ending March 25, 1905, 1,600 cases of smallpox occurred in the sanitary districts comprised within the unvaccinated Dewsbury union. These cost the authorities $100,000.

The Sanitary Condition of India.

The annual report of the sanitary commissioners of the government of India for 1904 shows that the chief causes of death of the European army in India were as usual, typhoid fever and abscess of the liver, the former accounting for 34 and the latter for 12 per cent. of the deaths. The returns made with regard to malaria are much more minute than formerly. The different forms of the disease have been classified and an account given of the occurrence of the anopheles at the respective stations, the measures directed against them, and the prevalence of malaria among the natives as judged by the examination of the blood of children under the age of 10. One result of this more complete investigation is to show that the benign form of malaria greatly preponderates over the malignant varieties. No less than 89 per cent. of cases belong to the former class. It has also been found that a large proportion of the admissions were not new infections, but readmissions, pointing to the necessity of a liberal use of quinin both for treatment and prophylaxis. With regard to typhoid fever it has been found that there are limitations to the rôle played by the drinking of water in its dissemination and that there are other modes of infection, notably infection by contact, in which the method of transmission may be by the infective material being taken up on the fingers either from the soiled body of the patient or from the bed clothes or utensils used by him. Infected milk and raw vegetables also play their part, while flies are evident agents of propagation. Favorable conclusions of Major Leishman as to the efficacy of antityphoid inoculations are narrated.

Return Cases of Scarlet Fever and Diphtheria.

The Metropolitan Asylums Board has recently issued a report by Dr. F. M. Turner on all the return cases of scarlet fever and diphtheria reported during the years 1902, 1903 and 1904. The total number of patients sent home from the hospitals after attacks of primary scarlet fever was 35,516, and the percentage of outbreaks following the discharges was 3.27. Dr. Turner thinks that not more than one in ten of the alleged return cases can be regarded as coincidental, the remainder being due to the arrival of the patient from hospital. He confirms the view that there is little, if any, connection between post-scarlatinal desquamation and infectivity. As to nasal discharge, he finds that the cases in which this is present show an infectivity rate of 2 per cent., against 1.5 for the whole series.

Pharmacology

Tyree's Antiseptic Powder.

REPORT OF THE COUNCIL ON PHARMACY AND CHEMISTRY,

Tyree's antiseptic powder was assigned for examination to a subcommittee of the Council, which made the following report:

To the Council on Pharmacy and Chemistry: Your subcommittee, to whom was assigned Tyree's Pulv. Antiseptic Comp., marketed by J. S. Tyree, Washington, D. C., reports as follows:

The label on the package states: "This preparation is a scientific combination of borate of sodium, alumen, carbolic acid, glycerin and the crystallized principles of thyme, eucalyptus, gaultheria and mentha, in the form of a powder," etc.

The statement that the powder contains the crystalline principles of thyme, eucalyptus, gaultheria and mentha is vague and misleading, since the chief medical constituents of eucalyptus and gaultheria are liquids, but it tends to convey the impression that the powder contains the essential constituents of these drugs, namely, thymol, oil of eucalyptus or eucalyptol, oil of wintergreen, or methyl salicylate, and menthol.

The literature supplied to physicians *claims* its composition to be: "Parts, sod. bor., 50; alumen, 50; ac. carbol., 5; glycerin, 5; the cryst. principles of thyme, 5; eucalyptus, 5; gaultheria, 5, and mentha, 5."

The composition, therefore, might be expressed as follows:

Sodium borate (borax)	50 parts, or	38.46 per cent.
Alum	50 parts, or	38.46 per cent.
Phenol (carbolic acid)	5 parts, or	3.85 per cent.
Glycerin	5 parts, or	3.85 per cent.
Thymol	5 parts, or	3.85 per cent.
Oil of eucalyptus or eucalyptol	5 parts, or	3.85 per cent.
Oil of gaultheria (or methyl salicylate)	5 parts, or	3.85 per cent.
Menthol	5 parts, or	3.85 per cent.

Analysis of specimens purchased from different sources in the open market were made under our direction. The reports of the chemists show that Tyree's antiseptic powder contains no borax, or mere traces only, and that it contains no alum, or mere traces only. Instead, the analyses show that boric acid and zinc sulphate are the essential constituents. The amounts of carbolic acid, thymol, menthol, etc., contained in the powder, if present, were far below the quantities indicated by the formula. The presence of glycerin could not be demonstrated, and if present the amount must be very small.

One chemist reports:

The result of analysis shows that different samples differ slightly in composition, but that the following indicates the average composition of the product.

	Per cent.
Zinc sulphate, anhydrous	15.56
Boric acid	81.26
Volatile matter at 100° C. for four hours	0.45

The undetermined portion consists of salicylic acid, carbolic acid, menthol and eucalyptol; possibly other antiseptic agents may be present in very minute quantities.

From the above findings we conclude that Tyree's antiseptic powder is a mixture of boric acid and dried zinc sulphate and antiseptic bodies, such as menthol, salicylic acid and carbolic acid, eucalyptol, etc. From this it can be readily seen that the label which is supposed to set forth the composition of Tyree's antiseptic powder is not in accord with the facts. The powder does not contain either borate of sodium or alum, and the presence of glycerin could not be established. The antiseptic agents, exclusive of the boric acid, are present only in small amounts.

The report of another analyst concludes as follows:

It evidently contains less than the amount stated of the principles of thyme, eucalyptus, wintergreen and mint. It also contains a very small amount indeed of carbolic acid, much less than that stated. We have been unable to identify certainly the presence of glycerin, and it is doubtful if it be present.

From the result of the analysis we feel confident that the preparation is to all intents and purposes a mixture of boric acid and sulphate of zinc.

The carbolic acid, thyme, eucalyptus, wintergreen, etc., if present, are present only in sufficient amount to give the compound a satisfactory odor.

In view of the fact that J. S. Tyree has given wide publicity to a formula which the preceding report has shown to be a deliberate misrepresentation of facts, it is recommended that the article be refused recognition by the Council on Pharmacy and Chemistry, and that this report be published in The Journal of the American Medical Association.

The recommendation of the subcommittee was adopted by the Council in accordance with which the report is published.

W. A. Puckner, Secretary.

The following correspondence is reproduced as it bears on the above:

Washington, D.C., Oct. 4, 1906.

Dr. G. H. Simmons, Chicago.

Dear Doctor:—Dr. L. T. Kebler, chemist to the drug department of the Agricultural Bureau, at Washington, D. C., requested me over the telephone this morning, to repeat in part to you a conversation which passed between the doctor and myself a few weeks ago. I know of no reason why I should comply with this request except as a courtesy to the doctor, for certainly I am under neither moral or financial obligations to you or The Journal of the American Medical Association.

As I remember the conversation, I stated to the doctor that it was and had been my intention on or about the first of February to state my reasons to the medical profession for changing the formula of Tyree's antiseptic powder from an alum and borax base to a boracic and zinc base. This was done a short time ago at the suggestion of several prominent gentlemen who were connected with hospital clinics on venereal, nose and throat and other similar conditions, that the powder might cover a broader and more useful field, and again, we found that the concentrated form of alum used in the manufacture of Tyree's antiseptic powder was unsuitable for all cases. I further stated to the doctor that I had in contemplation the omission from the label of the various conditions to which this preparation was applicable, for the reason that one purchasing it for a gargle and spray would not care to see the other objectional diseases mentioned.

The proportional formula of this preparation has never been kept a secret from the respectable members of the medical profession, but it has been refused from time to time to be divulged literally to unscrupulous members of the profession, as well as to business representatives of medical and drug publications. The primary difference in connection with the formula to Dr. Kebler was that I stated on my label that the preparation represented in one hundred parts, one hundred and thirty parts, but after explaining to the doctor that after dehydrating the borax and alum and the loss in trituration and boxing, that in reality we obtained less than one hundred parts. The doctor further raised a point concerning the mention of glycerin on the label. This was explained that the glycerin was added to the carbolic acid instead of water that it might be held in a more permanent and satisfactory solution.

I believe these were the major points that the doctor dwelt upon, which, after my explanation covering his enquiries, seemed to be entirely satisfactory. Truly yours, J. S. Tyree.

Chicago, Oct. 9, 1906.

Mr. J. S. Tyree, Washington, D. C.

Dear Sir:—Your letter of the 4th instant has been received. In this you state that Dr. Kebler of the Drug Laboratory requested you over the telephone to repeat a conversation which passed between you and him some weeks ago. You then say: "I know of no reason why I should comply with this request, except as a courtesy to the doctor, for certainly I am under neither moral or financial obligations to you or The Journal of the American Medical Association."

Under these circumstances I do not understand why you have written to me. However, while you are under neither moral nor financial obligations to me or to The Journal, I do believe that you are under obligations to physicians to tell them the truth regarding a preparation you are asking them to prescribe.

According to your letter, you have radically changed the ingredients of your powder, and it seems to me that it would have been only fair and just to let physicians who are using this powder know of the change you had made. In the circular which you send with your letter, the old formula still appears.

Very truly yours, G. H. Simmons,

The foregoing letter shows that Mr. Tyree assumes the right to sell to physicians a preparation with a descriptive formula which he acknowledges is false, and that he presumes to use his own pleasure as to the time when he will inform them of its true composition.

Mr. Tyree does not state when he changed the formula. We do not know whether it was a year ago, five years ago or ten years ago, but we do know that the package which was used in making the first analysis was purchased as early as last February, and the first chemist's report was submitted to the Council March 5, 1906. On April 4 Mr. Tyree was notified by the Council that the composition of "Tyree's Antiseptic Powder" did not correspond with the formula published by him.

Whether or not Mr. Tyree is justified in offering our profession a preparation as composed chiefly of borax and alum when in reality it is chiefly composed of boric acid and zinc sulphate, we leave physicians to judge.

Individual Diet.—While the classification of foods according to their chemical composition is of great value, the clinician knows full well that it requires an art to apply these facts in practice; in other words, articles of diet must be individualized, just as drugs are.—*Medical Times.*

Miscellany

Beriberi and Uncinaria.—At the séance of the Acad. des Sciences, Paris, June 5, 1906 (*Progrès. Méd.* 3d. Series, Vol. xxii, June 16), M. F. Noc reported some facts concerning beriberi, observed in the native hospital at Choquin, near Saigon, French Cochin China. In 77 cases of beriberi in Chinese and Annamites, he found in 74 examinations great number of the eggs of *Uncinaria americana* (Stiles) in the dejections, and he also found them in 17 out of 82 Annamites, themselves unaffected but living among those who were. On the other hand, he failed to discover it in the dejections of 31 Europeans suffering with various bowel disorders, diarrhea, dysentery, etc. He remarked that some of the symptoms described by Stiles as occurring in American uncinariasis, such as edema of the face and limbs, dropsy, nervous troubles, are also present in beriberi. In the autopsies of those succumbing to the disease he always found the lesions of gastroduodenitis, and whenever a hemorrhagic puncture was observed in the neighborhood of the pylorus, a careful search showed the uncinaria. The thymol treatment, moreover, by expelling the parasite, ameliorated the symptoms of beriberi with surprising rapidity. From all these facts he has been led to think that this hookworm plays a notable part in the etiology of beriberi.

Lumbar Puncture in Diagnosis.—L. Merzbacher, *Rivista di Patologia nervosa e mentale*, xi, May, 1906, finds from his study of the subject that the diagnostic points of value in lumbar puncture in organic diseases of the nervous centers are practically as follows: In every case of paresis there is a marked lymphocytosis, and in the majority of cases a significant increase of albumin. In tabes there is usually a marked lymphocytosis without any concomitant increase of albumin. Syphilitic infection of the organism causes in most cases (80 per cent., according to his observation) a notable increase of lymphocytes, but not of albumin. Inflammatory meningitis is accompanied by lymphocytosis, but not so the chronic hyperplastic meningitis. Psychoses lacking syphilitic antecedents are not accompanied by lymphocytosis, and in the present state of our knowledge, lymphocytosis can be considered as the most constant and early symptom of paresis and tabes. In the case of paresis the increase of albumin is also significant.

The Spirochaeta Pallida and Paresis.—G. Catola (*Riv. di Patologia Nervosa e Mentale* XI, fasc. 5, May, 1906), has examined the tissues of five paretics for Schaudinn's spirochaeta, using the method of Levaditi and that of Cajal with fixation in ammoniacal alcohol. He examined all the thoracic and abdominal viscera, the muscles, the lymphatic glands, the brain cortex and the cerebrospinal meninges, especially those parts showing opacity or thickening, and making hundreds of sections, but all with negative result. The blood and cerebrospinal fluid were not examined during life. His results, taken with those of Marinesco and Minea, reported to the Neurological Society of Paris, April 6, in which they had only negative results from the examination in tabes and paresis, lead him to conclude that progressive paresis is not due directly to the organism and is not, therefore, to be considered as a syndrome recognizing also the value of inoculation experiments.

Gastric Tumors in Furnituremakers.—If a cabinetmaker gets the habit of drinking the polishing fluid, as sometimes happens, the shellac is liable to accumulate in his stomach. Two concrements, each as large as a fist, were recently removed from the stomach of a cabinetmaker at Bonn, and Bier remarked on the case (*Med. Klinik*) that an exceptionally movable tumor in the stomach of any one practicing this trade should always suggest the possibility of an accumulation of shellac.

Improved Technic of Radioscopic Examination of the Esophagus.—Instead of having the patient ingest a suspension of bismuth in milk or water, Holzknecht, of Vienna (*Wien. klin. Wochsh.*), mixes the bismuth with some sticky, tenacious porridge, which is hard to swallow and sticks along the sides of the esophagus. The shadow cast by the bismuth is much more instructive than when it is taken in a more fluid suspension

Book Notices

TAHITI, THE ISLAND PARADISE. By Nicholas Senn, M.D., Ph.D., LL.D., C.M., Professor of Surgery in the University of Chicago, etc. Cloth. Fifty Illustrations. Price, $1.50. Chicago: W. B. Conkey Company, 1906.

Dr. Senn in recent years has become a traveler and a writer on travels. He has journeyed practically over the whole world, seldom going over the beaten paths, but selecting for his excursions the unknown or little known parts of the earth. In traveling he has seen things, kept his eyes open, and has written interestingly of what he has seen. His description of his travels, as our readers know—for several series of his articles have appeared in THE JOURNAL—are not only interesting but also instructive. Usually his writings have been from the viewpoint of the physician and for the edification of physicians, but occasionally he writes from the standpoint of a layman for laymen. The book before us is written for the public, although the medical aspect of the subject is not neglected.

"Tahiti, the Island Paradise," is not a book of travels, but a description of what the author calls the gem of the southern Pacific, and a history of its people. It is one of the Society Islands, an archipelago in the southern Pacific Ocean, about 3,600 miles south by southwest from San Francisco. It is not pretentious as to size, since it is only about 35 miles in length by, on an average, 12 miles in width. But what it lacks in size it makes up in a thousand and one attractive features. Not the least of these is that no one is compelled to work; it is the only place in the world, according to Dr. Senn, where the inhabitants are not obliged to labor for their daily bread. Certainly Nature has been very generous in providing for the wants of the Tahitans. The climate is delightful all the year round, and the island has a never-fading verdure and a vigorous vegetation. The bread fruit tree furnishes the principal part of the food for the indolent among the inhabitants. Manioc is another of Nature's gifts that may take the place of bread, and the cocoanut furnishes a good substitute for meat.

Until visited by Europeans Tahiti must have been a Garden of Eden, but so-called civilization has played havoc with its people. In 1767, when Captain Cook first visited the island, the population is supposed to have numbered some 200,000, whereas the last census shows only about 11,000, the result, in great part at least, of the diseases introduced by Europeans.

Several chapters are devoted to the history of the people, but this history is full of romance, but at the same time of pathos and tragedy. The book is well worth reading, not only for the information it contains regarding a beautiful island seldom heard of and of a people who are living in a little world by themselves, but because the author has given us a book that from cover to cover is readable and interesting. In some of his descriptions Dr. Senn is often poetic, and always enthusiastic when speaking of the beauty and natural attractions of Tahiti. He indulges a little too freely in quotations, classical and otherwise; so much so, we fear, as to occasionally tend to detract from one's interest in reading. The book is well illustrated.

TEXT-BOOK OF MEDICAL JURISPRUDENCE AND TOXICOLOGY. By J. J. Reese, M.D., Late Professor of Medical Jurisprudence and Toxicology in the University of Pennsylvania. Seventh edition. Revised by H. Leffman, A.M., M.D., Professor of Chemistry and Toxicology in the Woman's Medical College of Pennsylvania. Cloth. Pp. 656. Price, $3.00 net. Philadelphia: P. Blakiston's Son & Co., 1906.

The seventh edition of this valuable text-book brings its subject matter well up to date, some of the more recent reports of cases in which modern exact methods of investigation were employed being given in considerable detail. Among the new matters introduced may be mentioned the application of *x*-rays to the study of the skeleton, a method that has direct bearing on the question of identification. The serum test for blood is fully described. Among new subjects introduced into toxicology are chronic poisoning by potassium chlorate, ace-

tanilid and carbon monoxid; acute poisoning by boric acid, resorcinol, wormseed and formaldehyd. The tests for poisons are given with clearness, without unnecessary detail. The subject of ptomains is given due consideration, with the result that the whole matter must be regarded as being, to a considerable extent, *sub judice*. While it is impossible in so small a book to give the detail that will be required by the expert medical jurist or toxicologist, this volume affords to the student and practitioner a reliable guide to a comprehensive view of this important subject.

Marriages

Thomas L. Ryan, M.D., to Miss Marie Barrett, at Detroit.

M. Abi Massoud, M.D., to Miss Theo Gunn, at Stillmore, Ga., September 30.

Edward L. Whitney, M.D., to Miss Anna Hart Taylor, both of Baltimore, October 3.

M. D. Campbell, M.D., Plumville, Pa., to Miss Mae Nichols of Scottdale, Pa., October 3.

Frank B. Easton, M.D., to Miss Lillian Louise Libby, both of Laconia, N. H., October 3.

Samuel Hume Watson, M.D., to Miss Jane Shreeves of Blairstown, Iowa, October 10.

Louis Hamman, M.D., to Miss Mary Brereton Sharretts, both of Baltimore, October 10.

Charles K Hudson, M.D., Gladewater, Texas, to Miss Edna Harris of Cincinnati, October 3.

Harry B. Gudgell, M.D., Hazleton, Ind., to Miss Emma Horrall of Princeton, Ind., October 4.

Patrick F. Kelleher, M.D., Cambridge, Mass., to Miss Margaret L. Linehan of Boston, recently.

George T. Fluke, M.D., Altoona, Pa., to Miss Eleanor V. Regan of Philadelphia, September 26.

Paul Thomas Swett, M.D., Hartford, Conn., to Miss Anna Cowan Poole of Baltimore, October 3.

Walter A. Carr, M.D., Junction City, Kan., to Miss Effie Elizabeth King of Topeka, Kan., October 3.

Alexander J. McCannel, M.D., Minot, N. D., to Miss Carrie M. Graham of Forest River, N. D., recently.

Clayton Elmer Bartlett, M.D., Hot Springs, Wash., to Miss Barbara Haecker of Milwaukee, October 3.

Francis A. Seymour, M.D., Los Angeles, Cal., to Mrs. Pauline Garner Curran of Santa Barbara, Cal., recently.

Benjamin Jerome Sands, M.D., Port Chester, N. Y., to Miss Josephine Clark Wilson of Greenwich, Conn., October 10.

Henry Stuart Patterson, M.D., New York City, to Miss Charlotte Wise Hopkins of Washington, D. C., October 6.

William Patton McDowell, M.D., Eufaula, Ala., to Miss Nealie Linsey Silvester, at South Norfolk, Va., October 10.

Philip Edward Johnson, M.D., New York City, to Mrs. Laura Hoadley Scarborough of New Brighton, S. I., October 2.

Roland C. Harris, M.D., Rochester, N. Y., to Clara E. Moore, M.D., of Syracuse, N. Y., at Averill Park, N. Y., October 2.

Deaths

George Atherton Spalding, M.D. College of Physicians and Surgeons in the City of New York, 1875; whose grandfather, a student at Guy's Hospital, London, was the first to bring to this country vaccine against smallpox and who came from a long line of distinguished ancestors, many of whom were in the medical profession; an alumnus of Yale University, and after his graduation in medicine for two years assistant to Dr. John C. Dalton, professor of physiology in his alma mater; an interne in St. Luke's Hospital in New York in 1875 and 1876, and later a general practitioner well known and highly esteemed; from 1879 to 1894 attending physician at the House of Refuge on Randall's Island, and from 1896 until the time of his death attending physician to St. Luke's Hospital; a member of the New York Academy of Medicine, Medical Society of the County of New York and Alumni Association of St. Luke's Hospital, died suddenly from heart disease, at his home in New York City, October 2, aged 57.

Arnold Plumer Gilmore, M.D. Jefferson Medical College, Philadelphia, 1874; formerly of Winona, Minn., but for more than 20 years a resident of Chicago, and a specialist on diseases of the eye and ear; president of the Columbus Safe Deposit Company, and one of the principal owners of the Columbus Memorial building; one of the members of the first board of trustees of the Sanitary District, died at his home in Chicago, October 10, from Bright's disease, after a long illness, aged 55.

Jerome B. Snyder, M.D. Chicago Medical College, 1864; a veteran of the Civil War; for two years a member of the city council, and for seven years president of the board of education of Polo, Ill.; United States examining surgeon for four years; a member of the Ogle County Medical Society, died at his home in Rowan, Iowa, September 29, after a long illness, from cancer of the stomach, aged 62.

Frederick Crang, M.D. College of Physicians and Surgeons, Keokuk, Iowa, 1877, who attended medical lectures in Glasgow, Scotland, and was also a licentiate of Apothecaries' Hall, London, and practiced in England for 20 years; for many years a minister of the Congregational Church, died at his home in Forest Grove, Ore., September 26, from arteriosclerosis, aged 84.

Emil Wilhelm Hoeber, M.D. New York University, New York City, 1876; a member of the Medical Society of the County of New York, and of the German Medical Society; coroner from 1894 to 1897, during the administration of Mayor Strong, and United States pension examining surgeon, died at his home in New York City, October 5, after a short illness, aged 73.

Charles Grimsley Elliott, M.D. Medical Department of Washington University, St. Louis, 1891; a pioneer physician of Oklahoma, and superintendent of the first territorial hospital for the insane, at Fort Supply, died in Blackwell, Okla., after a fall down the stairs of his office, September 30, aged 41. He had had organic heart disease for some time.

Crittenden E. Barnes, M.D. Rush Medical College, 1883; city physician of Burlington, Iowa, from 1887 to 1892; a member of the staff and of the executive board of St. Francis Hospital; house surgeon of the Chicago, Burlington & Quincy Hospital in 1883, died at his home in Burlington, September 30, after an illness of five years, aged 45.

George S. Armstrong, M.D. Toronto University Medical Faculty, 1879; a member of the American Medical Association; for many years physician of the Spokane Falls & Northern Railway, and one of the most widely known practitioners of Washington, died at his home in Corbin Park, Spokane, October 1, from nephritis, aged 48.

Minerva M. Greenway, M.D., C.M. Trinity University, Toronto, 1899, of Toronto; lecturer on diseases of women at the Woman's Medical College; secretary of the alumnæ association of that institution, died at St. Michael's Hospital, October 4, from typhoid fever, after an illness of 10 days.

Morse Stewart, M.D. Geneva (N. Y.) Medical College, 1841; one of the founders of Harper Hospital; said to have been the oldest practitioner of Detroit, Mich., where he had practiced constantly for 64 years, died suddenly at his home from cerebral hemorrhage, October 9, aged 88.

Guilford Dudley Elder, M.D. University of Michigan, Department of Medicine and Surgery, Ann Arbor, 1877; a veteran of the Civil War; a member of the McLean County (Ill.) Medical Society, died suddenly, October 1, at his home in Bloomington, from cerebral hemorrhage, aged 59.

Walcott Noble Griswold, M.D. Castleton (Vt.) Medical College, 1857; who had been suffering from malignant disease for several years, committed suicide by shooting himself through the head, in his room at the Hahnemann Hospital, San Francisco, October 4, aged 79.

John W. Dryer, M.D. Milwaukee Medical College, 1901; twice president of the alumni association of his college, and a practitioner of Milwaukee, died at his father's home in Reedsburg, Wis., from laryngeal tuberculosis, after an illness of two years, aged 40.

Marie E. Frahm, M.D. Northwestern University, Woman's Medical School, Chicago, 1899; formerly a practitioner of Mattoon, died at her home in Tuscola, Ill., September 30, from cerebral hemorrhage, after an illness of one week, aged about 30.

Guy Dudley Hoag, M.D. Bellevue Hospital Medical College, New York City, 1897; a member of the Lawrence County (Pa.) Medical Society and the Physicians' Club, died at his home in Newcastle, Pa., October 6, from tuberculosis, aged 31.

C. P. Allen, M.D. Nashville (Tenn.) Medical College, 1857, died at his home in Sharon, Tenn., September 23, aged 72.

William H. Shackford, M.D. College of Physicians and Surgeons, Baltimore, 1871, died at his home in Roanoke, Va., October 4, from concussion of the brain, due to an accident a week before, when a bale of hay fell on him, aged 49.

Thomas J. Scott, M.D. New Orleans School of Medicine, 1860; a resident of Alvin, Texas; for several years local surgeon for the Gulf, Colorado & Santa Fe Railway, was found drowned in Galveston Bay, October 1, aged 68.

Francis M. Smallwood, M.D. Kentucky School of Medicine, Louisville, 1887; of Chillicothe, Ohio; at one time health officer, died recently at his home in that city from paralysis, after an illness of two years, aged 48.

H. G. Van Sandt (Years of Practice, Illinois), a veteran of the Civil War, a trustee of the Illinois State Normal School, Charleston, died at his home in Montrose, Ill., September 21, from cerebral hemorrhage, aged 63.

Victor Haischer, M.D. College of Medicine, Syracuse (N. Y.) University, 1905; an interne in the Hospital of the Good Shepherd, Syracuse, died suddenly at that institution, September 24, from acute nephritis, aged 25.

Harvey R. Winchell, M.D. State University of Iowa, Homeopathic Medical Department, Iowa City, 1882, died at his home in Rich Hill, Mo., September 29, from heart disease, after a short illness, aged 70.

Andrew M. Jones, M.D. Jefferson Medical College, Philadelphia, 1869; formerly of Corydon, Ind., but of late a resident of Pine, Colo., died in Denver, October 1, from lung disease, after a long illness, aged 63.

Silas B. Dickerman, M.D. Hahnemann Medical College, Philadelphia, 1870; for a number of years a member of the school board, died at his home in Abington, Mass., October 1, after a prolonged illness, aged 57.

Charlotte Fitz Gerald, M.D. University of Michigan, Homeopathic Medical College, Ann Arbor, 1879, of Ann Arbor, died at the home of her sister in Plymouth, Mich., from heart disease, October 4, aged about 60.

Reuben H. Baker, M.D. Chicago Homeopathic Medical College, 1890, of Pearl City, Ill., died at St. Francis Hospital, Freeport, Ill., October 9, two days after an operation for appendicitis, aged 42.

Peter W. Allen, M.D. Medical College of Virginia, Richmond, 1869; a Confederate veteran, died at his home near Ford's Station, Va., October 7, from paralysis, after an illness of several months, aged 66.

R. Connelly Church, M.D. Medical Department of the University of Tennessee, Nashville, 1893; of Mountain City, Tenn., died October 11 from a gunshot wound, said to have been self-inflicted, aged 35.

Thomas Rockwell Crittenden, M.D. College of Physicians and Surgeons in the City of New York, 1849; the oldest practitioner of Dover, Del., died at his home in that city, September 27, aged 84.

Samuel R. Sample, M.D. Jefferson Medical College, Philadelphia, 1857; a veteran of the Civil War, died suddenly at his home in Intercourse, Pa., from heart disease, September 30, aged 72.

John Pirnat, M.D. Miami Medical College, Cincinnati, 1867; for almost 40 years a practitioner of Evansville, Ind., died at his home in that city, October 10, after an illness of one week, aged 63.

William Scott Mullins, M.D. Pulte Medical College, Cincinnati, 1876; formerly of Henderson, Ky., died in the Riverside Hospital, Paducah, Ky., October 4, from heart disease, aged 52.

Edward Bliss Foote, M.D. Penn Medical University, Philadelphia, 1860, died at his home in Larchmont, N. Y., October 5, after a long period of invalidism, from senile debility, aged 77.

Lyman Atkins, M.D. Philadelphia University of Medicine and Surgery, 1866; formerly of Kouts, Ind., died at his home in Valparaiso, Ind., September 20, from senile debility, aged 87.

Oscar B. Johnson, M.D. Medical College of Indiana, Indianapolis, 1879; an old practitioner of Hendricks County, Ind., died at his home in Lizton, Ind., August 4, aged 58.

Michael Joseph Madigan, M.D. New York University, New York City, 1874, died at his home in Staten Island, N. Y., September 7, after an illness of one year, aged 56.

George A. Williams, M.D. St. Louis Medical College, 1865, one of the oldest practitioners of southern Illinois, died at his home in Hardin, September 30, aged 65.

Thomas Y. Lewis, M.D. Kentucky School of Medicine, Louisville, 1858, died at his home in Dublin, Texas, September 30, after an illness of several weeks, aged 70.

W. J. Robinson, M.D. Eclectic Medical Institute, Cincinnati, 1867; of Eaton, Tenn., died at the home of his son, near Trenton, Tenn., August 31, aged 70.

L. E. White, M.D. American Eclectic Medical College, Cincinnati, 1896, died at his home in Muncie, Ind., September 20, from accidental cocain poisoning.

John A. Beecher (Examination Massachusetts), died at the home of his sister in Rochester, N. H., September 30, aged 57.

Robert Schmeltzer, M.D. University of Würzburg, Germany, 1879, died at his home in Brooklyn, October 11, aged 55.

J. G. Greene, M.D. Atlanta (Ga.) Medical College, 1884, died at his home in Cartersville, Ga., October 2.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish name or address will be faithfully observed.

ANOTHER AUTOMOBILE NUMBER?

WEBSTER, N. Y., Oct. 8, 1906.

To the Editor:—I wish you would publish another "Automobile Number" of THE JOURNAL. It seems to me that it would be appreciated by a very large majority of the members and subscribers. If it could come some time during December or January, it could give us the experience of another season, and be in time to give its pointers to aid in selecting our machines for next season.

WM. STANTON, M.D.

[The "Automobile Number" was highly appreciated by many of our readers, judging from the commendatory letters received, but whether or not it is worth while to devote a number to the subject this winter we are not able to decide. We shall be glad to receive postal card advice from those interested.—EDITOR.]

LIABILITY OF CORPORATIONS FOR MEDICAL SERVICES TO EMPLOYES.

NEW CASTLE, PA., Oct. 8, 1906.

To the Editor:—Several times I have been called on to attend accident or emergency cases of employés by officials or other employés of the company. After attending one case, I presented my bill and was refused payment because I was not the "company physician." Would I be justified in declining to accept further requests for attendance? In referring to a similar instance a local paper called a physician "inhuman" for refusing to attend. B.

ANSWER.—As a general legal proposition, subject to more or less exceptions, corporations do not seem to be liable for medical attendance on injured employés. Nor have minor officials or other employés thereof inherent power to bind corporations to pay for medical services. Whether the higher officials have such power or not often requires a lawsuit to determine. See the following decisions reported in the Medicolegal Department of THE JOURNAL of dates named: Jan. 21, 1905, page 244, Bond vs. Hurd (Mont.); Feb. 25, 1905, page 655, Harris vs. Vienna Ice Cream Co. (N. Y. Sup.); July 15, 1905, page 216, J. H. Mohlman Co. vs. American Grocery Co. (N. J.); Aug. 25, 1906, page 638, Miller vs. Beaver Hill Coal Co. (Ore.); Sept. 15, 1906, page 893, Nelson R. Hall vs. New York, New Haven & Hartford Railroad Co. (R. I.).

The question, "Would I be justified in declining further requests for attendance?" is answered by the Principles of Ethics, which says: "The broadest dictates of humanity should be obeyed by physicians whenever and wherever their services are needed to meet the emergencies of disease or accident." A physician should not refuse emergency calls where life is at stake, no matter what the provocation may be to tempt him to do otherwise.

The Public Service

Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending Oct. 13, 1906:

Heysinger, J. D., asst.-surgeon, ordered from San Francisco, Cal., to Washington, D. C., to report to the Surgeon General for duty.

Stedman, C. J., asst.-surgeon, ordered to return from Newport News, Va., to his proper station, Fort Stevens, Wash.

Bispham, W. N., asst.-surgeon, relieved from present temporary duties and will return to his proper station, Fort Logan, Colo.

Lewis, W. F., asst.-surg., ordered from Newport News, Va., to Fort Monroe, Va., for temporary duty.

Wakeman, W. J., surgeon, granted an extension of four months to his sick leave of absence.

Kirby-Smith, R. M., asst.-surg., granted an extension of two months to his leave of absence.

Ford, Clyde S., asst.-surg., operation of his order for Philippine service is suspended until further orders.

Palmer, Fred W., asst.-surg., granted 15 days' leave of absence.

O'Connor, R. P., asst.-surgeon, arrived at Fort Leavenworth, Kan., for duty.

Pinkston, O. W., asst.-surgeon, relieved from temporary duty in the Department of California, and ordered to duty in the transport service.

Carter, E. C., surgeon, returned to Fort Leavenworth, Kan., from leave of absence.

Boyer, P. L., asst.-surgeon, returned to his proper station, Fort Sam Houston, Texas, from leave of absence.

Ferguson, J. B., contract surgeon, returned to duty on the transport *Dix* from leave of absence.

Daywalt, G. W., contract surgeon, returned to duty at Fort De Soto, Fla., from sick leave.

Ames, R. P., contract surgeon, left Fort St. Philip, La., and arrived at Jackson Barracks, La., for temporary duty.

Van Kirk, H. H., contract surgeon, returned to Fort Sill, Okla., from leave of absence.

Richardson, W. H., contract surgeon, ordered to Fort Monroe, Va., for temporary duty.

Bell, R. P., contract surgeon, ordered to Fort Monroe, Va., for duty.

Baker, C. L., contract surgeon, relieved from further duty at Honolulu, H. T., and ordered to Fort Totten, N. Y., for duty .

Bailey, E., contract surgeon, relieved from further duty in the Philippines Division, and ordered to Fort H. G. Wright, N. Y., for duty.

Repp, J. J., contract surgeon, ordered to the Army General Hospital, Washington Barracks, D. C., for duty.

Sanford, J. L., contract surgeon, relieved from further duty in the Philippines Division, and ordered to Fort Washington, Md., for duty.

Brown, I. C., contract surgeon, reported for duty at Fort McIntosh, Texas, from sick leave of absence.

Hughes, Michael E., contract surgeon, granted leave of absence for four months, in the United States.

Navy Changes.

Changes in the Medical Corps, U. S. Navy, for the week ending Oct. 13, 1906:

Bogan, F. M., P. A. surgeon, to the Naval Hospital, Washington, D. C., for treatment.

Boyd, J. C., Medical Director, to duty in command of the U. S. Naval Medical School Hospital, Washington, D. C.

De Bruler, J. P., asst.-surgeon, to duty at the U. S. Naval Medical School Hospital, Washington, D. C.

Bralsted, W. C., surgeon, detached duty at the U. S. Naval Medical School, Washington, D. C., etc., to duty as assistant to the Bureau of Medicine and Surgery, Navy Department, Washington, D. C.

Russell, A. C. H., surgeon, to the U. S. Naval Medical School, and additional duty as member of the Naval Medical Examining Board, Naval Medical School, Washington, D. C.

Castro, D. H., acting asst.-surgeon, appointed an acting assistant surgeon in the United States Navy from October 6, 1906.

Donelson, M., acting asst.-surgeon, appointed an acting assistant surgeon in the United States Navy from October 6, 1906.

Pickrell, G., surgeon, to the Bureau of Medicine and Surgery, Navy Department, Washington, for special duty.

De Bruler, J. P., P. A. surgeon, commissioned a P. A. surgeon in the United States Navy from January 3, 1906.

Dean, F. W. S., P. A. surgeon, commissioned a P. A. surgeon in the United States Navy from January 26, 1906.

Manchester, J. D., P. A. surgeon, commissioned a P. A. surgeon in the United States Navy from June 10, 1906.

Verner, W. W., P. A. surgeon, commissioned, a P. A. surgeon in the United States Navy from May 25, 1906.

Rennie, W. H., P. A. surgeon, commissioned a P. A. surgeon in the United States Navy from May 25, 1906.

Woodward, J. S., P. A. surgeon, commissioned a P. A. surgeon in the United States Navy from June 10, 1906.

Abcken, F. G., P. A. surgeon, commissioned a P. A. surgeon in the United States Navy from July 10, 1906.

Public Health.

List of changes of station and duties of commissioned and non-commissioned officers of the public health and marine hospital service for the seven days ended Oct. 10, 1906.

Gardner, C. H., P. A. surgeon, relieved from duty at Galveston, Texas, and directed to proceed to San Francisco, reporting to the Medical Officer in Command for duty and assignment to quarters.

Corput, C. M., P. A. surgeon, relieved from duty at New Orleans, and directed to proceed to Galveston, Tex., and assume command of the service at that port.

Ebert, H. G., asst.-surgeon, relieved from duty on the Revenue Cutter *Perry*, and directed to assume command of the service at Seattle, Wash.

Ebert, H. G., asst.-surgeon, granted leave of absence for fifteen days.

Salmon, T. W., asst.-surgeon, granted leave of absence for fourteen days from Oct. 21, 1906.

Simpson, Frlench, asst.-surgeon, directed to proceed to Baltimore, reporting to Medical Officer in Command for duty and assignment to quarters.

Herring, R. A., asst.-surgeon, directed to report to the Medical Officer in Command, New Orleans, for duty and assignment to quarters.

Bailey, C. W., acting asst.-surgeon, granted leave of absence for ten days, from Aug. 16, 1906, on account of sickness.

Cleaves, F. H. acting asst.-surgeon, granted leave of absence for four days, from Oct. 2, 1906, under Paragraph 210 of the Regulations.

Houghton, M. W., acting asst.-surgeon, granted leave of absence for fifteen days, from Oct. 15, 1906.

Hunter, W. R., acting asst.-surgeon, granted leave of absence for fourteen days, from Oct. 10, 1906.

Stanton, J. G., acting asst.-surgeon, granted leave of absence for thirty days, from Oct. 9, 1906.

BOARD CONVENED.

A board of medical officers was convened to meet at Galveston, Tex., Oct. 10, 1906, for the purpose of examining candidates for cadetships in the Revenue Cutter Service. Detail for the board: Passed asst.-surgeon C. H. Gardner, chairman; acting asst.-surgeon William Gammon, recorder.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General Public Health and Marine-Hospital Service during the week ended Oct. 12, 1906:

SMALLPOX—UNITED STATES.

Colorado: General, Aug. 1-31, 30 cases.
Kansas: General, Aug. 1-31, 29 cases.
Louisiana: New Orleans, Sept. 22-29, 3 cases.
New York: New York, Sept. 22-29, 1 case.
North Carolina: General, Aug. 1-31, 12 cases.
Ohio: Cincinnati, Sept. 29-Oct. 5, 1 case.

SMALLPOX—FOREIGN.

Africa: Capetown, Aug. 18-25, 3 cases.
Canada: Winnipeg, Sept. 22-29, 2 cases.
Chile: Iquique, Aug. 18-Sept. 1, present.
India: Calcutta, Aug. 11-18, 2 deaths.
Italy: General, Sept. 13-20, 3 cases.
Russia: Odessa, Sept. 8-15, 1 case.

YELLOW FEVER.

Costa Rica: Limon, Sept. 25, 1 case.
Cuba: Habana, Oct. 5-10, 1 case, 1 death; Santa Clara Province, Oct. 5-11, 2 cases, 1 death.
Mexico: Merida, Sept. 23-29, 4 cases, 4 deaths.; Tuxtepec, 1 case; Vera Cruz, 1 death.

CHOLERA.

China: Shanghai, Sept. 24-Oct. 7, 87 deaths.
India: Calcutta, Aug. 11-25, 29 deaths.

PLAGUE.

Egypt: Alexandria, Sept. 14-19, 3 cases, 1 death; Suez, 7 cases, 4 deaths.
India: General, Aug. 11-18, 1,937 cases, 2,113 deaths; Calcutta, Aug. 11-25, 1 case, 25 deaths.
Japan: Osaka, Oct. 10, present.
Persia: Seistan Province, June 23-July 27, 23 cases, 37 deaths.

Society Proceedings

COMING MEETINGS.

Mississippi Valley Medical Association, Hot Springs, Ark., Nov. 7-8.
American Public Health Assn., Mexico City, Dec. 3-7.
Southern Surg. and Gyn. Assn., Baltimore, Dec. 11-13.

COLORADO STATE MEDICAL SOCIETY.

Thirty-sixth Annual Meeting, held at Denver, Oct. 9-11, 1906.

The President, DR. H. G. WETHERILL, in the Chair.

Work of the House of Delegates.

Advertising by means of local puffs and personal write-ups in the daily, weekly and other papers was condemned by the House of Delegates, and constituent societies urged to use every legitimate means to stamp it out.

The House of Delegates commended the action of the Board of Trustees and the Editor of THE JOURNAL of the American Medical Association and its Council on Pharmacy and Chemistry in investigating and placing before the profession the facts regarding pharmaceutical preparations of the class extensively advertised to physicians.

The house passed a resolution to the effect that the practice of giving or taking a commission for referring patients is unprofessional, dishonorable and dishonest.

The Committee on Medical Education made a report in which it favored the minimum standard of medical education as adopted and recommended by the American Medical Association, July, 1905, and the House of Delegates adopted it as the minimum requirements of the society. These requirements are:

1. Preliminary requirements to be a high school education or its equivalent, such as would admit a student to one of our recognized universities.
2. Preliminary requirements to be passed on by a state official, such as the superintendent of public instruction, and not by an official of a medical college.
3. A medical training in a medical college, having four years of not less than thirty weeks each year of thirty hours per week of actual work.
4. Graduation from an approved medical college, requiring the candidate to pass an examination before a state medical examining board.
5. The passing of a satisfactory examination before a state medical examining board.

The house further recommended that the legislative committee of the society be instructed to recommend to the Colorado State Board of Medical Examiners the adoption of these minimum requirements, to go into effect Jan. 1, 1908.

The house expressed itself as being in hearty accord with the movement to demand from insurance companies a fee of not less than $5.00 for every complete examination made, irrespective of the amounts of the policies. It was further urgent on constituent medical societies, that have not already done so, to take proper steps to enforce these demands.

The house endorsed and ratified the action of the National Congress in passing a pure-food law, and urged the passage of a law in Colorado at the next legislature along identical lines.

Officers.

The following officers were elected for the ensuing year: President, Dr. H. R. Bull, Grand Junction; vice-presidents, Drs. Herbert B. Whitney, Denver; E. R. Neeper, Colorado Springs; Mary E. Phelps, Canon City, and O. P. Johnston, Boulder; secretary, Melville Black, Denver; treasurer, S. E. Solly, Colorado Springs; delegate to American Medical Association for two years, J. M. Hall, Denver; alternate, T. Mitchell Burns, Denver.

The next meeting will be held in either Denver or Glenwood Springs Sept. 17, 1907.

Ocular Headaches.

DR. EDMUND W. STEVENS, Denver, said the relation of eyestrain to headaches and other neuroses was first pointed out by Mitchell and Thomson thirty years ago. The medical profession has been slow to appreciate the importance of the subject. Eyestrain is the most common cause of headache in the otherwise healthy. Ocular headaches come on at any age, but are very frequent from 6 to 12 years of age, and again with beginning presbyopia. They are indistinguishable in character and position from headaches due to any other agency. He discussed the relation of eyestrain to migraine. The adjustment of proper glasses does more for the relief of migraine than any other treatment. He emphasized the importance of carefully measuring errors of refraction under a mydriatic.

Importance of Early Recognition and Treatment of Squint.

DR. JOHN M. FOSTER, Denver, said that parents and physicians often fail to detect squint on account of its periodicity, and they frequently are misled between squint and paralytic muscular troubles. The etiologic factor in the majority of cases of cross-eye is an error of refraction. The difficulties in determining these errors have been greatly simplified by the use of object test cards, cycloplegia and retinoscopy. The importance of early detection of refractive errors was pointed out, also the application of devices for exercising the weakened muscles, thereby increasing their strength sufficiently to enable them to maintain the correct position of the eye after it has once been obtained. The conservative methods are especially insisted on, as very few young children should be operated on for squinting eyes. The percentage of cases cured where properly fitted and fitting glasses are used is large if combined with proper exercises for the weakened muscles.

In advanced unilateral convergent squint there is always a loss of vision in the deviating eye, frequently of a high degree. It is in these cases, especially in young children, that our ingenuity is taxed to not only preserve what vision there is in the poor eye, but to increase it by correction of refractive errors and the use of cycloplegics.

Acute Suppurative Otitis Media and Mastoiditis.

DR. WILLIAM C. BANE, Denver, reported the case of a patient, aged 19 years, who was examined fifty-five hours after inflammation began. The membrana tympani was incised, followed by a free discharge of bloody serum. The discharge contained streptococci. The pain in the ear and mastoid, with elevation of temperature, persisted. On the eighth day of inflammation he operated on the mastoid. The cells were grayish and contained pus. On the morning of the fifth day after operation the pulse was 65 and the temperature 99 F., yet the wound had a pale appearance. Evening temperature was 101.4. On the sixth day at noon the patient had a severe chill; pulse, 120; temperature, 104. There was tenderness over the lateral sinus and internal jugular vein. At 8 p. m. the sinus was uncovered and incised, exposing a clot. The internal jugular was excised and a thrombus removed from the sinus by Dr. Lyman. Patient left the hospital the twenty-fourth day after the mastoid operation.

(*To be continued.*)

BRITISH MEDICAL ASSOCIATION.

Seventy-fourth Annual Meeting, held in Toronto, Ontario, Aug. 21-25, 1906.

(*Continued from page 1222.*)

SECTION OF OBSTETRICS AND GYNECOLOGY.

Relation of the Gynecologist to the General Practitioner.

A. F. FREELAND BARBOUR, M.D., Edinburgh, the president, in his introductory remarks, discussed the erroneous idea which commonly prevails regarding gynecology. The student believes that gynecology, inasmuch as it refers to diseases peculiar to women, has a special pathology separate from that of general pathology. He fails to recognize that aside from the anatomic peculiarities and the physiologic changes involved, there is no difference between salpingitis and appendicitis, and that epithelioma of the cervix does not differ pathologically from epithelioma of the lip. The great majority of gynecologic cases must first be in the hands of the general practitioner, who makes the first diagnosis of the conditions of the patient and outlines the routine treatment. Specialism in gynecology, apart from major gynecologic operations, is more akin to specialism in diseases of the heart and lungs than to specialism in the sense of mental diseases or diseases of the eye. The way of the specialist in gynecology passes through the domain of the general practitioner, and the specialist is called in when the general practitioner recognizes that he has not the training nor experience to enable him successfully to diagnose his case or treat his patient. While gynecology should be taught as a specialty, it should be taught in relation to medicine, surgery and obstetrics. A great fault in the medical education of to-day is that each subject is taught by itself, instead of in its relation to other portions of the medical curriculum.

SECTION OF THERAPEUTICS.

An Imperial Pharmacopeia.

DONALD MCALISTER, M.D., Cambridge, England, the president, in his introductory remarks, spoke in behalf of the British Pharmacopeia, noted the lack of harmony in the various national pharmacopeias, and suggested that the British Pharmacopeia should be adapted to the needs of all the nations included in the British dominions. He is investigating the possibilities of the proposal.

Medical Reciprocity.

The president also considered the question of medical reciprocity, in which he pointed out that by the medical act of 1886, an individual holding a recognized colonial medical diploma, granted to him in a British possession, and who is of good character, is legally entitled to practice medicine in that possession, and is also entitled, without examination, to practice in the United Kingdom, and to be registered in the official Medical Register. Before a colonial diploma can be thus recognized, however, the provincial council must be satisfied that the British possession in question affords to the home-registered practitioner such privileges of practicing therein as may seem just. Orders in council have been issued applying the act to New Zealand, the states of Australia, India, Ceylon and Malta, all of which grant medical diplomas. As these diplomas are recognized by the Medical Council their holders are at once capable of registration and of acquiring all the rights and privileges conferred thereby. A similar enactment exists in relation to foreign countries, and Italy

and Japan thus far have been afforded corresponding privileges. With the exception of Nova Scotia, no province of Canada has as yet applied for admission. Under the existing conditions a graduate of Ontario or Quebec cannot legally hold a medical appointment in the royal army or navy; he can not be appointed surgeon to a British ship or to any hospital or other publicly established body or institution in the United Kingdom; he is ineligible as a medical officer of health, he can not be a condidate for a diploma in hygiene or state medicine, and he may not use his degree as a qualification for private practice in any British possession governed by the medical act. The president urged the mutual recognition of professional qualification, that these disabilities might be removed, feeling sure that educational interchange would excite a powerful influence for good not only in the Canadian provinces, but in Great Britain itself.

The Alcohol Question.

DR. A. D. BLACKADER, Montreal, discussed the use of alcohol in treatment. He spoke of the antiquity of alcohol as a remedial agent and said that in the last twenty years considerable opposition had been manifested. The author feels that the stimulation of the heart from alcohol has been overestimated, and that it is somewhat feeble and transitory, but that its action on the nervous system is more complex, and that it is more depressing on the centers of judgment, discernment and self-control. In resisting the powers of bacteria, the use of large doses of alcohol has not been justified by experiments. As a food, alcohol can be utilized when other foods can be given only with difficulty, and it aids in the digestion of other foods. In fever and other conditions of exhaustion, alcohol does not tax the digestive apparatus, and increases the secretions that aid digestion. Used judiciously, alcohol, in his opinion, leaves fewer after-effects than other narcotics.

SAMUEL J. MELTZER, M.D., New York City, advocated the medicinal use of alcohol. He considered its use invaluable in the treatment of typhoid. He advised moderate doses and believed that alcohol properly used does good. The consensus of opinion among medical men is that it does no harm, and that in proper doses actual benefit results from its use. It increases blood pressure and corrects the distribution of the blood. While in health, alcohol may be a posion, it is a beneficent drug in diseases.

SECTION OF PHYSIOLOGY.

At the joint meeting of the sections of Physiology and Medicine a discussion was held on "Over-Nutrition and Under-Nutrition, with Special Reference to Proteid Metabolism."

PROF. R. H. CHITTENDEN, of Yale University, New Haven, related the results noted by him in a series of experiments relating to proteid metabolism. His special theme was the diet necessary to maintain health with the smallest amount of work by the organism. He questioned whether or not the human diet might be more in harmony with the minimum of proteid required. He believes in a variation of diet and that a vegetable proteid, like the gluten of wheat, is far more nutritious than ordinary meat. His final advice was that we should go to work to acquire knowledge of the physiology of nutrition, about which we now know so little. In his experiments, which he detailed, five professional men had lived from six to nine months on from 34 to 56 grams of proteid matter daily, or not more than one-half the standard quantity used. There is no evidence, the author stated, that if continued, this would be satisfactory, but he, himself, had carried it on for four years and a half, with great gain to bodily strength, with no deterioration of blood, with increase of power and decrease of fatigue. He asserted that more people suffer from the effects of over-eating than from those of alcohol. From experiments on animals, he found that disease resistance is much increased by a low proteid diet, that oxidation is lower, and that the organism works more economically.

PROF. WILLIAM D. HALLIBURTON, London, agreed with the results of Professor Chittenden, but stated that experiments on animals are not conclusive. The coefficient of proteid matter for animals and also for human beings varies. He considers high feeding responsible for many of the so-called "open air" cures for phthisis. Less reserve force is a vague term, but if we are living on the margin of our needs, when privation comes there must be a breakdown. An infant takes probably ten times the amount of nourishment it needs. While this is a physiologic error, it is so arranged by Nature. The excretory organs are sufficiently large, active and ready for the daily turnover. In the larger amount of food used by the body, there may be a small amount of the substances used for tissue repair, and this may be the cause of the intake, which seems at first larger than necessary.

OTTO FOLIN, Ph.D., Waverly, Mass., considered the use of cooked muscle as an aid to muscular energy, as more or less of a superstition. Many practices prevail among civilized nations which no scientific men recommend. Alcohol, for instance, is freely taken, but no physician will recommend the corresponding amounts as desirable. The universal desire to avoid useful work is at least as widespread as the desire for excessive proteid consumption, but this is looked on as a cause of moral degeneracy.

DR. ROBERT HUTCHINSON, London, believed that the proteid question was not to be solved except by the coöperation of physiologists and medical men, and that we want not the proteid minimum, but the proteid optimum. He accepted Professor Chittenden's minimum and recognized the great service to medicine by the American school, but could not accept the deductions that the least was necessarily the best. It is possible to get along with but one lung or one kidney, but two have been provided and are preferable.

(*To be concluded.*)

MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA.

Fifty-sixth Annual Meeting, held in Bedford Springs, Sept. 10-13, 1906.

(*Concluded from page 1221.*)

Oration on State Medicine.

DR. SAMUEL G. DIXON, Health Commissioner of Pennsylvania, made a plea for vaccination and referred to the fact that a year ago the Department of Health had been instrumental in enforcing the law of 1895, providing that unvaccinated children could not be admitted to school. Since then hundreds of thousands of children have been made immune against smallpox by vaccination. He also outlined the work of the department in the fight against typhoid fever and in the distribution of diphtheria antitoxin. The midwifery evil, he said, is receiving the attention of the department as well also as the securing of pure water to the people of the state.

Bearing on the Oration on State Medicine the following resolution was passed:

WHEREAS, There is a reported large mortality following child birth, which is due to preventable infection and other accidents of labor; and

WHEREAS, The state has increased the public safeguards requiring an examination of physicians before allowing them to practice midwifery; be it

Resolved, That a committee of nine be appointed by the president of the State Medical Society to formulate an act, to be introduced before the legislature of the State of Pennsylvania, establishing a legal standard of education for midwives, which may be, as far as possible, in harmony with the best standards in force in other states.

Stenosis of Pylorus.

DR. GEORGE S. DICKINSON, Erie, cited illustrative cases. In one case the condition was attributed to the constant pressure of the stomach against the desk, in a man, aged 50, who had been a book-keeper for a great many years.

DR. JOHN A. LICHTY, Pittsburg, said that pyloric stenosis must be differentiated from simple atonic dilatation of the stomach, the vomiting of pregnancy, simple hyperchlorhydria, right movable kidney, gastroptosis, gastric neurasthenia. Treatment in complete cases is necessarily surgical, and pyloroplasty or pylorectomy the desirable procedure, although the mortality is still high. For this reason posterior gastroenterostomy is the operation most frequently employed. Medical and dietetic treatment are advised in partial stenosis.

Gastroptosis; Its Treatment.

DR. JOHN J. GILBRIDE, Philadelphia, said that in diagnosis determination of the lower boundary of the stomach is not sufficient, the lesser curvature in a lower position than normal

being essential. Treatment should be preventive so far as possible. The bandaging of the abdomen during the lying-in period was advised. Mechanical and medical treatment should be persistently tried before surgery is resorted to. The preferable surgical procedure is the one employed by Beyea.

Peculiar Atrophic Affection of the Skin in a Neurotic Subject.

DR. RUDOLPH MYERS, Huntingdon, reported the case of a lady of neurotic tendency, who, after a slight scratch on the ring finger, observed that the skin on the back of the finger had become dark and sunken in a space three-fourths of an inch long and half an inch wide. Fourteen gangrenous points in all formed. A second attack ensued, beginning near the elbow, and attacks recurred every seven days until she had six. The case was regarded as one of neurotic gangrene.

Salt-Free Treatment of Epilepsy.

DR. ALFRED GORDON, Philadelphia, said that it has been shown that NaCl plays a great rôle in the normal metabolism of the body by influencing the elimination of waste products. Applied to epilepsy its presence in the diet increases the severity and the frequency of seizures. Its withdrawal shows a beneficial effect.

Diagnostic Significance of Herpes Simplex in Infectious Diseases.

DR. JAY F. SCHAMBERG, Philadelphia, concludes that herpes zoster, both the facial and genital varieties, while not clinically identical, are closely related; that it is highly probable that the vast majority of all cases of herpes of the various types are the result of the action of a toxin. The frequency of herpes simplex in certain infectious diseases and its rarity in others is regarded as evidence that the toxin possesses certain qualities in order to exert a selective affinity for sensory nerve structures. The toxin producing herpes simplex and herpes zoster is in all probability not the result of the action of any specific micro-organism. Pneumonia, spotted fever, and malaria are diseases in which herpetogenic toxin develops with a fair degree of constancy. Its frequency in these diseases and its rarity in typhoid fever and other infectious maladies make its appearance a symptom of considerable diagnostic import. The history of the tendency of certain individuals to recurrent attacks of facial herpes from slight indispositions should, however, be elicited before according to herpetic outbreaks the diagnostic value mentioned.

Relation of Cardiac Muscle and Valves to Arterial Tension.

DR. W. M. STANTON, Philadelphia, said that the factors concerned in arterial tension are the heart, the arteries, the vessels under the control of the vasomotor system, and the quality of the blood. With poor nutrition the reserve power of the heart is soon used up, and hypertrophy failing, signs of lost compensation appear at an earlier period. In blood-pressure estimates made under his direction in cases of tuberculosis the most marked urinary evidences in the way of albumin and casts were not accompanied by increased pressure. In 21 cases the highest systolic pressure was 145, and only in eight cases was the systolic pressure 100 or over. The poor nutrition was suggested as explanation of this fact.

Other papers read were, "Retinal Asthenopia," by Dr. Jos. E. Willetts, Pittsburg; "Pathology of Goiter," by Dr. George P. Mueller, Philadelphia; "Surgery of Thyroid Gland," by Dr. R. G. Le Conte, Philadelphia; "Brain Complications Following Mastoiditis," by Dr. F. W. Frankhauser, Reading; "Photographic Illustrations in Modern Medical and Surgical Literature," by Dr. C. B. Longenecker, Philadelphia; "Laryngectomy for Malignant Disease" and "Demonstration of Bronchoscopy and Esophagoscopy," by Dr. C. Q. Jackson, Pittsburg; "Some New Features of the U. S. P.," by Dr. A. Koenig, Pittsburg; "Electricity in Treatment of Disease," by Dr. J. V. Shoemaker, Philadelphia; "High Frequency Current in Advanced Pulmonary Tuberculosis," by Dr. M. L. Barshinger, York; "High Frequency Current in Rheumatoid Arthritis," by Dr. G. E. Pfahler, Philadelphia; "Diagnosis of Brain Abscess," by Dr. J. W. Boyce, Pittsburg; "Pernicious Anemia with Jaundice," by Dr. John G. Wilson, Montrose; "The Trained Nurse in the Public Schools," by Dr. S. W. Newmayer, Philadelphia; "Smallpox," by Dr. J. W. Ellenberger, Philadelphia; "Quarantine," by Dr. A. B. Brumbaugh, Huntingdon; "Fixation of Movable Kidney," by Dr. G. E. Shoemaker, Philadelphia; "Surgical Exploration in Abdominal Complications of Typhoid," by Dr. J. B. Roberts, Philadelphia; "Fractures of Head of Radius," by Dr. T. T. Thomas, Philadelphia; "Cleft Palate," by Dr. H. R. Wharton, Philadelphia; "Surgery of the Thoracic Cavity," by Dr. J. C. O'Day, Oil City; "Surgical Tuberculosis," by Dr. Geo. W. Guthrie, Wilkesbarre; "Hydrophobia and Its Treatment," by Dr. H. D. Jump, Philadelphia; "Aids in Teaching Climatology and Climatotherapy," by Dr. G. Hinsdale, Hot Springs, Va.; "Hypertrophic Pulmonary Osteoarthropathy," by Dr. H. M. Landis, Philadelphia; "Symptomatology and Diagnosis of Lobar Pneumonia," by Dr. James J. Johnston, Pittsburg; "Certain Complications of Lobar Pneumonia, Considered with Reference to Surgical Interference," by Dr. P. Y. Eisenberg, Norristown; "Treatment of Lobar Pneumonia," by Dr. James M. Anders, Philadelphia; "Clinical Results from Examination of Feces After Intestinal Test Meal," by Dr. Clement R. Jones, Pittsburg; "Relation of the Lymph Glands in the Mediastinum to Disease, and their Value in Early Diagnosis," by Dr. William S. Newcomet, Philadelphia.

AMERICAN ASSOCIATION OF OBSTETRICIANS AND GYNECOLOGISTS.

Nineteenth Annual Meeting, held at Cincinnati, Sept. 20-22, 1906.

(*Concluded from page 1220.*)

The Rectum in Its Relation to Diseases of Women.

DR. H. O. PANTZER, Indianapolis, said that a faulty function of either of the relevant organs might arrest or modify the function of its neighbor. Chronic constipation, at times, affected the quantity, frequency, or course of the menstrual flow. Rectal touch, he said, is practiced very little. The beginner should employ the rectal touch to get his first true impressions of the pelvic organs in the body, and the expert can not afford to dispense with it. The variable conditions of the rectum, as found by both vaginal and rectal examination, are of great diagnostic and therapeutic interest. The rectum in the multipara always shows deviations from the normal, connected with the events of parturition and puerperality. In sequence these deviations became accentuated. There are remarkable differences recognized which have different bearings and should have varied treatment, medicinal and operative. The rectal temperature in pelvic diseases has special significance. The oral temperature in these cases is often misleading. The rectal temperature may be anywhere from one-half to three degrees more than the oral temperature. The recognition of a febrile disease or its gravity might depend on this procedure, making it obligatory to take the record of both sites.

Trend of the Times in Appendicectomy.

DR. N. STONE SCOTT, Cleveland, Ohio, said that the next step in progressive surgery is the perfecting of the technic, with an eye single to the best interests of the patient, even to the smallest detail. Mere recovery was no longer all-sufficient. The ideal condition is health. Undesirable elements can be eliminated more surely and fully if in addition to the essentials heretofore considered necessary, due attention is given to certain points which have been too long neglected. The first of these is the choice of anesthetics. The ideal anesthetic had yet to be discovered. The method of operating is of utmost importance. The incision should be large enough to give access to the field of operation. The extent of the skin incision is of no importance, except for cosmetic effect. If the patient is fleshy, this superficial cut might of necessity be a long one. In aseptic cases the fascial separation should be only sufficient to admit the tip of the index finger. This is crowded through the soft parts, which are dilated easily to admit the entire length of the finger. Given an anesthetic with little, if any, attendant nausea, an incision so short as to close of itself, there is no physiologic reason for the recumbent posture. The author has gradually short-

ened not only the incision, but also the time spent by the patient in bed, for not infrequently, whether from physical overwork or nervous strain, patients need and should have a course of the rest cure. But the ideal operation can be performed only on an ideal patient; one who is intelligent, obedient, hopeful, and of good recuperative ability, both mental and physical, having well-developed muscle and fascia, without excess of fat, and a movable appendix with a good mesentery; one whose condition is uncomplicated by intercurrent disease or by severe sequelæ, the result of previous attacks.

Points Commonly Contested in Diagnosis and Treatment of Appendicitis.

Dr. Joseph Price, Philadelphia, found in the reports of some good hospitals that patients suffering from this disease remained in the medical wards until dead, no surgical effort being made to save them. This simply meant that the clinician did not yield the point that appendicitis is a surgical affection; that he did not have a precise knowledge of pathology; that he had not served his apprenticeship as a resident or as an aid to a surgeon. When the operations for appendicitis are complete the recoveries and cures pleasing, reopenings or secondary operations for complications are not necessary. One prominent operator reported 24 cases of ileus in his work. This meant that his work was defective. Multiple incisions and drains in both the pelvic and abdominal cavities are insults both to surgery and to the peritoneum. Most operators have succeeded in saving their desperate cases by a small or a generous incision. The multiple incision and drain only favors an additional point for complications. Waiting and watching should not be taught or practiced, either in private or public, under skilled or unskilled observation. Perforations occur under the eyes of surgeons, and good clinicians watch and endeavor to limit spreading peritonitis and infection with quick disastrous results. Most good surgeons admit that they are distressed and unhappy while watching and waiting for an appendicitis that has not been operated on. A perforation, a spreading infection, does thrice more harm, and kills thrice as many patients as an inexperienced operator in an early operation.

Diagnosis and Surgical Treatment of Injuries to the Diaphragm.

Dr. John Young Brown, St. Louis, Mo., from a careful analysis of the cases coming under his observation, is convinced that there are present in but few of them symptoms on which a positive diagnosis of injury to the diaphragm can be made, and that in many cases when extensive injuries to the abdominal viscera are present, the patients are apparently in excellent condition, and present practically no symptoms. He believes, therefore, that in all penetrating gunshot or stab wounds of the chest, where from the location of the wound it is reasonable to conclude that injury to the diaphragm is possible, the existence or non-existence of such injury should be determined by proper exploration. Positive symptoms in these cases are generally the signals of peritonitis, and peritonitis of this character is usually fatal.

If this view is correct, how should we explore through the chest or through the abdomen? A penetrating wound of the diaphragm is a penetrating wound of the abdomen, and an exploration to determine the presence of such an injury which does not enable the operator to repair, if present, the associate injuries to the abdominal viscera, should not be undertaken. To sew up an injured diaphragm and leave a perforated bowel or stomach will certainly prove disastrous. Through an abdominal incision, the extent of injury to both diaphragm and abdominal viscera can be determined absolutely. If it is found that the wound in the diaphragm is so situated that it can not be repaired through an abdominal incision, thoracotomy can be done at the site of the chest wound, resecting an inch or two inches of rib. With the hand in the abdomen, the diaphragm can be pushed into the thoracotomy wound, making the work of repair quite easy. A method which he has found very useful in dealing with injuries of this character consists of leaving both ends of the first suture long, using one as a tractor. This method enables the operator to work through a very small incision, and frequently does away with the necessity of resecting more than a portion of one rib.

The mortality of this work always will be high. Many of these cases are mortally wounded when seen by the surgeon. There are, however, quite a few whose injuries could be repaired with satisfactory results, if operation is undertaken early. He urged that more attention be paid to penetrating wounds of the lower chest, and that early exploration be undertaken as a routine procedure in all cases where injury to the diaphragm is suspected.

Reflex Dyspepsias in Abdominal and Pelvic Disease, and Their Surgical Treatment.

Dr. Herman E. Hayd, Buffalo, N. Y., said (1), the intimate nervous supply of the abdominal and pelvic organs often make one organ reflect and masquerade symptoms which represent the disease of the other. Chronic appendicitis, retroversions and floating kidney very frequently produce very marked dyspeptic symptoms. Gall-bladder disease and often stones without jaundice are treated for simple dyspepsia. (2), He made a plea for the more careful examination of operative cases. Frequently many organs are involved in the symptomatology, and the patient remains uncured because of incomplete surgery. (3), Serious stomach diseases producing various dyspeptic symptoms, such as ulcer, hour-glass contraction, pyloric obstruction, chronic gastritis with dilatation and early cancer, should be placed among the curable surgical diseases, and should receive the unquestioned benefits of early surgical interference.

TRI-STATE MEDICAL SOCIETY OF ALABAMA, GEORGIA AND TENNESSEE.

(NOW THE SOUTHERN MEDICAL ASSOCIATION.)

Eighteenth Annual Meeting, held in Chattanooga, Tenn., Oct. 2-4, 1906.

The President, Dr. A. Bennett Cooke, Nashville, in the Chair.

Addresses.

Addresses of welcome were delivered by the Hon. W. R. Frierson, Mayor of Chattanooga, Dr. Luther Freeman, on behalf of the professions, and Dr. William L. Nolen on behalf of the medical profession of Chattanooga. These were responded to by Dr. George C. Savage, Nashville.

Dr. A. Bennett Cooke, Nashville, the President, in his annual address, entitled "Medicine and Things," denounced in scathing terms the methods adopted by the "patent medicine" manufacturers and vendors.

Dr. Jere L. Crook, Jackson, Tenn., in his paper, "The Attitude of Some Life Insurance Companies Toward the Profession," described and denounced the transactions of one of the life insurance companies. The paper was warmly endorsed by the members and a resolution was proposed by Dr. James B. Cowan, Tullahoma, Tenn., and adopted, commending the stand taken by Dr. Crook. A copy of the resolution will be sent to the company in question.

Reorganization.

By a unanimous vote of the members the association agreed to relinquish its charter and form the Southern Medical Association, adding the states of Louisiana, Mississippi and Florida. The states of North and South Carolina and Kentucky have also been invited to coöperate. The new constitution and by-laws adopted are said to be in accordance with that suggested by the American Medical Association for district associations.

Election of Officers.

The following officers were elected: President, Dr. Henry H. Martin, Savannah, Ga.; vice-presidents, Drs. Mack Rogers, Birmingham, Ala., James B. Cowan, Tullahoma, Tenn., and John R. Tackert, Meridian, Miss.; secretary, Dr. Raymond Wallace, Chattanooga, Tenn., and treasurer, Young L. B. Abernathy, Chattanooga.

The first meeting of the Southern Medical Association will be held on the second Tuesday in October, 1907, in Birmingham, Ala.

Therapeutics

Hemicrania.

The best results in the treatment of hemicrania, according to H. C. Becker, in *N. Y. Med. Jour.*, are obtained by instituting treatment early in the disease or during the prodromal attack as manifested by a state of mental depression and irritability, associated with general languor. Later a pain over one eye or in the back part of the head is an early sign, later developing into a pain throbbing in character. Under such conditions Becker states that the patient should not indulge in reading or in any exercise necessitating eye strain. He should be instructed to take a saline laxative and a hot mustard footbath, and to lie down in a darkened, quiet room and to sleep, if possible. Cold applications are frequently of benefit in affording relief to the severe, throbbing headache. To give immediate relief the following is recommended:

℞. Acetphenetidini .....gr. v |30
Caffeinæ citratæ.....gr. ss |03
Codeinæ sulph.....gr. 1/6 |25

M. Ft. capsula No. i. Sig.: One such every two hours.

In some instances he recommends the following:

℞. Ext. cannabis indicæ.....gr. ss |03
Camphoræ monobrom.....gr. i |06

M. Ft. cap. No. i. Sig.: One such capsule every two hours.

When the pain is sudden in its onset and throbbing in character, ergot combined with codein is recommended:

℞. Ext. ergotæ.....gr. i |06
Codeinæ .....gr. 1/6 |25

M. Ft. capsula No. i. Sig.: One such capsule every two or three hours for two or three doses.

Dizziness is not infrequently complained of after the pain has been relieved by the ergot, and may be relieved by applying the galvanic current over the site of the pain.

Becker does not omit to mention the fact that the drug treatment of hemicrania is very often disappointing as the effect of the dose wears off, so to speak, and must be increased in size, and while the medicine may afford relief at one time, the same sized dose will prove insufficient a second time.

He also warns against the danger of the patient becoming addicted to the use of the coal-tar products.

PROPHYLAXIS.

Patients subject to attacks of hemicrania should guard against undue nervous excitement; and as hemicrania is common to neurasthenics, the proper treatment of neurasthenia should be instituted. One of the most common things to be corrected is some error in refraction, especially in children who are frequently troubled with astigmatism, nasal disturbances are less frequently a cause.

Gouty conditions and rheumatic diatheses are prominent factors in the etiology of hemicrania, at least in adults, and proper treatment should be established to lessen the frequency and severity of the attacks. Consequently Becker recommends in such cases colchicum in gouty cases and the salicylates in rheumatic conditions.

Anemia, when present, should be treated by administration of iron and the patients should be advised to exercise in the fresh air.

TREATMENT OF ATTACKS.

If the attack occurs after a hearty meal, an emetic dose of the syrup of ipecac should be administered. Following emesis, he recommends calomel in doses of grain 1/6 each (.25) every half-hour for eight doses, followed in two hours by half an ounce (15.) of magnesium sulphate in half a glass of warm water. An enema of soapsuds and warm water can be given, and small quantities of warm water should be given internally at frequent intervals for from six to twelve hours. To relieve the acute pain Davis recommends the following combination:

℞. Acetphenetidini .....gr. v |30
Salolis
Caffeinæ citratæ, āā.....gr. i |06

M. Ft. capsula No. i. Sig.: One such capsule every two hours for an adult.

He also recommends galvanism to the temples and to the back of the neck for 30 minutes daily. The elimination from the kidneys should be carefully watched,and in case these organs are acting sluggishly he recommends the administration of potassium citrate in 20-grain doses (1.30) in a glass of distilled water three times a day. The diet should be carefully watched and regulated.

During the period between the attacks the following combination is advised:

℞. Sodii phosphatis.....gr. xx 1|30
Salolis .....gr. x |65
Tinct. nucis vom.....m. v |30
Aquæ dest. q. s. ad.....f℥iv 120|

M. Sig.: To be taken at one dose in a glass of vichy water, one hour before breakfast, three times a week.

To decrease the severity and lengthen the time between the attacks he recommends the following combination:

℞. Sodii bromidi.....gr. xv 1|
Tinct. cannabis ind.....gtt. x |65
Syrupi simplicis q. s. ad.....f3i 4|

M. Sig.: To be taken at one dose.

In cases of gouty individuals with high arterial tension he recommends potassium iodid grains 10 (.65) three times a day, and in conjunction with it nitroglycerin in moderate size doses.

Davis also recommends that in anemia the patient take two hot baths weekly, in addition to the usual medicinal treatment.

Randolph, in the same periodical, states that the treatment of the attack is very unsatisfactory and that no drug taken by the mouth can be absorbed during the nausea. He states that the best results are obtained by giving calomel in doses of grain ⅛ (.008) each every half-hour, after vomiting has taken place, and continued until one grain (.06) has been taken.

Nausea in some of these cases may be relieved by the local application of a mustard plaster. The only scientific method, according to Randolph, lies in prophylactic measures.

Neuralgia and Headache.

L. Williams, in the *Clinical Journal*, makes a division of the cases which are characterized by pain along the nerve into those in which the condition is a fibrositis, an inflammation of the fibrous tissue of the nerve, and those in which the pain is due to some condition outside of the nerve itself. In the sciatic nerve a fibrositis constituting a true sciatica is distinguished by the fact that the pain is aggravated by putting the nerve on the stretch, while if the pain is due to some other cause it may be relieved by this maneuver. For the treatment of sciatica, cleansing of the *primæ viæ*, regulation of the diet and especially massage are recommended.

The presence of a neuralgia should suggest (1) a fibrositis, (2) an unsatisfactory blood state and (3) the existence of an irritant. The blood state may be anemia, goutiness, toxemia from constipation or other cause. Hygiene, generous diet, especially fats, and iron are the remedies for anemia. The iron should be given in the form of the citrate or tartrate. A useful formula is as follows:

℞. Ferri amon. citrat.....gr. x |6
Liq. arsenicalis.....m. ii |12
Inf. quassiæ .....℥ss 15|

M. Sig.: *Ter die post cib.*

As strength improves this may be used instead of the above:

℞. Ferri et quin. citrat.....gr. xx 1|3
Liq. arsenicalis.....m. v |3
Tr. nucis vom.....m. iv |25
Aquæ aurant. flor.....f℥ss 15|

M. Sig.: *Ter die post cib.*

When giving iron the bowels should be kept open with aloes, which enhances the effect of the iron, or later with cascara. A daily morning dose of a natural mineral water is also very useful. For a direct influence on the pain a combination of quinin gr. v (gm. 0.3) and tr. gelsemium mx (c.c. 0.6) is recommended every twenty minutes till pain ceases or four doses are taken.

For pain in the area of the trigeminus, whether arising from irritation in the mouth or elsewhere, Williams recommends butyl-chloral as one of the best remedies (5 gr. every half hour until pain ceases, not exceeding six doses). A combination with gelseminis is desirable. Aconite liniment is useful locally. For vague pains he has found chlorid of ammonium, gr. 20 (gm. 1.3), combined with tr. cimicifugæ, m 20 (c.c. 1.3), more effectual than any of the above-mentioned remedies.

Williams regards acetanilid as our most valuable and powerful antineuralgic, next to morphin, and thinks that it is not more dangerous when cautiously used than many other drugs which are habitually prescribed. According to him the occurrence of slight cyanosis need not be alarming. [Caution in the presence of such symptoms is, however, the part of wisdom.—Ed.] Morphin sometimes is very useful, but not often desirable. Leeches have often a marked effect.

Neuralgia and headache connected with eyestrain are characterized by the fact that they appear as the result of slight defects so that patients will declare that their eyesight is exceptionally good. This good eyesight is made possible, however, by continual contraction of the ciliary muscle, which leads to exhaustion and neuralgia as a consequence. Dizziness, nausea and vomiting and general nervous exhaustion may be secondary effects. Careful examination should be made and errors corrected. Dental irritation may also give rise to headache. The same is true of nasal and aural affections. In migraine careful search should be made for eyestrain and other local lesions, and the physician should also search for cardiovascular changes. If nothing can be discovered, the general nervous sensibility should be reduced by hygiene, diet and the exhibition of bromids.

Headaches caused by mechanical congestion (tight corsets, collars, obstructions in the nose and pharynx) are obviously to be treated by the removal of the obstruction. Headache may be due to change of climate. When the conditions are relaxing quinin and strychnin are efficient. Headache accompanying a cold is usually due to a fibrositis and is to be treated accordingly. Most headaches are due to blood states, such as anemia, toxemia from poisons of specific diseases, alcohol, defective kidney excretion, constipation. As a general rule, not to be too much insisted on, headaches due to toxemia are frontal, while those due to functional nervous troubles have a preference for the vertex. While the salts of potassium are useful diuretics, theobromin or its compound diuretin is the best. It is best given in cachets of 15 to 20 grains three times a day. Where there is reason to suppose that headache is due to vasomotor constriction, liq. trinitrin is very useful. Its effect, however, is transitory, and it should not be frequently repeated. Dr. Williams thinks that it is best given in conjunction with hydrobromic acid, and he advises the following large dosage:

℞. Liq. trinitrin.....m. iv | 25
Acid hydrobrom. dil.....m. xx | 1 | 3
Aquæ .....f℥ss | 15 |
M. Sig.: *Ter die post cib.*

Cannabis indica is useful for the symptomatic treatment of headache. Ross has described a headache which is associated with deficient coagulability of the blood, and yields readily to chlorid of a calcium. In very persistent headaches it is well to blister the nape of the neck and keep the wound open with savin ointment for a week. This sometimes succeeds where other measures fail.

Medicolegal

Competency of Witnesses to Testify to Poisoning.

The Court of Criminal Appeals of Texas says, in Rice vs. State, that it does not believe it required a woman to be an expert in order to be able to know that poison was administered to her through a syringe into her rectum. It was the statement of a fact which, without any personal experience or any expert knowledge, she might state. Again, it says that two physicians were permitted to give their opinion as to the cause of the subsequent death of the woman in question, and both attributed it to strychnin poison. Both of them testified that they had never before come in contact with a case of strychnin poison in their practices, though both were graduates of schools of medicine and had practiced medicine a number of years; that all of their knowledge as to strychnin poison was such as had been acquired from reading the books and study, and from what they had been taught in school. This was objected to on the ground that it was hearsay and incompetent; that said witnesses could not be considered as experts. But the court holds that the testimony was admissible. Nor, in its opinion, does this militate against the proposition that medical works can not be read to the jury either as evidence or as argument. A man, it says, may become an expert from his knowledge of the human system and from his knowledge of strychnin as a poison, without having ever attended a case of poison by strychnin. A man may become an expert from scientific investigation without any practical experience.

No Damages for Anguish from Mutilation of the Dead—Property Rights in Bodies and Skeletons.

The Supreme Court of Oklahoma holds, in Long vs. Chicago, Rock Island & Pacific Railway Company, that the parents of an infant child are not entitled, under the law, to recover damages for mental pain and anguish occasioned by the mutilation of the dead body of such infant. It says that in announcing this rule it has not overlooked the declarations to the contrary by some courts of high standing. These decisions, however, indicate an effort to interpolate into the law for the punishment of a wrong a remedy at the sacrifice of legal principles. The courts which declare the right to recover for mental anguish in a case of this character do so on the assumption that a human corpse is property; not property in the general acceptation of that term, but a sort of quasi (as it were) property—that is, that it so resembles property, in the right of relatives to control and direct its interment, and to have it kept inviolate from negligent or malicious injury, that the law of the rights of property and the remedy for the destruction thereof should be extended to such cases, measuring the injury and the compensation by the mental suffering of the living occasioned by the desecration of the dead. The disposition to protect the bodies of the departed, as indicated by these decisions, appeals to our higher sensibilities, but the rules announced by these courts authorizing recovery for mental anguish alone is, in this court's opinion, largely the result of sentiment, and is in conflict with the common law of the land. It is true that in some countries the bodies of deceased persons have been seized and sold for debt, and, under such a law, they would be property. Greatly to their credit, England and the United States have always considered the decent burial of the dead of more importance than the payment of the debtor's claim. In dealing with the question presented the court has no reference to dead bodies or the skeletons thereof which have been by law properly appropriated for the benefit of science; as, for instance, for medical schools and other institutions of learning. That such are property this court does not deny, because they have an intrinsic value for a particular purpose. Nor is this court inclined to criticise, as some other courts have done, the failure of the lawmaking power to provide for recovery in such a case as here under consideration. The legislature are the judges of the expediency of such a law, and on that question minds might differ, for the legal wrong is against the public and not against the individual. But where a corpse is mutilated, before or after burial, in such a way as to render necessary the expenditure of extra money or labor in caring for it, or where injury is done to the coffin or clothes, the actual damages sustained may be recovered.

Capacity of Children to Commit Rape and Other Crimes.

The Supreme Court of North Dakota says, in the case of State vs. Fisk, that the confusion which existed at common law as to the capacity of children to commit crime has been removed in that state by express statute. Section 8544 of the Revised Codes of 1905, so far as material, provides: "All persons are capable of committing crime except those belong-

ing to the following classes: 1, Children under the age of 7 years; 2, children over the age of 7 years, but under the age of 14 years, in the absence of clear proof that at the time of committing the act or neglect charged against them they knew its wrongfulness." Under this section a child under the age of 7 years is conclusively presumed to be incapable of committing a crime. In this respect it is the same as the common law, both of England and this country. Between 7 and 14, called the dubious age of discretion, the child is still presumed to be incapable, but the presumption is not conclusive. The state may overcome the presumption, but to do so it must show by clear proof that the accused knew the wrongfulness of the act when he committed it. In the absence of such proof the presumption of incapacity must prevail. The burden is on the state in such cases to prove knowledge of the wrongfulness of the act as an independent fact. In this respect the rule is the same as at common law.

The foregoing may be said to refer to mental capacity. But the crime of rape, as well as the crime of assault with intent to commit rape, involves a further element, and that is the physical capacity to commit the offense. In England it was accepted as a fact that a child under 14 had not the physical capacity to commit the offense, and it was, therefore, held from an early day that the presumption of incapacity was conclusive. Evidence to show capacity was not admissible. In this country several states followed the English common-law rule. Williams vs. State, 20 Fla. 777; McKinny vs. State, 29 Fla. 565; State vs. Sam Wrist, 60 N. C. 294; State vs. Pugh, 52 N. C. 61; Foster vs. Com. (Va.), 31 S. E. Rep. 503; State vs. Handy, 4 Har. (Del.) 566. See also Com. vs. Green, 2 Pick. (Mass.) 380. The courts of other states, and with considerable unanimity, were of opinion that the English rule was not suited to this country on account of the difference in condition, the age of puberty apparently coming earlier, and held that the presumption of physical capacity was not conclusive, but that it may be overcome by proof that the defendant has reached the age of puberty and was capable of consummating the crime. People vs. Randolph (N. Y.), 2 Parker Cr. R. 174; Williams vs. State, 14 Ohio, 222; Hiltabiddle vs. State, 35 Ohio St. 52; Gordon vs. State, 93 Ga. 531; Wagoner vs. State, 5 Lea (Tenn.), 352; Heilman vs. Com., 84 Ky. 457; State vs. Jones, 35 La. Ann. 935.

The law in this state (North Dakota) is settled by statute in favor of the rule laid down in the cases just cited. Section 8891 of the Revised Codes of 1905 reads: "No conviction for rape can be had against any one who was under the age of 14 years at the time of the act alleged, unless his physical ability to accomplish penetration is proved as an independent fact, and beyond reasonable doubt." In prosecution of persons between the ages of 7 and 14, for rape or an attempt to commit rape, the burden is on the state to show the mental and physical competency of the defendant. In the absence of such proof the presumption of incompetency must prevail.

As applied to assaults with intent to commit rape by children between 7 and 14 years of age, the rule is that where physical capacity to consummate the offense is not shown, there can be no conviction for an assault with intent to commit it. There being no ability to commit the rape, the intent is merely a thought or desire, which could not in the nature of things produce any result, the highest offense of which the party is capable being a mere assault and battery. The only case holding a contrary view which has come to this court's notice is Com. vs. Green, 2 Pick. (Mass.), 380, in which it is held that the want of physical ability to consummate the offense will not defeat a conviction for an assault with intent to commit it.

In the case of an adult, impotency is a defense against the consummated offense of rape. But the courts differ when the charge is an attempt. See Territory vs. Keyes, 5 Dak. 244. In that case it was held that the impotency of a grown man is no defense in a prosecution for assault with intent to commit rape, in the absence of proof that the defendant knew that he was impotent. In the present case, a prosecution of a boy under 14 years of age, there was legal incompetency. The question of impotency was not involved.

Current Medical Literature

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

Medical Record, New York.

October 6.

1 *Three Ureters Demonstrated During Life; Ureter Catheterization Giving Three Different Urines, One Infected with Gonococci. B. Lewis, St. Louis.
2 *Axioms in the Treatment of Cancer of the Rectum. C. B. Kelsey, New York.
3 Treatment of Symptoms, a Rational and Scientific Procedure. G. F. Butler, Chicago.
4 *Effect of Blowing on Wind Musical Instruments with Special Reference to Tuberculosis. J. F. Rogers, New Haven, Conn.
5 *Appendicitis. J. J. Brownson, Dubuque, Iowa.

1. **Three Ureters Demonstrated During Life.**—Lewis gives the history of this patient, a man, 24 years old. Even after the most careful and persistent treatment, the condition of urethral gonorrhea proved very rebellious. During the writer's examinations it was noted that, as a rule, the organisms were not so numerous in either the urethral discharge or that pressed from the prostate as they were in the sedimentations from the urine. On inserting the rectangular cystoscope into the bladder two ureter openings were observed to the left of the median line. The normal opening was seen on the right side. The ureters were identified by passing up into them ureter catheters filled with lead fuse wire. An *x*-ray photograph was then taken. Only one of the two left-sided ureters was infected.

2. **Axioms in Treatment of Cancer of Rectum.**—Kelsey believes that in every suitable case of cancer of the rectum the patient should be subjected to immediate excision or resection by some one of the half-dozen well-recognized varieties of the operation. In every other case, he considers such only as allow of complete removal of the disease with no more risk than attends any other major surgical operation. The mortality rate depends on the choice of cases and on the operator. There is no one operation that is applicable to all cases. The site of the growth must be the controlling factor. Kelsey describes the method which he has found satisfactory.

4. **Effect of Blowing on Wind Musical Instruments.**—Rogers states that the outflow of lymph is hastened, especially from the lung tissue; the heart sounds and beats are not materially altered except by extreme pressure; the gaseous interchange in the lungs must be facilitated at least temporarily; the effects of changes of pressure on the circulation and movements of the abdominal organs are pronounced; the amount of muscular strength required varies with the instrument and character of performance. Opinion among musicians seems to be about equally divided as to the frequency of tuberculosis among such musicians. The professional musician who has contracted tuberculosis would better adopt some less taxing work when the quality or quantity of his work makes too much demand on his general vitality, and when his surroundings as to ventilation or dust are bad, he should find a place entailing less danger.

5. **Appendicitis.**—Brownson says that the operation for appendicitis ought to be done in the primary stage or before the high-fever period. The appendix should be removed, to guard against fulminating cases and those in which rupture occurs into the abdominal cavity. In the secondary period, after suppuration, drainage should be instituted and Nature left to take care of the appendix. In the interval, after all symptoms of inflammation have subsided, the appendix should be removed. The operation ought not to be done in the intermediary period when there is fever and distension of the abdomen, because the danger from operation at this period is greater than the risk of the case becoming fulminating, or the abscess bursting into the abdominal cavity.

New York Medical Journal.

October 6.

6 *Functions of the Cerebellum and Symptoms of Its Disease. C. L. Dana, New York.
7 Progressive Muscular Atrophy of Cervicobulbar Type Occurring with Cervical Rib. W. G. Spiller and J. C. Gittings, Philadelphia.

8 *A Practical View of Tent Life in the Southwest. E. E. Elliott, E. Las Vegas, N. M.
9 *Note on Peculiar Attitudes in Epilepsy During Sleep. N. B. Roos, Binghamton, N. Y.
10 *Supracondyloid Fracture of the Humerus. C. C. Page, New York.
11 *Differential Diagnosis of the Acute Infectious Diseases. F. H. Dillingham, New York.
12 Relations of Gastric Ulcer to Gastric Cancer. M. R. Barker, Chicago.

6. **Functions of Cerebellum.**—Dana calls attention to the general subject of the functions of the cerebellum, and then to the morbid phenomena caused especially by other conditions and tumors, such as hemorrhages, softenings, degenerative sclerotic and functional disturbances. He reports 6 illustrative cases.

8. **Tent Life in the Southwest.**—Elliott says that the Southwest with its pure, dry, warm air and tent life can do good to all tuberculous patients, can do much for many, and can work wonders for a few, but that to get the greatest benefits in the shortest time the patient must be placed right at the start and be told what to do and what not to do at all times.

9. **Attitudes in Epilepsy During Sleep.**—In the men's infirmary at the Craig Colony, Ross has observed a peculiar similarity of posture during sleep in a large number of the male patients. Many of them sleep curled up, the head being bent forward until it rests securely on the knees, which are drawn up. Many of these low-grade patients invariably cover their heads entirely with blankets. Others sleep in a sitting posture night after night the year round, while still others simply brace the head against the pillow as it stands on edge at the head of the bed. Others sleep flat on the abdomen, while still others sleep with their arms above the head, the fingers clasped and supporting the head in this manner. Some sleep with their heads resting on elbows and hands, while others sleep in a posture in which the head is flexed until it touches the breast, without giving any support whatever to the head. Ross thinks this observation is interesting chiefly from the fact that all patients who assume these extraordinary attitudes during sleep have practically no mentality, standing but little if any above animals in this respect.

10. **Supracondyloid Fracture of the Humerus.**—Page reports a case which illustrates the excellent results obtained by the prompt reduction and accurate replacement of the fragments in a supracondyloid fracture of the left humerus.

11. **Diagnosis of Acute Infectious Diseases.**—In this paper Dillingham considers particularly the diagnosis of the less typical cases of smallpox, chickenpox, measles, scarlet fever and typhoid fever.

Boston Medical and Surgical Journal.
October 4.

13 *Future of the Medical Profession. C. W. Eliot, Boston.
14 *Unity of the Medical Sciences. W. H. Welch, Baltimore.
15 *Hysteria from the Point of View of Dissociated Personality. (To be continued). M. Prince, Boston.
16 *The Ulnar Nerve as a Landmark of the Elbow. F. J. Cotton, Boston.

13, 14.—See THE JOURNAL, Oct. 6, 1906, page 1115.

15. **Hysteria.**—Prince presents a study of certain well-known types of hysteria from the point of view of dissociated or disintegrated personality, and, conversely, dissociated personality from the point of view of hysteria, taking into consideration only such manifestations as may be observed by the clinician, without consideration of the psycopathologic changes which underly hysteria and multiple personality. The article is to be continued.

16. **Ulnar Nerve as Landmark.**—Clinical experience has convinced Cotton that the ulnar nerve serves admirably as a landmark of the elbow. Particularly it is of value in the common and often overlooked fractures or epiphyseal separations of the internal epicondyle. It is very rarely that the ulnar nerve is displaced.

St. Louis Medical Review.
September 29.

17 Mouth Cleanliness. M. A. Smale, London, England.
18 Origin and Heredity of Matter. J. Wright, New York.

The Laryngoscope, St. Louis, Mo.
September.

19 *Herpes Zoster Auris. D. T. Vail, Cincinnati.
20 *A New Operation for Extreme Cases of Septal Deflection, with Presentation of a Successful Result in an Adult Case. J. Price-Brown, Toronto.
21 Blood-Clot Method of Wound Repair in Aural Surgery. F. B. Sprague, Providence, R. I.
22 *Infective Sigmoid-Sinus Thrombosis, Resection of Internal Jugular. H. B. Ellis. Los Angeles.
23 *Mixed Tumor of the Soft Palate. T. H. Halsted, Syracuse, N. Y.
24 *Case of Polypoid Lipoma of the Tongue. A. O. Pfingst, Louisville, Ky.
25 Faucial Pillar Retractors. A. R. Solenberger, Colorado Springs, Colo.
26 Case of Epileptiform Hysteria, Probable Result of Necrosing Ethmoiditis. W. W. Bulette, Pueblo, Colo.
27 *Case of Submucous Hemorrhage of the Right Vocal Cords. O. Wilkinson, Washington, D. C.
28 *Perforation of the Septum Nasi. C. W. Richardson, Washington, D. C.
29 *Frontonasal Encephalocele. F. E. Hopkins, Springfiel, Mass.
30 Removal of An Open Safety Pin from the Esophagus. F. L. Stillman, Columbus, Ohio.
31 Two Cases of Bone Impacted in the Larynx. J. M. Ingersoll and D. P. Allen, Cleveland, Ohio.
32 Papilloma of Larynx from Inhalation of Flames. A. B. Thrasher, Cincinnati.
33 A Rare Form of Tubercular Laryngitis, Tubercular Web Between the Vocal Cords. S. Rosenheim, Baltimore.

19.—See abstract in THE JOURNAL, July 28, 1906, page 299.

20. Id.—Oct. 6, 1906, page 1137.

22. Id.—July 21, 1906, page 230.

23. **Mixed Tumor of Soft Palate.**—Halsted reports the case of a man, aged 55, who had a swelling in the throat for at least 20 years. Various diagnoses had been made by the physicians consulted and the majority advised removal, although a few of them strenuously advised against any surgical interference. Following an acute attack of pharyngitis and laryngitis, the patient submitted to having the tumor removed. It was encapsulated, as hard as a bone, but in its center were several small cystic cavities. On microscopic examination the tumor was found to be a typical example of the mixed tumors of the salivary glands, the so-called cylindromata. Seven months after the operation the tumor had not returned.

24. **Polypoid Lipoma of Tongue.**—The patient concerned in the report made by Pfingst was a girl, aged 14½. Attached to the tongue at a point corresponding to the foramen cecum was a large pedunculated mass of a shape which could be compared to a fetal chicken or duck. It had a smooth though slightly irregular surface, was pink in color, and rather firm to the touch. The tumor was first noticed when the patient was about two weeks old. The growth was removed by snaring it close to the base with a Peters snare. Hemorrhage, though profuse for two or three minutes, subsided in ten minutes and the patient made a good recovery. The mass of the growth was made of true adipose tissue, with rather large cells irregularly arranged, and was characterized by an abundance of thin-walled vessels.

27. **Submucous Hemorrhage of Right Vocal Cord.**—The special feature in the case reported by Wilkinson is that the hemorrhage came on in a perfectly healthy woman, aged 50, without any apparent exciting cause. The treatment consisted of mild oil sprays at first, with one or two applications of 2 per cent. nitrate of silver solution, and an injunction not to use the voice.

28. **Perforation of Nasal Septum.**—Richardson reports 15 additional cases of perforation of the nasal septum in which there was no known etiologic factor and an indefinite pathologic history. An analysis of these 15 cases showed that in 11 there was either the direct physical evidence of tuberculosis in the affected individual, or that the perforation took place in an individual who, it might be said, had a well-marked family history of tuberculosis. These 15 cases, added to the 17 reported in a previous paper, make 32 cases with a total of 22 cases in which tuberculosis was more or less in evidence, with 10 without such evidence. Richardson believes that this occurrence of 66 per cent. of perforation in individuals of a tuberculous or tubercular predisposition must be more than a mere pathologic coincidence.

29. **Fronto-Nasal Encephalocele.**—The case reported by Hopkins differs from cases reported previously in that the symptoms were almost wholly nasal. The patient was 11 months

old and presented a small swelling over the right nasal bone, which was present at birth and had been diagnosed as a cyst. Relief was sought because of obstruction to nasal respiration in the right fossa. On examination the right fossa was found to be occluded by a tumor projecting in the vestibule, having its attachment apparently to the outer wall near the anterior end of the inferior turbinate. The small mass was removed with a cold wire snare and the supposed pedicle trimmed down smoothly with a pair of cutting forceps. Examination of the deeper parts of the fossa by reflected sunlight revealed a globular tumor at the level of the middle turbinate about five-eighths of an inch in diameter, perfectly smooth, of a grayish color and semi-translucent. Pressure made with a cotton-tipped probe against the globular tumor within the nose caused an increase in size of the external one, while pressure with the finger externally was conveyed to the mass within. Diagnosis of cerebral hernia was made, and as no operation promised relief nothing further was done. The child became ill on the fifth day, and at the end of two weeks died of meningitis.

Annals of Surgery, Philadelphia.
September.

34 Serumtherapy of Tetanus. N. Jacobson, Syracuse, N. Y., and H. D. Pease, Albany, N. Y.
35 *Treatment of Tetanus by Magnesium Sulphate. J. A. Blake, New York.
36 Early Operation in Traumatic Intracranial Hemorrhage. F. W. Murray, New York.
37 *Case of Tumor of the Carotid Body. J. C. Da Costa, Philadelphia.
38 *Shortening of the Round Ligaments of Subperitoneal Ventro-Aponeurotic Fixation. J. M. Fisher, Philadelphia.
39 *An Experimental Study of Suture of Arteries with a Description of a New Suture. G. M. Dorrance, Philadelphia.
40 *Combined Superior Tibio-fibular and Astragalo-fibular Osteoplasty as a Means to Prevent Shortening of the Leg After Extensive Osteomyelitis of the Tibia Occurring During Adolescence. N. Kerr, Chicago.
41 *Relation of the Technic of Nurses and of Hospital Apparatus to the Healing of Wounds. C. P. Noble, Philadelphia.

35.—See abstract in THE JOURNAL, July 14, 1906, page 146.

37. **Tumor of Carotid Body.**—Da Costa reports a case in which removal of the tumor was followed by hemiplegia. He points out that the operation of removing a carotid tumor is an extremely dangerous one and is not to be undertaken lightly. Every tumor in this region of the neck should be examined very carefully so that the surgeon will not be led into operating for some supposedly trivial condition and then find himself suddenly so far advanced in attacking a carotid tumor as to necessitate tying all the carotids. In his case, eight weeks after the operation, the hemiplegia seemed to be fading. [This case was referred to in the article on this subject by Drs. Keen and Funke, in THE JOURNAL A. M. A., Aug. 18-25, 1906.—ED.]

38. **Shortening of Round Ligaments.**—The operation to which Fisher refers is the one devised by Dr. E. E. Montgomery.

39. **Sutures of Arteries.**—In the method described by Dorrance attention is called to the following advantages: 1, The suture does not protrude in the lumen of the artery; 2, fibrin ferment can not get from the ends or cut surfaces of the artery into the blood stream; 3, the liability to secondary hemorrhage is lessened by the double line of suture. Disadvantages have not been observed. Pagenstecher's thread No. 1 is used in the finest sewing-needle the thread will pass through. The clamps used are very limber-bladed forceps, devised especially for this work in order to avoid crushing the intima. The blades are covered with rubber tubing. Dissecting forceps are used to hold the edges of the artery. The suture can be used for a longitudinal, oblique or transverse (complete or incomplete) cut in the artery. When suturing a longitudinal cut the clamps are applied 2.5 cm. above and below the cut. The suture is started 1.5 mm. above the cut edge, the suture is passed through the outer two coats and tied, the end of the suture is grasped by a hemostat, the needle is next passed through all the coats of the artery on both sides 1.5 mm. below the first suture and 1.5 mm. from the cut edge; the suture from now on is a continuous mattress suture with the dropping back one-half a suture length every third suture until the end of the incision is reached, then the suture is passed through the outer two coats 1.5 mm. below the lower end of the cut and a half-hitch made to tie the suture. The same suture is continued as a whip-stitch over the edges of the artery outside of the mattress suture until the starting point is reached, when the two ends of the suture are tied. The artery is grasped in a gauze pad, the distal clamp removed, then the proximal clamp and the artery is dropped back in place and the deep fascia sutured around the line of approximation. The method of suturing an oblique cut is practically the same as for the longitudinal.

40. **Osteoplasty.**—The principal point in the case reported by Kerr, and the one which he believes to be of value in properly selected cases, is the substitution of the fibula for the tibia as the pressure bearing bone, in order that continued growth in the length of the leg may be maintained. Kerr concludes that the periosteum can be relied on to regenerate new bone; that it is not necessary to wait for two or two and a half months for evidences of repair on the part of this membrane, and that it is even better to remove the shaft of the tibia entirely just as soon as one feels satisfied that the vitality of the involved bone is sacrificed; that on account of the difficulties of rendering the parts sufficiently aseptic, through-and-through drainage either with gauze or tubes should be instituted just preliminary to the suturing of the edges of the periosteum together.

41. **Sources of Wound Infection.**—The points to which Noble directs attention are: 1. Whether surgeons should be satisfied with the policy of giving verbal directions to head nurses about the disinfection of hospital apparatus and the technic of nurses as applied to the treatment of wounds; or, whether each hospital should adopt a routine technic which should prescribe the methods which are to be followed, thus avoiding any possibility of error on the part of the head nurse and pupil nurses. 2. The importance of preventing the infection of the hands of nurses by the elimination of all possible sources of contamination, through proper regulations as to the cleansing and disinfection of wards, rooms, furniture and apparatus employed by the nurses. 3. The adoption of a proper technic for the disinfection of nurses' hands. 4. The installation of proper sterilizers, which will enable nurses to sterilize the apparatus used by them as efficiently as is done in operating rooms at the present time.

Virginia Medical Semi-Monthly, Richmond.
September 21.

42 *Two Cases Illustrating the Value of the Ophthalmoscope as an Aid in the Diagnosis of the Cause of Brain Lesions. J. Dunn, Richmond.
43 Gonorrhea. R. A. Gamble, Petersburg, Va.
44 *The Lingual Tonsil. J. P. Davidson, Richmond.
45 Tuberculosis—Its Etiology—Prophylaxis and Treatment. G. Armstrong, Staunton, Va.
46 Cough in Consumption and Its Management. W. H. Coffman, Asheville, N. C.

42. **Value of Ophthalmoscope in Diagnosis of Brain Lesions.**—The two cases reported by Dunn are, one of isolated supranuclear paralysis of the seventh nerve, and one of left-sided hemianopsia. Both patients sought relief from what they supposed was some eye trouble. Ophthalmoscopic examination disclosed the real condition.

44. **Lingual Tonsil.**—Davidson believes that the lingual tonsil often is responsible for persistent hacking or spasmodic cough, and that these symptoms can be relieved promptly by local applications to the tonsil rather than by the administration of sedative cough mixtures.

Journal of the Minnesota State Medical Association and the Northwestern Lancet, Minneapolis.
September 15.

47 The Lymphatics in Appendicitis. E. P. Quain, Bismarck, N. D.
48 *Skin-grafting; Modified Open Method. W. D. Kelly, St. Paul.
49 *Tuberculosis. H. M. Bracken, St. Paul.
50 Anaërobic Cellulitis, or Infectious Emphysema. J. W. Little, Minneapolis.

48. **Skin Grafting.**—Kelly employs local anesthesia and prepares the skin by washing it with sterile water or normal saline solution. A double-edged spatula knife is used to take grafts, by following a flat piece of board upward toward the imbedded hook with a sawing motion. In this way a very wide and as long a graft as required can be made. The skin graft should be made as thin as possible. The graft is placed

on a flat holder and immediately placed on the granulating surface. If the open wound is of recent date and granulating surfaces appear healthy, even if a discharge be present, it will be unnecessary to curette or to disturb the wound in any way, except to wash it carefully with normal salt solution or sterile water. If, however, the granulations are spongy, soft, or pale it is well to use a blunt curette to freshen up the surfaces of the wound. All bleeding should be stopped, and the blood clot removed before grafts are applied. In placing the grafts they should be smoothed out on a spatula or flat spoon, and applied with the follicles and the hair running in the same direction as the hairs of the parts around the wound. The spaces under the graft, when applied, should be obliterated, and the grafts made to agglutinate closely to the granular surface, which may be accomplished by using a rolled piece of gauze. After application of the graft this gauze is rolled on the graft, either upward or downward, until the graft gives an appearance of translucency, and the appearance of sticking or drawing in closely to the bottom of the wound. The dressings used on portions of body other than limbs are usually a thick piece of sterile gauze, placed on either side of the wound and held in place by strips of oxid of zinc plaster, which plaster is held far above the wound by the gauze. A single strip of gauze is placed over the entire wound, over the above dressing, and held in place by two oxid of zinc straps. In this way the patient or any one else is prevented from infecting the grafted side. The modified open dressing is usually completed by a single strip of gauze over the entire dressing. This dressing usually remains in place for four or five days, and if, at the expiration of this time, it is necessary to remove it, this can be done by cutting the dressing at right angles. The wound can then be dressed, and if blebs are formed they should be incised with either scalpel or scissors and simply washed with a disinfectant solution, but not irrigated.

49. **Tuberculosis.**—Bracken sums up the important points in the control of tuberculosis as follows: 1. An early diagnosis of the disease. In this the responsibility is about equally divided between the patient and the physician. 2. The education of the people, in order that they may know that tuberculosis is both a preventable and a curable disease. 3. The recognition of the fact that the general practitioner and the sanitary authorities must work together in the care of those cases which have become centers of infection, viz., cases with the tubercle bacillus present in the sputum. 4. The necessity for the proper care of tuberculous patients either at their homes or in sanatoria, in order to prevent the infection of others. 5. The necessity of considering the protection of the uninfected as an important factor in the control of tuberculosis. 6. The even greater necessity of caring for advanced or incurable cases than for the mild curable cases, if the disease is to be brought under control. 7. The creation of conditions to meet all requirements in the care of the tuberculous, embracing sanatoria, district nursing, dispensaries, etc. 8. The formation of antituberculosis organizations, to take an interest in raising funds and in aiding in providing for the proper care of the tuberculous. 9. The recognition of the fact that medication is but a small factor in the control of tuberculosis, while good hygienic surroundings for the patient, together with the proper prophylactic measure for the uninfected, are of the greatest importance in the control of this disease.

Fort Wayne Medical Journal-Magazine.
September.

51 Etiology, Transmission and Diagnosis of Scarlet Fever. E. M. Van Buskirk, Ft. Wayne.
52 *Gonorrheal Lesions Other Than of the Genital Tract. A. Kane, Ft. Wayne.

52. **Gonorrheal Lesions.**—Kane discusses the gonorrheal affections of the endocardium and of joints, but offers nothing new.

The Postgraduate, New York.
September.

53 Presentations of Specimens. S. S. Graber, New York.
54 Vincent's Bacillus and Spirillum, the Causal Agent of Chronic Suppurative Otitis Media Necessitating Radical Operation—Meningitis—Death. R. J. Held, New York.
55 Nauheim Bath in Gynecology. S. W. Bandler, New York.

Louisville Monthly Journal of Medicine and Surgery.
September.

56 Neuroses of the Intestine. J. Glahn, Owensboro.
57 Treatment of Doctors. A. F. Knox, Bowen.
58 Items of Interest. E. S. McKee, Cincinnati, Ohio.
59 Acute Autointoxication from Fecal Stasis. W. F. Waugh, Chicago.
60 Case of Hydrophobia. I. A. Arnold, Meadow Lawn.
61 Treatment of Chorea. R. B. Gilbert, Louisville.
62 Seminal Vesiculitis. J. T. Windel, Louisville.
63 Phases of Surgical Shock. T. L. Butler, Louisville.

Journal of the Kansas Medical Society, Lawrence.
September.

64 Absurd Verdicts in Cases of Insanity—Unfitness of Jury System. B. D. Eastman, Topeka.
65 Plea for the Earlier Diagnosis and Treatment of Epilepsy. M. L. Perry, Parsons.
66 Dementia Præcox. T. C. Biddle, Topeka.
67 Paranoia. L. L. Uhls, Osawatomie.
68 Toxic Psychoses. C. C. Goddard, Leavenworth.

Journal of the Arkansas Medical Society, Little Rock.
September 15.

69 Cases of Version. M. G. Thompson, Hot Springs.
70 Hemorrhage from Uterus During Gestation. J. T. Clegg, Siloam Springs.

Medical Examiner and Practitioner, New York.
September.

71 Early Diagnosis and Prognosis of Pulmonary Tuberculosis. S. A. Knopf, New York.
72 The Vagus Reflex a Diagnostic and Prognostic Sign in Life Insurance Work. T. J. Mays, Philadelphia.
73 Features of Chest Examination of Interest to Life Insurance Examiners. J. M. Patton, Chicago.
74 Tuberculosis: Its Consideration in Relation to Risks in Life Insurance. W. M. Hilton, Waverly, N. Y.

Vermont Medical Monthly, Burlington.
September 15.

75 Primary Pernicious Anemia. C. H. Beecher, Burlington.
76 Angina Pectoris. A. C. Bailey, Randolph.
77 Jaundice. M. L. Chandler, Barre.

Medical Fortnightly, St. Louis.
September 25.

78 Internal and External Urethrotomies. R. Harrison, London, England.
79 Our Duty to Prospective Medical Students. A. L. Benedict, Buffalo.

The Therapeutic Gazette, Detroit, Mich.
September 15.

80 The Diet of Childhood. D. J. M. Miller, Philadelphia.
81 Results of Treatment in Ninety-Four Cases of Pulmonary Tuberculosis. F. M. Pottenger, Monrovia, Cal.
82 Progress in Serumtherapy During the Year Ending June 1, 1906. E. R. Larned, Chicago.
83 Report of the Management of Tuberculous Patients Applying for Treatment to the Dispensary of the Samaritan Hospital, Philadelphia. M. R. Taylor, Philadelphia.
84 Present Status of Operative Intervention in Exstrophy of the Bladder. A. P. M. Vance, Louisville, Ky.

Brooklyn Medical Journal.
September.

85 Honors That Have Come to the Medical Profession in America. W. Schroeder, Long Island.
86 Nasal Malformations and Diseases of the Nasal Accessory Sinuses. C. W. Stickle, Brooklyn.
87 Address to the Graduating Class of the Methodist Episcopal Training School for Nurses, May 31, 1906. W. F. Campbell, Brooklyn.

Southern California Practitioner, Los Angeles.
September.

88 The Physician's Duty to His Fellow Practitioner. W. Lindley, Los Angeles.
89 European Surgery. A. S. Lobingier, Los Angeles.
90 Electrical Apparatus and Therapy. A. Soiland, Los Angeles.
91 Extrauterine Pregnancy. M. A. Rodgers, Tucson, Ariz.
92 Our Duties as Citizens in the Prevention of Tuberculosis. G. H. Kress, Los Angeles.

St. Paul Medical Journal.
October.

93 Dermatitis Exfoliativa. B. Foster, St. Paul.
94 Homicide by Aconite Poisoning and the Quantitative Distribution of Aconitina in the Human Body 317 and 385 Days After Death. H. C. Carel, Minneapolis.
95 Pyelitis. H. Peddicord, St. Paul.
96 Etiology and Pathology of Acute Septic Osteomyelitis. W. A. Dennis, St. Paul.

Journal of the Medical Society of New Jersey, Orange.
October.

97 Metastatic Panophthalmitis. C. J. Kipp, Newark.
98 Results of Dr. Allport's Plan of Examination of the Eyes and Ears of Public School Children in the Oranges. L. Emerson, Orange.
99 Edema of the Larynx; Two Cases Associated with Acute Septic Disease of the Throat. F. C. Ard, Plainfield.
100 Tendency of the Organism to Limit Pulmonary Tuberculosis. T. Senseman, Atlantic City.

Mississippi Medical Monthly, Vicksburg.

October.

101 Advantage of an Early Operation in Appendicitis. H. T. Inge, Mobile, Ala.
102 Biliousness. H. H. West, Biloxi.
103 La Grippe. J. T. Longino, Jonestown.

California State Journal of Medicine, San Francisco.

August.

104 Gastroenteric Autointoxication: Its Recognition and Significance and Its Relation to Arterial Hypertension. W. A. Briggs, Sacramento.
105 Pain. E. R. Wagner, San Jose.
106 True Sciatica and Diseases of the Posterior Urethra and Adnexa. G. S. Peterkin, Seattle, Wash.
107 Choice of Anesthesia. H. L. Parish, Calistoga.
108 Local Anesthesia. T. C. Edwards, Salinas.
109 Conservative Treatment of Hip Disease. S. J. Hunkin, San Francisco.

Journal of the South Carolina Medical Association, Greenville.

September 21.

110 Unjustifiable Hysterectomy. M. Simons, Charleston.
111 Recent Meeting of the British Medical Association in Toronto, Ontario. W. P. Porcher, Charleston.
112 Intestinal Origin of Tuberculosis of the Tracheobronchial Glands. A. Calmette, C. Guerin, and A. Delearde, Charleston.
113 Our Medical Law. M. R. Baker, Columbia.
114 The County Medical Society and Its Benefits to the Medical Profession. O. B. Mayer, Newberry.

Journal of the Outdoor Life, Saranac Lake, N. Y.

October.

115 The Error of Climate in the Treatment of Tuberculosis. J. W. Kime, Ft. Dodge, Iowa.
116 The Barlow Sanatorium of Los Angeles, Cal. G. H. Kress, Los Angeles.
117 Winter Amusements in Arizona. H. H. Stone, Phoenix, Ariz.

Kentucky Medical Journal, Louisville.

October.

118 Intussusception. J. B. Bullitt, Louisville.
119 Ectopic Pregnancy. A. W. Cain, Somerset.
120 Advantages and Disadvantages of Being a Physician. J. E. Wells, Cynthiana.
121 Postoperative Intestinal Obstruction Consequent on Visceral Stab Wounds of Abdomen. R. C. Falconer, Lexington.

The Canada Lancet, Toronto.

October.

122 Thoughts on a Decade in Medicine. E. A. Reeve, Toronto.
123 *Circulation Viewed from the Periphery. J. Barr, Liverpool, England.
124 *Technic of Operations on the Central Nervous System. V. Horsley, London, England.
125 Meeting of the British Medical Association in Toronto, August 21-25, 1906. J. Hunter, Toronto.
126 Application of Physical Chemistry to Serum Pathology. W. H. Manwaring, Toronto.

123, 124. See abstracts in THE JOURNAL, Sept. 1, 1906, page 706.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal.

September 22.

1 Protection and Control of the Milk Supply. R. Harcourt.
2 Sanitary Control of the Milk Supply. J. Glaister.
3 Protection and Control of Milk Supplies. H. C. Pattin.
4 Hygiene of the Home. J. J. Cassidy.
5 Medical Inspection of Children Attending Elementary Schools, H. MacMurchy.
6 Medical Inspection of Schools. W. Scott.
7 Present Status of Antituberculosis Work in Canada. J. H. Elliott.
8 *Significance of Some Enlargements of the Thyroid Gland. A. F. Martin.
9 *Simulation of Mastoid Disease. S. Paget.

8. Significance of Enlargement of Thyroid.—Martin attempts to explain the occurrence of some simple enlargements of the thyroid gland to which he gives the name thyreocele, a term first used by Robinson. Based on a careful study of a large number of cases, Martin concludes that a call for increased functional activity is sufficient cause for simple enlargement of the thyroid gland. Such a call is frequently given by the metabolism of the organism in connection with growth and development, with a performance of the uterine functions in the female, and with the chlorotic conditions of young girls. The phases of enlargement of the thyroid included under the term thyreocele are a response to such an appeal from one or more of the above causes in an individual which thyroid function is performed feebly. As undue physiologic activity is a potent cause for pathologic change, so this simple hypertrophy, when necessitated for prolonged periods, lays the foundation of the pathogenesis of the degenerate cystic and an adenomatous bronchocele. There is often some influence exerted by heredity on the thyroid function.

9. Simulation of Mastoid Disease.—In two cases seen by Paget, the signs of acute mastoid inflammation were feigned. The patient in each case was a nurse. One patient, a nurse in a fever hospital, had been subject for some months to a very slight discharge from the left ear. She complained of pain behind the ear. A few weeks later the temperature began to rise every evening, and at the end of a week it was 103. The patient was admitted to the hospital with a view to operation, but on taking the temperature it was found to be normal in the mouth and 104 under the arms. After a week or ten days the temperature became steady, the patient ceased to complain of pain and seemed to be in perfect health.

The other patient, a nurse in a convent, had a very slight chronic discharge from the left ear, and, like the first patient, had complained greatly of pain behind the ear. It was known of her that she was hysterical, and that she was in the habit of taking chloral. On her admission to hospital she had the appearance of a case of meningitis or of cerebral abscess. She lay in bed, day after day, in a state of lethargy, her eyes closed, her hands not moving. She seemed hardly to hear what was said to her, and, when she did answer, it was in a faint whispering voice, very slow. From time to time she moaned, complaining bitterly of pain, and flinching at the very lightest touch behind the ear; but mostly she lay like a log and seemed unconscious of all that was going on around her. Day after day she remained in this extraordinary state for nearly a fortnight. At the end of that time she began to have rapid convulsive up-and-down movements of the right hand and forearm, the side opposite to the affected ear. The mastoid was opened but no pus was found. The patient slowly became more natural and eventually left the hospital in fairly good health. A year later she had been admitted to another hospital with the same set of symptoms.

The Lancet, London.

September 22.

10 *Early Diagnosis of Cancer of the Stomach. C. M. Moullin.
11 A Study of the Streptococci Pathogenic for Man. F. W. Andrewes and T. J. Horder.
12 *Successful Treatment of a Case of Thoracic Aneurism Threatening to Rupture Externally. E. E. Young.
13 Concussion of the Spine, with Some Remarks on Concussion in General. E. M. Corner.
14 *Boric Acid Relative to Appendicitis. R. Harrison.
15 *Case of Osteitis Deformans with Huntington's Chorea. C. Mackey.
16 *Stammering and Its Treatment. R. A. Worthington.
17 *Phlegmonous Cholecystitis. G. A. Wright.

10. Early Diagnosis of Stomach Cancer.—Moullin believes that the chief reason why the results of operation for carcinoma of the stomach are not better than they are is that the diagnosis is not allowed to be made sufficiently early and that direct palpation through an incision is not resorted to at the first suspicion. If the existence of a cancer is suspected an operation should be done immediately.

12. Successful Treatment of Thoracic Aneurism.—Young reports the marked success attending the treatment of an interesting and apparently hopeless case of thoracic aneurism which had threatened to rupture externally. The skin covering the tumor, which was located in the median line of the neck, reaching from the level of the lower border of the third rib to just above the level of the lower border of the thyroid cartilage, was extremely thin, tense and shiny, looking like an abscess on the point of bursting. The patient was put to bed and kept absolutely quiet. The diet was restricted as far as possible, and all stimulants were withheld. Iodid of potassium was administered internally, in doses of 10 grains, three times a day, the dose being increased so that by the end of the third week 60 grains were being taken three times a day. Collodion was painted all over the surface of the tumor every night and morning. The patient began to improve from the commencement of the treatment, until in the ninth week he was well enough to assist in the work of the hospital ward. The

tumor was very much smaller, there was scarcely any visible expansile pulsation and the overlying skin was normal. The patient returned to his work.

14. **Boric Acid in Appendicitis.**—Harrison believes that boric acid may be a cause of appendicitis by reason of its inducing the severe digestive disturbances which always precede an attack of appendicitis.

15. **Osteitis Deformans with Huntington's Chorea.**—Mackey's patient was 57 years of age and began to suffer from twitchings 12 years ago. Twenty-six years ago he sustained a severe injury to the spine. The interesting feature in the case is the association of osteitis deformans and Huntington's chorea in the same patient. There appeared to be no malignant growth present in any other part of the body. Owing to the spasmodic contractions which the patient's muscles underwent it was found impossible to take satisfactory skiagrams of his bones.

16. **Treatment of Stammering.**—The general principles of the treatment of stammering are summarized by Worthington as follows: 1. Remove, as far as possible, any local physical inferiority in any of the organs concerned in speech. 2. Determine in what part of the mechanism the disturbance primarily arises and which of the phenomena are secondary. 3. Ignore the latter, but devise exercises of the second class for the former. 4. Endeavor to induce in the stammerer a constant habit of speech which shall itself be an exercise of the first class. He says that a stammerer cured is not the same as a man who has never stammered. Without incessant watchfulness on his part the trouble is certain to recur. The recognition of this fact will prevent much disappointment and misapprehension which too often arises from a belief that the secret of cure is some specific in the hands of this or that practitioner. The treatment of every case is essentially individual.

17. **Phlegmonous Cholecystitis.**—Wright reports three cases of phlegmonous cholecystitis, one of which terminated fatally. He says that in any case in which there is a suspicion of phlegmonous cholecystitis an immediate operation is no doubt demanded. The exposed gall bladder should be incised, emptied of calculi or bile, and drained, or if it is gangrenous and the patient is not too feeble it should be removed (cholecystectomy). The surrounding area will need cleaning and draining if it is infected.

The Clinical Journal, London.

September 5.

18 Dilatation of the Stomach. R. Hutchison.
19 *Deformities of the Arch of the Foot and of the Toes. E. M. Corner.
20 *Pericarditis in Children. H. W. Syers.

September 19.

21 *Treatment of Surgical Emergencies. A. Baldwin.
22 *Blepharitis. N. B. Harman.
23 Surgical Treatment of Hepatic Cirrhosis. C. G. Cumston.

19. **Deformities of Toes.**—Corner describes some of the common deformities of the toes. The most common affect the big toe and may be classified as deviations to the outside, hallux valgus; to the inside, hallux varus; to the dorsal face of the foot, hallux extensus; to the planta surface, hallux flexus, and hallux rigidus, a position midway between hallux extensus and hallux flexus. In the production of hallux valgus the bone is altered instead of the joint, the head of the metatarsal bone being irregularly developed in consequence of the numerous slight injuries which it receives, while the direction of the toe is determined by the shape of the boot. Pointed toed boots necessitate an outward direction of the toe, producing a hallux valgus. The brunt of the injury to the front part of the foot is borne by the lower part of the head of the first metatarsal bone, which consequently hypertrophies and changes the direction of the articular surfaces, so that the great toe becomes bent toward the dorsal surface of the foot, causing hallux extensus. This deformity is especially favored by high heels or a high arch to the instep (pes cavus). In flat-footed people the tendency is to throw the weight on the outer part of the foot, to limit the dorsal movement of the great toe and to produce hallux rigidus and finally hallux flexus. In these cases pressure and injury from tight shoes occur to the upper part of the head of the first metatarsal and the toe is displaced downward. Thus it will be seen that hallux flexus is associated with the abducted, flat or resting position of the foot; that hallux extensus is associated with the adducted, arched, or active position of the foot; and that each has a condition of the big toe for which the present name is hallux rigidus, which represents the corresponding deformity in a minor degree. Thus there are two types of hallux rigidus, one leading to flexion and the other to extension of the great toe. A similar minor change may be connected with the development of hallux valgus. Hallux valgus, when produced as a primary deformity as the result of mesially pointed boots, has a very deleterious effect on the future use of the foot. Even though people may have a good, active, arched instep, should they develop a primary hallux valgus, the abducted big toe prevents the foot assuming the position of activity and the arch of the instep slowly and steadily flattens, the foot becoming abducted. Treatment while the deformity is remediable is very desirable. Hallux varus occurs as part of the extreme abduction of the foot which occurs with a very high arch. The position of the foot in activity is associated with a position of the toes, consisting in dorsal flexion, *digiti extensi;* in the case of the second toe this position is apt to be exaggerated on account of its length and because it is displaced by the big toe in the position of hallux valgus. This position of the second toe may cause pain and lameness and the condition is called hammer toe. The toes may become *digiti rigidi,* or pass to the deformity of *digiti flexi.* Pes cavus is the deformity resulting from the correction of the inversion (varus) of the active and adducted position of the foot; typically it is associated with equinus. Pes planus is an exaggeration of the eversion (valgus) of the resting and adducted position of the foot; typically it is associated with calcaneus.

20. **Pericarditis in Children.**—According to Syers, pericarditis is not so usual a concomitant of acute rheumatism as was formerly thought, but when it does occur it is acute, tenacious and persistent, being attended with greater risk, both as regards the complete obliteration of the pericardial cavity and subsequent degeneration of the heart muscle. In children it is frequently not associated with joint affection, all that is complained of being some aching in the joints or limbs and "growing pain." The pressure of the pericardial effusion on the lower lobe of the left lung may produce signs interpreted in favor of consolidation presumably pneumonic—dulness and bronchial breathing may be present. Syers thinks that this occasions a frequent mistake in diagnosis. In the early stages of pericarditis a friction sound and a double aortic murmur are apt to be confounded. The error is invariably to interpret the murmur as due to friction. He also notes the fact that loud murmurs in the aortic region are frequently produced by minute lesions and justify a more favorable prognosis than is often given on account of them.

21. **Treatment of Surgical Emergencies.**—Baldwin discusses the emergency treatment of foreign bodies in the ear, nose, esophagus, larynx, trachea and bronchi, and of hemorrhage after tooth extraction, tonsillotomy and adenoids, and of epistaxis and hemorrhage from scalp wounds and after excision of the tongue.

22. **Blepharitis.**—Harman advises the frequent bathing of the eyelids with an alkaline lotion—simple bicarbonate of soda; plenty of soap and water and friction with a flannel will do just as well. A good cleansing given by the surgeon himself, and a final light swabbing with a weak solution of silver nitrate, will do more than gallons of lotion liberally bestowed during many weeks. Then the application of a smooth antiseptic ointment will keep the lids soft and reduce the liability to the collection of more crusts and scabs. Plain boric ointment in yellow vaselin, or a doubly diluted ointment of ammoniated mercury, or the yellow oxid of mercury in a mixture of lanolin and vaselin to the strength of 1 per cent., are all of value, the last perhaps most of all. These measures will do much to reduce the unsightly ravages made by the disease, but they will not touch the thing which is most frequently the real cause of the irritation. To get at this the refraction of the eye must be made out, objectively, by retinoscopy, and any irregularity found must be corrected with glasses.

Revue de Gynecologie, Paris.

Last indexed, page 1059.

24 (X, No. 4.) *Myomes et fibromyomes kystiques de l'utérus. P. Latteux.
25 *144 Hysterectomies abdominales pour fibromes. W. Cazenave.
26 *Sur la prétendue menstruation des femmes enceintes (during pregnancy). V. Wallich.
27 *Le kraurosis vulvæ. F. Jayle.
28 *Etude des hématuries gravidiques d'origine vésicale. R. Proust.

24. Cystic Fibromyoma of the Uterus.—Latteux gives the clinical history and histologic findings, in three colored plates, of a case of this kind. The patient was a woman of 43, with irregular, scanty and painful menses since the age of 13, and abdominal pains at times during the last three years, aggravated by reclining. Multiple fibromata were found in the uterus, and the organ was removed, with rapid healing.

25. One Hundred and Forty-four Abdominal Hysterectomies for Fibromata.—These operations were performed in Pozzi's service in the last five years. The mortality was 8.31 per cent.; in each of the 12 fatal cases there was pre-existing infection either in the fibroma or in the adnexa. About half of the patients were between the ages of 40 and 50. In 84 out of the 144 cases, complications existed; they involved the fibroma in 20 cases; the adnexa in 27; the peritoneum or intestines in 22; a tumor was found in the adnexa in 11 cases, and cancer in the uterus in 3. In one case a dead two-months fetus was found. Several of these complications were associated in some instances. The ovarian function was retained whenever possible and advisable. Seven of the patients had undergone a previous partial operation.

26. Menstruation During Pregnancy.—Wallich concludes from a careful review of the literature that an absolutely authentic instance of menstruation in a pregnant woman is unknown. Hemorrhages may be observed, but they lack the periodicity and other charaeteristics of physiologic menstruation.

27. Kraurosis Vulvæ.—Jayle presents 11 plates to illustrate his study of this subject, based on some cases personally observed and those on record. He remarks that kraurosis is frequently associated with leucoplasia, causing "white kraurosis;" when complicated with inflammatory lesions there is "red kraurosis." It is observed sometimes after removal of the ovaries or of the uterus and ovaries, and also in women affected with atrophying sclerotic ovaritis. Senile or presenile kraurosis also seems to be associated with ovarian lesions of this kind. Leucoplasic kraurosis became complicated with cancer in about 10 per cent. of the cases observed, and senile or presenile kraurosis likewise seems to favor the development of cancerous lesions, but this tendency has never been observed with postoperative kraurosis.

28. Hematuria of Vesical Origin in a Pregnant Woman.—Proust relates the details of a case in which after an accident a pregnant woman had profuse hemorrhage from the bladder. He attributed it to a varicose vein in the bladder, as he believes that pregnancy is liable to interfere with the circulation in this organ, and thus induce a tendency to varicose enlargement of the veins. Only two similar cases of serious hemorrhage have been reported, but the cystoscope confirms the frequency of the varicose engorgement of the bladder wall. One of the patients was cured by aspiration of the blood clots and local hemostatic measures, but a high incision, with direct hemostasis and suture, is the safest and most certain measure in serious cases. The hemorrhage once arrested, the pregnancy continues undisturbed.

Centralblatt f. Gynäkologie, Leipsic.

Last indexed, page 1234.

29 (XXX, No. 29.) *Zur plastischen Verwertung des Uterus bei Defekt des Sphincter vesicæ. M. Hofmeier.
30 *Zur Kasuistik der Geburten nach vaginaler Sectio cesarea und Vaginifixur. Westphal.
31 (No. 30.) Zur Frage der mechanischen Frucht-Abtreibung (abortion). F. Hehl.
32 Ueber die Breus'sche Hämatom-Mole. A. Zinsser.
33 (No. 31.) *Ueber Lumbal-Punktion bei Eklampsie. E. Pollak.
34 Zur Alexander-Adams'schen Operation. H. Palm.
35 Fall von ausgetragener intraligamentärer Gravidität (at term). H. Rodiger.
36 (No. 32.) *Subcutaneous Pubiotomy.—Die Pubotomie mit der Nadel. E. Bumm.
37 Examination, etc., of Midwives.—Erfahrungen bei Prüfungen und dem Nachexamen der Hebammen. R. Dohrn.
38 Ueber Dermoide des Beckenbindegewebes (pelvic connective tissue). K. Reinecke.
39 (No. 33.) *Causes of Disinfecting Action of Alcohol.—Ueber die desinfektorische Wirkung des Alkohols und ihre Ursachen. H. Füth.
40 Benutzung des stumpfen Hakens zur Erleichterung der Armlösung (use of hook for freeing arm). E. Hoerschelmann.

29. Plastic Utilization of Uterus for Defect of Vesical Sphincter.—Hofmeier relates the case of a woman of 41 with a vesicovaginal fistula. Three operations had failed to restore continence. This was finally attained by drawing over the uterus to form a pad to compress the urethra. Menstruation proceeds almost normally although with slight disturbances.

30. Births After Vaginal Cesarean Section and Vaginofixation.—Westphal has performed this operation in 11 cases, and here relates the normal course of one and two pregnancies occurring subsequently in two of the women. The usual disturbances were noted in a third case of delivery after the old Mackenrodt technic had been applied, but there were no after-disturbances following the two Dührssen operations.

33. Lumbar Puncture in Eclampsia, from Neurologist's Standpoint.—Pollak found such serious changes in the cells in eclampsia that he is convinced the lesions are already irreparable when lumbar puncture is given a trial, as a rule.

36. Subcutaneous Pubiotomy.—Bumm has been so much pleased with the results of what he calls "pubiotomy with the needle" that he states that he would not hesitate to do the operation anywhere, at need, even in a private house, as it is so simple and harmless. The only break in the skin is where the needle is inserted below and where it emerges above, after skirting the back of the pubic bone. The Gigli saw is then drawn down and out with the needle, and the bone is sawed. This operation enlarges the pelvis sufficiently even with a true conjugate diameter of only 7 cm. The parts separate for 3 cm. He has performed the operation 11 times and never required more than a minute or two.

39. Disinfection with Alcohol.—One of the factors in this method of disinfection is the constant increase in warmth of the skin treated with the alcohol. The temperature may rise nine degrees Centigrade, and even this temporary heating, Füth claims, may help to check the growth of micro-organisms.

Deutsches Archiv f. klinische Medizin.

41 (LXXXVII, Nos. 3-4.) *Study of the blood.—Zu meinen Blutuntersuchungen. (Nachprüfungen; einige weitere Beiträge.) J. Arneth.
42 *Relations Between Stomach Secretion and Intestinal Putrefaction.—Ueber die Beziehungen von Magensaft-Secretion und Darmfäulnis. D. von Tabora.
43 *Zum Verhalten der Langerhans'schen Inseln bei Diabetes mellitus und zu ihrer Entwicklung. K. L. Karakascheff.
44 *Ueber Polycythämie mit Milztumor. F. Lommel.
45 Ueber den Nährwert des Glyzerins (nutrient value). B. Krapp.
46 *Ueber die Wirkung der photodynamischen Substanzen auf weisse Blutkörperchen (action on leucocytes). H. Salvendi.
47 Photodynamic Phenomena.—Ueber den Ablauf der photodynamischen Erscheinung bei alkalischer, neutraler und saurer Reaktion. R. Dax.
48 *Ueber experimentelles, neurotisches Lungen-Oedem. L. Jores.
49 Action of Ultraviolet Light on Enzymes.—Ueber die Wirkung des ultravioletten Lichtes auf Enzyme. A. Jodlbauer and H. von Tappeiner.
50 Zur Kenntnis des Schwefelstoffwechsels beim Phthisiker (sulphur metabolism). W. Brasch.

41. Classification of Leucocytes.—For years Arneth has been studying with special interest the behavior of the neutrophile leucocytes, and his conclusions have been accepted by most writers on the subject. He classifies the leucocytes in three main groups: 1, Normal numbers of leucocytes (normocytosis); 2, increased numbers, and, 3, diminished numbers of leucocytes. Each of these groups has the three subdivisions: *a*, neutrophile cells developed above the normal; *b*, the neutrophiles normal, and *c*, the neutrophiles pathologically altered. For these subdivisions he uses the prefixes hyper (for *a*); normo or iso (for *b*), and aniso (for *c*). By this means a single term expresses a complicated condition, as, for instance, anisohypercytosis means a condition in which the number of leucocytes is above normal while the neutrophiles are pathologically altered. According to his conception, the body in its struggle against toxins uses up large numbers of neutrophiles, and substitutes for them must be provided, which process occurs according to certain established laws that will well re-

pay further study. The neutrophile cells are the liveliest and the most powerful of all the cells engaged in the defense of the body, and if isohypercytosis can be artificially induced by injection of some extraneous substance, it may thus prove possible to enhance materially the energy of the resistance offered by the organism. Up to the present time the substances injected to induce hyperleucocytosis have not succeeded in inducing the production of increased numbers of normal neutrophiles, but instead anisohypercytosis, that is, hyperleucocytosis with the neutrophiles pathologically altered.

42. **Relations Between Gastric Juice and Intestinal Putrefaction.**—Hydrochloric acid has direct bactericidal action and, aside from this, the gastric juice in general has a far-reaching influence in regulating putrefactive processes in the intestines. When the proportion of acid in the gastric juice is below normal, the putrefactive processes occur unregulated and unchecked, and if the resisting powers of the intestines are unduly taxed otherwise, trouble is liable to result. Nine tables are given by von Tabora with details of the diet of various patients, and of the metabolism as revealed in the urine and stools, and the stomach findings after test meals.

43. **Langerhans' Islands and Diabetes.**—Karakascheff published some time ago the results of research in 4 cases of severe diabetes, and here gives another series of 5 cases, all terminating in fatal coma. He also reviews the findings in a number of children and fetuses in regard to the development of Langerhans' islands and the glands of the region. The conclusions harmonize with those in his previous work, namely, that not the islands of Langerhans alone, but the whole of the parenchyma of the pancreas are more or less involved in the production of what is called pancreatic diabetes. Marchand admits the possibility that the parenchyma may become transformed into islands.

44. **Polycythemia with Enlarged Spleen.**—In the case described by Lommel the autopsy findings indicated that the increase in the numbers of blood corpuscles was probably due to a chronic stasis in the domain of the portal vein, which was also responsible for the enlargement of the spleen. The syndrome of polycythemia with enlarged spleen may be the result of these factors more often than has hitherto been suspected. In the case reported the capacity of the hemoglobin for oxygen was low, but the viscosity of the blood was extraordinarily high, and yet the blood kept up its circulation without enlargement of the heart, even under these circumstances.

46. **Action of Photodynamic Substances on Blood Corpuscles.**—Salvendi's experiments revealed that photodynamic substances have an unmistakably injurious action on the leucocytes, especially on the lymphocytes. The latter break up under their influence in two hours, while the leucocytes resist for twelve days and more.

48. **Experimental Pulmonary Edema.**—Jores has been studying why pulmonary edema does not develop in certain conditions which seem to invite it. He found that disturbances of the gas interchanges have no influence on its development. Even carbon dioxid does not entail edema of the lungs by direct injury of the capillaries in the lungs. On the other hand, he found it possible to induce pulmonary edema in animals by irritation of the peripheral stump of the vagus. This neuropathologic element in the development of pulmonary edema in man has been comparatively neglected hitherto. The vasodilating fibers which are responsible for the edema act on both lungs, even when irritated merely on one side. His experiments were made mostly on dogs and rabbits.

Deutsche medizinische Wochenschrift.

51 (XXXII, No. 36.) Behandlung der Blutungen aus dem Verdauungskanal (hemorrhage from digestive tract). H. Leo.
52 *Improved Technic for Detection of Occult Blood.—Vergleichende Untersuchungen über den Nachweis von Minimalblutungen in den Fæces nebst einer neuen Modifikation der Benzidin-Probe. E. Schlesinger and F. Holst (Strauss' clinic, Berlin).
53 *Operative Behandlung der genuinen Epilepsie. F. Rinne.
54 Die scheinbaren elektrischen Ladungen des menschlichen Körpers (electric charges of body). Sommer and R. Furstenau.
55 *Sleep for Children.—Einiges über den Schlaf im Kindesalter. Cassel.
56 Spirochæta pallida bei experimentell erzeugter interstitieller Hornhautentzündung (keratitis). Greeff and Clausen.

52. **Detection of Occult Blood in Stools.**—Schlesinger and Holst have been making a comparative study of the various tests for occult blood in stomach contents and feces. They found the benzidin test the most sensitive, and regard it as an advance, but they have modified it in some points which ensure still greater accuracy and eliminate some sources of error. They advocate marking off the stools with charcoal, and they mention the importance of refraining from meat and from drugs containing hemoglobin or iron for three days before the test. For the modified benzidin test a concentrated solution of benzidin in glacial acetic acid is made fresh; a little benzidin and about 2 c.c. of the acid are shaken up together and set aside to dissolve. A piece of feces about the size of a bean is stirred into a test-tube about one-fifth full of water. The tube is then plugged with cotton and the suspension of fecal matter is heated to boiling over a flame. It is advisable to have special test-tubes for this work, 10 cm. long, so that there need be no fear of any accidental contamination with blood or iron. About 10 or 12 drops of the concentrated solution of benzidin are poured into another test-tube and from 2.5 to 3 c.c. of a 3 per cent. solution of peroxid of hydrogen is added. This mixture is the reagent, and one or two drops of the boiled suspension of feces are then added to the reagent after shaking. In case of the presence of blood the brownish fluid turns green or blue. The more blood present, the more the tint inclines to blue, and the color reaction occurs very early, requiring only from a few seconds to two minutes or more with very minimal amounts of blood. The green or blue of the positive reaction turns to a dirty purple after from five to fifteen minutes. If there is no blood in the feces, the color of the brownish fluid remains unaltered even after twenty-four hours. The test as modified is much simpler than the others in vogue, while boiling the feces excludes error from any oxidizing process that might simulate the blood reaction. The modified test further allows constant control of the reagent and of the test-tubes.

53. **Operative Treatment of Genuine Epilepsy.**—Rinne reports a case of cortical epilepsy in which great improvement followed excision of a portion of the cortex. The operation was done in 1894 after the utter failure of all medicinal and other means of treatment. The patient was a man of 27. The epileptic seizures first appeared at 11, and always following the use of the right arm in lifting, striking or boring. The seizures always began in the right arm. They increased in frequency and severity, and there was general marasmus, paralysis of the face and right arm, and extreme amnesia. The brachial plexus was stretched first, with slight but transient improvement. Then a large flap was cut in the left parietal bone and the dura was incised. Nothing abnormal could be detected in the cortex exposed except that electric stimulation caused flexion and adduction of the forefinger and thumb, and, when the stimulation was very strong, flexion and then extension of the wrist and elbow were observed. The movements of the forefinger and thumb were constant and corresponded to stimulation of a sharply defined area, the anterior central convolution. This area was exeised for about 1 cm. by 1.5 cm., and for 3 or 4 mm. deep. The bone flap was loosely replaced and the wound drained. From the moment of the operation the patient was free from any tendency to epileptie seizures or aura for seven months, with no signs of recurrence. After the seventh month the seizures recurred, but they were very infrequent and mild, with intervals of six months of freedom and ample warning. His health is excellent otherwise, and he has been able to found and to manage an extensive business, although his right arm is still somewhat weak. Before the operation he had completely lost his earning capacity. The great improvement in this case may possibly have been due merely to relief from compression.

55. **Sleep for Children.**—Cassel mentions among the minor aids for promoting sleep in children, a light turned low in the room. This takes away the dread of the dark and has a soothing effect on certain children. Knowledge of the presence of a trusted person near the bed also promotes sleep, but the child should not be taken into an older person's bed. He cites a Swedish pediatrist of the eighteenth century, who estimated

that, in Sweden, an average of 700 infants were smothered annually in the bed with mother or nurse. A warm bath, about 92 F., for five or six minutes before retiring, has generally a sleep-inducing tendency. It is especially grateful in the febrile infectious diseases, soothing the nerves. A wet pack to the trunk, the temperature about 77 F., when the child goes to bed, may also prove useful, or a cold rubbing down with water, not cooler than 75 F., with or without addition of salt. A tendency to masturbation should be combated by physical exercises, sports and playing in the open air until the child is so tired that he drops to sleep at once on going to bed. Cassel never gives drugs to combat insomnia, accomplishing the purpose by other means, except when a child is kept awake by an annoying cough or convulsions.

Mitteilungen a. d. Grenzgebieten d. Med. u. Chir., Jena.

Last indexed XLVI, page 1654.

57 (XVI, No. 2.) *Zur Chirurgie des Morbus Basedowii. K. Schultze.
58 Zur Kenntnis der Gallenblasen-Bronchusfistein infolge von Cholelithiasis (fistula between gall bladder and bronchus). H. Schlesinger.
59 *Ueber akuten mechanischen Ileus. Ringel (Hamburg).
60 Ueber perirenale Hydronephrose. O. Minkowski.
61 *Zum Kapitel der Diagnose des extra- und intraduralen traumatischen und pachymeningitischen Hämatoms. F. Apelt.

57. **Operative Treatment of Exophthalmic Goiter.**—This extensive communication from Riedel's clinic at Jena states that out of 50 patients 36 were cured and 6 materially improved, while in one case the intervention failed to benefit, and 7 of the patients succumbed to heart failure within 24 hours. The heart had evidently been too severely injured by the chronic intoxication to stand the stress of the loss of blood and the general anesthesia. Local eucain anesthesia is now used in Riedel's clinic by preference, and the mortality has dropped from 12 to 8 per cent. In 7 of the cases there was recurrence, but it subsided either spontaneously or under internal treatment. The article concludes with the details of the case histories, and seven pages of bibliography on surgical and serum treatment of exophthalmic goiter. Schultze remarks that the numerous encouraging articles from surgeons—reporting success in from 80 to 90 per cent. of cases—should stimulate internists to refer cases of exophthalmic goiter to the surgeon, after failure of internal measures, in time for operative treatment to be effectual. The earlier it is undertaken, the better the results. All the 8 milder cases in his experience were cured, and 80.2 per cent. of the moderately severe cases were cured or much improved, while only 57 per cent. of the severer cases were cured and 7.7 per cent. improved. The mortality in this group was 28.5 per cent. of the 21 patients. The symptoms before and after the operation are critically reviewed. As characteristic of the disease 25 symptoms are cited, with their proportional frequency, as follows: Goiter, 100 per cent.; tachycardia, 94; palpitations, 94; exophthalmos, 92; psychic disturbances, 68; tremor, 66; headache, 52; sleeplessness, 40; sweats, 36; emaciation, 30; Graefe sign, 30; vomiting and diarrhea, 28; Stelwag sign, 22; lachrymation, 18; falling of the hair, 18; Möbius sign, 14; nosebleed, 14; polyphagia, 14; polydipsia, 12; pressure on the eyes, 12; edema, 10; hot flashes, 10; friability of the nails, 8; spots before the eyes, 6, and pigmentation of the skin, 6. The above figures all stand for the percentage. Treatment with Möbius' antithyreoidin (60 cases) and with rodagen (35 cases) seems to be only palliative in its effect according to the reports published by various writers, and these measures do not always benefit. The results of the experiences to date, he concludes, are decidedly in favor of surgical treatment, as this gives better hope of a permanent cure.

59. **Acute Mechanical Ileus.**—Ringel's experience warns that operative treatment should not be deferred too long. Out of 27 patients with acute mechanical occlusion of the intestines from various causes, on whom he operated, 14 died. Autopsy showed more or less extensive peritonitis in all fatal cases, except in two infants who had failed to recover from the shock. One of the patients cured by the operation had a large patch of gangrene on the intestine, consecutive to volvulus. The prognosis is good with prompt surgical measures, but it is grave after complications set in.

61. **Diagnosis of Intradural Hematoma.**—Apelt reports a case of hematoma of the dura mater diagnosed and cured by trephining. He then relates the histories of 13 other cases in which the symptoms or the absence of symptoms was most misleading. In one case a hemorrhagic pachymeningitis simulated an apoplectic lesion; there were no convulsions nor paralysis. The neurologist and the surgeon will be saved many a disappointment, he declares, if before trephining for a supposed hematoma in the dura mater, they first exclude other affections that might exist, such as internal, hemorrhagic pachymeningitis, alcoholism, sunstroke, certain forms of encephalomalacia, apoplexy, thrombosis of important cerebral arteries with consecutive softening, fat embolism after a fracture, and Reichardt's acute swelling of the brain.

Münchener medizinische Wochenschrift.

62 (LIII, No. 29.) Determination of Proteolytic Ferment Action.—Ueber eine einfache Methode zum Nachweis proteolytischer Fermentwirkungen (nebst einigen Ergebnissen, besonders bei der Leukæmie). E. Müller and G. Jochmann.
63 *Die Rolle der Grubeninfektionen bei der Entstehung der Genickstarre-epidemien (epidemic cerebrospinal meningitis and infection in mines). L. Jehle.
64 Pyocyaneus-Sepsis bei Erwachsenen (in an adult). Rolly.
65 Hemiplegie bei intakter Pyramidenbahn (intrakortikale Hemiplegie). W. Spielmeyer.
66 Zur Prognose der Lungentuberkulose. E. Rumpf.
67 Ueber 375 Selbstmordversuche (attempts at suicide). R. Rothfuchs.
68 *Die Anwendung der Hyperämie nach Bier bei einigen Erkrankungen der Diabetiker. K. Grube.
69 Die Romanowsky-Färbung nach May (stain). Viereck.
70 Vereinfachtes Extensions-Verfahren (simplified technic). A. Hofmann.
71 *Functional Activity of the Kidney.—Die Tätigkeit der Niere. R. Magnus.
72 *Protection from Cadaveric Infection.—Wie schützen wir uns und unsere Diener bei Sektionen? C. Thorel (Nuremberg).

63. **Epidemic Cerebrospinal Meningitis.**—Jehle cites facts which demonstrate that in the epidemics at Neumühl and elsewhere the men became infected in the mines. He urges that the fathers of infected children should not be allowed to return to their work in the mines until they have received treatment to render them harmless as bacilli carriers. Workmen coming from infected regions should be treated as suspected bacilli carriers.

68. **Passive Congestion in Treatment of Affections in Diabetics.**—Grube has applied passive congestion or suction therapy in a large number of cases of furuncles or carbuncles in diabetics. He reports here the details of 5 severe cases to illustrate the benefits derived and to urge the more frequent use of the treatment. He has had good results from superheated air in treatment of diabetic gangrene. He applies the hot air at a temperature of 65 C. for an hour daily, and has never witnessed harm, but always benefit.

71. **Physiology of the Kidneys.**—Magnus here presents in compact form the present status of our knowledge in regard to the physiologic activity of the kidneys, analyzing 60 works on the subject that have appeared in recent years. He accepts the theory that the urine is the result of secretory activity, not of a process of filtration.

72. **Protection During Autopsies.**—Thorel has not found that rubber gloves have diminished the number of accidental infections on the part of the general utility men in the dissecting room. On the contrary, the number has increased, probably because the men trust to the gloves and omit the careful cleansing of the hands, or they allow the gloves to become soiled inside. He gives the instructions for prophylactic cleansing of the hands, etc., and for the care of rubber gloves, on a placard in his dissecting room. Simmonds has recently urged that knives should be made with rounding tips for dissecting work, to prevent accidents, and Thorel has invented a holder which holds the skull while it is being sawed, and prevents injury of the hands. He calls attention to the possibility of pulmonary tuberculosis developing in consequence of infection from a tuberculous process on a cadaver. He states that he has had an unmistakable experience of this kind in his environment. The best way to avoid cadaver infection among the attendants is to have them trained and skilled in the measures necessary for cleanliness, and have them insured against accidents.

Zeitschrift f. Geb. u. Gynäkologie, Stuttgart.

Last indexed, page 314.

73 (LVII, No. 3.) *Ueber Pemphigus neonatorum. Koblanck.
74 *Verlauf und Ausbreltung der Infektion belm septischen Abortus. P. Seegert.
75 *Zur Pubiotomle. P. Rissmann.
76 Ueber Epithel-Metaplasie am Uterus, besonders an Polypen. R. Oerl.
77 Epithellal Formations in Lymph Glands and Spaces in Pelvis.—Ueber epitheliale Bildungen der Lymphgefässe und Lymphräume in Beckenlymphknoten bei Uteruskarzlnom und bei karzlnomfreien entzündlichen Adnex-Erkrankungen. A. Sltzenfrey.
78 (LVIII, No. 1.) Fall von diffusem Myom mit beglnnendem Karzinom in der hyperplastischen Uterus-Schleimhaut. V. Doca.
79 *Ueber Eklampsle, Esch.
80 Behavlor of Ovaries, Tubes and Remains of Uterus After Total or Partlal Removal of Uterus in Rabblts.—Experimentelle Untersuchungen über das Verhalten der Ovarlen und Tuben, sowle des Uterusrestes nach voilständiger resp. tellwelser Entfernung des Uterus bei Kaninchen. G. Burckhard.
81 Mechanlsm of Parturition with Frontal Presentation and Mentoposterior Expulsion.—Beitrag zum Studium des Mechanismus partus bei Deflexionshaltung. A. Leo.
82 *Ueber Endometritis atrophica purulenta fœtida. P. Bröse.
83 Zur Kenntnis der benignen chorioepithelialen Zell-Invaslon in die Wand des Uterus und der Tuben. R. Meyer.

73. **Pemphigus Neonatorum.**—Koblanck has found the *Staphylococcus aureus* almost invariably in his experience with pemphigus in infants. In a recent case the child was born with pemphigus. Syphilis could be absolutely excluded. He has always succeeded in curing the pemphigus with 70 per cent. alcohol applied to the vesicles and their vicinity, carefully preventing the spreading of the germs over the skin. For this reason the bathing of the infants is forbidden until the pemphigus is cured.

74. **Course and Distribution of Infection With Septic Abortion.**—Seegert states that out of the 15,000 cases of abortion treated during the last 10 years in the obstetric and the gynecologic clinics at Berlin, about 15 per cent. were febrile cases. This is less than the actual number of cases, as many of the patients were seen briefly and fever may have occurred before or after without the physician's knowledge. In case of a pyemic affection after abortion, if an effusion was found in the small pelvis, in addition to the pyemic thromboses and metastases, the case invariably proved to be one in which criminal or artificial injury had preceded the pyemia. In such cases, the thrombi were found more in the uterine veins and the ovarian vessels were seldom free, while metastatic processes in the thorax were always present. About 450 patients presented serious symptoms after a febrile abortion, and 94 died. The autopsy findings in 82 are analyzed to study the course and spread of the infection, with details of a number of cases. Treatment was by digital examination of the uterine cavity, followed by irrigation with diluted alcohol. In the recent cases fluids were given freely, especially wine, brandy, beer, and milk and coffee, combined with solutions of grape sugar. Scrupulous care of the mouth was taken, and in prevention of decubitus. Quinin was given by the mouth in large doses, or if the appetite suffered or vomiting followed, the quinin was given subcutaneously, from six to eight syringefuls of a sterile 25 per cent. solution of quinin bihydrochlorate daily with careful oversight that the patient does not make any movement and is kept as warm as possible. Some of the cases with 70 chills terminated in recovery under this treatment, and even one with metastatic ophthalmia.

75. **Pubiotomy.**—Rissmann has performed this operation three times and is an enthusiastic advocate of it provided simple drainage of the prevesical space is ensured. Other factors to which he attributes his excellent results are the sagittal incision to spare the muscles, the introduction of the finger to protect the parts during the sawing, the application of a firm bandage over the pelvis during the obstetric maneuvers, the drainage with a special drain, which he illustrates, the absence of a firm bandage over the pelvis during healing, and the advice to be up and about early. There was no temperature in his cases.

79. **Eclampsia at Olshausen's Clinic.**—Esch continues the previous reports, which comprised 603 cases, by relating the experiences with 496 cases during the years 1900-1905 inclusive. This brings the total to 1,099 cases of eclampsia observed at the Berlin gynecologic clinic since 1885. Of the 496 women, 106, that is, 21.4 per cent., died. In at least three-fourths of the cases the convulsions ceased after delivery, but in 9 instances the eclampsia subsided without interruption of the pregnancy and did not recur during the delivery. In 9 other cases eclampsia had been observed at a preceding childbirth. Among the prodromal symptoms were pains in the stomach in 102 cases, edema in 143, headache in 178, tardy vomiting in 106, amblyopia in 4, and transient amaurosis in 17. In one case the amaurosis lasted only for a few hours and eclampsia developed four weeks later. Bilateral detachment of the retina was observd in one case and vision was not restored completely for several months. In 78 cases the convulsions developed after delivery or during the puerperium. Venesection was frequently applied, from 300 to 400 c.c. of blood being withdrawn.

82. **Fetid, Purulent Atrophying Endometritis.**—Bröse suggests the term "hysterozena" for the condition of which he describes 2 cases. It is observed only in senile women, and may possibly be due to the action of saprophytes in senile endometritis. Treatment with loose tamponing with iodoform gauze and drainage, after exploratory curettement, has given favorable results. Cauterization with zinc chlorid finally succeeded in conquering the fetid odor. Then the secretion was completely cured by rinsing the uterus with crude wood vinegar (3 tablespoonfuls to a quart of water).

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

International Clinics. A Quarterly of Illustrated Clinical Lectures and Especially Prepared Original Articles on Treatment, Medicine, Surgery, Neurology, Pediatrics, Obstetrics, Gynecology, etc., by Leading Members of the Medical Profession Throughout the World. Edited by A. O. J. Kelly, A.M., M.D., Philadelphia, with the Collaboration of W. Osler, M.D., J. H. Musser, M.D., and others. Vol. III. Sixteenth Series, 1906. Cloth. Pp. 302. Price, $2.00. Philadelphia: J. B. Lippincott Company, 1906.

Rhythmotherapy. A Discussion of the Physiologic Basis and Therapeutic Potency of Mechano-Vital Vibration, to which is added a Dictionary of Diseases, with Suggestions as to the Technic of Vibratory Therapeutics, with Illustrations. By Samuel S. Wallian, A.M., M.D., President American Medico-Pharmaceutical League, Ex-President Medical Association of Northern New York, etc. Cloth. Pp. 210. Price, $1.50 net. Chicago: The Ouellette Press, 1906.

A Manual of Midwifery. By Thomas Watts Eden, M.D., C.M., Edin. F.R.C.P., Assistant Obstetric Physician and Lecturer on Practical Midwifery, Charing Cross Hospital, etc. With 26 Plates and 233 Illustrations in the Text. Cloth. Pp. 518. Price, $4.20. Philadelphia: P. Blakiston's Son & Co., 1906.

The Schott Methods of the Treatment of Chronic Diseases of the Heart, with an Account of the Nauheim Baths, and of the Therapeutic Exercises. By W. Bezly Thorne, M.D., M.R.C.P. Fifth Edition. Cloth. Pp. 140. Price, $2.00 net. Philadelphia: P. Blakiston's Son & Co., 1906.

A Short Practice of Medicine. By Robert A. Fleming, M.A., M.D., F.R.C.P.E., F.R.S.E., Lecturer on Practice of Medicine, School of the Royal Colleges, Edinburgh, etc. Cloth. Pp. 748. Price, $4,20 net. Philadelphia: P. Blakiston's Son & Co., 1906

The Extra Pharmacopoeia of Martindale and Westcott. Revised by W. H. Martindale, Ph.D., F.C.S., and W. W. Westcott, M.B., D.P.H. Twelfth Edition. Flexible Leather. Pp. 1045. Price, $4.20. London: H. K. Lewis, 1906.

Variations in the Peroxidase Activity of the Blood in Health and Disease. By J. H. Kastle and H. L. Amoss. Hygienic Laboratory, Bulletin No. 31. Paper. Pp. 26. Washington: Government Printing Office, 1906.

An Introduction to Physiology. By William Townsend Porter, M.D., Associate Professor of Physiology in the Harvard Medical School. Cloth. Pp. 537. Price, $2.50. Philadelphia: J. B. Lippincott Company, 1906.

A Statistical Study of the Prevalence of Intestinal Worms in Man. By C. W. Stiles and P. E. Garrison. Hygienic Laboratory, Bulletin No. 28. Paper. Pp. 77. Washington: Government Printing Office, 1906

Medico-Chirurgical Transactions. Published by the Royal Medical and Chirurgical Society of London. Vol. LXXXIX. (Second Series Vol. LXXI.) Cloth. Pp. 757. London: Longmans, Green & Co., 1906.

How to Suppress a Malpractice Suit, and Other Medical Miscellanies. By Thomas Hall Shastid, A.M., M.D., LL.B. Cloth. Pp. 128. Price, $1.50. Marion, Illinois: Marion Publishing Company, 1906.

The Journal of the American Medical Association

Published under the Auspices of the Board of Trustees.

VOL. XLVII. CHICAGO, ILLINOIS, OCTOBER 27, 1906. No. 17.

Address

THE GROWTH OF NEUROLOGY.

CHAIRMAN'S ADDRESS BEFORE THE SECTION ON NERVOUS AND MENTAL DISEASES, AT THE FIFTY-SEVENTH ANNUAL SESSION OF THE AMERICAN MEDICAL ASSOCIATION, BOSTON, JUNE 5-8, 1906.

WHARTON SINKLER, M.D.

PHILADELPHIA.

I am very glad to have this opportunity of thanking you for the honor conferred on me in making me chairman of this Section. It is a distinction of which one may justly be proud, for the Section has grown from a small beginning in 1891 to one of the most important and widely known in the American Medical Association.

It is interesting to consider the development of the Section. Prior to the year 1891 there was no section devoted to this branch of medical science. In 1887 a new section was formed and this was called the Section on Medical Jurisprudence, Chemistry and Psychiatry, and this by expansion began to include the consideration of nervous diseases. In 1891, the subject of neurology having become so prominent in the discussions of the Section, the title was changed to the Section on Medical Jurisprudence and Neurology. In 1900, the scope of the Section had become such that it seemed advisable to again change the name, and it then became the Section on Nervous and Mental Diseases. Thus we have kept abreast of the progress in neurology throughout the world.

The list of men who were influential in the organization and development of this Section is well worth considering, for it contains among the names those of the brightest lights in neurology in this country. As chairman of the Section on Medical Jurisprudence, begun in 1887, are to be found the names of E. M. Reed, J. G. Kiernan, T. B. Evans and T. D. Crothers. In 1891, in the Section on Medical Jurisprudence and Neurology, H. N. Moyer was elected chairman. He was followed by Charles K. Mills, in 1892, and in regular order came J. G. Kiernan, D. R. Brower, T. D. Crothers, W. J. Herdman, C. H. Hughes, Frederick Peterson, H. T. Patrick, H. A. Tomlinson, R. A. Dewey, F. W. Langdon, F. Savary Pearce and J. H. McBride.

To those who can look back thirty years, it is amazing to consider the progress in the knowledge of the diseases of the nervous system. Until the latter half of the nineteenth century, no special attention was given to this branch of medical science in the schools, and few physicians ventured to claim neurology as a specialty. How different it is now! There is not a college of any size in the country which has not a chair of nervous and mental diseases, and almost every city has its neurologic society. The interest taken in neurology has increased in the profession at large, and this is shown by the large attendance at the meetings of this Section by members of the Association whose practice is not especially devoted to nervous diseases. It has been for years the custom of the general practitioner to regard the study of nervous diseases as not only difficult and obscure, but unprofitable, and for this reason he has put it aside and felt that there was no use in trying to do anything in the way of diagnosis or treatment of a case of nervous disease. It is different now, and the effect of teaching in the colleges is obvious to every one who meets the general practitioner in consultation. The meetings of the Section have each year been of greater interest and value to the members, not only in the character of the papers presented, but in the discussion of them. This year I can point with pride to our splendid program, which will be seen to include not only many papers on mental diseases, their etiology, pathologic anatomy and medico-legal relations, but the consideration of many organic and functional nervous diseases. It is noteworthy also to observe that the papers presented are not merely reports of individual cases, but a critical and scientific study of the nature of the various diseases considered. No attempt has been made to present a symposium on any special subject, for the reason that this would have taken so much time that many valuable papers would have been of necessity excluded. As it is, the papers offered have been in excess of the number allowed by the by-laws of the Association. This number, as you know, is forty. Had we been able to accept all which have been presented, there would have been at least fifty, and it is much to be regretted that many important contributions had to be declined on account of the program being full when they were presented. I believe that in the future it will be a wise plan to limit the time for the reading of each paper to twelve minutes and the discussions to five minutes, so that all papers which are offered may be presented before the Section. I am not in favor of requiring that the papers shall be read in abstract, as this mars their interest and value, but by excluding lengthy histories of cases and condensing pathologic reports it would be easy to present almost any paper in the space of ten or twelve minutes.

An innovation this year, and I believe that it is one which will accrue to the advantage and importance of the Section, is that of printing and distributing the transactions of the session. This will include all of the papers and discussions, together with anything else of importance connected with the session. Some of the other sections have published transactions, but this is the first time that the Section on Nervous and Mental Diseases has undertaken the task. I trust that this will meet with the hearty approval and co-operation of the members of the Section. In order to secure the publication of the transactions by the Association, it will be necessary to secure 75 subscriptions at $1.00 each. This does not cover the total expense, the balance being borne by the Association. The transactions are bound in cloth

and make a handsome volume. We must, therefore, look to the members to subscribe to one or more copies each.

Through the courtesy of Dr. James J. Putnam, the Section has been invited to hold one of our meetings at the Massachusetts General Hospital, so as to enable the members to visit the neurologic wards in this famous old institution and to have demonstrations of different sorts made before and after the meetings, and to allow the presentation of cases. We have selected Thursday afternoon for the meeting there.

I am sure that all of the members of the Section share with me the regret that I feel in the absence of the former secretary, Dr. D. I. Wolfstein. Last autumn Dr. Wolfstein, who for many years had been in poor health and had had two or three attacks of renal colic, was obliged to undergo the operation of nephrectomy. He made a good recovery, but was so generally shattered in health that he has been obliged to give up practice and go abroad for a year. During his term of service he proved a most valuable and efficient officer of the Section and did much toward promoting its growth and prosperity. We have been fortunate in securing the services of Dr. Weisenburg, who has been appointed to his place.

It is a source of some regret that we have no distinguished foreign neurologists with us. Your chairman and secretary sent invitations to several of the most distinguished men in this line in England and on the continent, but each one, while expressing great appreciation of the honor conferred on him, was obliged to decline for some good and sufficient reason. The International Medical Congress at Lisbon and the meeting of the British Medical Association at Toronto interfered with the acceptances in most cases.

The members of the Section have received a cordial invitation from Dr. Flood, the superintendent of the Massachusetts Hospital for Epileptics at Palmer, Mass., to visit that institution. The hospital is situated in the village of Palmer, about 84 miles west of Boston. To those who are interested in the colony treatment of epileptics and the insane, this institution affords an admirable opportunity for study.

Original Articles

THE MOTOR DEGENERATIVE SEQUENCE IN DEMENTIA.*

H. A. TOMLINSON, M.D.
Superintendent of the St. Peter State Hospital.
ST. PETER, MINN.

In the infant pantomime plays the principal part in expression, and as the child grows older this pantomime becomes more complicated and graphic; especially in so far as the movement of the eyes, the muscles of the face and of the arms is concerned; so that the impressions from the environment and the emotions involved are reflected in these movements. In those individuals who are born blind, this association of pantomime with the afterward acquired vocal or graphic means of expression persists, so that the muscles of expression reflect the emotions in any given form of mental activity. In the ordinary individual, however, these modes of expression are eliminated by education and the exigencies of social intercourse; which require the putting on a mask that shall conceal the effect of the conditions in the environment on the individual so far as they are emotional. Therefore, as the result of training and the influence of convention, and just in proportion with their extent, there is the exercise of restraint on the motor manifestations of mental activity. However, when, as the result of defect in the constitution of the individual, and the influence of untoward conditions in his environment, there is loss of mental capacity; and, therefore, of the power of inhibition, or interference with the means of expression; there is the tendency toward the reversion to these primitive auxiliaries of expression, to supplement the acquired faculty that the loss of capacity for control has rendered more or less inefficient, just as occurs in the confusion of mental aberration and after aphasia. When this loss of mental capacity becomes extreme, or the mental alienation of the individual makes him entirely introspective, there again develops the tendency to the suppression of the motor manifestations of mental activity; not as the result of volition, but because of the loss of capacity to generate them; and, as these emotions are less frequently generated, there follows a sequential and essential degenerative motor change which has its origin in that form of atrophy in the motor generative portion of the brain that results from disuse.

The dependence of motor manifestations on mental activity is not well understood, and too little thought of with relation to the significance of variation or suppression of muscular activity as a sequence to loss of mental capacity. We lose sight of the fact that very few forms of motion are in direct response to external stimuli. Aside from those motor manifestations that are so intimately associated with emotional activity, and are included under the term expression, there are numerous other forms of muscular activity that are a more or less direct response to the stimuli resulting from mental processes, even although they are not a direct reflex of the conditions involved in these processes. These motor generative impulses are centrifugal, and have their basis in the liberation in consciousness, as the result of indifferent stimuli, of pre-existing impressions that give rise to them. To illustrate, a man may be sitting under a tree, on a hot day, completely engrossed in a train of thought that has no relation to his environment. The sun reaches a position so that it shines directly on him. After a time, and without any conscious interruption of his train of thought, he will change his position so as to again get into the shade. The muscular movements involved in this change of position, while reflex, are extremely complicated and involve the intervention of intelligence. A new-born child, or a demented person, would not and could not change his position under similar circumstances, although both might manifest evidence of discomfort by irregular and inco-ordinate movements. Even in acute mental aberration, the accompanying loss of capacity has the same effect; because, in delirium, stupor, or the morbid introspection associated with depreciatory or persecutory ideas, extreme discomfort, or even the presence of physical danger, if apprehended, may not give rise to any movements that have their origin in centripetal stimuli. There can be no doubt but that these impressions reach the brain; but there is no active consciousness, and the correlation and co-ordination of these impulses does not take place: although we have found, as the result of repeated investigation, that the individual is impressed by them, and can recall the nature of these external impressions in

* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

detail, after the subsidence of the centrifugally generated processes, that for the time being dominate consciousness.

There are numerous other forms of muscular activity that are more or less in direct response to the stimuli from mental processes. These movements are largely combinations of the survivals of the simple changes in the multicellular organisms necessary to approach food substances or avoid sources of danger. Aside from these simple forms of motor manifestation, there are the more complicated movements involved in sexual attraction; which bring about changes in form, posture and expression. The growth of these different forms of muscular activity, and their complication in accordance with the development of the organism in response to the growing complexity of its environment, results in the multiplication and variation of these motor manifestations; and their combination and recombination to such an extent that they become abstracted from their primary relation, are no longer entirely reflex, but automatic; supplementary and centrifugally generated in response to stimuli coming from the vegetative or reproductive organs. That they are automatic is shown by the fact that they are manifested independently of active volition; and that they are persistent in their primary form is illustrated in the movements, inco-ordinate but instinctive, of the new-born child.

The study of the development of the different parts of the cerebral cortex confirms this contention. The branching out of the brain stem to form that part of the cortical envelope concerned with the special senses; the later association of these centers, and their relation with the centers of emotion; and, finally, the extension forward of projections of those motor areas having to do with the most complicated and completely abstracted forms of activity involved in expression, both vocal and graphic. Then the development around these areas of a cortical mantle apparently purely inhibitive and dirigent in its function; and which, in its turn, becomes abstracted from any direct relation with the motor generative activities it inhibits and regulates. This abstraction of the functions of that part of the cortical mantle that has to do with what are ordinarily termed the processes of intellection, that is, the processes of correlation and co-ordination, is important for us to appreciate in order that we may understand how mental reduction affects motor activity, and finally brings about degenerative change from want of use. It is too little understood that the primary function of the so-called higher cortical centers of the brain is that of inhibition; and that their relational, co-ordinative and dirigent functions are an after development. Therefore, in the progress of degeneration in the intellectual sphere, loss of capacity comes primarily in this dirigent, co-ordinative and relational function, leaving the primitive inhibitive function comparatively unaffected. So that impulses coming through the different avenues of special and common sensation are simply registered, with the result that motor activity does not follow, the degree of loss of capacity for correlation and direction affecting the extent to which capacity to generate motor activity is lost. The process of degeneration follows this order. Those forms of motor activity involved in the most abstract forms of expression are the first ones to be lost; and this failure shows itself in those co-ordinated movements that are the last in the order of development. They are manifested in stammering, slurring of sounds, dropping of letters and syllables, tremor in writing, running of words together, elision of letters or syllables, and, finally, imperfectly-formed characters, which gradually degenerate into a running wave-like mark, or irregular and formless angular strokes. We have seen these degenerative changes go on from one form to the other until there was neither vocal nor graphic expression; and then as gradually disappear in the reverse order. They are most common in general paresis, but are not infrequent in alcoholic and syphilitic insanity, and we have seen them in their grosser forms in primary degenerates. Some years ago we reported a number of such cases in another connection, and from that report the two following are selected as illustrative:

The first, a case of syphilitic brain disease, following a severe convulsion, developed paraphasia, myotonia, and paresis with tremor; also complete inhibition of intellectual function, with suspicion and blind resistance toward any effort in his behalf. He gradually became worse, the paraphasia becoming complete motor aphasia, the myotonia degenerating into athetosis, finally ending in muscular tremor, with complete motor inco-ordination. At this stage another profound convulsion occurred, with right hemiplegia. This was followed by gradual recovery, passing upward through the different stages traveled on the downward path, until he was able to walk about, feed himself and speak intelligibly. This transition was repeated with varying degrees of uniformity three times in eight months, each transition showing the stages less well marked and being of shorter duration until finally, following another severe convulsion, there was complete annihilation of mental life and voluntary motion. He lived, however, for about three months in this state. A necropsy was not allowed. The other case, a young girl, a low-grade imbecile, who came into the hospital with a history of epileptoid convulsions with rapid mental reduction. On admission she could express her wants, answer questions and care for herself. Degeneration proceeded very rapidly, however, paresis became marked, and she finally became bedfast. The vegetative functions remained intact, and the excrementary functions were performed automatically. There was no co-ordinated muscular movement or mental activity. She laughed and cried like a baby, had no articulate expression, and did not comprehend spoken words, although she apparently understood pantomime. She was without capacity to relate or co-ordinate external impressions. She, too, gradually recovered; passing progressively upward the path she had traveled downward. She afterward acquired considerable manual dexterity and learned to read.

Again, these degenerative changes may only involve the most highly abstracted manifestations, such as those involved in the co-ordinate expression of the most complicated relations, or the finer movements involved in manual dexterity, as we see them manifested in confusion and inco-ordination in senility.

It is interesting to note in this connection that the activities involved in the functioning of the vegetative organs do not normally give rise to sensations that are apparent in consciousness, or that directly stimulate the dirigo-motor apparatus, and while these functions may be affected by conditions in emotional activity this affection is indirect through the vasomotor apparatus, and the functional stimulus is reflex. Therefore, there may be, as in trance conditions and ecstacy, complete absence of motion and intelligence, without any interference with the functional activity of the vegetative organs. In those cases of insanity with which there is associated disease in the vegetative or reproductive organs, their functional activity results in painful sensations. These may give rise to all sorts of disagreeable and bizarre manifestations in consciousness, and thus come directly under the inhibitive influence of the higher cortical centers, with the result that their func-

tional activity may be perverted or inhibited, without the presence of organic change in the viscera themselves, so that the individual believes that he can not swallow, that the stomach is distended, that the intestines are paralyzed, contain poison or have disappeared from the abdominal cavity; and, again, that the anal sphincter is permanently closed or relaxed, with the result that so far as these functions are volitional they are inhibited.

After mental reduction proceeds to the extent that it involves loss of memory and power of attention, there begins to be evidence of relaxation of the normal tension in the facial muscles and the eyeball; so that there is not only loss of mobility in the facial muscles, but the lack of expression is increased by the dullness of the sclerotic, and the flattening of the anterior chamber that follows the loss of tension in the eyeball.

The next change to become apparent is the involvement of the muscles of the hand and arm, resulting in the loss of the finer movements and manual dexterity. As a rule, this is as far as the degenerative changes go, unless the mental reduction becomes extreme. It is interesting to note that these motor degenerative manifestations are similar to those present in senility, except that in dementia the paresis is spastic, while in senility it usually takes the form of tremor. There is a closer resemblance to the paresis of dementia than that which accompanies paralysis agitans, and this is particularly true of the involvement of the muscles of expression. When dementia becomes extreme, and especially in the course of primary degeneration, the motor disturbance may be considerable and manifest itself in spastic paralysis, involving first the musculature of the hand and forearm, so that the fingers become flexed in the hand, the hand on the wrist, the forearm pronated and flexed on the arm. In the lower extremity the involvement of the muscles follows the same order, but is more apt to be symmetrical and does not become so extreme. Finally, the head becomes flexed and the neck muscles rigid. That these changes are not due to primary involvement of the cord is shown by the fact that they are present in temporary cerebral conditions, where the manifestations of mental reduction are the result of accumulation of fluid in the meninges, or the paresis of autointoxication. Also, in dementia they may appear and disappear at first, and it is only after mental reduction becomes extreme that they are persistent. The following case illustrates this extreme involvement:

C. C., 25 years old, born in Sweden, laborer. Father living, mother died of smallpox. Father suffers from "asthma and rheumatism."

The patient was always less intelligent than his brothers and sisters, and as he grew older became irritable and morose and subject to outbursts of ill-temper and violence. Since puberty he had grown more dull and his temper more ungovernable. He was also a chronic masturbator. For three months before coming to the hospital he had been growing more stupid, sullen and filthy in his habits. He was also brutishly violent at times.

When admitted he was suffering from indigestion and constipation. The extremities were cold, blue and clammy. The tongue protruded hesitatingly in the median line; speech was slow and indistinct, and there was a coarse tremor in the tongue. The reflexes were present, but co-ordination could not be tested. Clonus was present. He did not take food voluntarily nor sleep well.

His general condition improved during the first month, and he got so that he would feed himself and answer simple questions. Soon after coming to the hospital the fingers of the left hand began to contract, and were soon firmly flexed in the palm. Edema set in also in the left arm and both legs. After a period of two months he again improved, was out of bed, fed himself, answered questions, and would go out walking. He did not pay any attention to his surroundings, however, and was filthy in his habits. When walking he assumed a stooped position, with the hands pressed on the abdomen; the head bent forward and to the left. Most of his movements were apparently automatic. During the next two years his condition was practically unchanged. Sometimes the contractures would almost disappear, but with each return became more marked until finally, in the spring of 1897, the hand and forearm, foot and leg, on the left side, were so much involved that he could no longer move about or help himself. After he was put in bed it was noted that his lungs were involved in chronic fibroid degeneration, with tuberculous infection.

The contractures gradually became more marked; all of the extremities were involved; he became generally rigid, and was incapable of voluntary movement. He would swallow when food was put in his mouth; the bowels and bladder were emptied automatically; he never spoke nor showed any evidence of intelligence. He died Sept. 3, 1897.

Postmortem, there was marked emaciation and the extremities were distorted by contractures. The skull was very thick, the sutures had disappeared, the diploë was present in only small areas and there was very little cancelous structure. The dura was thickened, but not adherent to the skull. There were 160 c.c. of cerebrospinal fluid. The arachnoid space was distended with gelatinous fluid, especially at the vertex and over the frontal lobes. The dura was adherent along the median fissure from the vertex anteriorly to the prefrontal region and for 5 cm. on either side. The pia was translucent over the frontal lobes and there were white streaks along the vessels over the whole convexity. The convolutions of the frontal and parietal lobes were much flattened and the sulci distended with fluid. The insula was uncovered on the left side and partially so on the right, on account of atrophy of the surrounding convolutions. There was marked dimpling from atrophy over the frontal and parietal lobes also. The ventricles were distended, the ependyma edematous and, in the floor of the fourth ventricle, granular. The cortex was thin, pale and nowhere more than 2 mm. in thickness. The lungs were diseased; the heart, spleen and liver small, and the kidneys the seat of parenchymatous change engrafted on a chronic interstitial nephritis. The generative organs were small and undeveloped.

So far as our observation goes, when the motor degenerative changes follow in the sequence here outlined, that is, beginning first with those motor activities last in the order of development, and follow in the regular order, the change is a permanent one; but when this sequence is departed from, or the paresis is not symmetrical and progressive, there is always the probability that the power of motion will return more or less completely. Postmortem in these cases, the external appearance of the brain and its coverings is always the same. Where there has been much spastic involvement areas of pachymeningitis are always present, with more or less recent extravasation of blood over the inner surface of the dura. The arachnoid space, especially over the anterior and middle portion of the brain, is filled with gelatinous fluid. The pia is translucent or partially opaque, with white streaks along the vessels, and there are delicate bands of adhesion between the pia-arachnoid and dura over the frontal region superiorly and at the base. The convolutions of the frontal lobes are very much shrunken and the fissures gape widely. The insula is partially uncovered by the atrophy and retraction of the convolutions surrounding it and there are marked areas of atrophic dimpling in the superior parietal lobule and in the angular gyrus. The visual area in the cuneus seems never to be involved to an appreciable extent macroscopically. Everywhere over the superior portion of the frontal lobes and the

antero-lateral portion of the parietal lobes there is an essential shriveling of the cortical gray matter and the underlying white substance. Whereas, in ordinary dementia, when the sequential motor involvement is not marked, the atrophy is present only in the frontal lobes, anterior to the precentral fissure, and while the convolutions are flattened the fissures do not gape widely and the white substance is not involved perceptibly. Histologically, the changes found are degenerative, and in one case we have traced them to the lumbar enlargement. Usually they only involve the cortex and fibers of association in the brain, and there are always numerous healthy cells and fibers in a given field. Besides, the degeneration is not focal, nor are there any continuous areas, or even groups of cells, unless, on account of the presence of some accidental condition, like that produced by the occlusion of a blood vessel. Then the changes which result are destructive and need not be confounded with the general degenerative changes. The extreme cases of motor degenerative change are practically confined to primary degenerates, where the mental reduction has begun soon after puberty, progresses rapidly and becomes extreme. This tendency is, in its turn, most marked in those individuals in whom there is the most evidence of defective development and the greatest number of the stigmata of lack of mental capacity. They are usually the offspring of the alcoholic and syphilitic, seldom of the insane or the tuberculous.

THE BLOOD PRESSURE IN PARESIS.*

G. L. WALTON, M.D.
Physician to Neurologic Department, Massachusetts General Hospital; Instructor in Neurology, Harvard University.
BOSTON.

There is a general belief that the blood pressure in paresis is low. This belief is based mainly on the observations of Pilcz,[1] who found normal tension in the earlier stages, falling tension as the disease advanced, with extreme hypotension in the terminal states. Janeway[2] regards this hypotension as analogous to the pressure of other wasting diseases but rather more pronounced. Pilcz used the Gaertner instrument. Alexander,[3] a year later, stated that the blood pressure in paresis was low in the end stages. From an examination of ten cases Craig[4] found the blood pressure in paretics high in the depressed condition, low in the excited. He regards his observations as favoring but not establishing Cramer's theory, that blood pressure is a cause of mental states and rapid changes.

These observations would naturally lead to the hope that we have in blood pressure a practical aid in the diagnosis of paresis from other nervous diseases.

In view of the great importance of this diagnosis, especially in the early stages, the results of many observations should be tabulated before we can establish a general rule and rely on it as an aid in the diagnosis of the individual case. The following observations are offered as bearing directly on this point. The results tend to show that the blood pressure test, while of great value here as elsewhere in determining the circulatory condition of the individual, is likely to prove of little help in the diagnosis of paresis from other nervous diseases.

I have examined 108 male patients with this disease. The majority of the cases were inmates of the Danvers Hospital, the Worcester Hospital, the Medfield Asylum, the State Hospital at Tewksbury and the McLean Hospital, to the superintendents of which institutions I am indebted for the opportunity. The remainder were seen at the Neurologic Clinic of the Massachusetts General Hospital and in private practice.

The following classification shows the comparative ages: Under 40, 28; 40 to 50, 41; 50 to 60, 33; over 60, 6.

Among these 108 cases definite cardiac, renal or arterial diseases was absent in only 44 cases.

The Riva-Rocci instrument was used in all observations. In certain of the cases first examined the 5 cm. cuff was used, but was discarded on account of its unreliability, and the cases in which it was used as far as possible re-examined. The majority of the tests were made with either the 9 cm. cuff of the Riva-Rocci type, or the 12 cm. cuff of the Janeway. The observations with the 5 cm. cuff are included in the tables, and offer an excellent example of its disadvantages.

My observations would not quite justify the conclusion that a width of at least 12 cm. is necessary, for I have found the registration of the 9 cm. cuff quite constant, and varying so little from that of Janeway that for clinical purposes the former seems to me to answer every requirement.

Ordinary precautions only were taken in making the observations, for example, having the arm on a level with the heart, and snugly adjusting the cuff. Since the question at issue was that of the practical value of the blood pressure in diagnosis, no attempt was made to reduce the observations to the accuracy of physiologic experimentation. The average blood pressure of all the cases, without reference to heart, kidney or arterial disease, was as follows:

Age.	5 cm. cuff.	9 cm. cuff.	12 cm. cuff.
Under 40	145 mm.	123.4 mm.	125 mm.
40 to 50	152 mm.	124 mm.	128.75 mm.
50 and up	150.3 mm.	140 mm.	147.1 mm.

These figures are certainly well above the average normal, which would, perhaps, be not far from 115 with the broad cuff for males under 40, 138 for males over 50, and somewhere between these figures for males between 30 and 40.

This result would contraindicate the impression I believe to generally prevail, that the blood pressure in general paralytics on the whole is low. On the contrary it would indicate that the blood pressure in this disease is, on the whole, high. This would naturally result from the large proportion of cases presenting hardened arteries, with tendency to enlargement of the heart and to chronic renal degeneration. In point of fact it is doubtless these conditions that we are measuring rather than the general paralysis. Then, too, it is very common for paretics to overeat and to take on flesh during the demented stage, a fact which tends to produce higher readings, even with broad cuff.

The renal complication was allowed for by Pilcz, who noted that when Bright's disease was present, hypertension was in evidence. He also noted that depressive mental states, as well as remissions of symptoms, brought about a rise.

It would seem, then, that before using the blood pressure as a diagnostic aid in general paralysis, we must

---

* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

1. Wien. klin. Woch., 1900, p. 277.
2. The Clinical Study of Blood Pressure. Appleton & Co., 1904, p. 253
3. Lancet, 1901, vol. ii, p. 18.
4. Lancet, 1898, p. 1743

eliminate nearly half of the cases, and only examine the others at certain stages of the disease. Nor is it certain that even after these precautions have been taken hypotension will be found sufficiently constant to permit of making a rule.

With this question in view I have tabulated the results of the examination of the 44 cases in which there was no record of arterial, cardiac or renal disease, with the following results:

Age.	5 cm. cuff.	9 cm. cuff.	12 cm. cuff.
Under 40	148.4 mm.	110 mm.	115 mm.
40 to 50	151 mm.	125.9 mm.	.....
Over 50	168.5 mm.	129 mm.	118 mm.

These figures are somewhat below the average normal of health. This would seem to indicate that the tendency of the disease itself, unopposed by arterial, cardiac or renal disease, is toward hypo- rather than hypertension. When we consider, however, the moderate degree (except in certain terminal cases) of the difference between this and the normal average pressure, together with the variations from which these averages were made up, it is evident that this test is hardly likely to become a prominent one as an aid in the diagnosis of paresis in its early stages from other nervous diseases, though it may be of great value in determining the condition of the circulatory system of the individual.

Even if it should be established that paresis has a characteristic low pressure, recent observations on the blood pressure in psychoneurotics would lessen the diagnostic value of the knowledge. The chief hope lay in the diagnosis of early paresis from the psychoneuroses, in which the pressure was proclaimed high by Heine. It would appear from the investigations of Krauss,[5] and of Romberg[6] that variability and instability of pressure rather than high pressure, is the characteristic of the psychoneurotic. Dr. Joseph Pratt, who has had extended opportunity for study of these cases in the Medical Out-patient Department of the Massachusetts General Hospital, tells me that his experience confirms this observation.

As an example of the variations, the limits (for males under 40, broad cuff) were 80 and 155.

With regard to the prediction of death by fall of blood pressure noted by Pilcz, it is of interest to note two moribund cases seen at the Danvers Hospital, one of whom died within 12 hours, the other within 48 hours, and a third moribund case, a female, seen at the Medfield Asylum. The blood pressure in the first of these cases was 97 mm. with the narrow cuff, in the third, 105 mm. with the 9 cm. cuff, both low records. In the second case, however, the pressure was 183 mm. with the narrow cuff, a high record. There was little to choose in the general condition of these patients. The urine and arteries (radial) were normal in the case of high tension, the heart dulness was slightly increased; in the two cases of low tension the arteries were atheromatous, the heart dulness increased. The arms in all three cases were small.

With regard to the question of low blood pressure in mental exhilaration and the opposite in depression, I have had no opportunity of studying the same case through changes of emotional condition. The majority of the patients at the time of examination were euphoric, expansive without excitement, or simply apathetic and demented.

In eight cases only marked psycho-motor excitement was present.

CASE 1.—Male, 35, with normal radial and temporal arteries, a faint trace of albumin in the urine, and a few hyaline casts; heart negative. Marked excitement. Blood pressure, Janeway cuff, 135.

CASE 2.—Male, 50, with slightly thickened arteries. Heart negative. Slight trace of albumin with a few hyaline casts. Grandiose and elated. Blood pressure, narrow cuff, 97.

CASE 3.—Male, 61, with moderately thickened arteries, normal heart and a trace of albumin in the urine. Excited, singing, maniacal, with formal associations. Blood pressure 120, Janeway cuff.

CASE 4.—Male, 49. Atheromatous arteries, normal heart and urine. Excited. Blood pressure 135, Janeway cuff.

CASE 5.—Male, 49. Arteries and heart normal. Trace of albumin in the urine, sediment negative. Exhilarated. Blood pressure 160, Janeway cuff.

CASE 6.—Male, 35, with slightly thickened arteries. Negative heart and urine. Exhilarated. Blood pressure 125, Janeway cuff.

CASE 7.—Male, 36. Slightly thickened arteries. Urine and heart negative; excited and expansive. Blood pressure 130, Janeway cuff.

CASE 8.—Male, 35. Arteries and heart negative. Slight trace of albumin, few hyaline casts. Marked psycho-motor excitement. Blood pressure 135, Janeway cuff.

The pressure of the excited case taken with the narrow cuff was then 97; the average pressure of those taken with the Janeway cuff was 134.3, that is, on the whole, we find readings rather above than below the average of health.

Limiting ourselves to the excited cases without discoverable arterial thickening or cardiac disease, namely, cases 1, 5 and 8, we find a pressure of 135 (Janeway cuff) in a male of 35; a pressure of 160 (Janeway cuff) in a male of 49; a pressure of 135 (Janeway cuff) in a male of 35. These are decidedly high readings.

As far as these cases go, then, they point to high, rather than low pressure, in the excited states of general paralysis. This fact, even if these few cases should prove typical, would not militate against the observation which has been generally accepted, that manic states are accompanied by lower pressure than depressed ones. The emotional condition commonly present in mania was notably wanting in these cases; I refer to the elation and happiness with sense of well-being which is rather the dominant note in simple mania.

The only cases showing marked depression were the following:

CASE 9.—Male, 56. Arteries normal. Slight trace of albumin. Few hyaline casts. Heart normal. Marked depression. Blood pressure 150, Janeway cuff.

CASE 10.—Male, 41. Arteries slightly atheromatous. Heart and urine negative. Extremely restless and depressed. Blood pressure 95, Janeway cuff.

The theory of Cramer that the mental state is largely dependent on the blood pressure has a certain fascination, and I was tempted to hope that a low blood pressure might be found fairly constant in the euphoria, if not in the excitement, of general paralysis. The observations failed, however, to establish this proposition. The difference between the average blood pressure of the euphoric cases and that of cases not euphoric was not sufficient to establish a rule, though the average of the former was somewhat lower. The variations were marked, and pronounced euphoria was found among the cases of high as well as those of low blood pressure. In fact, the most marked atheroma with its cardiac and

5. Krauss: Lehrbuch der Inneren Medicin. J. v. Mering, Jena, 1905, p. 910.
6. Romberg: Deutsch. med. Woch., 1905, p. 1377.

renal accompaniments was found with the most absolute sense of well-being, as shown in the following illustrative cases:

CASE 11.—Male, 56; bedridden. Thickened arteries, with trace of albumin in the urine and systolic murmur. Pronounced euphoria. Blood pressure 145, with Janeway cuff.

CASE 12.—Male, 51. Atheroma. Heart and urine negative. Euphoric. Blood pressure 150, with Janeway cuff.

CASE 13.—Male, 58. Marked hardening and tortuosity of arteries and cardiac enlargement. Blood pressure 190, with 9 cm. cuff.

CONCLUSIONS.

1. The average blood pressure in paresis, taken as a whole, is high.

2. This is doubtless due to the prevalence of atheroma with its cardiac and renal accompaniments.

3. The average blood pressure in cases of paresis without atheroma, cardiac enlargement or renal disorder, is probably somewhat lower than that of health, but the variations are so great that it can not be said to be uniformly low.

4. The test is not likely to prove of great practical value in the differentiation of paresis from other nervous disorders, though here, as elsewhere, it is of great value in estimating the circulatory condition of the individual.

5. These observations are too few to establish a rule with regard to the blood pressure in varying emotional states. As far as they go, however, they tend to show (a) that the excited states of paresis are as likely to be accompanied by high as by low pressure; (b) that mental depression is accompanied by high oftener than low pressure, but that it is not incompatible with low pressure; (c) while the average pressure in euphoria is perhaps somewhat lower than in the other mental states of the general paralytic, it is not inconsistent with high pressure, or with pronounced atheroma with its cardiac and renal accompaniments.

RECENT CONTRIBUTIONS TO THE PHYSIOLOGY OF THE CIRCULATION.*

JOSEPH ERLANGER, M.D.
MADISON, WIS.

The title of this paper is misleading, in that it implies that herein will be found a complete review of all of the advances recently made in the physiology of the circulation. It is hardly necessary to state that it would be impossible to read merely the titles of the important contributions within the time allotted to the reading of this paper. I take it that a full review of all contributions is not what is wanted as an introduction to a symposium on circulatory affections, but rather a consideration, more or less complete, of those advances which, in the present state of our knowledge of the subject, seem to elucidate, or to promise to elucidate, problems of interest to the clinician.

By way of further limitation it might be suggested that from the border-line subjects a choice be made of those contributions which seem to be the most important. Judgment in this matter, however, is difficult; indeed, it is well nigh impossible. Therefore, in order to extricate myself from the difficulty, I have presented most fully those subjects, included in the class specified above, in which I have taken a more or less personal interest.

If it be justifiable to gauge the interest that is taken in a subject by the number of contributions to it, then there is perhaps no other subject which interests a larger audience than the physiology and pathology of blood pressure. The ardor with which this subject is being attacked on all sides does not seem to have been abated by the guarded but rather disheartening conclusions reached by the Committee on Research for the Division of Surgery, Harvard Medical School.[1] Their main conclusion reads as follows:

> The value of the Riva-Rocci apparatus in determining the blood pressure in surgical patients is limited to a comparatively small number of cases. The conditions of cerebral compression and of surgical shock produce the most marked and definite alterations in the blood pressure. When these conditions are present and other confusing causes of alterations in the blood pressure are eliminated, the value of the blood pressure determinations, as an indication for or against operation, is increased. Under other circumstances, the value of these observations is at present not apparent. The adoption of blood pressure observations in surgical patients does not at present appear to be necessary as a routine measure.

On reading this conclusion, one is struck by the fact that the committee was able to discover decided and characteristic changes in the blood pressure only in those surgical conditions which presumably involve the very nerve centers that govern the cardiovascular mechanism. And the question, therefore, suggests itself: Does this fact serve to account for the generally unsatisfactory results obtained by the committee and by almost all other investigators who have worked in the field of clinical blood pressure? In part, I think, it does. All physiologists are agreed that there is at work in the animal organism a compensatory mechanism the main function of which is to maintain a sufficient circulation of blood in all organs, but particularly in those organs the functions of which are of immediate vital importance.[2] Through the interaction of the centers controlling the heart and the caliber of the smaller arteries, the force and rate of the heart beat and the resistance to the flow of blood through the peripheral vessels are so varied to suit varying conditions that the mean blood pressure, for instance, may be kept constant despite decided changes which may have occurred in both of the above-mentioned variable factors. It follows, therefore, that under such circumstances it may be impossible to recognize in the data afforded by blood pressure investigations as usually practiced, any change in the circulatory system until the disturbances in function have become so serious that the centers can no longer compensate them.

In this connection, it is necessary to call attention to the fact that in most investigations thus far made either one or the other of the determinable blood pressures, systolic or diastolic, has been followed, and usually it has been the systolic pressure. As a rule, it has been forgotten in such investigations that the pressure in the larger arteries varies through a wide range with each beat of the heart. With each contraction of the heart the pressure in the arteries rises rapidly to its maximum or systolic value, and during cardiac diastole the pressure in the arteries falls relatively slowly to its minimum or diastolic value.

---

* Read in the Section on Practice of Medicine of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

1. "Report of the Committee on Research for the Division of Surgery," Harvard Medical School; "Blood-Pressure Observations in Surgical Cases," Boston Med. and Surg. Jour., 1904, vol. cl, p. 255.

2. Francois-Franck: "Defense de l'organisme contre les variations anormales de la pression arterielle," Acad. de Med., Paris, July 21, 1896.

Dawson[3] has recently published a report of an investigation of the blood pressures at different points of the arterial tree of the dog. The pressures were determined by means of valved mercury manometers connected directly with the arteries of the animal. He found in the carotid artery, for example, the pressures to be: systolic 162, diastolic 103, mean 122 mm. Hg. With each pulse wave, therefore, the pressure ranges through 59 mm. Hg. For the sake of convenience, this range of pressure with each pulse wave has been termed the pulse pressure. The pulse pressure is the difference between the systolic and diastolic pressures. In addition Dawson has shown, in confirmation of older investigators, that the mean and diastolic pressures are practically constant throughout the large arteries, and that the systolic pressure obtained from branches of the main arterial trunk falls off considerably as the smaller vessels are approached (Fig. 1).

Here special attention should be directed to the fact that the mean and diastolic pressures are practically constant in all of the larger arteries and that the diastolic is much nearer to the mean than is the systolic pressure. The practical significance of these relations of the pressures to one another becomes apparent when it is recalled that at present there is no known way of directly determining the mean blood pressure in man.

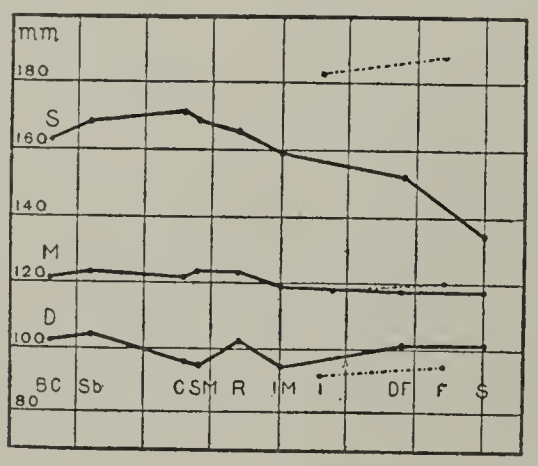


Fig. 1.—Aortico-femoral system, S, M and D are the systolic, mean and diastolic end pressures, respectively. The solid lines connect end pressures taken in side branches of the aortico-femoral trunk. Broken lines connect pressures taken in the main trunk of the system. B, C is the branchio-cephalic artery; Sb, left subclavian; C, celiac axis; S M, superior mesenteric; R, left renal; I M, inferior mesenteric; I, iliac; D F, deep femoral; F, femoral; S, saphenous (Dawson).

But it follows from the above-mentioned facts that the diastolic pressure is a much more accurate indicator of the mean than is the systolic.

At least four methods have been proposed for determining the systolic pressure in man, namely: 1. The method of obliteration,[4] compression or decompression of an artery until the pulse distal of the point of compression or decompression disappears or reappears, respectively. 2. The method of von Frey,[5] submersion of the arm in mercury and measurement of the distance from the surface of the mercury of the place in the arm where the subjective pulsation is the most intense. 3. The method of Gaertner,[6] the flushing of the finger tip, which previously has been made anemic, during decompression of the digital arteries. 4. The method of von Recklinghausen,[7] the first abrupt increase in amplitude of pulsations transmitted from the artery, during its decompression, to the object compressing the artery.

Many tests[8] have been made of the accuracy of estimations with the method of obliteration. The results obtained are by no means uniform, but the discrepancies are probably largely due to the fact that investigators in many instances are not sufficiently well acquainted with the subject of hemodynamics, with the theory of the manometers used for the direct measurement of the blood pressure. Furthermore, the peripheral pulse has been palpated, not recorded, in too small an artery. There is no need of discussing here how these facts have influenced the results obtained by different investigators. According to recent investigations it would appear that when the tests are made on the exposed arteries of animals the method of obliteration is found to be very accurate indeed.[9]

In animals when the artery is covered by surrounding tissue the estimation varies somewhat with the thickness of the tissue and with the width of the compressing cuff. But such animal experiments permit the assumption that fairly accurate estimations may be made in man. With cuffs of sufficient width the error need not be more than —4 mm. Hg.[10]

In this connection I wish to call attention to the test of the method of Vierordt, recently published by Mummery,[11] who states that "the accuracy of the readings (of the Riva-Rocci apparatus) has previously been tested by observations on the cadaver, . . . but this method of testing the instrument is very unsatisfactory and unreliable." He does not seem to know that tests of the method of Vierordt have been made on the living animal. And in the statement that the Riva-Rocci "apparatus registers the maximum systolic pressure" it is evident that Mummery is not acquainted with the meaning of the terms used.

Mummery's method of testing the instrument consists of making simultaneous readings with the ordinary mercury manometer in the right femoral artery and with the Riva-Rocci apparatus attached to the left thigh of a dog. With certain exceptions, which he explains to his own satisfaction, he finds that the readings made with the two instruments correspond very well indeed. He then implies that he has proved that the Riva-Rocci instrument registers the systolic pressure. It is not stated how his mercury manometer was read, whether at the crest of its swing or at its mean position; in either case, but especially in the latter, the readings made would be very far from the true arterial systolic pressure. Neither does Mummery state the width of the cuff used to apply the pressure to the thigh, nor does he seem to know that it is impossible to apply circular pressure to the thigh of the dog without having a large component of the

3. Dawson: "The Lateral Blood Pressures at Different Points of the Arterial Tree," Amer. Jour. of Physiol., 1906, vol. xv., p. 244.

4. v. Basch: "Ueber die Messung des Blutdrucks am Menschen," Ztschr. f. klin. Med., 1881, vol. ii, p. 79.

5. Chir. Beit. Fests. f. Benno Schmidt, Leipsig, 1896; ref. Sahli; "Lehrb. der klinischer untersuchungsmethoden." Second ed., 1899.

6. Gaertner: "Ueber einen neuen Blutdruckmesser (Tonometer)," Wien klin. Wochschr., 1899, No. 25, p. 696.

7. v. Recklinghausen: "Ueber Blutdruckmessung beim Menschen," Arch. f. exp. Path. u. Pharmak., 1901, vol. xlvi, p. 78.

8. Potain: "Determination experimentale de la valeur du sphygmomanometre," Arch. de Physiol., 1890, fifth series, vol. ii, p. 300.

9. Gumprecht: "Experimenteile und klinische Prüfung des Riva Roccischen Syphygmomanometers," Zschr. f. klin. Med., 1900, vol. xxxix, p. 377.

10. Erlanger: Proc. Amer. Physiol. Soc., Dec., 1903, p. 14; also, "A New Instrument for Determining the Minimum and Maximum Blood Pressures in Man," Johns Hopkins Hosp. Rep., 1904, vol. xii, p. 53.

11. Mummery: "Comparison of Blood-Pressure Readings Obtained Simultaneously With a Manometer and With a Sphygmomanometer," Proc. Physiol. Soc., Jour. of Physiol., 1905, vol. xxxii, p. 23; also "The Physiology and Treatment of Surgical Shock and Collapse," Lancet, 1905, vol. i, p. 696.

pressure lost in dragging the cuff toward the apex of the cone. These observations of Mummery are therefore valueless and misleading.

The accuracy of estimation made by the method of von Recklinghausen has been tested on the exposed artery of the dog, although not so carefully as is desirable. The method seems to be very accurate. Comparisons of estimations in man by the methods of von Recklinghausen and Vierordt indicate that with the latter method the estimations may be from 5 to 10 mm. Hg. too low.[10] The estimations made with the method of von Frey are too subjective to allow of satisfactory testing.

The method of Gaertner is open to the objection that the arteries of the fingers are probably small enough to participate directly in vasomotor changes.[12] Therefore a rise of the general blood pressure, which in part is caused by constriction of the digital arteries, may be associated with a fall of pressure in the terminal phalanges. That this does occur is practically demonstrated by the fact that cold, which usually causes peripheral constriction with consequent rise of the general blood pressure, seems to cause a fall of pressure as estimated by the method of Gaertner.[13]

There are two methods by means of which the diastolic pressure may be estimated in man. The older method, that of Marey, consists of determining the pressure under which the pulse will transmit oscillations of greatest amplitude to the object with which the pressure is being applied to the artery. Within the past ten years many opinions have been expressed as to which pressure, mean or minimum, is determined by this method. Within comparatively recent years, owing largely to the investigations of Howell and Brush,[12] the decision has been reached that the method of maximum oscillations determines the diastolic pressure. There seems to be but one investigator, von Recklinghausen, who now maintains that maximum oscillations are obtained at a mean pressure.[7] This opinion is based on the observation that if a tracing be made of the oscillations obtained from an artery while the pressure on it is slowly falling the largest oscillations will be obtained some time before an abrupt diminution in amplitude occurs. In such a case von Recklinghausen assumes, rightly, I believe, that the pressure on the artery was diastolic when the abrupt diminution in amplitude was registered, and that the maximum oscillations, therefore, were obtained while the pressure on the artery was above the intra-arterial diastolic pressure. But it can readily be shown that if the pressure on the artery be allowed to fall somewhat more slowly than in von Reckinghausen's experiments the maximum oscillations will be followed immediately by the abrupt diminution in amplitude.[10] The cause of the discrepancy which is seen when the pressure on the artery falls rapidly can not be discussed here. Let it suffice to state that, under any circumstances, the diastolic pressure corresponds with the abrupt diminution in amplitude.

The second method with which it has been proposed to determine the diastolic pressure in man depends on the observation that while gradually compressing an artery, at a certain pressure the pulse peripherally of the place of compression diminishes in amplitude. Janeway,[14] who first noted this phenomenon, did not feel justified in concluding that it permitted of the estimation of the diastolic pressure. He cautiously states that "the pressure to produce it must lie above the minimum pressure in the artery." Other investigators, among them Masing,[15] but particularly Strassberger[16] and Sahli,[17] maintain, on *a priori* grounds entirely, that the principle of Janeway gives diastolic pressures; but the proof is lacking that such is the case. It has been noted by Strassberger, and the same fact is illustrated in the tracings reproduced by Sahli, that the amplitude of the pulse wave increases before the diminution in amplitude occurs. Strassberger, therefore, estimates the diastolic pressure by noting the pressure at which the pulse waves of increasing amplitude first began to diminish, using for the compression of the artery the Riva-Rocci sphygmomanometer. The changes in amplitude of the radial pulse are noted with the finger. Sahli likewise employs the Riva-Rocci instrument to apply pressure to the brachial artery, but he records the changes in the radial pulse with the Jaquet sphygmochronograph. As stated above, it is assumed that the pressure exerted on the brachial artery is diastolic when the pulse diminishes in amplitude.

It would be a relatively simple matter to test the accuracy of this assumption on the living animal, but, to my knowledge, no such tests have yet been made. In the absence of such tests it becomes necessary to call attention to the fact that there are obviously two processes at work tending to alter the amplitude of the peripheral pulse while the artery is being compressed. First, by some unknown factor tends to enlarge the pulse amplitude; second, by the pressure from without must constantly tend to diminish the amplitude of the peripheral pulse by diminishing the caliber of the artery. It is true that the latter factor will not be great so long as the external pressure is less than the intra-arterial minimum; the great diminution in caliber will occur when the diastolic pressure is exceeded. There is no justification for Sahli's assumption that the arteries suffer no lateral expansion with the advent of the pulse wave and that, therefore, the caliber of the artery is not diminished by external pressure until that pressure exceeds the diastolic.

Since, then, there are two factors altering the amplitude of the peripheral pulse in opposite directions, any *a priori* conclusion as to the value of the pressure determined by the method of Janeway must necessarily be questionable. It is true that comparisons have been made of estimations of the blood pressure determined by the methods of Marey and of Janeway. But, unfortunately, the results obtained by two investigators do not agree. Thus Janeway states that the pressure at which the pulse waves as recorded with the sphygmograph diminish in amplitude "always lies above the lower limit of maximal pulsation, as shown by the Hill-Barnard[14] sphygmometer." Whereas Brush[18] found that the diminution in the amplitude of the peripheral pulse, as determined by palpation, corresponds fairly closely with the diastolic pressure as determined with my instrument. It is to be regretted that the latter investigator did not employ a more objective method of studying the variations in the peripheral pulse.

12. Howell and Brush: "Critical Note on Clinical Methods of Measuring Blood Pressure," Trans. Mass. Med. Soc., June 12, 1901.
13. Raab: Münch. med. Wochschr., 1905, No. 50.
14. Janeway: "Observations on the Estimation of Blood Pressure in Man," New York Bull. of Med. Sc., 1901, vol. i, p. 105.
15. Masing: "Ueber das Verhalten des Blutdrucks der jungen und der bejahrten Menschen bei Muskelarbeit," Deuts. Arch. f. klin. Med., 1902, vol. lxxiv, p. 253.
16. Strassberger: "Ein Verfahren zur Messung des diastolischen Blutdrucks und seine Bedeutung für die Klinik.," Zeitschr. f. klin. Med., 1904, vol. liv, p. 373.
17. Sahli: "Ueber das absolute Sphygmogramm und seine klinische Bedeutung," Deuts. Arch. f. klin. Med., 1904, vol. lxxxi, p. 493.
18. Brush: Amer. Med., July 15, 1905, p. 97.

The question now arises: Does the knowledge of either one of the determinable blood pressures (systolic and diastolic) suffice in physiologic and clinical observations or are the advantages which may be gained from the knowledge of both pressures so great as to demand their estimation in all cases?

There is no doubt that the diastolic pressure gives the better clue to the driving force of the blood stream, i. e., the geometric mean of the blood pressure. This is indicated by the fact that the diastolic pressure lies much nearer to the mean, and follows its variations much more accurately than does the systolic. When, therefore, it is desired to know the mean pressure approximately, the diastolic pressure should be determined. If, on the other hand, it is desired to know the strain to which the arteries are subjected, then must the systolic pressure be determined. But there are some reasons for believing that a change in the mean pressure may occur without affecting one or the other of the determinable pressure and, conversely, that the diastolic and systolic pressures may change without there being any corresponding change in the mean.[12] Also it can be shown that both the systolic and diastolic pressures must be known in such and similar cases in order that the nature of the change in the circulation may be determined.

In this connection, it was first suggested by the author[19] that, under more or less normal conditions, it should be possible to determine changes in the relative velocity of blood flow in the aorta, and the factors determining such changes, from a knowledge of the associated changes in the pulse pressure (the difference between the systolic and diastolic pressures), the blood pressure (diastolic) and the pulse rate. The argument, which was almost entirely *a priori,* was briefly as follows: In a constant circulatory system the heart will pump blood into the arteries until an arterial pressure is produced which is sufficiently great to force out of the arteries, against the peripheral resistance, an amount of blood equal to that which is thrown into the arteries. At the end of each cardiac cycle the pressure in the arteries will be at its lowest or diastolic level. With each cardiac systole the pressure in the root of the aorta will rise rapidly to its maximum or systolic value. Other things being equal, the difference between the systolic and diastolic pressures, i. e., the pulse pressure, should vary with the amount of blood thrown out by the heart with each beat. When the mean blood pressure is constant an equivalent of the amount of blood which is thrown out by the heart during systole must escape from the arteries into the veins during diastole. In the pulse pressure, therefore, we have a measure of the systolic output of the heart. This systolic output, or rather the pulse pressure caused by it, when multiplied by the pulse rate per minute should give the relative velocity of blood flow in the aorta. Since it has been shown that the methods employed for estimating the blood pressures in the brachial artery of man determine the lateral pulse pressure in the aorta,[3] we have at hand the means of determining the relative velocity of blood flow in man. It is necessary to bear in mind in this connection that there are many factors, whose values are still unknown, which may operate to vitiate the value of the pulse pressure as an index to the relative velocity of flow. Among such factors the following may be found to be of importance: the capacity of the arterial system, the rigidity of the arterial walls which may vary with the arterial pressure and degenerative changes, the rate of systolic output, the superposition of secondary on primary waves, etc.

Sahli[17] discussed this phase of the blood-pressure problem and independently arrived at the conclusion, in which he was opposed by Strassberger,[20] that the pulse pressure is valueless as an index to the velocity of blood flow. It should be stated that Sahli seems to have had in mind the possible value of the pulse pressure in pathologic conditions only, and, in the absence of experimental data, his conclusion in this regard seems to be justifiable. Nevertheless, it is possible to collect from the physiologic literature facts which indicate that a distinct association exists between pulse pressure and systolic output. Therefore, it seems reasonable to maintain that in physiologic conditions, at least, the products of the pulse rate by the pulse pressure in the same subject vary with the velocity of blood flow.

By way of illustration of the value of this assumption a few observations made in man will be given.[19] An average of many observations in man shows that with the assumption of the erect from the recumbent posture the systolic pressure suffers practically no alteration, whereas the diastolic pressure rises; the pulse pressure, therefore, becomes smaller. The pulse rate is faster with the individual in the standing position, and it results that the product of the pulse rate by the pulse pressure is practically the same in both positions. It certainly seems probable that the compensatory mechanism would strive to maintain the same velocity of blood flow when the body is in two normal positions, and the fact that the product of the pulse rate by the pulse pressure is identical in the two positions of the body may be taken as proof that the compensation is perfect. It should be noted in connection with this experiment that if only systolic pressure estimations had been made, the erroneous conclusion would have been reached that the blood pressure is not changed by alterations in the position of the body.

As a second illustration, we may choose the effect on the pressures of immersing the body in the erect position in warm and in cold water. When the body is in warm water, the diastolic pressure is high, but, the systolic pressure being relatively higher than the diastolic, the pulse pressure is large. At the same time, the pulse rate may be more rapid than that of the normal standing position. The product of the pulse rate by the pulse pressure is, therefore, remarkably large, indicating a high velocity of blood flow. When the body is immersed in cold water, the diastolic pressure, as in the former case, is high, but since the systolic pressure does not increase to the same extent as the diastolic, the pulse pressure is relatively small. The pulse rate may be slow. The product of the pulse pressure by the pulse rate is, therefore, small, indicating a low velocity of blood flow. It will be noted that in both parts of this experiment the blood pressure was increased over the normal by immersion in water. But the effect of the warm water was, as we should expect, to increase the velocity of blood flow, whereas the effect of the cold water was to diminish the velocity of flow.

It should not be necessary to make any further comments on the value of simultaneous estimations of the systolic and diastolic pressures. Their values, or, rather, the necessity of making them in all cases, can be read in the brief accounts of the experiments quoted above.

19. Erlanger and Hooker: Proc. Amer. Physiol. Soc., Dec., 1903, p. 15; also, "An Experimental Study of Blood Pressure and Pulse Pressure in Man," Johns Hopkins Hosp. Rep., 1904, vol. xii, p. 145.

20. Strassberger: "Ueber Blutdruck, Gefässtonus und Herzaebeit bei Wasserbäden verschiedener Temperature," Deuts. Arch. f. klin. Med., 1905, vol. lxxxii, p. 459.

The pulse pressure may prove to be of value in still another connection. Mall and Welch,[21] in an experimental study of infarct formation in the intestine, have shown that diapedesis of the red blood corpuscles occurs when the blood flow through an artery is cut down to such a point that lateral pulsations of the walls of the peripheral arteries can no longer be seen. In the same connection, Hamel[22] and Kronecker[23] have shown that the edema, which is so apt to develop in artificially perfused organs, may be largely obviated by perfusing with a fluid driven by a pulsating pressure. The absence of pulsation, therefore, seems to favor extravasation of blood through the blood vessels into the tissues.

It has been shown that this property of the pulse pressure is probably of considerable significance in man. For example, the amount and composition of the urine seems to vary with the pulse pressure; and, in a case of orthostatic albuminuria, the output of albumin was found to bear a very distinct relation to the magnitude of the pulse pressure; albumin appearing or increasing in amount in association with diminution of the pulse pressure and diminishing or disappearing with increase of the pulse pressure.[19]

Before leaving the subject of blood pressure, attention should be directed to the relation which it bears to Cheyne-Stokes respiration, since an important contribution to this association has recently been made by Eyster.[24] This investigator recognized at least two forms of Cheyne-Stokes respiration, one associated with increased intracranial tension, the other occurring in association with arteriosclerosis, myocarditis, nephritis, etc.

In regard to the first form of Cheyne-Stokes respiration, it has long been known from experiments on animals that, when the intracranial tension is high, the blood pressure is apt to vary in the form of long regular waves, the so-called Traube-Hering waves. It has also been noted that at such times the respirations often become periodic. Hill[25] noted that the respirations, i. e., the periods of hyperpnea, occur during the ascending limbs of the Traube-Hering waves, the apneic periods while the pressure is falling. In one clinical case Hill was able to show by means of the plethysmograph that dilation of the vessels of the arm and hand occurs during the period of apnea and constriction with dyspnea. In other words, he has obtained rather indirect evidence that in man the same changes in blood pressure are associated with periodic respirations as in the dog.

Cushing[26] first showed clearly that when, in the dog, the intracranial pressure exceeds the blood pressure, there seems to occur an increase in the activity of the vasoconstrictor center and that this results in a rise of the blood pressure, until, in favorable cases, it exceeds the intracranial pressure, when the brain, which had previously been anemic, receives a supply of blood. In certain cases this increased activity of the vasoconstrictor center seems to endure for but a relatively short period; with its fatigue, perhaps, the blood pressure falls, the brain again becomes anemic, and again the anemia stimulates the vasoconstrictor center. In this way the periodic waves of blood pressure seem to be produced. When, with the fall of blood pressure the brain becomes anemic, the respirations cease; they begin again when the brain receives blood. It would, therefore, appear that the periodic respiration seen in conditions of increased intracranial tension results from these alternating periods of ischemia and flushing of the brain. But the conditions are not so simple as stated. Eyster[24] points out that it is necessary to take into account the general irritability of the respiratory center. This phase of the question does not concern us here. Cushing was able to show in two cases of increased intracranial tension with Cheyne-Stokes respiration in man that the periods of hyperpnea are coincident with rises of the systolic pressure, the apneic periods, with falls.[27]

These determinations can not be considered conclusive, since we have seen that the systolic pressure may vary independently of the mean and diastolic pressures. Eyster has demonstrated beyond doubt, however, that in man a rise of blood pressure preecdes, or is coincident with, the beginning of the period of hyperpnea. The method employed by Eyster for this purpose deserves a word of mention. Using the author's sphygmomanometer, Eyster first determined the systolic and diastolic pressure. The instrument was then set at a pressure midway between the determined pressures and a record was made on a revolving drum of the pulsations obtained in this way. Such pulsations are, of course, intermediate in size between those obtained at systolic and diastolic pressure. It was stated above that maximum oscillations are obtained at diastolic pressure. If, therefore, the pressure in the artery should rise, the oscillations would increase in amplitude, since the diastolic pressure would then be closer to the pressure in the instrument; and, *vice versa,* should the diastolic pressure fall, the recorded oscillations would diminish in amplitude, since the diastolic pressure would then have receded from the pressure at which the instrument had been set. This method of studying oscillations in the blood pressure, which are too rapid to be followed by methods generally employed, was first used by Mosso[28] and later by myself.[29]

It was also with the aid of this method that Eyster was enabled to recognize a second type of Cheyne-Stokes respiration associated with periodic changes in the blood pressure. He found that when Cheyne-Stokes respiration is met with in other conditions then increased intracranial tension, the hyperpnea occurs while the blood pressure is falling. Eyster does not attempt to suggest an explanation of this association, but it is implied that there exists a permanently low state of irritability of the respiratory center and that the center, therefore, requires an abnormally strong stimulus to arouse it into activity. This strong stimulus presumably is supplied by the accumulation of waste products in the center when, through the fall of the blood pressure, the irrigation of the center becomes insufficient. This inference is supported by the fact that carbon dioxid, administered toward the end of the period of hyperpnea, has, in one

21. Mall and Welch (Quoted by Welch): "Thrombosis and Embolism," Allbutt's "System of Medicine," 1899, p. 254.
22. Hamel: "Die Bedeutung des Pulses für den Blutstrom," Ztschr. f. Biol., 1889, vol. xxv, p. 474.
23. Kronecker: "Importanza del Polso per la Circolazione del Sangue," Atti della R. Acc. dei Lincei, 1889, p. 270, ref., Centbl. f. Physiol.
24. Eyster: To appear in Jour. of Exp. Med.
25. Hill. "Cerebral Circulation," Lond., 1896.
26. Cushing: "Concerning a Definite Regulatory Mechanism of the Vasomotor and Center Which Controls Blood Pressure During Cerebral Compression," Johns Hopkins Hosp. Bull., 1901, vol. xii, p. 290.
27. Cushing: "The Blood Pressure Reaction of Acute Cerebral Compression," Amer. Jour. of Med. Sc., 1903, vol. cxxv, p. 1017.
28. Mosso: "Sphygmomanometre pour mesurer le pression du sang chez l'homme," Arch. it. de Biol., 1895, vol. xxiii, p. 177.
29. Erlanger: "The Physiology of Heart Block in Mammals, With Especial Reference to the Causation of Stokes-Adams Disease," Jour. of Exp. Med., 1905, vol. vii, p. 676.

case of this type of Cheyne-Stokes respiration, promptly abolished any tendency to apnea.[30]

PHYSIOLOGY OF THE HEART.

Within recent years many new researches into the cause of the heart beat have been undertaken. Indeed, this subject seems to have been attacked by the physiologist with renewed vigor.

One of the most remarkable phenomena which this activity has brought to light is the astounding longevity of the mammalian heart after the death of the organism. To Martin belongs the credit of having first demonstrated the fact that the heart of the dog may be kept beating if the coronary circulation be maintained by driving defibrinated blood through the aorta toward the heart.[31] In these experiments the blood was aërated by passage through the animal's lungs. Some years later Langendorff simplified the process somewhat in that the blood was aërated by exposure to an atmosphere of pure oxygen instead of being passed through the lungs.[32] Still more recently, it was discovered that, as was known to be the case with the cold-blooded heart, the salts of the blood, not its complex constituents, are of prime importance in originating and maintaining the beat of the mammalian heart.[33] It was found that a solution containing sodium chlorid, potassium chlorid, calcium chlorid, approximately in the proportions in which they occur in the blood, when perfused through the isolated heart, will cause it to beat. In 1901, Locke determined the solution best suited to prolonged activity of the isolated heart.[34] Such a solution contains, beside the above-mentioned salts, sodium bicarbonate, dextrose and oxygen. With this solution Locke has recently succeeded in maintaining the beat of the rabbit's heart, with some interruptions, for five days,[35] and other investigators have succeeded in reviving the hearts of mammals, including man, many hours after death of the organism. Usually in these latter experiments the dead animal or the excised heart is put on ice until the attempt is made to revive the heart by artificial perfusion of the coronary system. In this way Kuliabko[36] has revived a part of the heart seven days after the death of the organism. The monkey's heart has been revived almost fifty-four hours after death.[37] It has been found possible to revive the hearts of children dead of disease. Thus Kuliabko succeeded in causing the heart of a child to beat twenty hours after death from pneumonia.[38]

It is interesting to note that the pioneers in this field of research entered on experiments with fear and anxiety; the preparations were made with almost funereal solemnity. Now these experiments are among the easiest the physiologist has to perform. As an example of this it may be stated that one experimentor,[37] instead of making all preliminary dissections on the living animal, with the confidence born of experience, boldly kills the animal, eviscerates it, dissects out the cardiac nerves, and, then only, begins to perfuse the heart.

The only difficulty experienced in reviving the mammalian heart consists in the tendency which it sometimes displays to go into so-called fibrillary contractions instead of beginning to beat coördinately. No satisfactory explanation of the cause of this phenomenon has yet been suggested. Fibrillation, once begun, is apt to persist with the greatest of obstinacy. Indeed, not so many years ago, some investigators went so far as to deny the possibility of reëstablishing coördinated contractions in a ventricle which has once fibrillated. Recently Hering discovered that if the fibrillating heart be brought to rest by perfusing it for a short while with a 1 per cent. solution of potassium chlorid, on subsequent perfusion with Ringer's solution, the heart will beat coördinately.[38] In the same connection it has been shown by Seligmann that camphor will cause a fibrillating heart to beat coördinately.[39] After the injection of camphor, strong stimulation of the ventricles may cause them to fibrillate, but this fibrillation always ceases with the cessation of the stimulation,[40] whereas, in the absence of camphor, the fibrillation usually continues until all movements of the heart cease. It should be added, however, that the last investigator in this field maintains that camphor has absolutely no influence over fibrillary contractions.[41]

During the last few years the controversy between the neurogenists and the myogenists has been waged with renewed vigor, and consequently many facts have been gathered, some of which favor the view that the mechanism which determines the beat of the heart is nervous; others, the view that the impulse which causes the heart to beat arises in, and is conducted through, the myocardium. This controversy has recently been reviewed by Howell with his characteristic clearness.[42] Only one phase of this question, namely, that dealing with the path of conduction of impulses from auricles to ventricles in the mammalian heart will, therefore, be considered here. This subject has been chosen for consideration, because it has served to elucidate some hitherto obscure pathologic phenomena noted in the human being.

The theory of myogenic origin and muscular conduction of the impulse which causes the heart to beat assumes that the impulse arises in the musculature in the region of the mouths of the great veins and is transmitted from this place through muscle to the arterial end of the heart. The successive regions of the heart, therefore, contract from above downward.

Thus, as is well known, there is a perceptible interval between the contraction of the auricles and the contraction of the ventricles. Some evidence has been obtained that in the mammalian heart the impulse arises in the region which lies between the mouths of the two venæ cavæ.[43] At least this is the only region the warming or

30. Pembrey, Beddard and French: "Observations on Two Cases of Cheyne-Stokes' Respiration," Proc. Physiol. Soc., Jour. of Physiol. 1906, vol. xxxiv, p. 6.

31. Martin: "A New Method of Studying the Mammalian Heart," Stud. from the Biol. Lab., Johns Hopkins Univ., 1882, vol. ii, p. 119.

32. Langendorff: "Untersuchungen am überlebenden Säugethierherzen," Pflüg. Arch., 1895, vol. lxi, p. 291.

33. Rusch: "Experimenteile Studien über die Ernährung des isolirten Säugethierherzens," Pflüg. Arch. 1898, vol. lxxiii, p. 535.

34. Locke: "Die Wirkung der Metalle des Blutplasmas und verschiedener Zucker a. d. isolierten Säugethierherz," Centbl. f. Physiol. 1901, vol. xv, p. 490.

35. Locke and Rosenheim: "Notiz über die Ueberlebensdauer des isolierten Säugethierherzens," Centbl. f. Physiol., 1905, vol. xix, p. 737.

36. Kuliabko: "Weitere Studien über die Wiederbelebung des Herzens," Pflüg. Arch., 1903, vol. xcvii, p. 539.

37. Hering: "Uber die Wirksamkeit der Nerven auf dem Tode wiederbelebte Säugethierherz," Pflüg. Arch., 1903, vol. xcix, p. 245.

38. Hering: "Ueber die Wirksamkeit des Accelerans auf die von den Vorhöfen abgetrennten Kammern isolirter Säugethierherzen," Centbl. f. Physiol., 1903, vol. xvii, p. 1.

39. Seligmann: "Zur Kreislaufswirkung des Camphers," Arch. f. exp. Path. u. Pharmak., 1905, vol. lii, p. 333.

40. Gottlieb: "Zur Herzwirkung des Kamphers," Ztschr. f. exp. Path. u. Therap., 1905, vol. ii, p. 385.

41. Winterberg: "Ueber Herzflimmern und seine Beeinflussung durch Kampher," Ztsch. f. exp. Path. u. Therap.

42. Howell: Harvey Lecture, "The Cause of the Heart Beat," THE JOURNAL A. M. A., June 2 and 9, 1906, pages 1665 and 1749.

43. McWilliam: "The Rhythm of the Mammalian Heart," Jour. of Physiol., 1888, vol. ix, p. 167.

cooling of which alters the rate of the whole heart.[44] From this region, therefore, the impulse must spread through the auricles into the ventricles. If this impulse spreads through muscle, then there must be a muscular connection between auricles and ventricles.

The existence of such a connection was for many years denied by anatomists and by some physiologists. In 1893 Kent[45] stated that such a connection exists, although he did not exactly localize it. Indeed, it has been said that Kent's methods did not suffice to demonstrate the presence of muscle fibers.[46] In the same year His, Jr.,[47] exactly localized a definite muscular bundle connecting the septum of the auricles with the septum of the ventricles. Practically no notice was taken of this work until 1904, when the existence of this bundle was confirmed and its exact anatomy described by Retzer,[46] Braeunig[48] and Humblet.[49] In 1905, Tawara[50] described its minute anatomy. This investigator believes that the auriculoventricular bundle of His consists of a tissue which differs microscopically from the rest of the heart muscle. He thinks it is composed of so-called Purkinji fibers and that it is a part of the Purkinji system of fibers which ramifies through the heart muscle. In a general way it may be said that the auriculoventricular bundle begins in the septum of the auricles immediately below the foramen ovale and from this place passes downward and forward through the auriculoventricular junction where it comes into close relation with the auriculoventricular valves. Arrived in the septum of the ventricles, it courses downward and forward over the upper edge of the muscular septum between it and the membranous septum. According to Tawara, it here divides, one part passing down the right side of the septum, the other down the left side. According to Retzer, the dimensions of the auriculoventricular bundle in man are 18 mm. in length, 2.5 mm. in breadth and 1.5 mm. in thickness.

If this muscular bundle constitutes the functional connection between auricles and ventricles, destruction of it should block the passage of the auricular impulse into the ventricles. Whether or not the ventricles will then stop beating will depend on the degree to which their inherent rhythmicity is developed. If, as is the case with the cold-blooded heart, they are not spontaneously rhythmical under what might be termed normal conditions, then they should cease to beat when complete block is produced; but if they are spontaneously rhythmical, they should continue to beat, but with a rhythm totally independent of that of the auricles. It might here be stated that it has long been known that the mammalian ventricles possess the property of spontaneous rhythmicity. This was first demonstrated by the experiments of Wooldridge,[51] and subsequently by those of other investigators,[52] in which the functional connection between auricles and ventricles was severed by crushing all of the tissue in the auriculoventricular junction.[53] Under these circumstances, the ventricles continue to beat, but with a rate which is much slower than that of the auricles and with a totally independent rhythm. That the same phenomenon may be elicited by destruction of the auriculoventricular bundle alone was first demonstrated by His, Jr., in 1895.[54] In a very brief report of his experiments, His states that section of the auriculoventricular bundle in rabbits causes the ventricles to beat indpendently of, and much more slowly than, the auricles.

His's observations did not receive the recognition they deserved, probably owing to the fact that only a preliminary report of them was made. The recent anatomic work on the auriculoventricular bundle has served to stimulate further investigations into the physiology of the bundle. In 1904, Humblet repeated His's experiment on the excised perfused heart of the dog and apparently obtained the same result.[49] In a much more convincing way Hering, in 1905, showed that section of the auriculoventricular bundle causes complete independence of the auricles and ventricles.[55] In these experiments, as in those of Humblet's, the isolated perfused heart was employed.

My experiments on heart block in the dog were performed simultaneously with those of Hering.[56] The method employed differed from that of other investigators in that, instead of cutting the bundle in the perfused heart, it was compressed in a specially devised clamp with the heart preserving its normal relations to the organism.

The method used for compressing the auriculoventricular bundle can not be described here. With gradual compression of this bundle the following phenomena may be noted: First, may be seen a slight increase in the interval between the beginning of an auricular and the beginning of its independent ventricular contraction. This, then, is the first sign of heart block. It has been described in the human being by Weckebach,[57] Mackenzie[58] and Rihl.[59] With further clamping a degree of compression may be reached in which this interval—the intersystolic period—gradually increases in length with successive beats until eventually the ventricles fail to respond to one of the auricular impulses. Following this ventricular silence, the intersystolic period is short, but it immediately begins to lengthen again until another ventricular beat is dropped. In this way states may be produced in which a ventricular beat may be dropped quite regularly in 10, 9 or 8, etc., auricular beats. This condition, too, has been seen in the

44. Adam: "Experimentelle Untersuchungen über den Ausgangspunkt der automatischen Herzreize beim Warmblüter," Pflüg. Arch. 1906, vol. cxi, p. 607.

45. Kent: "Researches on the Structure and Function of the Mammalian Heart," Jour. of Physiol., 1893, vol. xiv, p. 233.

46. Retzer: "Ueber die musculöse Verbindung zwischen vorhof und ventrikel des Säugethierherzens," Arch. f. Anat., 1904, p. 1.

47. His, Jr.: "Arbeiten aus der med. Klinik zu Leipzig," 1903, ref. Retzer, (46).

48. Braeunig: "Ueber muculöse Verbindungen zwischen Vorkammer und Kammer bei verschiedenen Wirbelthierherzen," Arch. f. Physiol., 1904, suppl. 1.

49. Humblet: "Le Faisceau inter-auriculo-ventriculaire constitue le lien physiologique entre les oreillettes et les ventricules du cœur du chien." Arch. inter. d. physiol., 1904, vol. i, p. 278; also, "Allorhythm cardiaque par section du faisceau de His," Ibid, 1906, vol. iii, p. 330.

50. Tawara: "Die Topographie und Histologie der Brückenfasern." Centbl. f. Physiol., 1905, vol. xix, pp. 70 and 298.

51. Wooldridge: "Ueber die Function der Kammernerven des Säugethierherzens," Arch. f. Physiol., 1883, p. 522.

52. Tigerstedt: "Ueber die Bedutung der Vorhöfe für die Rhythmik der Ventrikel des Saugethierzens," Arch. f. Physiol., 1884, p. 497.

53. Krehl and Romberg: "Ueber die Bedeutung des Herzmuskels und der Herzganglien für die Herzthätigkeit des Säugethierzens," Arch. f. exp. Path. u. Pharmak., 1892, vol. xxx, p. 49.

54. His, Jr.: "Dritte Intern. Physiol. Congress in Bern," Centbl. f. Physiol., 1895, vol. ix, p. 469.

55. Hering: "Ueber die Erregungsleitung zwischen Vorkammer und Kammer des Säugethierherzens," Pflüg. Arch., 1905, vol. cvii, p. 97.

56. Erlanger: "Vorläufige Mitteilung über die Physiologie des Herzblocks in Säugethieren," Centbl. f. Physiol., 1905, vol. xix, p. 9; also, "Physiology of Heart Block in Mammals With Especial Reference to the Causation of Stokes-Adams Disease," Jour. Exp. Med., 1906, vol. viii, p. 8.

57. Wenckebach: "Die Arhythmie als Ausdurck bestimmter Functions-störungen des Herzens," Leipsic, 1903.

58. MacKenzie: "New Methods of Studying Affections of the Heart," Brit. Med. Jour., March and April, 1905.

59. Rihl: "Analyse von fünf Fällen von Ueberleitungsstörungen," Zeits. f. exp. Path. u. Therap., 1905-6, vol. ii, p. 82.

human being. With further clamping, more advanced stages of partial block may be obtained, stages in which only every other, or every third, or every fourth auricular beat may stimulate the ventricles, giving rise to what are generally termed 2:1, 3:1, 4:1, etc., rhythms, respectively. Usually, however, the ventricular period, when the ventricles are beating independently of the auricles, is shorter than the time occupied by four auricular beats, so that, should the third auricular beat fail to stimulate the ventricles, the latter may contract spontaneously. It is evident, therefore, that the ventricles may beat independently of the auricles, although the block is not actually complete. This state has been termed relative complete block.[60] Finally, when the pressure on the auriculoventricular bundle becomes such that the auricular impulse fails to pass the obstruction, the block becomes absolutely complete. In both forms of complete block the ventricles beat more slowly than the auricles and independently of them. This state of affairs is seen in advanced stages of Stokes-Adams disease.

When the block is produced slowly, in the manner described above, the ventricles begin their independent beats with a perfectly constant rate at the moment the block becomes complete; but when the block is established more or less suddenly the ventricles may cease beating for a variable interval of time—it may be as long as seventy seconds—when they may begin to beat, slowly at first, but with a gradually increasing rate until that usually seen in complete heart block obtains.[38, 60]. Naturally, the normal rate of the auricles is not affected during such periods of stoppage of the ventricles, except, secondarily, through the ischemia resulting from the cessation of the circulation. It is assumed that the ventricles stop beating in this experiment, when they are suddenly removed from the propelling action of the auricular impulses, because the inherent rhythmicity of the ventricles is dormant while the ventricles are being driven by the auricles; but when the auricular impulses suddenly fail to reach the ventricles the latter cease beating until their inherent rhythmicity develops to the stage at which the ventricles will begin to beat spontaneously.

These facts relating to heart block, as well as others to be given below, can best be explained by fitting them into a theory which may be represented diagrammatically as in Figure 2. It might be added that this theory is supported by many facts which can not be given here.[61] The upper line of the diagram represents the contractions of the auricles (A1, A2, etc.) and ventricles (V1, V2, etc.), the lower line the changes in irritability of the ventricles, the line 0 marking the non-irritable level. As is well known, the irritability of heart muscle falls to zero, that is, the tissue will not respond to stimuli of any strength, during the phase of contraction. During relaxation the irritability returns, increasing presumably rapidly at first and then more and more slowly until the tissue again contracts. With each contraction of the auricles a wave of excitation descends into the ventricles; this impulse is represented diagrammatically by the lines marked a b, the lengths of which have been chosen so as to vary with the strengths of the impulses which presumably reach the ventricles. It is assumed that the ventricles will contract when the auricular impulse as represented by this line acts as an efficient stimulus, i. e., when it intersects the curve of irritability of the ventricles.

After completion of the second ventricular cycle in the diagram, the clamp on the auriculoventricular bundle is gradually tightened. With this the impulse diminishes in strength, but it is still efficient. But in the fourth cycle the line representing the strength of the auricular impulse fails to meet the curve of irritability of the ventricles. The ventricles, therefore, fail to contract and their irritability, instead of falling to zero, continues to increase. The next auricular impulse is no stronger than was the preceding one, but at the time of its advent in the ventricles their irritability has increased to such a level that the impulse is efficient and the ventricles respond with contraction. At this stage we have a partial block of the 2:1 type. In the same way 3:1 and higher rhythms may be obtained. The block becomes relatively complete when the auricular impulses fail to stimulate the ventricles before the ventricles begin to beat as a result of the development of their inherent rhythmical power, and the block becomes absolute when the auricular impulse fails to get into the ventricles.

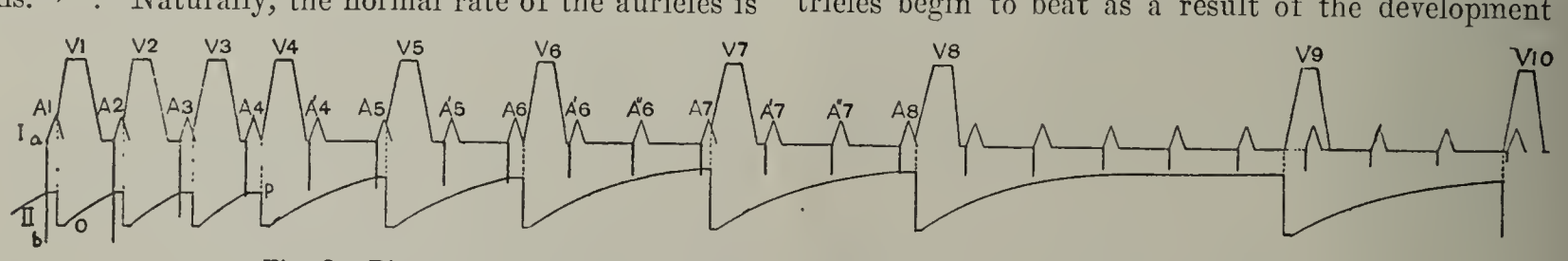


Fig. 2.—Diagram to illustrate the genesis of heart block. For description see text.

It has been shown experimentally that if, while the block is partial or relatively complete, the rate of the auricles be slowed by any means (e. g., by stimulation of the vagus nerve), the block may become less complete, that if the ventricle rate be increased during partial block (by stimulation of the accelerator nerve, for example), the block may become more complete. Indeed, it may actually become complete, and in such a case the ventricles may cease beating until their dormant rhythmicity awakens.[60, 61] A glance at the diaphragm will serve to make clear the probable mechanism of these phenomena. It is justifiable to assume that the strength of the auricular impulses varies inversely as the auricular rate. It is conceivable, therefore, that if the rate of the auricles be sufficiently increased while the rhythm is, for example, 2:1, the auricular impulses thus weakened may fall short of being efficient stimuli. The rhythm then may become 3:1 or the block may become complete. Naturally, diminishing the auricular rate will have the opposite effect.

Since it has been found possible to produce heart block in other ways than by destruction of all the tissue in the auriculoventricular junction, i. e., by destroying the auriculoventricular bundle only, the way has been opened to the direct solution of the question:

60. Erlanger and Hirschfelder: "Further Studies on the Physiology of Heart Block in Mammals," Amer. Jour. of Physiol., 1903, vol. xv, p. 153.

61. Erlanger: "The Effects of Extra Systoles on the Dog's Heart and on Strips of Terrapin's Ventricle in the Various Stages of Block," Amer. Jour. of Physiol., 1906, vol. xvi, p. 160.

Do the vagus and accelerator nerves act on both the auricles and the ventricles? In relation to this problem it has been found that in complete heart block produced by destruction of the auriculoventricular bundle the normal influence of the vagus over the auricles is preserved, whereas, in the dog, at least, its influence over the ventricles is lost or almost completely lost.[56, 62] Thus stimulation of the vagus in such a case may stop the auricles, but the ventricles will continue to beat with practically unchanged rate. It follows from this observation, and others which can not be given here, that the prolonged[60] stoppage of the ventricles which may be obtained by stimulation of the vagus in the normal animal must be due to the fact that the vagus stops the auricles, and the ventricles, therefore, stop until their inherent rhythmicity develops to the point at which they begin to beat spontaneously.[60]

It might be added that the vagus likewise does not act on the ventricles of man, since in cases of complete heart block atropin does not increase the ventricular rate, although it exercises the usual accelerating effect over the auricles. It has long been known that in cases of Stokes-Adams disease (heart block) the pulse rate is remarkably stable. For example, changes in posture have not the usual effect on the pulse rate.[29] This observation is explained by the fact that in such cases the ventricles are not affected by vagus influences.

The accelerator nerves act directly on auricles and ventricles: stimulation of these nerves during complete heart block causes independent accelerations of auricles and ventricles [56, 60, 62]. And direct evidence obtained from a case of heart block indicates that in man, too, the accelerators act on auricles and ventricles.[29]

From these observations it follows that simultaneous stimulation of inhibitory and accelerator fibers might slow the auricles while accelerating the ventricles. This actually does occur in the dog, and there seems to be some grounds for believing that it would likewise occur in man. The evidence for this opinion follows. In advanced cases of Stokes-Adams disease with complete heart block, it has been observed that mild syncopal attacks may occur in association with Cheyne-Stokes respiration.[29, 63] This has also been seen in an instance of complete heart block experimentally produced in the dog.[64] In such cases in association with the onset of the period of hyperpnea, acceleration of the auricles and marked retardation of the ventricles may occur. In the present state of our knowledge, these changes in the rates of auricles and ventricles can be explained only on the assumption that they are caused by a simultaneous diminution in the tone of the vagus and accelerator centers in the medulla. The auricles, which are influenced mainly by the vagus, would then beat faster, whereas the ventricles, which are influenced by the accelerators only, would beat more slowly.

There seems to be still another way in which the syncopal attacks of Stokes-Adams disease might be caused, namely, by a sudden increase of the auricular rate while the block is partial. It was stated above that in the dog the block may under such circumstances become complete and that the ventricles may then stop beating until their inherent rhythmicity develops. It is this marked slowing of the ventricles which directly causes the syncopal attacks.[29, 65]

Thus far reference has been made only to heart block resulting from obstruction to the passage of impulses from auricles to ventricles. It is necessary to bear in mind the possibility of there being other forms of heart block, although it is my opinion that the term heart block should not be applied to any condition other than functional insufficiency of the auriculoventricular bundle.

1. It is conceivable that under certain circumstances the cardiac impulse, through disease of the auricles or of the great veins, may be so feeble as always to constitute a subminimal stimulus for the ventricles. Under such circumstances, the auricles and ventricles would beat independently of one another. I know of no instance of heart block clearly due to such disturbance.
2. On the other hand, it is conceivable that through disease or drugs the irritability of the ventricles may be reduced to such an extent that auricular impulses of presumably normal strength may fail to act as efficient stimuli to the ventricles. According to Straub, the administration of antiarin, an alkaloid of the digitalis group, to the frog may be followed by the development of a partial block.[66] Straub has brought forward evidence which seems to indicate that in such cases the antiarin acts by diminishing the irritability of the heart muscle. This fact is of very great interest in that it may serve to explain the observation recently made by MacKenzie that in man the administration of digitalis may result in the development of a partial block, apparently at the auriculoventricular junction.[58] In the same connection Hering has shown that the apparent block following the administration of strychnia can likewise be explained only upon the assumption that the irritability of the ventricular muscle is reduced by the drug.[67]

Since allorhythmia and complete independence of the beats of auricles and ventricles apparently may be brought on in several ways, the question suggests itself: What is the cause of heart block in man? A definite answer to this query can not be given in the present state of our knowledge. The only justifiable answer is that disease of the auriculoventricular bundle has been found in all cases, now four in number, of Stokes-Adams disease (heart block) which have come to autopsy since it has been proved that the auriculoventricular bundle constitutes the only physiologic nexus between auricles and ventricles.[68]

62. Hering: "Ueber die unmittelbare Wirkung des Accelerans und Vagus auf automatisch schlagende Abschnitte des Säugethierherzens," Pflüg. Arch., 1905, vol. cviii, p. 281 Hering here does not refer to the cause of stoppage of the ventricles seen on vagus stimulation in the normal heart.

63. His, Jr.: "Ein Fall von Adams-Stokes'scher Krankheit mit ungleichzeitigem Schlagen der Vorhöfe und Herzkammern (Herzblock), Deuts. Arch. f. klin. Med., 1889, vol. lxiv, p. 316.

64. Cullen and Erlanger: "Experimental Heart Block," Read before the Johns Hopkins Med. Soc., April 23, 1906.

65. Webster: "Cardiac Arrhythmia in Relation to Cerebral Anemia and Epileptiform Crises," Glasgow Hosp. Rep., 1900, vol. iii, p. 413.

66. Straub: "Ueber Wirkung des Antiarins am ausggeschnittenen susperdirten Froschherzen," Arch. f. exp. Path. u. Pharm., 1901, p. 366.

67. Hering: Centbl. f. Physiol., 1901, vol. xv, p. 193.

68. Stengel: "Fatal Case of Stokes-Adams Disease With Autopsy," Amer. Jour. Med. Sc., 1905, vol. cxxx, p. 1083. Also Hay: "The Pathology of Bradycardia," Brit. Med. Jour., Oct. 21, 1905, p. 1034. Also Schmoll: "Adams-Stokes Disease," THE JOURNAL A. M. A., vol. xlvi, p. 361. Also Jellick, Cooper and Ophüls: "The Adams-Stokes Syndrome and the Bundle of His," THE JOURNAL A. M. A., March 31, 1906, p. 955.

Auto Saves Lives.—With the advent of the motor in a country village and its appearance on its highways and byways, the horses will get over their restiveness and the antipathy which some farmers have against automobiles will quickly disappear. The motor car that takes the physician to the bedside of the farmer's wife in half the time a horse would and by promptness enables him to save her life can no longer be considered a thing of evil.—*Automobile.*

AN ANALYSIS OF EIGHT HUNDRED AND EIGHT CASES OF CHOREA, WITH SPECIAL REFERENCE TO THE CARDIO-VASCULAR MANIFESTATIONS.*

W. S. THAYER, M.D.
Professor of Clinical Medicine in Johns Hopkins University.
BALTIMORE.

Some time ago Dr. Thomas suggested to me that it might be of interest to analyze the records of the cases of chorea which had been treated in his department in the Johns Hopkins Hospital Dispensary with reference to the cardio-vascular manifestations. For the most part these cases have been rather carefully studied, each patient, as far as possible, having been sent to the medical department for special notes on the heart. Last fall, accordingly, I undertook this task, which was particularly interesting to me in view of the fact that many of the special notes had been made by myself. I have added to these cases those which have been treated in the hospital wards during the same period, the majority of which I have also been able to study.

My plan was somewhat similar to that which was adopted a few years ago in the study of the cardio-vascular complications and sequels of typhoid fever. It involved: 1. A study of the records of these cases while under treatment. 2. A study of the pathological observations in the fatal cases. 3. An investigation into the present condition of all old patients with whom it was possible to enter into communication.

The amount of time required to go over so large a number of cases made it impossible for me to finish this whole undertaking in time for this session. That which I present consists of a brief summary of the first part of the work, namely, a study of the records of 808 cases of chorea treated in the Johns Hopkins Hospital and Dispensary, with special reference to the condition of heart and vessels.

Number of Cases.—The material amounted to 808 cases, of which 698 were treated in the dispensary and 110 in the wards of the hospital.

Race.—Of these cases, 783, or 96.9 per cent., were white; 25, or 3 per cent. only, were colored. As the proportion of colored patients treated for all diseases in the medical department of the hospital and dispensary amounts to about 12 per cent., it may be seen that these figures go to support the observations of Weir Mitchell and others that chorea is relatively rare in the negro.

Sex.—Two hundred and thirty-two, or 28.7 per cent., of these cases were in males; 576, or 71.2 per cent., were in females; about the usual proportion.

Age.—The following table, arranged by hemi-decades, will show the incidence of chorea according to age:

TABLE SHOWING INCIDENCE OF CHOREA ACCORDING TO AGE.

YEARS.	Cases.	Percentage.
1 to 5	20	2.5
10 to 15	369	46.2
15 to 20	83	10.4
20 and over	20	2.5
Uncertain	10	....

It may thus be seen that 84.5 per cent. of the cases were between the age of 5 and 15.

Number of Attacks.—The frequency of relapses and recurrent attacks of chorea is well recognized. In 799 of these 808 cases good records could be obtained as to the number of attacks. In 499, or 62.4 per cent., the patient was seen in the first attack alone. In 163, or 20.4 per cent., there was a history of two attacks. In 137, or 17.1 per cent., there was a history of three or more attacks.

Incidence of Rheumatism.—A point of special importance, particularly with regard to the occurrence of cardio-vascular manifestations, is the frequency with which rheumatism was observed, or distinctly noted in the history. The atypical and mild character of acute rheumatism in children is familiar. Considering the histories given by the patients or their parents, it was deemed wise for our present purposes, to classify arbitrarily, as acute rheumatism, all those cases in which there was a clear, definite history of pain and tenderness in joints. The patients and their parents and friends were always carefully questioned on this point. Out of 789 cases in which there was a record as to the previous history of the patient, in 171, or 21.6 per cent., a history of rheumatism was obtained.[1] In 618, or 78.3 per cent., there was no history of rheumatism.

Fever.—Observations on the temperature, important though they undoubtedly are, were unfortunately not made in many of the dispensary cases. A discussion of the temperature records in the hospital cases is reserved for the section treating of organic heart lesions.

Heart.—In 118 cases in the dispensary, and in one case in the hospital no note on the heart was recorded. Of the remaining 689 cases, cardiac murmurs were detected in 235, or 40.5 per cent.; they were absent in 345, or 59.4 per cent. In about one-quarter of the instances with abnormal heart sounds, the murmurs were soft systolic souffles, heard at the base alone, or over the whole cardiac area, and unassociated with other modifications of the size or functions of the heart, such as might justify the diagnosis of organic lesion.

In 175, or 25.4 per cent., of the cases in which an examination of the heart was recorded, conditions justifying the diagnosis of organic cardiac disease were found. In 16 more instances the signs were sufficient to warrant a reasonable suspicion that such changes were present. Including these, the proportion of cases with possible organic change would be raised to 27.7 per cent.

Character of the Cardiac Lesions.—The cases in which the diagnosis of organic cardiac disease was made have been divided into three classes, one in which the condition was certain; another in which the existence of organic change was regarded as probable; a third, which has been already mentioned, including 16 cases in which organic lesions were suspected. Taking into consideration those cases only in which organic lesions were deemed probable, 175 in number, there were:

Cases of mitral insufficiency	111
Cases of mitral stenosis	7
Cases of mitral stenosis and insufficiency	39
Cases of mitral and aortic insufficiency	10
Cases of mitral stenosis and aortic insufficiency	1
Cases of double mitral disease and aortic insufficiency	1
Cases of acute endocarditis, probably mitral in character	6

In 20 instances with definitely recognized organic lesions an acute endocarditis was also present. There were 3 cases of acute pericarditis. In 2 instances a diagnosis of adherent pericardium was made in a relapse.

Fatal Cases.—There were 4 fatal cases of chorea insaniens, and one case in which the patient died during an attack of acute rheumatism which had been associated with a choreic attack. Of the 4 cases of chorea

* Read in the Section on Practice of Medicine of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

1. In some of these cases rheumatic symptoms were observed while the patient was under treatment.

insanicns there were autopsies in two instances. In both of these cases the patient had had rheumatism, one in connection with the fatal attack. In both instances acute endocarditis was found; once, mitral; once, aortic and mitral. Of the two other cases, in one a well-marked endocarditis and pericarditis was recognized *intra vitam*, while in the second, a soft systolic murmur alone was audible over the cardiac area; at the same time, however, high fever and an extremely rapid, irregular pulse justified the diagnosis of an endocarditis. In this case there was no history of rheumatism. In the fifth case, in which death occurred during an attack of acute rheumatism which had followed chorea, there was subacute endocarditis of the mitral and aortic valves as well as an acute pericarditis.

RELATION OF THE CASES WITH CARDIAC INVOLVEMENT TO RHEUMATISM, TO RECURRENT ATTACKS AND TO FEBRILE MANIFESTATIONS.

Relation of Rheumatism to Cardiac Involvement.—It was deemed of interest to note the relation of those cases with cardiac involvement to rheumatic complications. The following table shows the proportion of instances in which acute rheumatism occurred among the cases, with and without cardiac involvement:

TABLE SHOWING INCIDENCE OF RHEUMATISM.

	Rheumatism.		No history of rheumatism.	
	Cases.	Per cent.	Cases.	Per cent.
Without cardiac involvement	105	16.9	513	83.
With cardiac involvement	66	38.5	105	61.4

The relatively higher percentage of a history of acute rheumatism in those cases with cardiac involvement might, in part, be due to the fact that a large proportion of these cases were hospital patients whose histories were taken with greater care and accuracy. Looking at the question from another standpoint (Chart 1), however, it was found that:

Of 171 cases with a history of rheumatism, 34.5 per cent. showed organic cardiac lesions.
Of 618 cases with no history of rheumatism, 16.9 per cent. showed organic cardiac lesions.

It is clear, therefore, that cardiac manifestations were more frequent in those patients who had suffered from acute polyarthritis.

Relation of Relapses and Recurrent Attacks to Cardiac Involvement.—The following table bears on the question of the relative frequency of recurrent attacks in cases with and without cardiac lesions:

TABLE ILLUSTRATING FREQUENCY OF RECURRENT ATTACKS IN CASES WITH AND WITHOUT CARDIAC LESIONS.

	Single attack.		Two attacks.		Three or more att'cks.	
	Cases.	Pr ct.	Cases.	Pr ct.	Cases.	Pr ct.
Without cardiac involvement	414	65.6	121	19.2	94	14.9
With cardiac involvement	85	50.	42	24.7	43	25.2

If, again, one divide the total number of cases into three groups, those in which there is a record of but one attack, those in which there is a record of two attacks, and those in which there is a record of three or more attacks, and study the percentage of cardiac lesions in each group (Chart 2), the following figures are obtained:

PERCENTAGE OF CARDIAC LESIONS IN CASES WITH SINGLE AND MULTIPLE ATTACKS.

	Single attack.		Two attacks.		Three or more att'cks.	
	Cases.	Pr ct.	Cases.	Pr ct.	Cases.	Pr ct.
Number of cases	499		163		137	
Cardiac lesions	85	17.	42	25.7	43	31.3

The histories of individual cases, moreover, show very clearly in a number of instances, the development of cardiac lesions with relapses and recurrent attacks.

Relation of Fever to the Development of Cardiac Complications.—The temperature, as has been said, was regularly recorded only in hospital cases. In but 1 out of 110 instances was there a complete absence of fever during the attack. In 4 more of these cases it was noted that the temperature was normal during the greater part of the time, the elevations being slight and occasional. In the rest of these cases there were frequent elevations of the temperature above 99 degrees; in the majority, indeed, it remained somewhat above normal during the greater part of the acute attack.

Of particular interest is a comparison of the temperature records of those patients with and without cardiac complications. The following table shows the temperature records in 48 cases without demonstrable cardiac involvement as compared with 59 cases in which organic lesions were detected:

TABLE SHOWING PREVALENCE OF FEVER IN CASES WITH AND WITHOUT CARDIAC INVOLVEMENT.[2].

Temperature	No fever.		99 to 100.		100 to 101.		101 or above.	
Cardiac Involvement	Cases	P. A.	Cases	Pr.ct.	Cases	Pr.ct.	Cases	Pr.ct.
Absent	1	2	19	39.5	24	50	4	8.3
Present	0	..	9	15.2	19	32.2	31	52.5

If we look now at the question from the standpoint of the percentage of cardiac lesions detected among these

NO RHEUM 16.9% RHEUM 34.5% 1 ATTACK 17% 2 ATTACKS 25.7% 3 OR MORE ATTACKS 51.3% NO FEVER 0% 99°-100° 32.1% 100°-101° 44.1% 101°+ 88.8%

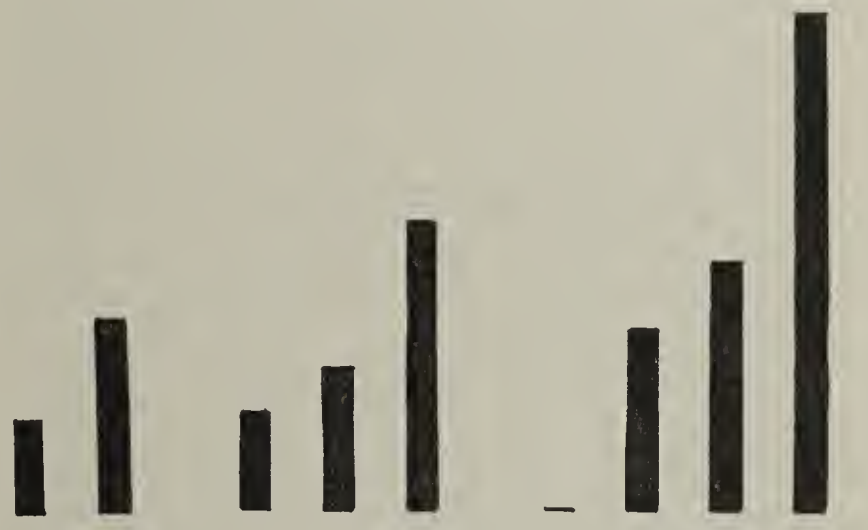


Chart. 1. Chart 2. Chart 3.

Chart 1.—Percentage of cardiac lesions in cases with and without a history of rheumatism.
Chart 2.—Percentage of cardiac lesions in relation to number of attacks.
Chart 3.—Percentage of cardiac lesions in relation to the degree of fever.

cases when arranged in groups according to the degree of fever present (Chart 3), we obtain the following suggestive table:

TABLE SHOWING PERCENTAGE OF CARDIAC LESIONS RELATIVELY TO THE PRESENCE AND DEGREE OF FEVER.

Temperature	No fever.	99 to 100.	100 to 101.	101 or above.
Cases	1	28	43	35
Cardiac lesions	..	9 (32.1%)	19 (44.1%)	31 (88.8%)

From the clinical symptoms and the condition of patients returning to the hospital subsequently, there is considerable reason to believe that, in a large proportion of these febrile cases, acute endocardial complications were present. In many patients in whom in one attack there was fever without evidence sufficient to justify a diagnosis of organic cardiac lesion, there was found, on later observation, definite valvular disease.

2. In one of these cases without heart lesion the temperature was doubtless due to an abscess, while in two or three of the cases with cardiac involvement the high temperature was due to complicating rheumatism.

CONCLUSIONS.

A consideration of these cases would suggest that well marked febrile manifestations, without rheumatism, occurring during the course of chorea, especially if they be associated with undue rapidity or irregularity of the pulse, should be regarded as at least strongly suggestive evidence of acute endocarditis. It may of course be possible that such fever is but the index of an infection which lies at the bottom of the choreic manifestations as well as the associated endocarditis. Slight grades of fever were, it is true, observed in almost every case treated in the wards of the hospital. There is nothing, however, in these studies to justify conclusions with regard to the old question as to whether endocarditis in chorea represents a secondary infection or a special localization of an infectious agent which is responsible for the essential manifestations of the disease.

The most important and interesting part of this investigation remains to be carried out, namely, the study of the circulatory conditions in old patients, but it may not be amiss to call attention again to certain points of interest brought out by this preliminary analysis.

1. Of 689 cases of chorea observed at the Johns Hopkins Hospital or Dispensary during one or more attacks, 25.4 per cent. showed evidences of cardiac involvement; such evidence was present in over 50 per cent. of the patients studied in the wards of the hospital.

2. Cardiac involvement occurred with somewhat greater frequency in those cases in which there was a history of acute polyarthritis than where such history was absent.

3. Cardiac involvement was commoner in cases of chorea with frequent recurrences than in those in which there was a history of a single attack.

4. In 110 cases of chorea treated in the wards of the hospital there was fever of a moderate extent in almost every instance.

5. In a large majority of the cases in which high fever was present there was evidence of cardiac involvement.

6. There is good reason to believe that the presence of fever in otherwise uncomplicated chorea is, in a large proportion of cases, associated with a complicating endocarditis.

CARDIAC HYPERTROPHY AS OBSERVED IN CHRONIC NEPHRITIS.*

NATHANIEL BOWDITCH POTTER, M.D.

Visiting Physician to the New York City Hospital and to the French Hospital, Instructor in Medicine, Columbia University.

NEW YORK CITY.

The frequency of a pronounced hypertrophy of the heart in kidney disease was first pointed out by Bright[1] in 1836. It was exhibited in 23 per cent. of his cases, in most of them affecting the left ventricle, without any cardiac or aortic lesion as a cause. His theory, chemical in nature, considered that an altered condition of the blood either stimulated the heart excessively or else affected the arteries and capillaries in some way to make it more difficult for the heart to drive the blood through to the veins.

G. Johnson[2] confirmed his findings and adopted the second possibility as an explanation, assuming that the blood is laden with impurities as a result of the renal disease, and that these poisons stimulate the arterioles to contract by way of the vasomotor nerves and so necessitate an hypertrophy of the left ventricle. His conception assumed the existence of an hypertrophy of the muscular layer of the arterioles and explained only the left ventricular hypertrophy. In 1856 Traube[3] advanced a purely physical theory to explain the cardiac hypertrophy which occurs in chronic nephritis. Two factors, he concluded, produce an increased aortic pressure: First, an obliteration of numerous vessels in the contracted cortex or their compression by the inflammatory exudate; second, an increase of the amount of fluid in the arteries as a result of the lessened abstraction of water by the reduced kidney structure. In regard to the first factor, Ludwig and his followers, however, proved that an increased pressure in the renal vessels would not produce any permanent increase of the general arterial pressure (ligature of both renal arteries). As for the second factor, Traube's opponents claimed correctly that in chronic contracted kidney there was no decrease, but always an increase in the amount of water withdrawn from the blood, and in addition a diminished excretion of urine. A resulting plethora is promptly equalized by vaso-dilation and no increase of blood pressure results.

Cohnheim[4] modified Traube's hypothesis by assuming that despite the resistance in the kidneys the same amount of blood enters the renal arterioles, and as their tonus depends on the amount of urinary substances to be eliminated there must be an abnormal resistance. In 1872 Gull and Sutton[5] considered that a general arterio-capillary fibrosis was the primary condition, and that both the contraction of the kidney and the hypertrophy of the heart were secondary. Although this hypothesis will explain the condition in the true arteriosclerotic kidney, it is of no value in interpreting the other forms of renal disease, nor does it account for an hypertrophy of the right ventricle and auricles.

In 1877, Ewald[6] found hypertrophy of the muscular layer of the systemic arterioles and suggested that the cardiac hypertrophy depended on this widespread change, and that the latter was due to the increased viscosity of the blood with excessive friction in the capillaries. The hypertrophy of the auricles and right ventricle is left unexplained by such an hypothesis, and since an accurate method for estimating the viscosity of the blood has been devised by C. Hirsch and C. Beck,[7] no constant relation between it and increased blood pressure on the one hand and cardiac hypertrophy on the other has been observed. In 1878 v. Buhl[8] believed both renal lesion and cardiac hypertrophy to be concomitant results of the inflammatory action on the kidney and heart of some unknown substances. He found myocarditis in 65.7 per cent. of contracted kidneys, and very often a relative narrowing of the aorta. Such cardiac hypertrophy he considered excentric, due to a previous dilatation. His percentages have not been confirmed except in a measure by Debove and Letulle[9] in 1880. In any event, his theory would not explain the cardiac hypertrophy of other types of renal disease. In 1880 DaCosta and Long-

---

* Read in the Section on Practice of Medicine of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

1. Guy's Hosp. Rep., 1, 1836, p. 396; vol. ii, pp. 234 and 259.
2. "Diseases of Kidney," second edition, 1856.
3. "Uber den Zusammenhang v. Herz u. Nieren Krankheiten," Hirschwald, Berlin, 1856.
4. Allg. Path., second edition, vol. ii, p. 258.
5. Med. Chir., Trans., vol. lv, p. 1872.
6. Virchow Arch., vol. lxxi.
7. Münch. med. Wochschr., 1900, No. 49.
8. Deut. Arch. f. klin. Med., vol. lxxii; also Mitt. aus dem path. Inst. z. Münch., 1878, p. 38.
9. Arch. gen. de Med., 1880, vol. i, p. 278.

streth[10] attributed both renal disease and cardiac hypertrophy to a degenerative atrophy of the renal ganglia and of the lower cervical ganglia of the sympathetic. Senator believes such degenerations are due merely to old age. In 1878 he[11] suggested the possibility of different causes for the cardiac hypertrophy in the various types of renal disease. In 1902, influenced by Strauss' investigations, he[12] advanced the following: "In unfavorable cases of chronic parenchymatous nephritis and secondary contracted kidney, the retained metabolic products irritate the heart and the arterioles, causing contraction of the latter and sometimes an accompanying thickening of their walls. Hypertrophy of both sides of the heart results. The left hypertrophies more than the right, because the former not only responds by increased activity to the direct stimulation of the blood, but also has to overcome the resistance due to the contraction of the peripheral arteries, whereas the right ventricle suffers less because the pulmonary vessels possess so little tonus. In primary chronic interstitial nephritis the same irritation exists but acts more insidiously."

In 1900, Bier[13] sees in the cardiac hypertrophy and the accompanying vascular changes a purely compensatory process, useful and necessary. Without it a prolongation of life would be impossible.

These in brief have been the more striking theories advanced to explain the frequent association of cardiac hypertrophy in chronic nephritis. More recently, 1905, from Krehl's clinic, M. B. Schmidt[14] compared the blood pressure of numerous cases of nephritis during life with their histologic picture postmortem. In pure parenchymatous nephritis without glomerular changes, no increase of blood pressure was observed. When the glomeruli were plainly involved the blood pressure was increased. From the same clinic A. Loeb,[15] in 1905, decided that the cardiac hypertrophy is secondary to increased blood pressure, that both are compensatory reactions, that the increased vascular tonus occurs when the glomeruli are imperfectly supplied with blood, either by an inflammatory process or by stasis, so that their capillaries are thereby under too low pressure for proper filtration. He does not decide whether this general vasoconstriction is brought about purely reflexly or by the retention of some poisons. In his last edition, Krehl,[16] 1906, accepts Loeb's theory, and adds that all renal affections which do not influence the circulation are accompanied chiefly by alterations of the tubular epithelium, whereas those in which the blood pressure is raised show essentially a glomerular involvement. He believes that the increased blood pressure may be produced either reflexly or by substances which are imperfectly excreted by the damaged glomeruli. Suggestive of the latter origin, he cites the pressure-lowering influence of a milk diet and the pressure-elevating influence of uremic conditions.

In 1905, Müller,[17] of Munich, in discussing Loeb's theory, cites cases to show that hypertension does occur without glomerular involvement, but always accompanied by renal inadequacy. He believes that increase of blood pressure and cardiac hypertrophy are limited almost exclusively to nephritis with uremic tendencies, and concludes that the uremic poison is identical with or closely related to the substances which induce hypertension, that slightly concentrated they stimulate the vasomotor, strongly concentrated they exert a more or less profound intoxication of the central nervous system.[18] As corroborative evidence he cites: the almost constant hypertension in uremia; the marked increase of tension and headache (uremic) following a nitrogenous meal, which tendency is practically limited to renal cases liable to uremia. He regards the possibility of some adrenal-like substance being the cause of the hypertension[19] and suggests that, whatever the nature of the poison which increases peripheral resistance, it may also exert an irritating action on the heart muscle. The cardiac hypertrophy can not be regarded as the cause of the hypertension, but a persistence of the latter must lead to the former, because hypertension occurs very early in many cases of nephritis (scarlet fever, sublimate poisoning) long before any cardiac hypertrophy or arteriosclerosis could develop. Neither can any definite organic change in the vessel walls be supposed to cause the hypertension; because the tension especially early in nephritis oscillates so decidedly and becomes normal in acute nephritis as soon as the process has subsided.

The relations between arteriosclerosis and nephritis are complicated. Probably many poisons affect both systemic arteries and kidney structure, and the same poisons very likely also irritate the heart muscle itself and so assist in the production of an hypertrophy of its fibers. The frequent occurrence of aseptic pericarditis argues in favor of a direct toxic action on the heart. Rapidity of development and body nourishment are important factors.[20] Hypertrophy of the heart has been noted in scarlet fever within 4 weeks. With an almost complete loss of kidney substance in cystic and tuberculous kidneys and with the nephritis which develops at the height of a sepsis, no hypertrophy results. Although the hypertension must be compensatory and act by increasing the current rapidity through the affected kidneys, yet it is doubtful if the increased excretion of urine is always dependent on such a flooding (Loewi) or on a stimulation of the glandular activity. For in some cases with oliguria and edema we see no diuretic action result from salt or other diuretics (caffein, theobromin), although in cardiac dropsies such diuretics act surely and promptly. Perhaps in such cases the kidney structures on which these drugs should act are diseased.

In 1905, Volhard,[21] of Geissen, also attributed the cardiac hypertrophy to an involvement of the water filtrating apparatus (the glomeruli). If increased work is thrown on this mechanism, compensation occurs in one of two ways: 1, by an increased filtering surface (extirpation of one kidney, early cases of diabetes with polyuria before cardiovascular changes have resulted); or, 2, by increasing the pressure through the filter.

10. Am. Jour. Med. Sciences, July, 1880.
11. Virchow Arch., vol. lxxiii, p. 1878.
12. Spez. Path. und Ther., vol. xix, part 1, second edition.
13. Münch. med. Wochschr., vol. xvii, April, 1900.
14. Verh. d. dcut. path. Gcsell., 1905, p. 107.
15. Deut. Arch. f. klin. Med., 1905, vol. lxxxv, p. 348.
16. "Path. Physiology," Vogel, Leipzig.
17. Verb. Deut. path. Gesell., 1905, p. 64.
18. Bouveret, quoted by Bradford, Progressive Medicine, December, 1902, claims that cardiac hypertrophy is absent in just these cases which are prone to develop uremia and soon terminate fatally, and that uremia is more frequent in cases without cardiac hypertrophy. Bradford, in the Lancet, Aug. 6, 1904, p. 354, mentions the same combination in the small white kidney.
19. Tigerstedt, Forlanini and Riva Rocci.
20. Bradford, in Progressive Medicine, December, 1902, p. 238, does not regard the age and nutrition as an important factor, because he has seen kidney disease develop in young adults without any subsequent cardiac hypertrophy.
T. C. Janeway, in his paper, "Chronic Hypertension," read before the Association of American Physicians, May 18, 1906 emphasizes the nutritive factor in arteriosclerosis, suggesting that the changes in the coronary arteries and the degenerative tendencies of age make a poor basis for the development of new heart muscle.
21. Verh. Deut. path. Gesell., 1905, p. 112.

Rapid severe strains on this mechanism result in injury to the vessel walls and edema as in acute glomerulonephritis. A more insidious tax allows the cardiovascular system time to hypertrophy, and the resulting polyuria is perhaps only the expression of an excessive compensation.

During the past few years comparatively little irrefutable evidence directly bearing on this subject has been contributed by experimental medicine and pharmacology, although many pertinent questions have been investigated and partially settled, and fruitful fields for more definite information opened.

Ascoli and Figari[22] found that in some rabbits with a unilateral ligation of the ureter nephrolysins produced generally (not, indeed, always) a marked cardiac hypertrophy, especially of the left ventricle, in from 2 to 8 weeks; again, that dogs injected with normal rabbit serum showed no variation in the blood pressure curve, while those injected with a mixture of nephrolytic rabbit serum exhibited a contraction of the peripheral vessels. Pearce's[23] careful work throws doubt on their claim, and I have been unable to find any confirmation of their findings elsewhere. In a thorough review, Sata[24] mentions their work, but does not comment on their conclusions. Pearce[25] studied adrenalin poisoning in animals. After large doses, within 24 to 72 hours he found dilatation of the cardiac chambers, edema of muscles, splitting of muscle cells and acute granular degeneration. After daily doses for 11 days (animal living 16 days), the heart muscle was thickened; there was much new connective tissue distributed focally, round-cell infiltration, swelling, vacuolation, granular degeneration of muscle fibers, edema and increase of fine elastic fibers in the new connective tissue. The orifices of the coronary arteries were obscured and obstructed (apparently by a lesion of the aorta resembling recent aortitis). He thinks these lesions have no connection with ordinary myocarditis (human), but attributes them to mechanical efforts of contracting arterioles and over-acting heart. Similar results are reported by K. Ziegler.[26]

R. Tigerstedt[27] gave the name of rennin to a substance which he extracted from kidneys and which, when injected into the blood, markedly raised the blood pressure primarily by its action on the peripheral vascular nerve centers. His observations have not been confirmed as far as I know.

Richter's[28] brilliant results in producing a typical acute glomerulo-nephritis with hydrops by injecting uran nitrate open a possibility for future research on the question under discussion. Heineke and Meyerstein, in Müller's laboratory, have confirmed Richter's experimental glomerulo-nephritis with uran nitrate.

Loewi's[29] experiments on caffein diuresis have perhaps added additional reasons for condemning some of the older theories mentioned at the beginning of our discussion. Israel[30] fed rabbits with increasing doses of urea for a considerable time and produced hypertrophy of both heart and kidneys.

22. Berl. klin. Wochschr., 1902, p. 563.
23. Trans. Am. Assoc. Phys., vol. xviii, pp. 594-5.
24. "Ueber die Wirkung u. die Spezipitate der Cytotoxine in Organismus," Ziegler, Beit. z. path. Anat., vol. xxxix, No. 1, 1906.
25. Jour. Exp. Med., vol. viii, p. 400, 1906.
26. Ziegler's Beit., 1905, vol. xxxviii, p. 229.
27. Skand. Arch. f. Physiologie, vol. viii.
28. Die exp. Erzeuging v. Hydrops bei Nephritis. Beit. z. klin. Med. Festchr. H. G., Prof. Senator, Berlin, 1904, Hirschwald, p. 283.
29. Arch. f. exp. Path. u. Pharm., 48, p. 410; 50, p. 326.
30. Virchow Arch., 1881, vol. lxxxvi, p. 299.

In 1900, Croftan,[31] from a series of experimental injections of xanthin and hypoxanthin in rabbits, concluded that these and kindred substances produce a rise in arterial pressure, spasm and endarteritis of renal and peripheral vessels and cardiac hypertrophy of left and subsequently of the right ventricle. No confirmatory experiments are recorded so far as I know.

The beneficial action of potassium iodid in arteriosclerosis and nephritis is now credited to its action in diminishing the viscosity of the blood.[32] Despite the recent decided interest in nephritis and in arteriosclerosis, as well as the many experimental investigations in point, but few more facts, either pertinent or important, are worth mentioning here. To explain some of the difficulties and discrepancies in published statistics, the unfortunate lack of uniformity of classification of the different varieties of nephritis might be alluded to. Again, from the cardiac side, accurate observations were lacking until Hasenfeld, in 1897, and von Hirsch, in 1900, both from the Leipzig school, examined the hearts in 25 cases of pure interstitial nephritis. They employed Müller's careful method, weighing the individual chambers, comparing the figures with the body weight and making allowances for the co-existence of general edema. In brief, over 75 per cent. of their cases exhibited an hypertrophy of all chambers of the heart. v. Buhl's figures were 75 per cent. Krehl, Romberg and Henschen have all noted clinical evidence in proof of such a general involvement.

From the last 18 months' autopsy records of the New York City Hospital (for which I am indebted to the kindness of my friend and colleague, Dr. Horst Oertel, and of his assistants, Drs. Symmers and Crowell) different results are obtained. Before quoting them I should mention that probably 75 per cent. of our material was derived from individuals who died above the age of 50, and that Müller's accurate method was not employed.

286 Autopsies, 151 Cases of Nephritis.

	Per cent of Hyp. of of L.V	Per cent of Hyp. of L. & R.V.	Per cent of Normal or Atro. Heart
66 chronic interstitial	30.5	11.5	58
22 arteriosclerotic interstitial	27	9	64
25 chronic parenchymatous	12	4	84

Dr. Oertel concludes that the microscopic examination of some hearts, atrophic or normal in size, indicates that a previous hypertrophy has existed. This is shown by the presence of a certain number of atrophying large muscle fibers. Both Dr. Oertel's impression and my own (substantiated by a few definite cases[33]) agree that, in many of these cases of atrophic and normal sized hearts, patients came to autopsy in a very poor state of nutrition. Three explanations suggest themselves: 1. That the patient's power of nutrition was unequal to produce an hypertrophy. 2. That the disease developed too severely and suddenly to permit any such hypertrophy. 3. That the heart was originally hypertrophied and had

31. Amer. Jour. Med. Sc., November, 1900, p. 592.
32. Müller, O., and Inada: Deutsch. med. Wochscht., No. 48. 1904; also Breitner: Pest. Med. Chir. Presse, 1905, No. 41, p. 506; Erlenmeyer: Deutsch. med. Wochsch., No. 7, Feb. 15, 1906, p. 259.
33. Of nephritis, 38 cases have been autopsied in 1906. In 10 the nutrition was marked "good." Of these, 6 showed hypertrophy of the left ventricle, and 1 of both ventricles. In 3 the heart was of normal size or atrophied. In 7 the nutrition was marked "fair." Of these, 1 showed hypertrophy of the left ventricle, 2 of both ventricles, and in 4 the heart was of normal size or atrophied. In 15 the nutrition was marked "poor." Of these, 4 showed hypertrophy of the left ventricle, and in 11 the heart was of normal size or atrophied. In 6 the nutrition was marked "emaciated." In none of these was the heart hypertrophied.

become later atrophic. In most of our cases more probably the last explanation was illustrated because of the co-existing atrophy of the other organs.

Any theory in explanation of all the recorded conditions, and especially Loeb's theory, must satisfy the striking peculiarity so well brought out by Councilman last year. His autopsy records showed that in amyloid disease, excepting three cases complicated by arteriosclerosis or chronic interstitial nephritis, no cardiac hypertrophy existed, despite the very decided glomerular involvement. Similar observations are numerous in chronic pyelonephritis with almost complete renal atrophy and cystic degeneration.

In an effort at compensation the patient's nutritional capacity must, I conceive, be the keystone to the successful accomplishment of such an effort. Some individuals of poor nutrition, of deficient recuperative power, perhaps due to heredity or to some acquired fault, possess neither a sufficient resistance to the drains of the renal lesion nor the reacting power to compensate the mischief by a compensatory increased tension and subsequent cardiac hypertrophy. Suggestive analogies in infection are easily adduced. We are all familiar with the progress of syphilis attacking some poorly nourished woman in whom a moderate course of mercury still further reduces her physical condition, while the husband from whom the infection was acquired readily withstands both disease and treatment. Again, Wright has several times called attention to cases of chronic staphylococcus infection with a low staphylococcic-opsonic index, in which no response of the organism can be evoked by any method of vaccination or amount of vaccine, whereas in others vaccination promptly raises the index and the patient gets well.

The only therapeutic indications to be adduced from this presentation are all so evident and so constantly applied that I hesitate to add, in conclusion: We should, of course, first and always, work against the cause, next favor hypertension, or, at least, not combat it early in the disease; then preserve and save the heart by every known method, for example, by limitation of fluids ingested, as von Noorden has so timely urged; and, finally, keep up the patient's nutrition in every way, so that as perfect and permanent a compensation as possible may result.

The importance of this in the dietetic problem of nephritis was sufficiently emphasized last year by Shattuck. It was my good fortune and that of all his pupils for the past fifteen or twenty years to hear him urge time and again the necessity of supporting the nephritic's nutrition.

NOTE: THE DISCUSSION ON THE SYMPOSIUM ON DISEASES OF THE HEART WILL FOLLOW THE TWO OTHER PAPERS IN THE SYMPOSIUM, BY DRS. DAVIS AND ANDERS, NEXT WEEK.

The Automobile's Possibilities.—A satisfactory physician's car can be bought for much less than $1,000, capable of maintaining an average speed of fifteen miles an hour over all but the very worst roads and powerful enough to climb any hill without difficulty. One such car will easily do the work of three horses for the busy country physician, will double his leisure hours and greatly increase his profits, while during favorable weather the long, tiresome drives behind jaded horses will be delightfully replaced by the rapid motor doing the distances in a fraction of the time, without thought of pity for the motor power or serious loss of time.—Dr. Doolittle in *The Automobile.*

SUCCESS: THE SURGICAL DESIDERATUM.*

A. ERNEST GALLANT, M.D.
NEW YORK CITY.

'Tis not in mortals to command success,
But we'll do more, Sempronius,—
We'll deserve it.—(Addison.)

When the surgeon has completely removed the diseased structures, repaired damaged tissues or replaced dislodged organs or viscera, and the patient has survived the ordeal, has the operator completed his work or should he see to it that the resulting condition in the months and years to come is such as will elicit from the patient words of praise for the operator and operation?

While it would be a matter of great satisfaction if I could give tables of hundreds of operations without a death, or enlarge on the successes which have (and have not) followed my work, I prefer on this occasion to direct attention to certain factors in dealing with individual cases which will aid the abdomino-pelvic surgeon in attaining this desirable ambition—success—in some cases. For convenience and brevity the life history of the surgical patient may be divided into seven stages: 1, Antecedent; 2, precedent; 3, preliminary; 4, immediate; 5, convalescent; 6, subsequent; 7, conclusive.

HEREDITARY AND ACQUIRED DISEASES.

Tuberculous, rheumatic, gonorrheal or syphilitic diseases, whether involving the lungs, heart, liver, kidneys, spleen, brain and spinal cord or the gastrointestinal tract, must be taken into consideration before operation, as well as after. This was forcibly brought to my attention after operation on a man for appendicitis. For four years previously he had been treated medicinally for locomotor ataxia, which had been controlled. After operation the wound showed no tendency to heal. The man failed to retain nourishment by mouth or rectum, and died on the tenth day of starvation. The consulting surgeon opposed all my solicitations for energetic antisyphilitic medication, until the eighth day, at which time the patient was too low to absorb any drugs.[1]

An hereditary history of uterine cancer, the grandmother having died at 65 years of "cancer of the womb" and the mother when 49 years old, was considered justification for vaginal hysterectomy in Mrs. K. K., aged 38, mother of 5 living children, who was suffering from menorrhagia, lasting of late from 8 to 10 days. The enlarged uterus was retroverted and adherent in the cul-de-sac. During the past 14 months she has gained in health and strength, and is happy in the assurance that she is practically free from the danger of following in the footsteps of her grandmother and mother.

THE PRECEDENT HISTORY AND EXAMINATION.

The precedent history must always be given due consideration when deciding whether to operate at once or later. Rupture of any viscus, solid or hollow, calls for immediate action; strangulation, twisting, or complete obstruction demands immediate operation; whereas, on the other hand, we avoid operation during the acute invasion of the peritoneum by the gonococcus, and prefer to wait for "a more convenient season" when the Neisserian enemy shall have been starved into inactivity. When confronted by tubercular peritonitis, cysts, fibromata, etc., of slow growth we can more deliberately decide when and how to operate.

---

* Read in the Section on Obstetrics and Diseases of Women of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

1. Amer. Med., vol. iii, p. 837, 1903.

The precedent examination must enable the surgeon to answer, without bias, the following interrogations: (1) Does the focal condition explain and account for all the symptoms, or are other regions involved? (2) Has the attending physician, who has done his best, done all? (3) Is operation the only means of relief, and will the proposed operation remove all the trouble and relieve all the symptoms? In order to answer these queries intelligently the surgeon must be, first, a diagnostician—theoretical, logical and mechanical; second, a general practitioner, familiar with all that is best other than surgery, and, last, a surgeon who has the moral courage to decide when not to operate.

Extraordinary recoveries without operation do occur and nonplus the surgeon, as in the case of Mrs. C., aged 60, who for three weeks had been suffering with pain and swelling in the right half of the abdomen; eleven years ago she had a similar attack. The urine was scanty; temperature varied from 100 to 103.6 F., pulse from 80 to 100; tongue was deep red and fissured down the middle. There was rapid loss of flesh and strength. Her abdomen was enormously distended and fluctuant. A diagnosis of hydronephrosis was made and operation advised. Recently her son informed me that by the use of ice for ten days the swelling had been scattered, and the old lady had sailed away to her native, sunny Italy.

PRELIMINARY PREPARATION OF PATIENT.

The preliminary preparation of the patient for operation must aim for surgical cleanliness, cleanliness of the

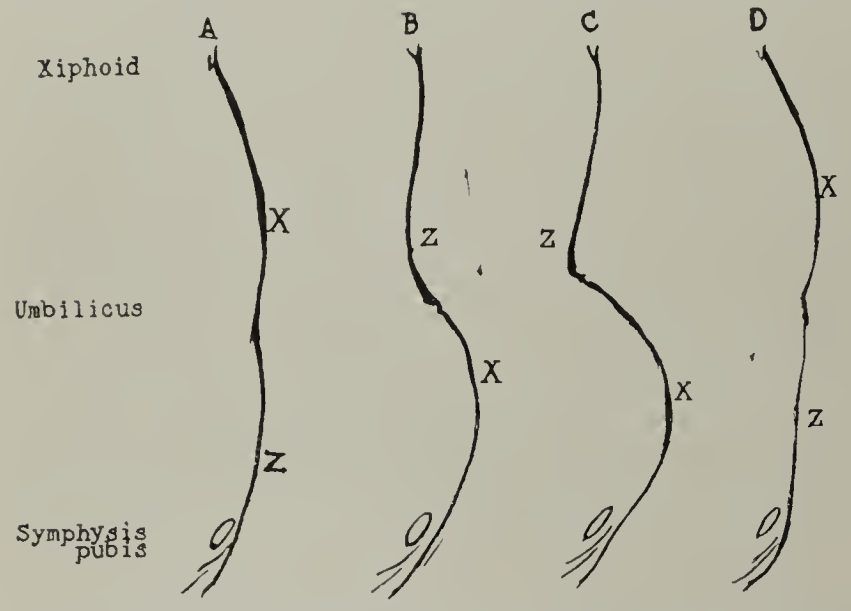


Fig. 1.—Lead tape outline of the anterior abdominal wall in Glenard's disease (visceroptosis). A, normal outline, standing without clothing; B, ptosis outline, standing without clothing; C, ptosis outline standing with waistbands fastened; D, outline same case, when recumbent. X, point of maximum protrusion; Z, point of maximum flattening.

emunctories and mind. In my work this begins two days before operation; liquid diet is given, alternating with water, eight ounces, every hour; the kidneys are washed out, and two laxative pills to clean out the bowels are given the second night before operation. To relieve the patient from undue unrest and to secure restful, good sleep a sedative is given each night. In cleansing the patient the night before operation my plan is as follows: (a) An enema of one quart of soapsuds; (b) a 1 to 2000 permanganate of potash, douche; (c) the hair is clipped close from the mons and vulva; (d) the abdomen and vulva are anointed with tincture of green soap, which is rubbed into the skin until dry, with a second and third coat, one over the other, each rubbed in until dry. In this way the soap penetrates the skin; the patient then goes to the bath tub and the nurse soaks and scrubs the abdomen and vulva until all the soap is removed, a process which involves more work than would at first seem likely, and secures cleanliness to a degree unobtainable by the soap plaster method. After drying the skin, three more coats of green soap tincture are rubbed on the skin and remain as a protective until the patient is placed on the operating table ready for the final scrub.

THE ANESTHETIC AND OPERATION.

The immediate steps involved are anesthesia, field preparation and operation.

As a stimulant of great value to the patient, a heart sedative and a quieter of respiration we use morphin (1/12 to 1/6 grain, in proportion to weight), placed dry on the tongue, 15 minutes before beginning ether. The shoulders should be level with the table and the head should be raised high enough to bring the chin near the sternum, a frequently overlooked measure for securing comfortable breathing. Ether, about half an ounce, is poured on my modification of the Allis inhaler, which is handed to the patient who holds it on the chest, near the mouth, and administers the anesthetic to herself, without fear of choking or of being suffocated. After a few minutes the patient will ask the anesthetist to take the cone, or her hands will relax and make it necessary to take it from her and to continue the administration, which has been free from the fear and nervousness felt when other methods are practiced. In this way a little ether is wasted, and the time prolonged, but to the patient the method is excellent. My average, per hour, has for years been 100 c.c. Squibb's ether.

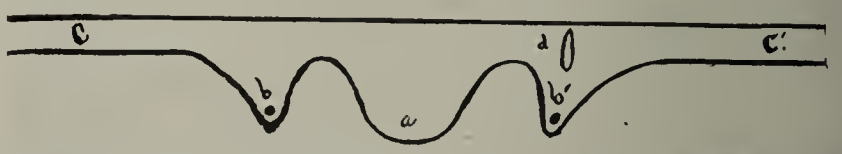


Fig. 2.—Outline of abdominal "stock." Apron "a" is cut the shape of the space bounded by the anterior superior spines above, the groins, laterally, and the symphysis pubis below. The straps "c" and "c'" pass around the body, the end of "c" being drawn through buttonhole "d" and are pinned in front at "a." Perineal straps (not shown) fastened to buttons on tongues "b" and "b'" are pinned in front to "a."

The preparation of the operative field is accomplished by adding more soap, rubbing it in until dry and then scrubbing thoroughly until all the soap has been washed away. The skin is next rubbed with alcohol and then covered with a sterile towel.

The incision is made as short as the size of the fingers will admit, and as long as the size of the tumor necessitates; by preference through the inner edge of the rectus, even for appendicitis, as it affords access to the tubes on either side. Ligatures are applied to individual vessels, suture to broad surfaces, making use of No. 1 or 2 catgut. For facilitating the passage of sutures I have found the ingenious ligature carrier of Kurz very helpful.

As a rule, saline solution is used to wash out pus and blood, but at times I prefer simply to mop out the cavity and to close without drainage. After removal of broad ligament cysts, and after supravaginal hysterectomy, I carry a roll gauze drain into the vagina. A cigarette drain suffices after most appendicectomies.

Cocain, .1 per cent., injected under the epidermis, has served well in rupture of gastric ulcer, ruptured ectopic pregnancy, etc. Unless the patient is in a very bad condition I prefer to employ but one assistant, who must hand instruments, dressing, etc., thus reducing the chances of infection to a minimum. Closure of the

wound is accomplished by carrying a long-handled needle through all the structures; it is then threaded with silkgut and reversed; the fascia is then approximated with two, three or more catgut sutures, and intermediate silkgut to align the skin closely.

If much blood has been lost, the cavity is filled with saline solution, 120 F., or from two to four pints are allowed to run into the rectum while the patient is still on the operating table.

POSTOPERATIVE CARE.

Immediately subsequent to the operation I exercise great care not to expose the patient to a chilling of the surface by well-meant efforts on the part of the nurses to change the blankets and underclothing, preferring to wait until the patient is warm in bed and conscious enough to help.

As soon as the patient is conscious enough to drink she is made to take four ounces of hot (not tepid) water every fifteen minutes until vomiting occurs, as a means of washing out the stomach and ridding it of ether and mucus; then I wait two hours and thereafter give water hourly. If the stomach retains this quantity of water for six hours it is safe to begin giving milk and lime water. Lavage of the stomach while the patient is on the operating table will accomplish the same purpose, and in the few instances in which I have used it it has been very satisfactory.

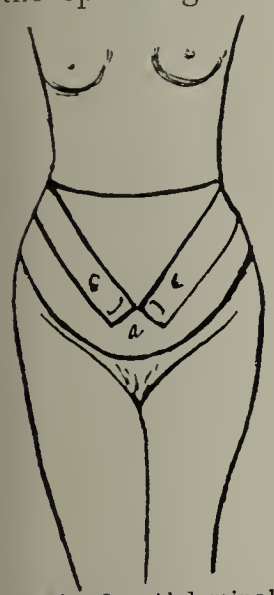


Fig. 3.—Abdominal "stock" adjusted.

For pain and nervousness I make use of bromid, chloral and a small quantity of morphin, on the ground that if sleep and rest be secured the patient will bear the next day's discomfort with greater fortitude. To secure rest these patients must be permitted to assume any position which will afford the least discomfort and I permit them to turn from side to side or lie on the back, as they deem best.

To the "tired, worn and weary" one who has been but a few hours removed from the operating table, nothing is so quieting and refreshing as light, gentle massage over the whole body, as shown by the patient falling to sleep during the process.

Postoperative weakness is largely due to muscular atrophy from disuse while in bed, and it is my custom in order to avoid this effect to have the patient massaged once daily for the first three days, adding passive motions during the fourth, fifth and sixth days and active, resistant movements for the succeeding days in bed. When cared for in this way the patient can walk about the room as soon as she gets out of bed, experiences little, if any, of the feeling of faintness so commonly complained of, and within a few days is strong enough to go out doors. This plan is in line with the views of our Chairman as expressed before this Section in a paper entitled "Massage and Exercise in the Management of the Puerperium,"[2] and by Howden[3] where he advocates postoperative exercises as a means of preventing hernia. My own use of massage and exercises in puerperal women has been most satisfactory, and after the first time the patients "cry for it."[4]

2. THE JOURNAL A. M. A., 1902, vol. xxxi, p. 355.
3. Med. Rec., 1904, vol. lxv, p. 160.
4. Amer. Med., vol. vii, p. 783, 1904.

While we agree, in the main, with Bayard Holmes in the desirability and practicability of "the short narcosis, the short incision and the short stay in bed after ideal operations,"[5] we have lacked the moral courage to get our patient out of bed on the second day after celiotomy, but are firmly convinced that the patient, without elevation of temperature, pulse or respiration, and primary wound union, will derive greater benefit from the operation if the stay in bed is limited to the shortest possible practical time, say seven days or more, as her condition may indicate. Even for a healthy individual, sitting up in bed is a most uncomfortable position and can not be maintained for any length of time, unless the patient can sit cross-legged; I prefer to let her sit up in a rocking chair.

The most distressing complications to patient and surgeon after operation are intestinal distension and acute dilatation of the stomach. Since 1892 I have made use of massage and kneading of the abdomen whenever the accumulation of gas becomes disagreeable, usually within thirty hours after operation, and by this means, after fifteen or twenty minutes, the patient usually expels large quantities of flatus, which relieves the pain and stops the vomiting.[6] As an adjuvant to the stomach tube in the class of cases so graphically described by Herrick[7] as "acute dilatation of the stomach" I have derived much good from massage and kneading,

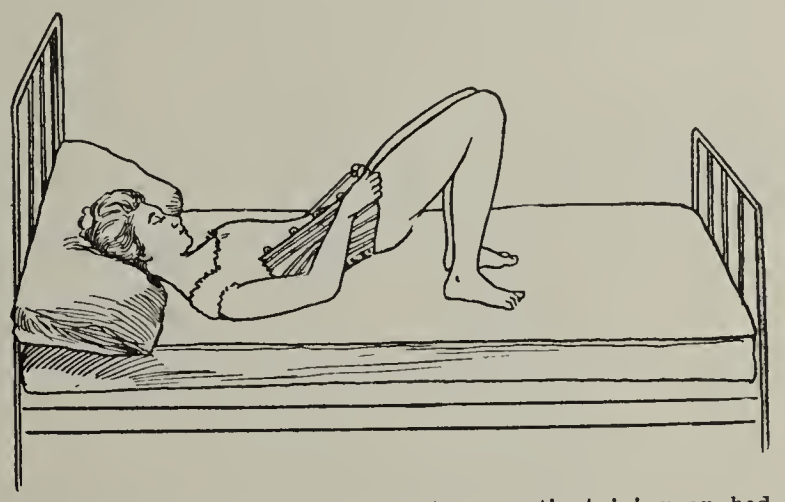


Fig. 4.—The semiopisthotonos posture; patient lying on bed or couch, hips raised, causing viscera to gravitate toward the diaphragm when applying the "abdominal stock" or special corset.

but in spite of all I lost one patient, from this cause, after excision of a small urachal abscess which opened at the umbilicus.

While tympanitic distension is unrelieved I deem it most unwise to add to the discomfort of the patient by administering salts, calomel, etc., by the mouth, preferring to introduce salines or cathartics or soap suds into the rectum to overcome from below the antiperistaltic action of the intestines. At the same time the patients receive only water by mouth until the bowels are relieved. It is often surprising to note how well patients will do on water only.

Enemata are always introduced through a short rectal nozzle, with the patient lying on the *right side,* the hips being raised on a pillow, the vessel or douche bag being slung not more than a foot above the anus. Given in this way, the fluids enter very slowly, cause no irritation, gravitate to the lowest point, the caput coli, and are retained with greater comfort to the patient.

5. Amer. Med., 1905, vol. x, p. 1025.
6. Mathews: Med. Quarterly, July, 1896.
7. THE JOURNAL A. M. A., 1903, vol. xlvi, p. 923.

LATENT MALARIA?

Delafield, in his lectures to students, calls attention to the manifold varieties of malarial fever met in New York and vicinity. It has been my worrisome experience to meet several instances in which, immediately after operation, the temperature, pulse and respiration shoot up, remit twice daily and are associated with marked abdominal distension, and a very distressing headache, the one feature which disturbs the patient most, as it does not let up. During the remissions the patient's pulse is of good quality, the face and tongue show no signs of sepsis, though there may be some abdominal tenderness, probably due to the distension. This condition continues for some days, with or without vomiting, even after the bowels move and gas has been freely evacuated; and yet, in spite of all, while the patient is very much distressed, she does not look like one who is seriously ill.

Having studied malarial vagaries in person when living in New Jersey, and later noticing the frequence of remittent fever in puerperal patients when at the Sloane maternity and in private obstetric practice, in spite of the absence of demonstrable plasmodia in the blood, and from the clinical fact that the only drug which has given relief is quinin, I look on this post-operative complication as a latent malaria which, owing to the depression following operation, phoenix-like, bursts into a flame, poisons the patient, worries the nurse, makes lunatics of the family, and adds many a gray hair to the surgeon's head.

Following the teaching of my preceptor, Dr. E. S. McClellan, who antedated Koch by twenty-five years, I give 5 or 10 grains, each, of the sulphate of quinin, iron and magnesium with ten minims of sulphuric acid, dilute, in solution, once daily, seven hours before the hour of the highest temperature of the preceding day. The effect is most gratifying to patient and surgeon, as illustrated by the accompanying chart of a patient following laparotomy, for restoration of a retroverted uterus, held down by very thick cord-like bands.

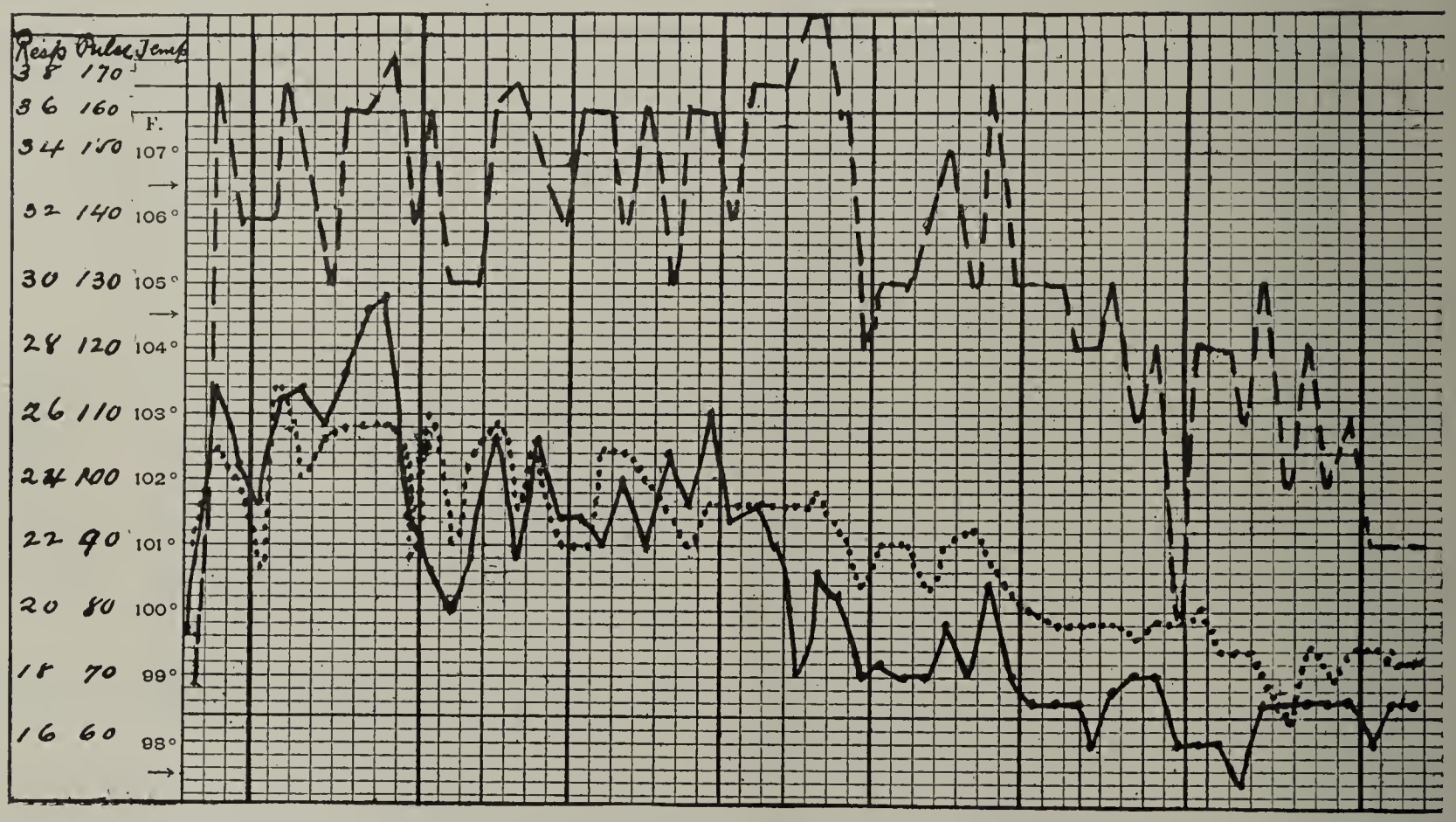


Chart 1.—Respiration ----; Pulse . . . . .; Temperature ————.

CONVALESCENCE.

Now that the patient is ready to get out of bed, the order has been given for a general tonic, and instructions as to daily calisthenic exercises, etc., have we done our whole duty and provided against a relapse, perhaps return of many of the symptoms, which have been in abeyance during the period of rest in bed? From our standpoint, no. In a paper entitled "Waistbands and Corsets in the Genesis and Treatment of Glenard's Disease"[8] I endeavored to show that the present manner of fastening the clothing and corsets around the waist is the greatest curse to women of the civilized peoples of the world, productive of distension of the lower abdominal wall, distortion of the stomach, displacement of the colon, kidneys, liver, spleen and even the heart in such a large proportion of women as to call for its recognition or exclusion ere we permit any of our patients to resume their ordinary mode of life. This holds good after suture of prolapsed viscera, or pelvic work, especially when the anterior abdominal wall of the woman standing resembles an inverted interrogation mark—so truly pathognomonic of visceroptosis (Fig. 1). This condition is very apt to be overlooked unless the examiner observes, palpates and percusses the abdomen with the patient undressed, standing, and, in order fully to appreciate her condition when dressed, ties a piece of muslin bandage around the waist to imitate as nearly as possible the waistbands when tied (Fig. 1 B). In this way only can we ascertain the real extent of visceral displacement.[9]

In endeavoring to meet the requirements for the relief of these ptoses I make use of the abdominal stock binder, Rose's plaster and a corset of peculiar design.

The Abdominal Stock.—This is made of 18-inch wide unbleached muslin, two yards long, doubled, and is cut to fit each patient by placing the free edges on a level with the mons and marking with a lead pencil the out-

8. Canadian Jour. Med. and Surg., July 1903.
9. "The Symptomatology and Diagnosis of Glenard's Disease," International Clinics, 1904; Fourteenth series.

line shown in Figure 2. The apron-like center piece corresponds to the suprapubic area and curves outward over the iliac crests, thence down to the gluteal fold to form the tongues, "b'" "b," the bands, "c" "c'" running out to the full length of the muslin on either side. At "d" a buttonhole, three inches long, is made, through which to slip the end, "c," after it has been carried around the waist (Fig. 3). Perineal straps of tape threaded through quarter-inch rubber tubing are attached by a loop to the buttons on "b" "b'" and pinned to "a" on the corresponding sides. The pattern was obtained some years ago from a nurse who was unable to tell who was the original designer.

Some patients can put up with the irritation of the Rose's plaster bandage and wear it for a month without undue discomfort and during that time are fitted for the special corset.[10]

Position of Patient.—Before putting on the binder, plaster or corset the patient places herself in the elevated dorsal posture (semiopisthotonos, Fig. 4), rubs the abdominal contents in the direction of the diaphragm, and while in this posture adjusts the garment. When the patient stands up the lax abdominal wall, with the replaced viscera, are supported by the corset and can not prolapse.[11]

THE ADHERENT DILATED STOMACH.

While conducting some investigations on the position of the kidney at the pathologic department of Columbia University, with the kind co-operation of Dr. B. B. Gallaudet, we ran across instances of dilated stomachs, adherent near the pelvic brim by the omentum, colon, appendix, etc., preventing the stomach from contracting and neutralizing any efforts on the part of the physician to relieve the dilatation. The same condition has since been met at operation and on the autopsy table. The diagnosis can be made by placing the patient in the semiopisthotonos posture or on the hands and knees —if the stomach is non-adherent it will gravitate toward the diaphragm and *vice versa.*

In thin patients the stomach will not ascend, as it should do, during inspiration; the succussion note remains below the umbilicus; and the chronicity of the gastritis and malnutrition, without periods of improvement in general health, is a picture we can not fail to recognize.

The treatment of adherent, dilated or prolapsed stomach can only be surgical—freeing adhesions, plus gastroplication, gastropexy, or posterior gastroenterostomy. In one instance, adhesion of the stomach to the left pelvic brim had followed appendicitis. I opened above the umbilicus, expecting to do a gastroenterostomy. The greater curve lay just above the pelvic brim. On separating the adhesions, the patient vomited, the stomach contracted so much that it would have been difficult to pull the small contracted stomach through the wound sufficiently to do an anastomosis. Without any further steps the wound was closed, and during the year past the stomach has never extended below the umbilicus. This patient wears a special corset.

CONCLUSION AND SUMMARY.

In conclusion and summary of these, my personal predilections, I would lay especial stress on the following factors, which, when properly applied in appropriate cases, will oft-times bring success and cure the patient:

1. A most careful consideration of antenatal and postnatal diseases and the chronicity or acuteness of the present condition before deciding to operate or not to operate.

2. The liberal use of water by mouth and rectum before, during and after operation. The free application of tincture of green soap, rubbed into the skin until dry, when preparing the field of operation and the hands of the operator and assistant.

3. Minimum morphin before anesthesia; care that the head is properly elevated, the ether administered by the patient herself in the first stage, and a minimum quantity of ether employed.

4. A reasonably short incision, a reasonably quick operation, a reasonable number of sutures to close the wound, and a reasonable time in bed.

5. After operation the careful prevention of chilling the body; the cautious use of morphin and sedatives; lavage to allay undue vomiting, and colonic massage and kneading for relief of distressing intestinal distension, with continuous rectal irrigation for tympany.

6. To invigorate the tired patient and to prevent muscular atrophy and cardiac weakness, general massage, with passive and active movements daily while in bed and calisthenics when first about.

7. For the prevention of hernia and enteroptosis or support of prolapsed organs apply the abdominal "stock," Rose's plaster bandage, or a special corset, put on while the patient is in the dorsal-inclined posture.

60 West Fifty-sixth street.

10. International Clinics, 1905, Fifteenth series.
11. Nephropexy, Pro. and Con.. N.Y. Med. Jour., April 29, 1905.

DISCUSSION.

DR. M. I. ROSENTHAL, Ft. Wayne, Ind., has made it a practice, when the peritoneum is closed, to have the anesthetist wash out the stomach with normal salt solution while the patient is still under profound anesthesia. The patients so treated vomit less frequently and complain less of thirst.

A PLEA FOR THE SCIENTIFIC ADMINISTRATION OF ANESTHETICS.*

JAMES TAYLOE GWATHMEY, M.D.
NEW YORK CITY.

There is no more reason why we should adhere to the drop method of chloroform or the cone method of ether when a better and more exact method is produced than that we should continue to use the "one horse shay" when the automobile is available. Nor is it sensible to continue the foolish custom of allowing the most inexperienced interne to narcotize instead of having a professional anesthetist in every hospital.

Furthermore, because a man has given an anesthetic many times during his hospital service and irregularly afterward, it is no evidence of his ability to do the same thing several years after, with even a reasonable degree of success. The wonderful advancement in all departments of medicine has come from men devoting their exclusive time to some one branch of it, and especially is this true of anesthetics. We are indebted to England, where the professional anesthetist prevails in hospitals as well as in private practice, for all recent progress in the administration of anesthetics. Here in America, where both nitrous oxid gas and ether were first discovered and used, we seem still content to continue what might be called "frontier" or "border" life with the mortality table the same as when anesthetics were first introduced.

* Read in the Section on Laryngology and Otology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

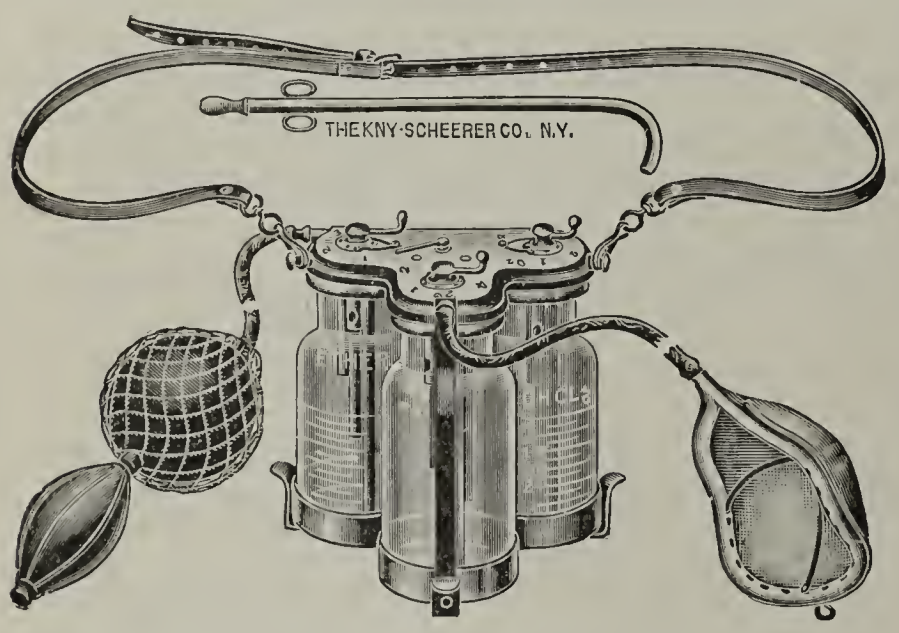
The production of anesthesia, like hunting, billiards, or any other thing in life requiring skill, should fall into the hands of one who is giving himself entirely to that branch and who loves it for its own sake. The ownership of an anesthetic outfit by a physieian who has the price does not necessarily qualify him as an expert. Espeeially is this true if he is attending to the general practiee of medicine or some other branch of it and using this subject as a makeshift. To sueh men the exact method of anesthesia will not appeal.

RECENT PROGRESS.

The English have produced the Harcourt inhaler, giving a maximum 2 per cent. chloroform vapor and a minimum 1/10 per cent. The Freneh have produeed the Gigliementi Roth Drager apparatus for the exact administration of known percentages of ehloroform and oxygen vapors. The Germans have given us the Braun apparatus for the administration of an attenuated ether vapor to be supplemented with small amounts of chloroform from time to time as indicated. With these object lessons for the scientific administration of anesthetics before me, I have succeeded in producing an apparatus giving a known percentage of chloroform and oxygen (or air) and also an attenuated ether vapor, or any combination of these two drugs.

APPARATUS DESCRIBED.

The apparatus (the successor of the three bottle inhaler) consists of two six ounce bottles, one for ehloro-



form, one for ether. Both bottles are placed on a tin vessel eontaining thermalite. This "thermalite warmer," if plaeed in boiling water for three minutes, will stay warm for over one hour and a half. If the heat is to be continued, this can be aeeomplished by simply taking the stopper out, thus exposing the thermalite to the atmosphere. The liquid now begins to re-crystallize and in turning to a solid again gives off heat for another hour and a half. Or the instrument can be boiled for three minutes, cooled immediately by plaeing in cold water, and the stored heat turned on at any time needed by taking out the stopper, and thus starting up recrystallization. The size and the cost of the apparatus are thus reduced nearly one-half. The teehnie is also mueh simplified.

The small switches on the top of eaeh bottle are so arranged that chloroform or ether, eombined or separately, ean be given and in any strength desired. All of the vapor being warmed, it is more respirable, redueing the after effects, and at the same time inereasing its safety as regards life. The vapor percentage, when using either oxygen or air, can be inereased or deereased, without at the same time inereasing or diminishing the anesthetic.

In each of these bottles there are three tubes, varying in length from one that reaches the bottom of the bottle to one that penetrates only the stopper. These tubes represent three degrees of vapor strength, the longest, No. 3, with the mask, has an estimated 1.8 per eent. vapor strength; the shortest, No. 1, representing a very attenuated vapor strength, 0.1 per eent. chloroform. In addition to these degrees, by simply turning a small lever, without removing the mask, the patient gets pure air, or a mixture of oxygen and air.

The percentage varies according to the depth or amount, and also to the temperature of the liquid, the size of the hand bulb, and the pressure with whieh the air or oxygen is forced through the tubes, either by the hand bellows or from the oxygen tank. It also varies with the tube through which it is passing, the longest tube representing, with the mask, nearly 2 per cent., and the shortest a fractional, or 1/10 per cent. vapor. As the mask is not air tight nor arranged so that the vapor can be compressed, there is no possible danger of getting more than this amount, although it is possible to lighten the anesthetie to any degree desired.

ADMINISTRATION.

If the patient is a strong, vigorous man or an alcoholic, the longest tube is used to get him completely under; then the stop-cock is turned to the seeond longest, or No. 2. If the lid reflex is still sluggish, the lever may be turned to No. 1. If, now, this reflex gets too active, try the seeond length or No. 2 tube. By thus working up and down from the shortest to the longest tube, and by also varying the pressure, the patient can be kept between an active lid or swallowing reflex, on the one hand, and a very dull lid reflex on the other. If the patient is an infant or is very weak, only the shortest tube is to be used from the beginning.

The mask is similar to a folding Esmarch mask, the rim of whieh is hollow and perforated with small holes around the inner margin so as to allow the vapor to escape. It is eovered with two to four layers of gauze, over which is placed a piece of oiled silk or rubber tissue. A small opening, the size of a ten-cent piece, is cut in the middle of this gauze, so that, during the induetion period, a few drops of ehloroform may be added as is sometimes necessary with vigorous aleoholics. There are neither valves nor bag, eonsequently there is no rebreathing, no unnatural or strained breathing at any time.

This apparatus will not attraet those who wish to give a minimum amount of time and thought to this branch of medieine, but it will appeal very strongly to the surgeon who has the highest welfare of his patient at heart. By the administration of cologne during the first minute, or until the mucous membranes become saturated and the patient is breathing regularly, the element of fear is eliminated before the anesthetie is turned on at all, and the very small pereentage of deaths from fright will thus be absolutely done away with. The patient is entirely unaware of the attenuated chloroform vapor and sinks into a quiet and natural sleep, with the stages of exeitement entirely absent or redueed to a minimum. During the narcosis the disagreeable mucous râle is eliminated, the billowy breathing is absent, neither do we have the quiet and sometimes impereeptible breathing that accompanies chloroform as usually administered, which is so very alarming to the anesthetist.

The patient is barcly submerged and the reflexes are just abolished. Thus we may say that the patient is within calling distance at any time. If a severe hemorrhage should occur or shock from any cause take place during the operation, the anesthetic can be quickly eliminated from any part that it might take in producing this state.

The pulse, color and respiration are nearer normal, generally speaking, than with any other method of administration. To administer this attenuated vapor of known percentage successfully, the anesthetist must at all times be on the *qui vive*. He must observe all signs and symptoms and graduate his anesthetic accordingly. To the interne who is in the habit of watching the operation most of the time and at irregular intervals loading up his patient with ether, this narcosis will be a hardship.

The after effects from the warmed-over ether and chloroform vapor in 98 per cent. of the cases are nothing, for the following reasons:

1. The glands of the buccal cavity have not been unduly excited and consequently the nauseating ether saliva is not present.

2. A carbon dioxid poisoning is also absent, as there has been no re-breathing. When the blood has rid itself of the drug, the patient immediately returns to a normal condition. With any closed method we have more or less carbon dioxid in the blood, and ether saliva in the stomach plus the anesthetic to contend with.

3. Acid intoxication and late poisonous effects of anesthetics, as noted by Arthur D. Bevan and Henry Baird Favill,[1] need not be dreaded.

Their article, while exhaustive, shows a lack of appreciation of the subject of anesthesia. In not a single history of all the cases enumerated was the amount or method of giving stated. With the anesthetic heated to the temperature of the blood (100 F.) and with an attenuated vapor of chloroform or ether given, as the case requires, I have no hesitancy in saying that these late effects will be an impossibility.

The percentage of deaths from anesthetics would be materially lessened if surgeons themselves knew a little more of the theory of narcotics. For instance, many surgeons will allow an irregular narcosis (which is always dangerous). Now, if the patient suddenly shows that the reflexes are not entirely abolished, the command may be given to "push the anesthetic." If the anesthetist is inexperienced, he may follow implicitly the surgeon's directions, regardless of the condition of the patient. The patient may now take several long, deep respirations and then hold his breath, and thus invite a fatality if chloroform is being administered.

WARMED CHLOROFORM.

Chloroform should never be administered, even by the drop method, at a normal temperature. If the vapor method is not used, a very simple way is to have a pan of hot water (100 F.) on the anesthetist's table in which to place the chloroform bottle from time to time. The value of warmed-over vapor of ether has been known since 1877, when Dr. Glover invented his portable regulating inhaler, but the value of warmed-over chloroform has not been recognized up to this time. In order to determine the comparative value of chloroform as regards life, when heated to 100 F. and at normal temperature, I recently made a number of experiments conforming to those that I made with oxygen in 1904. In all I killed 43 cats, 17 with the warmed chloroform vapor and 26 with the vapor at the normal temperature. The following table shows the results:

TIME REQUIRED TO KILL CATS WITH CHLOROFORM AND AIR.

Number of the experiment.	Number of minutes required to kill at 100 Fahrenheit.	Number of minutes required to kill at normal temperature.
1	18	4.5
2	57	3
3	26.5	7.5
4	24.5	7
5	15	4
6	16	4
7	15	3.5
8	8	7.5
9	13	9
10	22	5.5
11	12	7
12	17	10
13	21	6
14	25	9
15	27	10
16	17	7.5
17	12	10.5
18	..	10
19	..	10
20	..	17
21	..	16
22	..	13
23	..	16
24	..	11
25	..	12
26	..	12
	17) 346 total.	26) 232.5 total.
	Average 20.35 min.	Average 8.94+ min.

From this table we see that the vapor, when raised to the temperature of the blood, is almost 2½ times as safe as chloroform vapor as usually administered; and is nearly as safe as chloroform and oxygen, and is safer than ether and air.[2] These experiments having been made on animals, it remains to be proved if the same results can be obtained on a human being undergoing a surgical operation. The combination of oxygen and warmed chloroform vapor gives us a close approximate to the ideal anesthetic toward which we are gradually working.

AUTHOR'S THEORY.

As this is the first time in the history of medicine that this comparison, i. e., of warm and cold chloroform vapor, has been made, it may not be out of place to give my own theory as to the above.

It is an acknowledged fact that, in the tropical climates, chloroform is given with less danger to life. In fact, the anesthetic is so volatile that it sometimes becomes necessary to use a more or less closed method. By heating the chloroform to 100 F. we, as nearly as possible, reproduce the conditions at the equator. The vapor is more readily absorbed by the blood, and little or none of the vapor remains in the reserve air in the lungs. With chloroform as ordinarily administered, a certain per cent. of the vapor remains in this reserve air to be warmed over before it is capable of being absorbed by the blood. As long as the vapor remains in the lungs in this way, it is a menace to the life of the patient. This itself would be a sufficient reason for administering a warm vapor in preference to a cold one. My idea is that after this warm vapor gets in the blood it is also more readily given off; whereas, a cold vapor circulates for an indefinite period. In other words, while the chloroform vapor at a higher temperature is more easily absorbed, it is also more easily given off.

We may liken the warm and cold gases in the blood to a bubble of gas, on the one hand, and a water-soaked log on the other. When the warm vapor reaches the alveoli of the lungs it immediately escapes and when the cold chloroform reaches the same place it acts the part

1. THE JOURNAL A. M. A., 1905, Sept. 2 and 9.

2. Gwathmey: Medical Record, Nov. 19, 1904.

of the water-soaked log and is indifferent to the opening. Whether this theory is correct or not, the fact remains that chloroform, heated to the temperature of the blood (100 F.) is more respirable, has less after effects and is also less dangerous to life than chloroform as usually administered.

ADVANTAGES OF METHOD.

The principal advantages of this method over all others are: 1. The administration of known percentages of chloroform or ether, separately or combined, in any desired proportion. If a change from one anesthetic to the other is indicated, this is accomplished quickly.

2. Elimination for rebreathing and carbon dioxid.

3. The ability to maintain the desired level called for by the operation.

THE FUTURE OF ANESTHETICS.

Attaining full surgical anesthesia or analgesia from scopalamin and morphin is unscientific and will never become a routine procedure. But the administration of gr. 1/100 scopalamin and gr. 1/6 morphin one-half hour before the operation and supplementing this by as much of any general pulmonary anesthetic as may be necessary is theoretically correct and clinically safe. This is now the usual method of procedure by some of the attending staff at the General Memorial Hospital in New York City, where they have used this combination over five hundred times with the following results: 1, Surgical anesthesia quickly produced; 2, maintained satisfactorily with a minimum amount of the anesthetic (gas-ether being the usual method); 3, the after-effects in over 90 per cent. of the cases as to nausea and vomiting are all that could be desired. The patient usually sleeps for three or four hours after the operation, but can be aroused at any time.

At the Polyclinic Hospital, New York City, we are giving gr. 5 of chloretone every 15 minutes until 15 grains are taken before the operation, but we have not sufficient data as yet to report definitely. The combination of scopalamin and morphin or chloretone or cocain locally, plus a small amount of some pulmonary anesthetic, will undoubtedly be the anesthetic of the future.

DISCUSSION.

Dr. W. S. Bryant, New York City, said that some of his patients had been admirably anesthetized by Dr. Gwathmey. He thinks the amount of anesthetic given was less than with any other method he has seen used and the supply of oxygen more abundant. This accounts for the surprisingly slight disagreeable effects of the anesthetic. He has not seen any bad results from the method, either with chloroform or ether or a combination of the two. He thinks that this method of giving vapor, and possibly warm vapor, would solve many difficulties in anesthetizing patients whose surgical treatment is seriously handicapped by some general disease.

Dr. R. C. Myles, New York City, said that this subject has worried and annoyed him more than operations on the throat. Whether he has an expert anesthetist or not, he never can dissociate himself from the responsibility. Unfortunately statistics can not be obtained. Those who have lost patients under anesthesia do not give the statistics for publication; they are perfectly willing to confer with one another on the subject, but not with the profession at large in the way of publication. He has frequently asked surgeons in different parts of the United States as to deaths from anesthesia, and it is rarely the case that they have not had a fatal accident, but he does not believe that 5 per cent. are reported. So the fatality is far beyond what the literature gives. Since Dr. Gwathmey has been carrying out this method, Dr. Myles has been particularly fascinated with it and has had his assistance a great many times. In mastoid operations, especially in cases involving intracranial structures, taking one or two hours, it has been ideal. In throat cases it has nearly always acted well. Dr. Myles is opposed to chloroform. He referred to one of his own cases which Dr. Gwathmey mentioned, that of a young girl 8 or 10 years old. She was lying on the table with her head over the side and was doing well, when he used scissors to sever the mucous membrane that covers the anterior part of the faucial tonsil; it was a case of submerged tonsils deeply embedded. He made two nicks and noticed an instant cessation of everything that tends to life: eyeballs rolled up, pupils enlarged, and all the phenomena of death were apparent. She gasped and stopped breathing. He grasped her by the legs and held her straight in the air while Dr. Gwathmey used artificial respiration. It seemed a long time, and three or four times he thought there was no use in keeping it up, but Dr. Gwathmey made pressure on the chest and kept her breathing in and out, until finally she gasped and recovered. Nothing but activity caused this patient's recovery. The operation was continued, the tonsils and adenoids were removed, and the patient recovered from the operation. These experiences which happen so suddenly with chloroform in throat operations are due, he believes, to some disturbance of the respiratory center and caused by the surgeon's manipulations. He does not think that they are due to the lymphatics. There is some stimulation or activity caused by incising the throat.

Dr. L. A. Coffin, New York City, raised the question whether or not warm ether or warm chloroform vapor can be given. It seems to him that by this method of heating the ether or chloroform is caused to vaporize more rapidly, but that the vapor is of the same temperature. The heat becomes latent heat. The beauty of the method, it seems to him, is in the graduated and certain amount of vapor, of either the ether or chloroform.

Dr. W. E. Casselberry, Chicago, said he experimented in former years in giving nitrous oxid with oxygen and made a preliminary report, but gave it up on account of the complicated technic. He asked whether in the method mentioned by Dr. Sherman its administration can be interrupted for different stages of a tonsil or adenoid operation, without the patient's coming out from the anesthetic in the course of a few seconds. In that operation an interrupted administration is a necessity. Concerning chloroform, he emphasized that the safest way to anesthetize for tonsil and adenoid operations is not to give chloroform at all, but to substitute ether for it. Recently, for another purpose, he had occasion to look through his records of private cases and found from 480 tonsil and adenoid operations, a series of 160 cases anesthetized by ether satisfactorily to the operator and to the patient, with no fatality and no cause for anxiety beyond the usual sense of responsibility which pertains to the use of any anesthetic. He said that, as regards this new apparatus, it is beautiful to behold and no doubt works perfectly in the hands of Dr. Gwathmey, but he has the same objection to it as to many other complicated forms of apparatus. It contains screws, valves and a lot of rubber tubing; the screws will rust, the tubing degenerate and the valves stick or leak at critical moments. As long as ether can be poured and chloroform dropped out of a bottle on to an ordinary inhaler it will take long to introduce complicated mechanical devices for this purpose.

Dr. C. M. Robertson, Chicago, said he also is afraid of chloroform anesthesia, although he perhaps would venture to use this method. He decided against chloroform because of operating after two deaths in the hospital, his operation almost causing a third. He has not had an actual death, but pretty nearly so. He gives ethyl chlorid gas in a manner that seems almost ideal. The gas is put up in metal containers so that the heat of the hand generates the gas in the tube. All that is required in giving it to people who can not breathe through the nose is a cheap face mask. After the patient is anesthetized a nasal tube is put in the nostril through which the anesthetic is given continuously. He has used it for the last eight months in private and hospital practice with no bad results, except in one patient who could not breathe on account of having the head thrown back too far. There is no cyanosis with this method of anesthesia, the heart is not affected at all, nor is the respiration, and it seems better

than any form of chloroform he has seen. The trouble with ether is, that following some operations, tonsillectomy, for instance, there is a possibility of purging which is likely to start hemorrhage, and that is an objectionable feature.

DR. M. H. CRYER, Philadelphia, spoke in regard to the use of nitrous oxid gas in combination with oxygen. Sir Frederick Hewitt, of London, first devised an apparatus for making this combination and used it very successfully. In 1904 Dr. Cryer brought one of his apparatus to this country and had it somewhat modified and at the present time it is in general use throughout the United States. It is often used to carry the patient into a state of ancsthesia before the administration of ether.

DR. E. F. INGALS, Chicago, said that he has used chloroform in these operations several hundred times, and has seen deaths from chloroform, but never from these operations. Nevertheless, he is not so free in using chloroform as would be supposed from the chairman having called on him in its defense. Many times lately he has given nitrous oxid gas and followed it with ether. During his practice he had seen several cases in which chloroform acted badly and he believes that it will have to be abandoned in most of these operations.

DR. J. T. GWATHMEY, New York City, said that nitrous oxid and oxygen gas is unquestionably the safest anesthetic in the world; anybody studying the subject clinically and theoretically knows that. The only question is that so far they have not been able to use it. Dr. Hewitt acknowledges that it is only applicable to certain cases and on that account has given it up as a routine procedure. Dr. Gwathmey said that his own method comes as near nitrous oxid and oxygen gas as anything can. The reflexes are barely abolished, the patient is just under, and although given ether continuously, in the majority of cases there is no nausea, or very little. In regard to the length of time it takes the patient to come out of the anesthetic, in a case not long ago at one of the largest hospitals in New York, the operation lasted nearly five hours. The anesthetic was given by this method and fifteen minutes after the operation was completed the patient was out and talking normally, without any nausea or vomiting. For adenoid and tonsil operations in giving ether there is nothing better than this method. Anesthesia is a little deeper than with nitrous oxid and oxygen gas.

MEDICAL SPECIALISM, WITH ESPECIAL REFERENCE TO PROCTOLOGY.*

LEWIS H. ADLER, JR., M.D.
Professor of Diseases of the Rectum, Philadelphia Polyclinic and College for Graduates in Medicine; Prosector to the Professor of Anatomy, Medical Department of the University of Pennsylvania; Consulting Surgeon, Charity Hospital.
PHILADELPHIA.

THE GENERAL PRACTITIONER AND THE SPECIALIST.

In this age of commercialism the struggle for existence is of the keenest. This condition exists in both the business world and in professional life, but especially so in the latter. Is it strange, therefore, that the general medical practitioner looks in awe and wonder at the growth of the specialist and the multiplication of the specialties and asks himself: What is to become of the family doctor? Or: Has my position become that merely of an intelligence office, where the general public can obtain information as to suitable specialists for the treatment of eye, ear, nose, throat, stomach, heart, lung, kidney, liver, or other troubles?

Assuming, for the purpose of argument, that the objections urged against specialism in medicine are well founded, what would be the result if it were possible to abolish the specialist? Would the best interest of medicine thereby be conserved? Would the general practitioner, in the multiplicity of diseases coming under his notice, be enabled to study the individual characteristics and phases of each complaint with that nicety, care and distinction necessary to permit him to draw conclusions and deductions that would enhance the progress of medicine to the same extent as under existing circumstances? Would the health of the public be cared for as well under such a régime? I firmly believe that no fair-minded person could give other than a negative reply to each of these questions. If this be admitted, then, the fact exists that specialists are needed and that specialism in the practice of medicine will grow with the requirements of existing or of future needs and conditions.

A well-known Philadelphia physician was testifying in one of the local courts as an expert. He was asked if he were a specialist, to which he replied: "Thank God, no." When asked what he called himself, he replied: "A general practitioner." When asked to explain to the judge and jury the difference between a specialist and a general practitioner, he replied that "it took about a dozen specialists to make one all-round general practitioner of medicine." As a piece of witticism these remarks could not fail of appreciation, but as a statement of fact they hardly would be seriously entertained by any one.

THE IDEAL SPECIALIST.

It is true that the so-called specialist, who immediately after graduation attempts to pose as an expert in any line of medical practice, will sooner or later bring disgrace on himself and prove a discredit to the profession at large. The same remarks apply with equal force to the practitioner who, after some years of general work, attends a postgraduate course for six weeks or thereabouts and then deems himself a full-fledged specialist in the line of work to which his attention has been directed.

My opinion of the ideal specialist is one who, on graduation, serves a full-term residency in some general hospital in one of our large cities; then takes up the general practice of his profession with some more or less definite idea that at some time in the future, when his finances and acquaintanceship both among the profession and the laity are sufficient to warrant the step, he will take up whatever special line of work either his own liking dictates or is indicated by the course of events which shape the destiny of most men. From five to ten years spent in general practice is none too long for the average individual. During that time as much attention as is possible should be given to the study of the diseases to which it is hoped to devote more or less exclusive attention later. When it is possible, associations should be formed with a specialist, in the desired line, having a hospital position; where as an assistant, much experience may be gained and practical work done. After the proper length of time has been spent in gaining the required knowledge and experience in the practice of medicine, in its broadest sense, the individual, desirous of specializing his work, is prepared to take up the requisite postgraduate instruction. At least a year's time should be devoted to this work. From half to three-quarters of this period may be spent in colleges in this country and the remainder may be employed abroad.

To the student of proctology I would advise a division of time, so arranged as to enable him to spend a couple of months in each of three or four of the teaching centers of this country. In this manner not only is a

* President's Address at the Eighth Annual Meeting of the American Proctologic Society, held in Boston, June 5-6, 1906.

variety of work seen, but also the various clinicians with whom he comes in contact impress on him their individuality both in operative technic and treatment.

NEED OF A KNOWLEDGE OF THE SPECIALTIES.

The foregoing remarks demonstrate that the profession of medicine and the public welfare are materially benefited by having in the community such practitioners who, at the proper time of their professional career, devote their entire time and attention to the study and treatment of some particular portion of the human economy. It is only within recent years that our medical colleges have appreciated the importance of students having at least a rudimentary knowledge of the specialties, such as ophthalmology, otology, laryngology and dermatology, and have required an examination in these branches. Those of us who graduated fifteen or twenty years ago can recall the meager attendance of students to these clinics at all times, and in the latter half of the term the professor considered himself, indeed, fortunate if he could secure an attendance in the amphitheater of a half-dozen men.

In connection with this teaching of the specialties in our undergraduate colleges I would make two comments: First, that the teaching should be done by specialists, and, second, that the teacher should not exact of the student the same profound knowledge of such special subjects as is required for the major branches.

PROPER RELATIONS BETWEEN SPECIALISTS AND GENERAL PRACTITIONERS.

I will now consider the apparent antagonism on the part of some general practitioners toward the specialist. Is this antagonism justifiable? Under certain circumstances the answer must be given in the affirmative. There is just cause for complaint on the part of the general practitioner when the specialist exceeds his authority in treating a patient for any trouble other than that for which he was referred. Furthermore, one specialist has no right to refer a patient to another specialist without first consulting the family physician. Another cause for grievance and the occasion of a drifting apart of the general and the special practitioner is that the public have been educated to seek advice and treatment of a specialist when in their judgment their physical needs require attention, and they do this without even consulting their family physician. It is true that the specialist may with propriety treat such patients and ignore the family physician; but is such a course productive of the cordial relationship that should exist between all honorable and regular practitioners of medicine? I think not. When a patient presents himself at the office of a specialist, without an introduction from his physician, one of the first questions that should be asked is, "Who referred you?" If it be some one other than the family physician, the next inquiry should be, "Who is your physician?" This should be entered with the patient's history in the proper place, and with the patient's consent, as soon as possible thereafter a note should be sent to the physician stating that such and such a person has been seen and examined, with a report of the facts ascertained. Furthermore, any sugestions regarding constitutional treatment should be made to the family physician and left for him to prescribe. If this course were followed by all specialists a much more cordial fellowship would soon be recognizable within the rank and file of our profession and a large part of the enmity now evinced by the general practitioner toward the growth of specialism would be forever dissipated.

Viewed from my standpoint, the progress of specialism does the general practitioner much more good than harm. A single example will have to suffice as an illustration, for time will not permit a thorough consideration of all the features of the subject which would be in order in an extended discussion of the matter. Take, for instance, the subject in which the members of this society are chiefly interested. Each individual composing the organization comes into daily contact with numerous patients afflicted with some ailment of the alimentary tract, more particularly of that portion of the lower bowel beginning at the sigmoid flexure and terminating at the anus. At each annual meeting the individual experiences of one and all of us are given concerning the results obtained from various methods of treatment; original or more extended observations are recorded regarding the pathology, symptomatology, diagnosis and prognosis of the different rectal diseases; instruments are shown of recent device; new operative procedures are described, and any additional information worthy of record is detailed regarding well-known operations. All this material as presented by the individual is subjected during its recital to the closest scrutiny by the members collectively, and then is discussed in a frank and fearless manner by the leading proctologists of this country, with but one natural result: the speedy separation of the chaff from the wheat.

At this point some one may say that all this is true, but what has it to do with indicating the benefits, if any, which accrue to the general practitioner from the growth of specialism? In the first place, all our sessions are open to any members of the medical profession, except that small portion of time which is devoted exclusively to business pertaining to routine matters, necessarily of interest only to members of the society, so that any one of the profession may attend our meetings and freely partake of the bounteous repast of knowledge which there awaits the hungry seeker eager for enlightenment on things proctologic.

Furthermore, those unable to attend the meetings have the opportunity of reading in the medical journals the various papers read before the society, as well as a synopsis of the discussions pertaining thereto. In this way the general practitioner, if he so desires, may fit himself according to his individual capacity properly to diagnose and to treat diseases of the rectum, even to the performance of operative measures. Thus the specialist is largely of benefit to the general practitioner without deriving or seeking any direct personal gain.

Let me shift the scene for awhile and express my views briefly as a specialist on the topic, What should be the attitude of the general practitioner toward the reference of cases and consultation with specialists? This is a broad subject, but the question can be answered, somewhat tersely, it is true, by saying: By acting honestly to the inner conviction of what is right to one's own interest and at the same time just to the patient's welfare. I am glad to say that there are many men whose professional careers are conducted on this principle, but what of the large number who are not animated by such motives? These latter individuals perform major operations with little or no training in surgical work and with a less knowledge of the risks involved to human life. If the patient lives, their egotism is increased and their self-importance and esteem made greater. When a contrary result ensues there is no lessening of the personal vanity, but the death is attributed to natural causes, which in point of

fact it is, but not in the sense of the ordinary acceptance of that term.

These remarks are made not because they are agreeable or from any desire to utter disagreeable things, but as they are facts they seem essential as a sort of preface to what I am now about to state. These same men who so recklessly perform almost all the operations embodied in the surgical field, and who are never known to require a consultation in a purely medical case, unless the patient is at death's door or is so sick that the patient's family becomes frightened, never attempt the removal of a cataract, and when they have a case of a fractured bone hasten to call in assistance. Why? The loss of an eye or an imperfectly set bone, as a rule, does not kill a patient, but it does prove a lasting monument of the lack of a medical man's knowledge, ability and skill.

It is true that in the selection of the operation for the extraction of a cataract I may be accused of using a very poor illustration to emphasize the point made, for it is well known that to-day even the most skilled general surgeon refers such patients to the ophthalmologist. Nevertheless, my object is thereby attained of pointing out a condition of affairs which is deplorable and should not exist.

CONCLUDING REMARKS.

In conclusion permit me to offer a few words of caution and advice, which seem suitable for presentation and consideration in an address of this character. In the first place, let us be considerate of the errors in diagnosis made by others which opportunity happens to reveal to us. No one is infallible. The practitioner who never makes a mistake is either ignorant of its occurrence or else his practice is so limited that he has little opportunity to err. A shrug of the shoulder or an elevation of the brow of a physician being consulted may convey to a patient as much condemnation of another physician's former treatment or diagnosis as though the harshest language had actually been used; and, finally, we must not rush into print with articles of a laudatory character, in which, too often, unstinted praise and unmerited recommendation is given to some new drug or novel method of treatment without having had ample experience to justify the same. Similar remarks are likewise applicable to those who publish a description of some newly devised operation without having taken the necessary time to test its merits, much less its demerits.

The avoidance of these evils, for such we know them to be, will save much unnecessary confusion in the minds of the readers of our medical journals, who today see statements made to this or that effect which tomorrow are contradicted.

1610 Arch Street.

SURGICAL ASPECTS OF TUBERCULOSIS.*

HERMANN B. GESSNER, M.D.
Lecturer and Demonstrator of Operative Surgery, Tulane University of Louisiana.
NEW ORLEANS.

By the above title we understand tuberculosis as it presents itself to the surgeon, to that division of the medical body which busies itself with the knife, the brace, the plaster bandage, the rubber constrictor, in other words tuberculosis accessible to external means of therapeusis.

EXTENT OF THE SURGEON'S DOMAIN.

How broad is the field which we are about to survey? What promise does it hold out of opportunity for rendering services of value, for doing work satisfactory to the active and to the passive party?

A brief view of some figures bearing on this matter may be of some interest. During the decennium, 1894 to 1903, we find that in the Charity Hospital of New Orleans the prevalence of the pulmonary form, commonly accepted as medical in its aspect, was 4.24 per cent. (42 in 1,000) of the total number of patients admitted for the whites, 9.001 per cent. (90 in 1,000) for the colored. During the same period the prevalence of surgical forms of tuberculosis was 2.92 per cent. (29 per 1,000) for the white, 3.229 per cent. (32 per 1,000) for the colored.[1] These figures make the ratio of surgical to medical tuberculosis cases about 1 to 1.5 for the white, about 1 to 2.8 for the colored. The greater preponderance of pulmonary cases in the colored may be accounted for by the fact that the members of this race suffering from the pulmonary disease come to the hospital in large numbers to spend their last days on earth, while they seem less inclined to come for the less fatal, though more disabling, local lesions.

In Ward 1 of the same hospital, a portion of the service of Dr. R. Matas, professor of surgery in the Medical Department of the Tulane University of Louisiana, of 149 surgical cases admitted during the six months, October, 1903, to March, 1904, 17 (nearly 12 per cent.) were tuberculous in character. These figures, taken from the reports of a general hospital admitting patients regardless of racial considerations or of any considerations other than those of public health, may be assumed to be fairly representative of the conditions existing in this section of the country.

When we come to consider the tissues, apparatus, regions and organs presenting work for the surgeon, it seems easier to enumerate the organs not affording opportunity for surgical intervention than to give the long list of those which do. Of the connective tissues which form the framework of the human body every element comes within the scope of our sphere of interest and action, fascia, adipose tissues, cartilage, bone, muscles, tendon-sheaths. The brain and its meninges, the coverings of the spinal cord, the cerebrospinal nerves, the organs of special sense belong in our domain. The pericardium, the blood vessels and, of special importance, the lymphatics and lymphatic glands are amenable to surgical intervention. The serous, synovial and mucous membranes do not escape our attention, nor are the secreting glands foreign to the subject. The digestive apparatus presents the lip, tongue, palate, pharynx, stomach, small intestines, colon, appendix and liver; the respiratory apparatus, the larynx, trachea and pleura; the genitourinary apparatus is ours in its entire extent, including kidney, ureter, bladder, urethra, prostate, vesicles, cord, testis, vulva, vagina, uterus, tubes, ovaries, mammary gland. Every region presents some lesions for which surgical therapeutics of one kind or another are indicated. To sum up, one may say that every portion of the body is affected with tuberculosis of what we may call the surgical type with the exception of the heart, the spinal cord, the lungs and bronchi, the spleen and the pancreas. Even these organs are not all free from surgical intervention for tuberculosis, as lit-

* Read before the Mississippi State Medical Association, April, 1906.

1. Gessner, Hermann B.: "Importance of Surgical Tuberculosis to the General Practitioner," New Orleans Med. and Surg. Jour., September, 1904.

erature records the sueeessful draining of pulmonary cavities of tubereulous origin. A more thorough review of the subject might show that others of the exceptions given should be included in our list of organs requiring surgieal intervention for tuberculosis.

It must not be forgotten in taking this survey of the field that some of the tissues mentioned are but rarely involved. Up to a recent period the peripheral nerves have been thought to be immune. During the past winter Professor Matas has had oeeasion to bring before the medical class of Tulane a case of ulnar nerve tubereulosis, besides eneountering a similar ease in his private practice. Again, the stomach is rarely the seat of tuberculous lesions, its seeretion apparently proteeting it against the local development of tubercle bacilli. The pericardium is not frequently the object of our attentions, though I have had the opportunity of tapping this sac for a serous effusion seeondary to a pleural exudate, withdrawing two ounees on one and seven ounces on another occasion.

The eonelusion to whieh we finally come is that there is not a region of the body, not a tissue nor any organ, whieh we may say positively can not be the seat of tuberculosis, and further that with improved technic there is seareely a lesion that ean be considered outside the domain of the surgeon. The rare tuberculous lesions of the endoeardium are safe from his reach, as would be similar lesions of the large vessels, did they oecur primarily. But anything short of these impossible heights may be reaehed by persistent effort. Let the surgeon, therefore, keep tuberculosis ever before him as a possibility lest he have the humiliating experienee of attempting the removal of a lipoma from the baek and finding a cold abscess or discovering that a supposed sebaceous cyst over the eyebrow is in reality a tuberculous collection originating from the dura and perforating the frontal.

DIAGNOSIS AND PROGNOSIS.

Of diagnosis I shall say little, this aspect having been pretty well erystallized in the literature. The slow onset, the painless, afebrile eharaeter of the lesion, combined with the information derived from the use of the exploring needle and the results of examination of the fluid by staining, culture and inoculation, make the reeognition of tubereulous diseases in most cases a matter of only ordinary diffieulty. The use of tuberculin, about which much has been written pro and eon, has, in my hands, proved serviceable for clearing up diagnoses. Care must be taken to avoid exeessive doses, the limits reeommended by the manufacturer being observed.

In regard to prognosis I must deelare myself frankly optimistie. Given a patient with a single lesion, offering good opportunity for radieal extirpation, and the ehanees of ultimate recovery are excellent. Autopsy records show that, with extensive local trouble amenable to surgical intervention, there may be perfeetly sound viscera, the disease in such instances progressing by eontinuity and contiguity only without metastatic deposits through the lymph or blood channels. Just as the prognosis of pulmonary tuberculosis has improved under modern methods of early diagnosis and prompt treatment, so with the surgical side of the disease, whieh, being more accessible, ought to be even more favorable for reeovery.

TREATMENT.

The treatment of surgical tuberculosis is so well known that I will not dwell on it at length. Rest, general and local, the latter secured by proper methods of immobilization, aspiration, injeetion, excision are all too familiar to require being expatiated on. I pause only to impress on you the desirability of making a clean sweep, of praeticing radieal exeision in all eases in which this is feasible, in preference to employing the slower method of aspiration and injection. I refer, of course, to those eases in whieh the discase has progressed to the point of destruction of tissue, to easeation and liquefaetion.

I should like to eall attention to the Bier method of congestion, whieh, though not new, has recently been taken up with renewed vigor. In the Charity Hospital service of Professor Rudolph Matas, the treatment has been applied of late to diseased joints with very satisfaetory results. By no means should we slight the improvement of patients' general health by the well-known hygienic means of sunlight and fresh air, with properly direeted exercise. Nor should we overlook the specific medication by means of culture and serum preparations, one of whieh, let us hope, will some day prove to be the long-sought-for boon. The use of the hygienie means referred to, together with the watery extraet of tubercle baeilli, has enabled our Louisiana Tuberculosis Sanitarium, conducted by Dr. W. J. Durel at Covington, La., to get excellent results and establish a high reputation.

In summing up, we arrive at these conelusions:

1. Tubereulosis is of interest to the surgeon beeause it affects praetieally every region of the body with sufficient frequency to require that he be ever on the lookout for it.

2. Early recognized and promptly treated, the surgieal form is as amenable to treatment as any class of lesions with whieh we are eonfronted.

1528 Louisiana Avenue.

TESTIMONY AND EVIDENCE IN MEDICINE.

M. L. HARRIS, M.D.
CHICAGO.

I have deviated somewhat from the eustom of my predecessors of presenting some purely surgical subject for your consideration in order to take up a matter of a more abstract nature, yet one which I believe to be of the greatest praetical importanee, and one too often negleeted by most physicians. I refer to the question of testimony and evidence in medieine.

In the legal profession the questions of testimony and evidence, in so far as they relate to human affairs, have been very thoroughly studied, and more or less fixed rules governing them have been adopted. The value of testimony and the weight to be attaehed to evidenee in the formation of eonclusions are all elaborately dealt with, but the physieian dealing habitually with questions of life and death too often fails to apply the most eommon rules of logic to his reasoning, with the result that his deduetions are often entirely unwarranted by the premises, and therefore frequently erroneous. Many of the errors of judgment made by physicians will be found on analysis to be due not so mueh to an actual lack of knowledge of the subjeet as to the fact that they are based on testimony that is unreliable and evidence that is insufficient.

Notwithstanding the fact that their daily life is made up of listening to testimony and to the weighing of evidence, yet the majority of physieians fail absolutely to eomprehend the meaning of these two terms, and to understand wherein the one differs from the other.

WHAT IS TESTIMONY?

Testimony is that which is derived from an individual who in medicine is usually the patient and corresponds to what is called the history of the case, as given by the patient or some other person. Belief in human testimony is a fundamental principle of our moral nature, and in law is the very basis of evidence. An instinctive leaning or propensity to speak the truth is inborn in our nature, and by Reid, in his "Inquiry Into the Human Mind," this is recognized as the "principle of veracity."

The very nature of the case in all times and in all courts of law has given to the communications between the patient and the physician, from whom he seeks relief from his sufferings, the highest degree of credibility, yet every physician of experience knows that the testimony of the patient is but too often in the highest degree unreliable. This is not a denial of the principle of veracity, but an attempt to differentiate sharply between that which is truthfully told and the truth of that which is told. A patient may never be so truthful and relate nothing but what he believes to be the truth, but the physician must discriminate very carefully between what the patient believes to be true and the facts as they really exist.

There are many reasons why a truthful statement by the patient may not state the truth. In the first place the majority of individuals are very poor observers, and particularly so when it concerns a matter about which they know but little. Imperfect observation or perceptions leads to erroneous concepts, and although a patient's statement may truthfully depict his perceptions and conceptions, if these be erroneous his testimony contains untruths. Aside then from those patients who are mentally irresponsible, from those who wilfully attempt to deceive, and from those who are unconsciously biased on account of contingent personal benefits at stake, which will be considered later, the physician must recognize the possibility of error in the testimony of those who have every reason and intention to be honest.

Therefore, in receiving knowledge of facts from the testimony of others, one should be influenced by their accordance with facts previously known or believed, and this constitutes what is termed their probability; but in being influenced one must guard against two sources of error, namely: unbounded credulity and unyielding skepticism, for the former is the attribute of a weak mind, which seldom thinks or reasons, while the latter belongs to those who find nothing probable beyond their own limited field of observation and experience. That those things which accord with one's own observations are more readily believed than those which do not, is natural, and thus the value of a wide experience becomes evident, for, as Abercombie has well said:

> **The progress in knowledge is not confined in its results to the mere facts which we acquire, but has influence in enlarging the mind for the further reception of truth, and sets it free from prejudice which influences men whose minds are limited by a narrow field of observation.**

EVIDENCE: LEGAL AND SCIENTIFIC.

Testimony and evidence are by no means the same. There may be a great deal of testimony yet very little evidence. By evidence is meant "the means by which any alleged matter of fact, the truth of which is submitted to investigation, is established or disproved." This is the legal definition and indicates its origin by containing hidden within it a description of the method of procedure in law. An "alleged matter of fact" is presented in the form of a conclusion which is assumed to be true, and an attempt is then made to bring forward sufficient evidence in support of the assumed facts as will ordinarily satisfy an unprejudiced mind beyond reasonable doubt of their truth. In other words, the conclusion is presented first and the evidence made to fit the conclusion. While this method of procedure may be applicable to the ordinary affairs of men it is most fallacious when applied to medicine or other natural phenomena.

A definition which conveys a better idea of the meaning of evidence, as applied to medicine or the investigation of natural phenomena is, that evidence is any fact which, when presented to the mind, effects or tends to effect a conviction concerning the existence of some other fact. This does not presuppose nor assume any certain conclusion, but leaves the conclusion to be that which the evidence warrants. The value of the evidence in establishing the facts as such in any particular case varies greatly.

PROOF.

When the evidence is positive, direct and complete it amounts to proof. Proof, therefore, is not synonymous with evidence, for the latter is the means or medium by which truth is established, while the former is the effect or the end result of evidence. The evidence may be sufficient to amount to proof, when a conclusion is warranted, or it may be so insufficient as to render any conclusion absolutely unjustifiable. It is the natural tendency of the untrained mind to reach conclusions on entirely insufficient evidence, while the trained mind will recognize consistency and truth when a less experienced one will disbelieve.

The ability to deduce a correct conclusion does not depend entirely on the known terms of the premises, but also on the readiness with which one appreciates or comprehends the equality or inequality, or the similarity or dissimilarity, between the known and the inferred terms. When the savage, by observing a few signs, the mere existence of which is almost invisible to the untrained eye, is able to assert with certainty that a definite number of white men known as soldiers were present at that particular spot at a certain definite time past, and that they came from one direction and departed in another, he is displaying the most perfect logic possible, because from a few known facts he is correctly inferring a large number of unknown facts, the latter being necessary dependencies of the former.

THE PHYSICIAN AND LOGIC.

Logic is the most abstract of objective sciences, and treats of the necessary dependencies of things. The average physician knows too little about logic. He is not trained in giving to evidence its proper weight; he does not sufficiently recognize that there must be equality between the terms of the conclusion and those of the premises, and that in just so much as these terms deviate from perfect equality does the conclusion lack in certainty or inevitability. In mathematics the conclusions are positive and absolute, but in medicine it is very rarely that they obtain such a high degree of certainty. It should be the duty of the physician, however, to give to his conclusions the highest degree of probability possible under the circumstances, and this can only be done by strictly applying to his work the sound rules and principles of logic. A large part of a physician's life is spent in listening to testimony, yet how seldom does he

ask himself, How much credence should be given to these statements? How much of this or that is true, and how much is false, not false in the sense of willful deception, but false for the reasons already mentioned, unintentional errors?

PRESUMPTIVE EVIDENCE.

The fact that the patient comes to the physician suffering from some ailment from which he desires relief, and that this can best be obtained by acquainting him with all the circumstances connected with the case, is presumptive evidence of the truthfulness of his statements. Yet it is only a presumption.

In law two kinds of presumptions are recognized, namely: Conclusive presumptions, or those which do not admit of proof to the contrary and which include a variety of conditions not pertinent to our subject; and disputable presumptions, wherein one condition is usually found by experience to accompany or succeed the other, so that when the one is recognized as present the other may be presumed to exist. The relations between the two, however, is not an absolute or necessary one, and the presumption thus raised can be held only until some proof is given in rebuttal.

Most of the testimony of patients is presumptive evidence of the disputable variety, and, while the presumption is usually that the statements made are true, this is by no means always the case. For instance, in the case of a young unmarried woman with suppression of menstruation and an enlarging abdomen, experience has shown that the incentive to mislead is so great that the presumption is entirely in favor of the testimony being false. Also in that large class of personal-injury cases in which monetary compensation is sought, a large experience involving thousands of cases has convinced me beyond a doubt that much of the testimony in this class of cases is presumptively untrue, and that it can only be believed when substantiated by correlated facts. These conditions should be recognized by the physician in order not to be misled by statements which he receives from the patient.

It is a well-recognized principle of the law of evidence that the facts from which an inference is to be drawn must be proved by direct evidence and not to be presumed or inferred. In other words, a conclusion can not be legitimately based on presumptions or inferences. A violation of this principle by the physician is frequently seen, and numerous errors in the way of faulty conclusions are the result.

AN ILLUSTRATION AND ITS ANALYSIS.

How an erroneous conclusion may be formed from inferences is shown by the following example from actual experience: A man meets with an accident, fracturing his leg. After the usual period of confinement to bed he gets around on crutches and then without them, and makes a recovery in the average time, but although he recovers from the fracture he does not feel that everything is just right with him, and in two or three months after getting around he consults a physician, who discovers he has tabes. He states that previous to the accident he was perfectly well and did not notice any symptoms until after he began getting around. The circumstances here of a history of previous good health, of an accident producing a distinct physical injury with the appearance subsequently of tabes, lead to the conclusion that the tabes is the direct result of the injury.

Let us analyze this case, which is a very common one in principle, and see if the conclusion is warranted by the evidence. The first point to be considered is the patient's statement that he was in good health and showed no symptoms of tabes previously to the injury. He may even show that he had been accepted for life insurance after having passed a satisfactory medical examination but a short time before he was injured. Granting that the patient is perfectly honest and states only what he believes to be true, how much value should be placed on this statement as evidence? Has it the value of presumptive evidence, or, in other words, is it in all probability a statement of the facts? I claim that it is not, and for the following reasons:

Tabes is frequently extremely slow in its onset, and its earliest manifestations are so insidious as to be unrecognized by the patient, for the reason that they may give rise to no subjective disturbances whatsoever. In fact it is very probable that the earliest manifestations of tabes are only recognizable objectively, and by one who is perfectly familiar with them as well as with the methods of eliciting them. In any case, therefore, of evident tabes, the patient's statement that certain manifestations were not present at any reasonable time antecedent to the event in question, can have very little, or no weight, as evidence. In fact, it is highly probable that the statement in this particular is false. To assume his previous good health is therefore purely a presumption, and, as already said, no inference can be based on presumption.

If now it appear that the patient is prosecuting a suit for personal damages for his injury and its alleged consequences it at once becomes evident that his statements regarding symptoms of tabes previously to his injury not only can not have any positive value, but are really presumably false. If we analyze further we learn that the real cause of tabes is unknown, and that even those who are most familiar with it do not agree in all particulars as to its essential nature. It is impossible to establish a causal relation between two terms when the essential nature and necessary antecedents of the second of them are absolutely unknown. The conclusion, therefore, that the tabes following the injury as a necessary dependent is without the slightest justification. It has never been proven that an injury or physical trauma can produce the symptoms and changes characteristic of tabes, while it is a daily observation that the latter condition is constantly met without there being the slightest suspicion of an injury ever having entered into the history.

It is very evident then that trauma can not be held to be a necessary antecedent of tabes, nor is there any basis in reason for even inferring a causal relation between the two. The fact that the evidences of tabes may become rapidly manifest subsequently to an injury is no reason for assuming that the injury acted as a cause, or even hastened the advance of the condition.

It is perfectly well known that an individual may be subjectively in good health, yet a careful examination will show that numerous defects are present, which defects have remained unnoticed by the individual, owing to the fact that they have been compensated for, or the defective functions vicariously performed, or the individual's preoccupation along other lines has temporarily excluded from consciousness the impressions produced by the defects. Let now any event markedly disturb the equilibrium of the individual's existence, and the defects may become rapidly manifest, yet there will be no causal relation whatsoever between the disturbing element and the particular manifestations which become apparent.

The mere fact that the manifestations subjectively followed the alleged antecedent in question furnishes no ground for inferring a causal relation between the two; in fact, no such inference can have the slightest justification unless it can be shown by direct evidence that the said manifestations are the necessary dependencies of the said antecedents. The consequences need not necessarily be immediate, but if mediate, continuity, consecutiveness, and concatenation must be shown. In the case under discussion these things can not be shown. The conclusion then that the tabes is the result of the injury received is without the slightest justification, as it rests entirely on assumption and inference.

DIAGNOSIS SHOULD BE BASED ON EVIDENCE.

Every diagnosis is, or should be, a conclusion based on evidence, yet how often do we find when the rules of logic are applied that the diagnosis, instead of resting on evidence, rests on assumption and inference. This is due to the fact that the majority of physicians in their ratiocinations fail to distinguish between assumption, inference and fact. An assumption is that which is taken for granted—that which is accepted as true without evidence—while an inference is the result of a ratiocination based on a certain amount of evidence. The difference between an inference and a conclusion is that the former is drawn from the appearances of things, is partial and indecisive, and pertains to particular circumstances, while a conclusion is drawn from real facts, is full, decisive and conclusive, and expresses the necessary dependencies of the premises.

The difference between an assumption, an inference and a conclusion may be well illustrated, as follows: A patient presents himself suffering of a disease of one kidney, which may require removal. The question which immediately presents itself is, Has the patient two kidneys? Omitting the preliminaries of the mental process for brevity's sake, the proposition may be stated in this manner:

Most men have two kidneys.

This is a man.

Therefore, this man has two kidneys.

It will be seen that the major premise contains the word most, which at once subdivides men into at least two classes, while the minor premise contains nothing whatever which indicates to which class the particular man belongs. Therefore no conclusion can be drawn, and when it is accepted that this particular man has two kidneys it is a pure assumption. If, however, by the use of the segregator or ureteral catheter, urine be collected in the two vials, some evidence is present on which may be based an inference that the patient has two kidneys. If in addition to the mere collection of separate urines the urines be noted to drop in a normal intermittent or perhaps alternating manner; if one be markedly bloody while the other is perfectly clear; or if on analysis the composition of the one differs so greatly from that of the other as to make it impossible that both could have come from the same organ, then the conclusion is warranted that two kidneys exist in the particular man in question, and this fact may now be used in arriving at any further conclusions regarding, for example, the proper course to pursue. Thus it becomes self evident that a conclusion cannot be based on an assumption or an inference, but must rest on the facts themselves.

Medicine is a science, and the statement is not invalidated simply because most, yes, the large majority, of the facts pertaining to it are unknown. No science is complete in the sense that all the facts pertaining to it are known.

During the development of any science or of a theory it frequently becomes necessary to assume the existence of certain conditions or relations as a working basis, but it should be remembered that all deductions made from such assumptions are purely hypotheses, and are but the scaffold which supports the workmen during the building of the permanent structure.

In medicine there are many hypotheses which are of the greatest value in enabling us to develop the facts, but when we come to the practical application of our knowledge to the individual case, or to the giving of testimony before courts and juries, we should learn to recognize and to distinguish the assumed, the inferred and the hypothetic, so as to confine ourselves to the known facts and the warrantable conclusions deviate therefrom.

NATIONAL SUPERVISION AND STANDARDIZATION OF FOOD.*

H. L. E. JOHNSON, M.D.
WASHINGTON, D. C.

The relation of pure food to the health of a nation is equally important with good government of a nation. Each year shows not only an increase in the efforts of hygienists and governments to protect the individual in the matter of his food, but also the slow but steady progress of food-producing and controlling corporations in their adulterating, embalming, misbranding and counterfeiting processes, culminating in the disgusting and nauseating revelations of the past few months, which have shaken faith throughout the civilized world in the purity of almost every article of food and drink.

Proprietary drug compounds are, in many instances, either inert, wholly false in their claimed composition, dangerous to health or habit producing. Under various names they are hawked about, through a variety of methods, leaving in their wake disappointment, poverty, complicated illnesses, habitués and mental wrecks.

Wealth, greed of the tariff-protected corporations and their almost unlimited opportunities for fraud give birth to these abuses. Ignorance on the part of the laity of the facts, or lack of appreciation of the health effects, together with the failure of the physicians and hygienists to educate the public in these matters, fosters this state of affairs. Publicity is the potent remedy for these evils.

The food of a nation should be as genuine as the nation's bond and currency. Counterfeiting of either should be a felony, and as such should be severely punished.

Because of its application to present conditions, I quote from the report[1] of the committee of the Pan-American Medical Congress on "Department of Public Health for the United States," adopted at Mexico City, Mexico, November, 1896, the following:

"We further recommend:

"The passage of uniform national and state laws regulating the importation, exportation, sale, inspection, and standard of meats, fruits, and food-stuffs, water supply, ice, milk, and beverages, prohibiting adulteration and providing adequate penalty for violation.

"The passage of uniform national and state laws regulating

---

* Read before the Section on State Medicine, British Medical Association, Toronto, Canada, Aug. 24, 1906.

1. For full report see U. S. Senate document No. 38, Fifty-fifth Congress, first session.

the manufacture, importation, exportation, and sale of drugs and chemicals, with provision for their inspection, and penalties for their adulteration. And a further provision requiring the labeling with exact formula of all proprietary medicines and compounds, and providing penalties for violation.

"The passage of uniform laws, national and state, regulating the sanitation of railroad cars, both steam and street, barges and ships, steam and sail, public vehicles, ambulances, laundries, slaughter houses, morgues, hospitals and dispensaries, jails and reformatory institutions, with penalties for violation.

"The passage of uniform laws, national and state, regulating the hygienic management of contagious diseases, personal and house quarantine, vaccination, hygiene of dentistry, barber shops, public baths and gymnasiums, amusement halls, migration of tramps and profligate persons, disposal of dead bodies, garbage and sewage, draining of land, and removal of weeds and decaying vegetation, and providing penalties for violation.

"The passage of uniform laws, national and state, providing for and regulating disinfecting plants, steam, dry heat, and chemical, for mails, foreign and domestic, clothing bedding, money, persons, etc. Bacteriologic laboratories, animal industry and inspection plants, state and national hospitals, and retreats or sanitariums for the treatment of habitués, inebriates, venereal, tubercular and insane persons, with special laws for commitment to and discharge from the same. District nursing for the poor, sick, obstetrical, contagious diseases, etc.

"The passage of uniform laws, national and state, providing for the appointment of state and national medical experts and the punishment of medical crimes.

"The passage of uniform laws, national and state, regulating state and interstate medical, surgical, and dental practice, which will protect the same as a science and not as a trade.

"We further recommend adequate appropriation of money by the several states and the general government for the scientific investigation of public health matters in this and foreign countries, and the suppression of diseases, endemic and epidemic.

"We further recommend that appointment to and the tenure of medical offices shall depend upon professional ability and efficiency, and not on political influence.

"HENRY L. E. JOHNSON, M.D.
"President Committee on Department of Public Health."

The health of the public, through an appropriate department of the government, should be efficiently protected, and all food, beverages, drugs and drug compounds, their preparation, preservation, storage and sale should be standardized and regulated. International standardization should and can be made universal by treaty with the several powers.

Opposition to standardization and control emanates principally from the large dividend-paying, tariff-protected corporations, who, when reforms are urged, make their usual threat—"To increase the cost to the consumers"—and in other ways obstruct and defeat proposed remedial legislation.

Cold-storage foods, undrawn poultry, canned goods and meat packers' productions offer a broad field for medical and hygienic investigation, for determining food etiology and placing responsibility, in connection with the alarming increase in intestinal diseases, deaths from appendicitis, and the so-called "acute indigestion." A few successful legal actions, civil or criminal, based on established bad food causation of illness or death, would promptly drive disease-producing foods from the market.

From a politico-industrial point of view, the recent legislation in "the states" providing for pure food and meat inspection is excellent so far as it goes, but, from a medico-hygienic standpoint, is not entirely efficient or satisfactory, as it tends to conserve the financial interests of the producer and jeopardize the health of the consumer, by delaying the operation of the food bill, and by omitting the date of slaughter, production and inspection from the government certificate or label, thereby placing an immense quantity of meat and meat products, prepared under presumably careless and objectionable methods, now in cold storage or warehouse, on an equality with, and indistinguishable from, recent products prepared under careful government supervision. An identical inspection stamp or certificate will be placed alike on meat slaughtered 5 years and that slaughtered one month, without any distinguishing marks to guide the innocent purchaser. Thus, the consumer is deprived of his right of selection, choice, and exact knowledge of meat and meat products, by the absence of dates of slaughter and inspection. Meat slaughtered and kept in cold storage five or ten years may be wholesome at the time of inspection, but how much longer will it keep so? The government's certificate given in such cases is legally final, but such a guarantee is at least doubtful as to healthfulness.

The American people contributing this year, from their tax funds, the vast sum of $3,000,000 to enforce this special legislation, designed to correct inexcusable irregularities of meat-producing corporations, should have, irrespective of political faith, supported the demands of their President, and insisted on further protection of their health, through adequate inspection, dating certificates or labels, and severe penalties for violations.

WHAT EFFECTIVE MEASURES ARE THERE FOR THE PREVENTION OF THE SPREAD OF SYPHILIS AND THE INCREASE OF PROSTITUTION?*

CHARLES GREENE CUMSTON, M.D.
BOSTON.

It is not to be supposed that there exists at the present time a single moralist sufficiently severe, or rather insufficiently enlightened, who would dare to doubt the necessity of measures capable of combating the propagation of venereal diseases. Fortunately, the time has past when syphilis was believed to be the unique result of depravation and was considered as the legitimate punishment of debauch. The numerous sources of infection are too well known at the present time to uphold the old rigorous theories and to these I shall not revert.

Of all the diseases which may affect the human race by contagion and which bring about the greatest disasters to society in general, there is not one more serious, more dangerous, or more to be feared than syphilis. This, I believe, is generally admitted, and since this is the case, why should not the proper authority profit by the knowledge that the progress of science dictates? Many years ago Michael Lévy said: "The extirpation of this leprosy of our time that is called syphilis, is not above the power of governments. The sequestration and leproseries put an end to the old scourge, leprosy; this plague has been the object of an extensive and expensive prophylactic control; every nation has made sacrifices to do away with the germs of smallpox, yet syphilis has caused more harm than all these diseases put together. It silently deteriorates generation after generation; its contagion is more evident than that of the plague; why are not the same barriers and the same means of extinction built up in all countries? Such is the human race; the lightning of insolate epidemics which pass over our heads like an electric cloud, benumb and frighten peo-

* Read in the Section on Hygiene and Sanitary Science of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

ple; they endeavor to prevent their return, while they become familiar with the slow and continued plagues which they carry in their flanks and which cause them to undergo hereditary ravage with the same patience that they show toward meteoric phenomena."

INTERNATIONAL PROPHYLAXIS.

Syphilis is not, like smallpox, a disease whose miasms disseminate contagions to the distant parts; neither is it like any of the exanthemata, susceptible of producing itself spontaneously; alone, immediate contact produces its development. Its extinction, although difficult, is not a chimerical dream; and if all nations would some day establish a complete system of international prophylaxis, much could be done for suffering humanity.

The word progress is on everyone's lips and modern civilization is justly proud of its numerous conquests. Scurvy has disappeared from those localities where it formerly reigned endemically; vaccination has stopped the ravages of smallpox, but syphilis still continues to be propagated and for centuries has not ceased to eat the limbs of the human race. Leprosy has been practically done away with, why should it not be the same for syphilis?

Here, however, I would say, I do not harbor too great an illusion. If the extinction of syphilis is not theoretically a dream, the universal consensus of opinion of all governments is that, in the present condition of society, it is a pure utopia. In point of fact, nations vary in character as do individuals, and a kind of mutual and systematic opposition is constantly present acting as an obstacle to their united action and it is to feared that this antagonism by continuing, will, for many years to come, offer a great resistance to the realization of any united efforts. If, at present, much has been done to prevent the extension of syphilis and other venereal disease, it nevertheless remains a glaring fact that there is still much to be done and that the large majority of prophylactic means now existing requires great modification.

MEANS OF PREVENTING DISSEMINATION OF SYPHILIS.

One of the most important means at our disposal for reducing the increase and spread of syphilis certainly resides in hospitalization, to which I shall now briefly refer. Formerly, all cases of infectious fever were placed in a common ward, but to-day all our modern hospitals have special wards or buildings reserved for diphtheria, scarlet fever, measles, etc. What has been done for acute infections is being attempted in chronic infections and for a number of years back we have watched the development of special hospitals, or sánitoria for tuberculosis. No matter what may be the divergence of opinion existing relative to these establishments and the results which may be obtained, it is nevertheless true that it was to this prophylactic procedure that the ancients were able to attenuate, if not to cause completely to disappear, the hideous disease that leprosy was in former years.

Among those essentially contagious diseases, which should receive the attention of modern prophylaxis and hygiene, venereal diseases should certainly be given a distinct and separate place. No one to-day would dare to uphold that the ills produced by the pathogenic agents of these diseases are not at least quite as considerable as those of tuberculosis, for example. I do not believe that I am going too far when I say that gonorrhea in the female is grave, prodigiously grave, and that it may be considered as the most fearful wound in young households. As to syphilis, with its high death rate and infantile malformations, with the disasters that it produces in certain individuals, with the fearful affections whose eclosion it favors and, although they bear the special name of parasyphilitic, which are none less attributable to it, we will not insist on this phase of the question.

Prophylaxis consequently has the imperious duty of considering these diseases, and among the arms which it has is certainly hospitalization. And, in the first place, let me say that I disagree completely with those who will not recognize an autonomy in venereal diseases, which I do not believe can be refused them; those who in principle believe that these patients should be placed in general medical or surgical wards corresponding to their cases, such as, for instance, urethritides and gonorrheal vaginitides in a service of genitourinary surgery; mucous patches, cutaneous manifestations of syphilis and chancroid ulcerations in the service of the dermatologist, etc. In a word, I believe in special hospitalization for the simple reason that the end to be attained is prophylaxis and the first condition to fulfill with this end in view when dealing with venereal disease, is isolation of the patients. Until this is done hospital treatment will remain completely ineffectual. This does not mean that I believe that hospitalization is in itself sufficient to furnish the solution of such a complex problem as venereal prophylaxis. If venereal diseases may be compared to infectious diseases on account of the factor contagion which is common to both, and if we eliminate extragenital infections, which, for that matter, represent a very small portion of cases, it must be recognized that they differ by the manner of contagion. While infectious diseases generally take on the epidemic type, while they may seize on an individual who is endeavoring to defend himself against them, venereal affections never assume the epidemic type and only exceptionally seize on an individual, who, knowing them fully, does what is necessary to avoid them. As has already been done by a number of authorities, we might possibly designate as epidemics those instances in which infection of a large number of healthy individuals has taken place from a single infected subject. Military surgeons, especially those belonging to small garrisons, have frequently noted the contamination of a large number of soldiers from a single woman.

This classification I do not wish to make, believing that it is merely a simple way of looking at things, original without a doubt, but susceptible of much discussion. Is it because venereal diseases are not contagious in the same way as eruptive fevers, or because their mode of contagion is nearly always genital, that we are led to consider an entire group of diseases for which hospitalization is useless, or merely of a temporary nature? These patients might very well be kept temporarily in a hospital, for a time just sufficient to initiate them into the manner of treatment that they should follow and to teach them to conform rigorously to the rules of general hygiene, which are so important in the treatment of their disease. It is for this reason that in the case of syphilitics I believe that it would be well to detain them in a hospital for a few days with their consent when they come to consult for the first time, and after their discharge from the wards they may continue the treatment in an out-patient department.

Beside voluntary hospitalization—and from a theoretical viewpoint hospitalization should be made obligatory—for those who are perfectly aware of the danger of their disease and who do not hesitate to communicate to others the affection of which they are possessors, hos-

pitalization should be made obligatory for those individuals who are voluntarily contagious. There would probably be no division of opinion on this subject in the medical profession if such measures could be applied to the male as well as to the female. It would be quite as justifiable and legal as the modern means of prophylaxis in the case of other infections, such, for example, as the quarantine imposed on ships, or the establishment of a sanitary cordon and so forth. Although a contagious venereal subject can not be held by obligatory hospitalization, there is, however, a class, which I believe should be compelled to submit to it; I refer to prostitutes. This measure has been considered arbitrary, illegal and inhuman and certain people believe that prostitutes should be free to enter a hospital or not as they see fit. This question has given rise to long and ardent discussions to which I will not refer. It seems to me, however, that the only way to control the transmission of syphilis is to sterilize prostitution as we would sterilize our dressings for a surgical operation, and could this be accomplished the gonococcus and *Spirochæta pallida* would, to a great extent, be removed from the list of pathogenic organisms.

I shall here ask to be permitted to make one reflection, namely, Who is the most guilty from the view point of propagation of venereal diseases, man or woman? I have no hesitancy in believing that it is the woman, and for these reasons: For example, a man contracts syphilis. Where does he contract it? Why, from contact with a female, who, from the very fact that she entered into relations with him, leads an active genital life. To whom will the man transmit it? Evidently to another woman, who, just like the first, is also leading an active genital life. Thus, the infection being contracted from one woman returns to another woman. And this woman, what is she? An avowed prostitute only rarely; statistics proves this; far more frequently she is a clandestine prostitute, and to this class I shall not refer. It occasionally also is a girl who has recently fallen, contaminated by her first lover, and who, forced by an exaggerated sexual instinct, or by misery, is perhaps called on to descend one or more rounds of the ladder of vice. In other words, no matter what may be the cause of her fall, she nevertheless becomes a candidate for prostitution. This reasoning may appear on the surface as a mere sophism, but in reality it is not so, because in the male no homologous condition is to be found like that of prostitution in the female.

PROPER EDUCATION OF BOTH SEXES.

Another and most excellent measure for the prevention of both venereal diseases and prostitution is the proper education of young people of both sexes in sexual matters and many excellent contributions to this subject have appeared of late. To mention the various writers who have advised this very common-sense course would take too long and I would merely refer here to two recent articles, the first from the pen of Prince Morrow[1] and one by F. Valentine.[2] The former writer says that the general principle laid down that the education of the public is the most valuable of all measures for the prevention of communicable diseases. Its importance is emphasized in the case of diseases the communication of which lies entirely within the control of the individual. The object of the proposed education is to give the youth of this country a clear comprehension of certain physiologic truths which have a direct bearing on the regulation of their sexual lives and of the serious consequences in the shape of disease and death which follow a breach of hygienic laws. In other words, it is intended to teach them how to live according to the laws of a healthy nature. This instruction in the physiology and hygiene of the sex function should form an essential integral part of the education of youth.

Dr. Morrow criticises our present educational system, the policy of which is to launch the young into the world in complete ignorance of everything pertaining to the laws of life reproduction. In seeking this knowledge the youth is but obeying the law of his mental evolution. Since this knowledge can not be had from legitimate sources—parents and instructors—it is gained surreptitiously and usually from depraved sources, dissolute companions or erotic or quackish literature. To be salutary as a safeguard, therefore, this hygienic education should be given in youth, for it is during this period that the foundations of what may be termed the sexual character are laid and habits of mind and practices are formed which, in great measure, determine the future sexual life of the individual.

Valentine concludes his most interesting paper thus:

> Sexual physiology and hygiene need not be formally taught girls, save in the exceptional instances in which the genesic impulse is prematurely developed. Sexual physiology and hygiene should be taught every boy, when mental and sexual puberty make him capable of beneficially utilizing the knowledge. The nature and scope of instruction on sexual subjects should be regulated according to each pupil's ability properly to appreciate the warnings inseparable therefrom.

The age at which a person may safely be instructed in sexual subjects is that age at which, in each individual case, such instruction becomes necessary for the purpose of moral and physical prophylaxis. The individuality of the parent, physician or teacher should be the guide to the choice of one or the other as the exponent of the facts.

Educational institutions may be utilized for instruction in sexual subjects, but such instruction must be given to small groups of pupils selected because of their mental parity as nearly as may be.

Text-books on elementary hygiene should not contain chapters on sexual physiology. Those charged with imparting instruction or sexual subjects should be provided with separately printed chapters on the physiology and hygiene of these matters. These separately printed chapters could then be given with the greatest discretion to such pupils only whose mental development would preclude their misusing the information derived therefrom.

All instruction to the laity on sexual subjects should be directed essentially to serve as a groundwork for the following ideas:

(a) Many learned men hold that ante-nuptial coitus is not necessary for the health of the individual.

(b) Continence reduces the sexual desire.

(c) Gratification of the sexual impulse before marriage degrades the moral tone and exposes to serious infection.

(d) Venereal diseases are not disgraceful infections, but the result of unfortunate lack of self-control.

(e) The greatest danger at the inception of venereal diseases is in their being maltreated by quacks.

(f) If a person is so unfortunate as to contract a venereal disease, self-preservation should cause him to immediately seek the advice of his family physician.

I believe that the public should be particularly enlightened on the dangers of gonorrhea, that it should be

1. Amer. Med., Jan. 13, 1906.
2. New York and Phila Med. Jour., Feb. 10, 1905.

fully aware that recent statistics conclusively show that the number of gynecologic operations increase each year necessitated by lesions due to the gonococcus. The husband, either criminally or unconsciously, transmits the gonococcus to his wife, usually in the following manner: In his bachelor days he contracted a gonorrhea, which was treated according to the usual methods; the gonorrhea disappears, but leaves in its place an insignificant gleet, a chronic discharge of such apparently little importance that the patient neglects to have it treated, supposing that it will cure itself. He gets married, usually without any thought of the past and without consulting a physician as to the seriousness of this little morning drop. After a variable length of time, and as soon as a congestion of the uterus predisposes the organ to microbic receptivity, the young wife presents all the well-known symptoms of a gonorrheal infection.

To a certain extent the public has surmised the dangers accruing from this disease, but not to the extent that it should. In face of the terrible consequences to which gonorrhea may give rise, the mortal dangers to which the spouse is exposed, sterility following gonococcic complications, certain members of the profession have declared open war against gonorrheal patients culpable of contamination. In Germany especially a law is under consideration which tends to protect women against venereal contagion from the husband or even the lover. Professor Hegar, in Germany, Jullien, Cazalis and several other physicians in France have proposed an obligatory verification as to the genital innocuity of the future husband. As a conclusion to this I would advise that young men be told that if they are unfortunate enough to contract gonorrhea or syphilis they should loyally consult a reputable physician before their marriage to ascertain whether or not they are fit subjects for matrimony. It is high time that the profession put an end to public ignorance in these matters and thus to a great extent avoid many catastrophes and moral pain.

There is a sad commentary on the practicability of the work of the temperance reformer in the fact that each succeeding generation of medical men is brought face to face with the disheartening truth that alcohol is still the "open door" through which stalks the foul specter, venereal disease. Since the days of Noah alcohol has continued to be the most powerful weapon in the seducer's armamentarium. In this he has an agent more deadly to virtue than the most powerful implement of warfare is to life itself; and with it he has it in his power to pave the way for suffering beyond human expression.

It is not my purpose to descant on the horrors of intoxication, nor is it at all necessary for the purposes of my theme. I do not need to follow the victims of the drug beyond that point where it robs the intellect of its inhibitory powers and deprives it of free agency. Such a state of mind by no means of necessity implies drunkenness; indeed, it comes at a point well on the hither side of that condition, and the horror of it all lies in the very fact that brain activity is not actually annihilated, but only cruelly perverted.

In this state the ordinary calm, self-restrained discriminating man may be transformed for the time being into a rutting animal and the virtue of a similarly endowed woman may drop from her like a mantle.

In the presence of men of your training and experience of human frailty, it is almost supererogation on my part to pursue this line of thought in greater detail. Given two creatures of opposite sexes, created after the image and likeness of the Maker, reduce them by alcohol to the state of mind above described, and the inevitable results are familiar to you all.

The stage settings that serve for the act in which the luetic virus may be imparted vary from the most sordid and squalid to the most luxurious and artistically perfect the human intellect is capable of inventing; and the actors in this most unspeakable of human tragedies, in like manner, represent each and every stratum of the body social.

The foci of propagation of venereal disease and prostitution do not wholly reside in houses of ill-fame. The reformer must look to the comic opera company, the private dining room, the furnished lodgings, the apartment house on the "easy virtue" style, the steamboat stateroom, the massage and manicure parlors, the automobile, the electric baths, the fortune-telling outfits, and lastly the avowed *maisons de joie*. The American cities have two potent foci for the development of prostitution, of which continental cities can not boast; I refer to the downtown office building and the bachelor apartment houses so much in vogue at the present time.

Prostitution, especially the clandestine form, is rampant in Boston, and in proportion to its population the Hub can compare favorably in this respect with any European city of its size with which I am familiar.

Beside those causes of a general order which influence prostitution and criminality in general are others which belong more particularly to the former. Leaving aside the culpability belonging to its authors, this crime is the consequence of other mistakes on the part of jurisprudence and public opinion. A large part of the responsibility rests on public opinion, because it encourages the seducer by its indulgence, perhaps even by its admiration. Public opinion also directs the education of women and the present system forces her especially toward the arts of seduction and coquetry, thus making her easier to seduce than seductive. The seducer of the twentieth century generally does not understand the extent of his responsibility; he goes about the proceeding because he is fully aware that many others have done the same, and he is covered by public opinion until the day that the scandal breaks out. Our up-to-date morals have taught him that to seduce a young girl, up to that time virtuous, and afterward to abandon her, in other words, of dishonoring her, and making her a candidate for prostitution, is practically nothing, and jurisprudence in our country hardly takes into consideration the moral assassin.

Another important factor in the development of the prostitute is our modern education. In large cities young girls of the people and working classes are, by their clothes, their manners and even mentally, in a condition far superior to the men of their own class. From this very fact, they become easy conquests for men of the well-to-do and richer classes, and there would be fewer seduced girls and married clandestine prostitutes if the parents did not sanction their daughters' luxurious habits far above their social rank and fortune.

Another potent cause forcing women to their fall is the insufficiency of salaries in large department stores and workshops. The conduct of a young girl, whose poverty prevents her from entertaining the hope of marriage, thus no longer becomes a moral question with her, but one of interest, and she reasons to herself that it is just as well to get as much out of life during youth as possible, if nothing but poverty-stricken old age and in-

firmity are to follow the pleasant days of the springtime of life.

On the other hand, the conception of marriage as the only possible mode of union has also disappeared from the minds of the mass of the population; marriage has ceased to be a sacrament and is looked on merely as a contract, which, in turn, under the influence of public opinion, law and jurisprudence in the matter of divorce, becomes every day still more fragile.

To sum up, it would seem to me that in order to deal with the spread of syphilis and prostitution, we should take into consideration the control of existing morals and opinions, teach the youth of our country the evils accruing from venereal diseases and the erection of proper hospitals for those already afflicted and who may become dangerous to society from this fact.

871 Beacon Street.

Clinical Notes

THERMOVIBRASSAGE: A NEW METHOD OF TREATMENT.

PRELIMINARY REPORT.

FREDERIC WADE HITCHINGS, S.B., M.D. (Harv.)
CLEVELAND, OHIO.

Nearly a year ago it occurred to me that if it were possible to give a treatment in which the effect of either dry or moist heat of any desired intensity could be added to that of mechanical vibration the value of the latter might be greatly modified, and perhaps markedly increased. Most of the available time since has been devoted to perfecting apparatus for attaining this end, and not only has this been successfully done, but enough clinical and other data have been accumulated to warrant a preliminary statement.

APPARATUS DESCRIBED.

In brief, what has been done has been to insert a resistance coil into the same space ordinarily occupied by a ball vibratode. The case surrounding the coil is of metal, and screws on the vibrator shaft just as an ordinary vibratode screws on. From a plug switch on the bale of the vibrator a short cable passes into the case to connect with the coil wires, and part of the current which runs the vibrator is shunted through the coil circuit at pleasure by turning a switch on the bale beyond the plug switch, but between the switch controlling the current supply for the vibrator motor and the latter. As a result of this arrangement the current can not pass through the coil unless the vibrator is actually running, and then only when the heat switch is turned on. This protects the coil from becoming overheated by the operator going away and leaving the current on too long, an accident which happened once under a different arrangement, with the result that the case became red-hot.

By turning on the heat switch for thirty seconds after the vibrator is running and then turning it off a temperature of about 108 F. develops in the case in another thirty to forty seconds. This is usually a suitable temperature with which to begin a treatment, and can be borne with comfort. At the end of from three to five minutes the temperature may be raised by again turning on the heat switch for from ten to twenty seconds. The amount of heat is under absolute control, and experience has shown that the individual patient varies very much in his susceptibility, so that it is best gradually to raise the temperature according to circumstances. The application is best made directly to the skin or through a moist cloth, if moisture is desired. Of course, the vibrator continues to vibrate, whether the heat is on or off.

SUCCESS OF TREATMENT.

The first case treated by thermovibrassage seems to show what has since been borne out by both clinical and experimental work, i. e., its peculiar efficiency in some cases, and that the effect produced is different from that produced either by vibration or the application of heat alone.

History.—Patient, a woman, aged 48, had suffered for years from attacks of trifacial neuralgia which were unusually severe, and confined her to her bed for at least twenty-four hours. No particular exciting cause had ever been found after repeated examinations, although the attacks were most likely to come on when she was over-tired. Different forms of treatment had been tried with little or no result. In the attack under discussion, she was seen nine hours after its onset.

Examination.—The pain was of moderate severity, and radiated over almost the entire left side of the face. There was a tender point over the supraorbital foramen, and the back of the neck on the same side was slightly indurated.

Treatment.—At first the following treatments were tried in the order given: The application of steady heat from a "thermalite" bag, alcoholic solution of menthol, vibration without heat twice with an hour interval between each time (this only made the pain worse), and, finally, an acetanilid compound tablet (gr. iii. ss. acetanilid, etc.). From all these things there was absolutely no relief.

Two hours after the tablet was given, dry thermovibrassage, as hot as could be borne with comfort, was given over the tender spot, painful areas, and neck for five minutes. The pain stopped completely before the treatment was over, and the patient felt drowsy, and took a nap. There was no return of the pain until another attack came on three weeks later.

It may be argued that the pain stopped because the attack happened to end just at the time the thermovibrassage was applied, but this does not seem at all probable with such a prompt and decisive effect after the thorough trial of the other things over a total interval of nine hours with no benefit. Moreover, in later and more severe attacks than this the effect was just as striking when the treatment was given nearer the time of onset. More cases of a similar nature have been treated, and generally with equally favorable results, but the number is too small as yet to draw definite conclusions as to the per cent. of cases which may be expected to be benefited.

Muscular affections seem to be particularly suited to this treatment, but the necessity of making accurate diagnoses is too apparent to need further mention. Already it has proved of decided value in sprains and bruises, in reducing swelling and soreness, and relieving pain. In a case in which a patient's thigh was severely bruised by being crushed by an automobile against the side of the garage, with resulting hematoma and exquisite tenderness, the flesh could hardly be touched at the beginning of the treatment, but before the end several pounds' pressure could be applied, and the results were most satisfactory. The symptoms in one case of acute torticollis disappeared under one treatment, and in another chronic case there was marked initial benefit, but the late results have not been determined. Probably they will not be as favorable. In a case of flat feet, complicated by general contraction of the muscles of the calves, severe pain was caused by the patient having to climb long flights of stairs many times a day. Plates were worn, but the pain had continued in spite of massage and was steadily increasing. When

treated the result was more satisfactory as far as the pain was concerned, as it almost all disappeared, and doubtless would have done so completely if the stair-climbing could have been given up.

In a case of chronic rheumatoid arthritis affecting the patient's knees vibration without heat was tried as a check against thermovibrassage. The stiffness was relieved somewhat, but the effect was very transitory and not very marked. With the latter the stiffness, soreness and pain were more relieved than by any other treatment the patient had tried in many years, and the effect lasted much longer than with other treatments. No hope of a cure could be held out, but the patient was most grateful for the relief afforded.

A private patient who had had a spastic paraplegia since he was a child was treated for congestive headaches due to mental overwork. An area three inches square on the back of the neck was treated for five minutes at a time on successive days. The headaches disappeared in a very short time and did not return. The interesting point about this case, however, was an entirely unlooked-for result, which was that the patient found that he could stand up much straighter and control his legs much better after each treatment. At first the effect lasted about twelve hours. Later it lasted longer, and at the present time one treatment a week suffices. At one time he had been under the care of Dr. S. Weir Mitchell, who prescribed massage and electricity, and he had also been treated by other prominent men, but the benefit from thermovibrassage is greater and more lasting than from any other previous treatments. It may be noted here that vibration without heat does not produce the same effect at all. So far no opportunity has offered to see whether other similarly-affected patients would be benefited in the same way.

At present, through the courtesy of Dr. Henry S. Upson, professor of neurology in the Medical Department of Western Reserve University, thermovibrassage is being given a thorough trial in the neurologic clinic of the Lakeside Hospital Dispensary. From the outset it is as useless to expect the regeneration of destroyed neurocytes from its use as it is from any other form of treatment, but the indications are that it is going to prove to be at least as valuable as electricity in its different forms and massage in many cases, and in some of decidedly greater value.

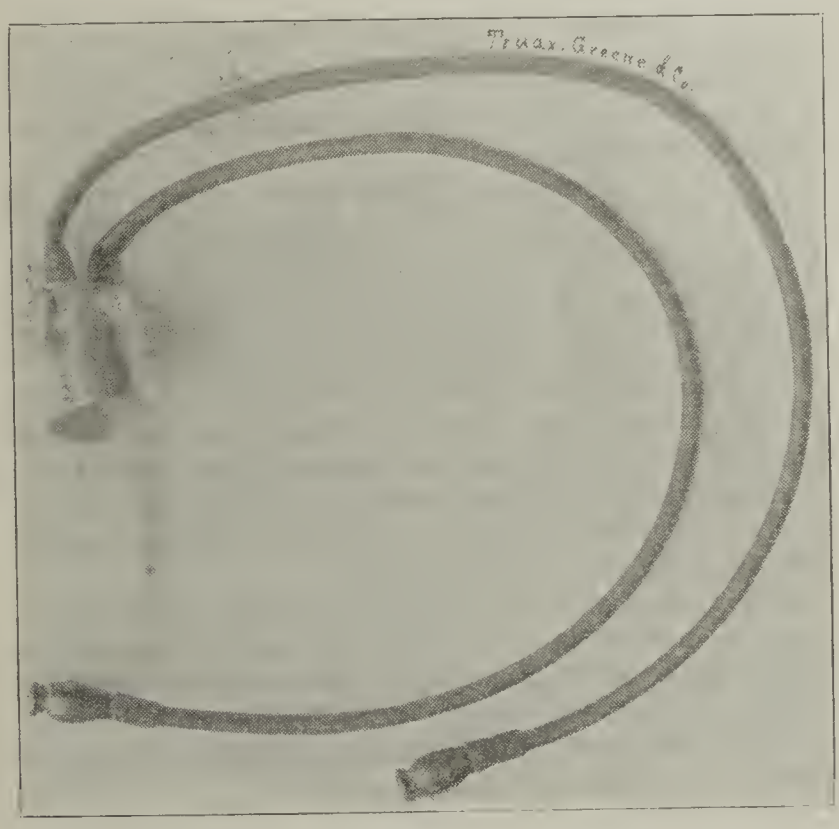
With the help of Dr. J. B. Austin, enough experiments have been done to show clearly that the effect is both constitutional and local, and, as above stated, is different from that of either vibration without heat or *vice versa*. That it is of far greater value than ordinary vibration is borne out by all the clinical and experimental evidence. Many more cases than have been cited have been recorded, but a description of the experimental work and fuller details will be withheld until still more data have been collected.

2658 Euclid Avenue.

A NEW STETHOSCOPE.

EDMUND F. WOODS, M.D.
JANESVILLE, WIS.

In presenting to the profession the stethoscope shown here I wish to recommend it for its simplicity, lightness and durability. The bell is made from very hard metal, nickle-plated, and so thick that it shuts out all outside sounds. It, therefore, conveys the heart and lung sounds better and more clearly than any other instrument I have been able to find, and especially gives the heart sounds without the humming sound so noticeable in other stethoscopes.



TOTAL LUXATION OF THE SPINE.

THOMAS F. RAY, M.D.
DEESON, MISS.

The abstract of Steinmann's article on "Total Luxation of the Spine," in THE JOURNAL, June 16, 1906, prompts the following report:

Oct. 19, 1898, I was called to see a negro. October 17 he had attempted to rearrange some bales of cotton loaded on a wagon. In lifting them he placed his head under the bales and lifted with his head and hands. In some way a bale fell on him and crushed him to the earth, whence he was picked up and attended by an irregular practitioner. I found him suffering from a complete bilateral dislocation of the fifth cervical vertebra forward with complete paralysis of all of his limbs and bladder. He could move neither hands nor feet and could not control his urine. His bowels had not moved since the injury. I immediately attempted reduction, without anesthesia, which was accomplished very easily. All the symptoms gradually improved. At the expiration of two years he seemed normal in every way with the exception of a deficient grasp of the left hand. I have not seen him for six years, but his employer writes that he is well.

New and Non-Official Remedies

THE FOLLOWING ARTICLES HAVE BEEN TENTATIVELY ACCEPTED BY THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR INCLUSION IN THE PROPOSED ANNUAL, "NEW AND NON-OFFICIAL REMEDIES." THEIR ACCEPTANCE HAS BEEN BASED LARGELY ON EVIDENCE SUPPLIED BY THE MANUFACTURER OR HIS AGENT, BUT TO SOME EXTENT ON INVESTIGATION MADE BY OR UNDER THE DIRECTION OF THE COUNCIL. CRITICISMS AND CORRECTIONS ARE ASKED FOR TO AID IN THE REVISION OF THE MATTER BEFORE FINAL ACCEPTANCE AND PUBLICATION IN BOOK FORM.

THE COUNCIL DESIRES PHYSICIANS TO UNDERSTAND THAT THE ACCEPTANCE OF AN ARTICLE DOES NOT NECESSARILY MEAN A RECOMMENDATION, BUT THAT SO FAR AS KNOWN IT COMPLIES WITH THE RULES ADOPTED BY THE COUNCIL.

W. A. PUCKNER, SECRETARY.

(*Continued from page 1303.*)

HEXAMETHYLENAMINE METHYLENCITRATE.[1]

This substance, $C_6H_8O_7(CH_2)_6N_4 = C_{12}H_{20}O_7N_4$, is a compound of hexamethylenamine with anhydromethylencitric acid.

It is a white, crystalline powder, melting with decomposition at 165° to 175° C. (329° to 347° F.), having an agreeable, acidulous taste and acid reaction. It is soluble in about 10 parts of water, but almost insoluble in alcohol and ether. By dilute acids and more easily by alkalies it is decomposed with the liberation of formaldehyde. On addition of 1 per cent. solution of phloroglucin to a solution of hexamethylenamine methylencitrate, followed by sodium hydroxide, the intense rose-red color characteristic of the liberated formaldehyde is developed.

It is incompatible with acids and alkalies.

Actions and Uses.—It is a urinary antiseptic and germicide claimed to be more prompt and energetic in its action than hexamethylenamine, acting equally well whether the urine be alkaline or acid in reaction, rapidly clearing it up and allaying pain.

It is recommended in cystitis, pyelitis, prostatic diseases and urethritis. It is also recommended as an efficient urinary antiseptic in infectious diseases in which bacteria are present in the urine, as in typhoid fever. It is regarded as a useful urinary antiseptic in the later stages and chronic forms of gonorrhea.

It may be used as a prophylactic against infection in case of operations or instrumental manipulation of the genitourinary tract.

Dosage.—0.6 to 1 Gm. (10 to 15 grains).

HOLOCAINE HYDROCHLORIDE.

ETHENYL-PARADIETHOXY-DIPHENYL-AMIDINE HYDROCHLORIDE.

Holocaine hydrochloride, $CH_3.C(:N.C_6H_4.OC_2H_5)(.NH.C_6H_4.OC_2H_5).HCl = C_{18}H_{22}N_2O_2.HCl$, is the hydrochloride of a basic condensation product of paraphenetidin and acetparaphenetidin (phenacetin).

It is prepared by the interaction of molecular proportions of paraphenetidin sulphate and acetphenetidin (phenacetin) in the presence of phosphorus oxychloride, decomposing the resulting holocaine sulphate with sodium hydroxide, crystallizing the base from alcohol, neutralizing it with hydrochloric acid, and crystallizing.

It forms small, colorless crystals, neutral or faintly alkaline, melting at 189° C. (372.2° F.), odorless, faintly bitter and producing transient numbness on the tongue. It is soluble in 50 parts of water and freely soluble in alcohol. On boiling in glass vessels the aqueous solution becomes turbid, owing to a separation of a small quantity of the free base by alkali derived from the glass.

It should form a clear, colorless solution in water, neutral or faintly alkaline, yielding white precipitates on addition of silver nitrate or of ammonia. The base obtained by precipitation with ammonia and crystallized from alcohol forms colorless needles, which melt at 121° C. (249.8° F.). Incinerated on platinum, it leaves no weighable residue.

It is incompatible with alkalies and their carbonates and the usual alkaloidal reagents. Glass vessels should be avoided in preparing the solution, porcelain being used instead.

Actions and Uses.—It is a local anesthetic like cocaine, but having the advantage of quicker effect and an antiseptic action. Five minims of a 1 per cent. solution when instilled into the eye are usually sufficient to cause anesthesia in from 1 to 10 minutes. It is more toxic than cocaine and without effect on the pupil or blood vessels. It is not so useful as cocaine when the vasoconstrictor effect of the latter is desired. It is said not to cause the scaliness of the cornea which sometimes results after the use of the older remedy.

Dosage.—It is applied in a 1 per cent. aqueous solution prepared in porcelain vessels.

Manufactured by Farbwerke, vorm. Meister, Lucius & Bruening, Hoechst a. M. (Victor Koechl & Co., New York). German patents Nos. 79,868, 80,568.

HYPNAL.

ANTIPYRINE CHLORALHYDRATE. MONOCHLORAL-ANTIPYRINE.

Hypnal, $C_{11}H_{12}N_2O.CCl_3CH(OH)_2 = C_{13}H_{15}N_2O_3Cl_3$, is antipyrine combined with one molecule of hydrated chloral.

It is prepared by triturating molecular proportions of antipyrine and hydrated chloral together, dissolving the resultant oily liquid in hot water and allowing the solution to cool.

It occurs in colorless octahedral crystals or a white crystalline powder, melting at 67° C. (152.6° F.). It is soluble in 10 to 11 parts of cold water, easily soluble in hot water, and in 3.5 parts of alcohol, forming neutral solutions.

The aqueous solution gives the usual reaction for antipyrine (a blood-red color with ferric chloride) and for hydrated chloral (turbidity and separation of chloroform when warmed with caustic alkali). Ammoniacal silver nitrate is reduced with the formation of a silver mirror, but the aqueous solution (1:10) acidified with nitric acid is not altered by silver nitrate nor precipitated by hydrogen sulphide. Hypnal dissolves in concentrated sulphuric acid without coloration and leaves no weighable residue when incinerated on platinum.

It is incompatible with alkalies, their carbonates and bicarbonates and with metallic salts.

Actions and Uses.—Hypnal is an analgesic and hypnotic resembling chloral in its action, but said to be less liable to produce injurious effects on the vasomotor center or the heart. It may be used where chloral is indicated, as in mild forms of mental excitement, incipient delirium tremens, and in insomnia caused by pain.

Dosage.—1 to 2 Gm. (15 to 30 grains); although supposed to be less toxic than chloral, larger doses up to 3 Gm. (45 grains) should be used with caution. It may be given dissolved in water (1:10) flavored with syrup of orange or aromatic elixir.

Manufactured by Farbwerke, vorm. Meister, Lucius & Bruening, Hoechst a. M. (Victor Koechl & Co., New York).

ICHTHALBIN.

ICHTHYOL ALBUMINATE.

A compound of ichthyolsulphonic acid and albumin analogous to tannalbumin.

It is prepared by precipitating a solution of ichthyol and albumin with diluted sulphuric acid and removing adhering odorous oil by heating the well washed and dried precipitate for 24 hours at 120° C. (248° F.), or by washing with alcohol, benzene, petroleum benzin, chloroform, etc.

It is an extremely fine, grayish white powder, odorless and practically tasteless. It is insoluble in water, in the gastric juice or in acid liquids, but completely soluble in alkaline liquids.

Actions and Uses.—Ichthoform is said to be antiseptic and antiphlogistic. It is reported to be efficacious in arresting intestinal decomposition and inflammation, whilst non-toxic.

Dosage.—For infants 0.13 to 0.3 Gm. (2 to 5 grains), in gruel; older children, 0.6 to 1 Gm. (10 to 15 grains), mixed with scraped chocolate; adults, 1 to 1.3 Gm. (15 to 20 grains), in chocolate tablets.

Manufactured by Knoll & Co., Ludwigshafen, a. Rh. and New York. English patent No. 11,344. U. S. trademark No. 31,114.

ICHTHAMMON.

The ammonium compound of a sulpho-acid obtained from a bituminous mineral by distillation with sulphuric acid and neutralization with ammonia.

1. This is the chemical name for a preparation on the market under the names of helmitol and urotropin, new (which see).

Actions and Uses.—It has the physical properties of ichthyol, a high sulphur content and, therefore, is claimed to have the pharmacologic and therapeutic properties of ammonium ichthyol sulphonate (see ichthyol).

Manufactured by F. Reichelt, Breslau.

ICHTHARGAN.

SILVER SULPHICHTHYOLATE. SILVER ICHTHYOLATE. ARGENTUM THIOHYDROCARBUROSULFONICUM SOLUBILE.

A compound of ichthyol and silver, claimed to contain 30 per cent. of metallic silver and 15 per cent. of sulphur in organic combination.

It is prepared, according to the patent specifications, by neutralization of ichthyol sulphonic acid with silver oxide and extracting the water soluble silver ichthyol sulphonate.

It is a brown, amorphous, perfectly stable powder, having a faint chocolate-like odor. It is freely soluble in water, glycerin, or diluted alcohol, but insoluble in absolute alcohol, ether, or chloroform. Its aqueous solution darkens with precipitation of metallic silver when exposed to the light, but is said to suffer no change in amber colored bottles.

It is incompatible with the soluble chlorides. Its solutions should not be exposed to the light.

Actions and Uses.—It is said to be bactericide, astringent and antiphlogistic. It is reported to combine the bactericidal action of the silver salt with the penetrating and antiphlogistic action of ichthyol.

It is recommended in gonorrhea in all its forms as a succedaneum for organic salts of silver. It is claimed to be the strongest in silver content of all the various organic compounds of silver introduced in late years.

Dosage.—0.04 to 0.2 per cent. solution in gonorrhea; 3 per cent. solution in posterior urethritis; ½ to 3 per cent. solution in trachoma.

Manufactured by the Ichthyol Co., Hamburg (Merck & Co., New York). German patent No. 112,630.

ICHTHERMOL.

HYDRARGYRUM THIOHYDROCARBURO-SULFONICUM. MERCURY ICHTHYOLATE.

A compound of ichthyolsulphonic acid and mercury, containing 24 per cent. of metallic mercury.

It is a dark colored, odorless powder, insoluble in water.

Manufactured by the Ichthyol Co., Hamburg (Merck & Co., New York).

ICHTHOFORM.

ICHTHYOL FORMALDEHYDE.

A compound of ichthyol and formaldehyde.

It is a dark brown, practically odorless, and tasteless powder. It is permanent and insoluble in the usual solvents.

Actions and Uses.—Ichthoform is said to be antiseptic and antiphlogistic. It is reported to be efficacious in arresting intestinal decomposition and inflammation, whilst non-toxic.

It is recommended internally in intestinal sepsis and externally in endometritis, in ozena, and in wounds, ulcers, etc.

Dosage.—Internally, 0.6 to 2 Gm. (10 to 30 grains), in powders taken plain, or suspended in gruel or cacao, or as a "shake" mixture; externally as pure powder, as 30 to 50 per cent. triturations, or as 10 to 25 per cent. ointments.

Manufactured by the Ichthyol Co., Hamburg (Merck & Co., New York). German patent No. 107,233.

ICHTHYOL.

AMMONIUM SULPHO-ICHTHYOLATE. AMMONIUM ICHTHYOL SULPHONATE. AMMONIUM-ICHTHYOL.

Ichthyol consists largely of the ammonium salts of sulphonic acids derived from the tar of a bituminous shale which is found in the Tyrol and which contains the remains of many fossil fishes. The exact composition and nature of ichthyol is still doubtful.

It is prepared by dry distillation of the bituminous mineral, sulphonating the crude volatile oil obtained with concentrated sulphuric acid, removing the excess of sulphuric acid by repeated precipitation with strong brine, and saturating the ichthyolsulphonic acid with strong ammonia.

Ichthyol is a brown, viscid liquid, transiucent in thin layers, having a bituminous odor and taste. It is soluble in water and in mixtures of equal volumes of alcohol and ether, but insoluble in the last two liquids by themselves. It is miscible with glycerin, oils and fats. It contains about 10 per cent. of sulphur in natural combination, and a further 7 per cent. introduced by the sulphonation.

Ichthyol is precipitated from its aqueous solutions by acids, and the dark, resinous mass thus formed is soluble in ether and in pure water, but not in dilute acids or in salt solutions. The fixed alkalies develop the odor of ammonia, and if the mass is then dried and carbonized, the residual mass gives off hydrogen sulphide on addition of hydrochloric acid. When dried on a water bath it yields about 55 per cent. of residue.

It is incompatible with acid and saline solutions, fixed alkalies, their carbonates and iodides, alkaloidal salts, mercuric chloride, etc.

Actions and Uses.—Ichthyol penetrates the unbroken skin and, it is claimed, acts as a vasoconstrictor on mucous surfaces. It has an antiseptic action and is believed to act as an alterative in consequence of the sulphur which it contains.

It is recommended internally in phthisis, skin diseases, gout, scrofula, nephritis, etc. Externally it has been applied in erysipelas, burns, chilblains, carbuncles, rheumatism, ivy poisoning, etc., also in uterine and vaginal inflammation, gonorrhea, etc.

Dosage.—Internally, 0.2 to 2 Cc. (3 to 30 minims) mostly in simple solution in water, or peppermint water, sometimes in the form of pills or capsules. Externally, in vaginal, uterine or rectal suppositories, in 0.06 to 0.12 Cc. (1 to 3 minims) bougies, or 1 to 3 per cent. solution for gonorrheal treatment.

Manufactured by the Ichthyol Co., Hamburg (Merck & Co., New York). German patent No. 35,216. U. S. trademark.

ICHTHYOLUM AUSTRIACUM.

PETROSULFOL.

A product obtained by the sulphonation of a mineral oil having a large natural sulphur content, neutralization with ammonia, and deodorization and purification by dialysis.

Actions and Uses.—These are claimed to be identical with those attributed to ichthyol.

Manufactured by G. Heil & Co., Tropau.

IODIPIN.

IODIZED SESAME OIL, MERCK, TEN PER CENT.

Iodipin is an iodine addition product of sesame oil containing 10 per cent. iodine, in organic combination.

It is prepared by the action of iodine chloride on sesame oil in sufficient quantity, theoretically calculated, to produce the required iodization.

It is a yellow, oily liquid, having a purely oleaginous taste. It is insoluble in water.

If to 1 Cc. of iodipin in 10 Cc. of chloroform a few drops of phenolphthalein test solution are added, the addition of one drop of half normal potassium hydroxide V. S. should produce a red color (limit of acidity).

Estimation of iodine: 3 Gm. of iodipin are saponified by heating with 5 Gm. of potassium hydroxide and 25 Cc. of alcohol. The solution is evaporated to dryness on the water bath and the residue carefully incinerated. The residue is extracted with water and the washings filtered into a Topf distilling apparatus. Then 10 Cc. of hydrochloric acid and 10 Cc. of ferric chloride solution are added and the liberated iodine distilled with the usual precautions into a solution of potassium iodide. Finally the iodine is determined by titration with tenth normal sodium thiosulphate solution V. S. and the per cent. of iodine calculated.

Actions and Uses.—Iodipin acts in the system similar to the iodides, being broken up in a manner analogous to that described under bromipin, which see. Its action is more lasting and with less tendency to iodism.

Manufactured by E. Merck, Darmstadt. (E. Merck & Co., New York). German patent No. 96,495.

(*To be continued.*)

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

103 Dearborn Avenue . . . . Chicago, Ill.

Cable Address . . . "Medic, Chicago"

Subscription price.....Five dollars per annum in advance

[*For other information see second page following reading matter.*]

SATURDAY, OCTOBER 27, 1906.

THE EFFECT OF STRENUOUS EXERCISE ON THE HEART AND KIDNEYS.

The active campaign against football which was in progress last season, and which had as its result a modification of the rules, was set in motion by the deplorably great number of gross physical injuries incident to the game. The question as to what effects of a less tangible character violent exercise of this character produces is one which, though it has occasionally been considered, has hardly received the attention it deserves. It has been believed, in a general way, of course, that many well-known athletes die young, but scientific observations on the cardiovascular and renal changes in athletes, extending over years, are sadly lacking.

The question is brought up again by the recent observations of Baldes, Heichelheim and Metzger[1] on the contestants in a twenty-mile walk. The facts which were brought out were not altogether new, though some data were added to the older ones of Leube, MacFarlane and others. The lesions produced by the excessive exercise were, in brief, the appearance in the urine in almost all cases of albumin, often accompanied by casts and at times by blood; a decided decrease in the arterial tension, associated with some enlargement of the heart, and decrease or absence of the tendon reflexes. In two or three instances the observers were able to see contestants some days after the walk, and in these individuals it was noted that the heart and kidneys had returned to normal. These results, so far as the urinary changes are concerned, correspond to those of Leube, who examined soldiers after long marches, and to those of MacFarlane, who examined football players before and after games. The new facts brought out by Baldes and his associates indicate a decided effect on the heart, and incidentally on the blood pressure, and also some effect on the nervous system, as shown by the changes in the deep reflexes.

The weak point in these observations is, as above stated, that they do not extend over a sufficient period of time. Do such changes when brought about at frequent intervals, as they must be in football players, for example, tend to leave behind them permanent structural changes in the organs most involved? So long as we are ignorant of the actual changes which occur it will be hard to answer this question. Is the heart lesion an acute dilatation? As eminent an authority as Schott believes that it is, though this view is opposed by good authority. The character of the kidney lesion which produces the albuminuria and cylindruria has led to much discussion. Leube regards the albuminuria as physiologic, but it must be confessed that clinicians are yearly becoming more and more skeptical regarding albuminuria so described. The urinary picture is that usually associated with an acute nephritis. The albuminuria can hardly be associated with changes in the blood pressure, as this is lowered, and, furthermore, the volume of blood is probably lessened by the profuse sweating. It may be that the excessive muscle work produces toxins which affect the kidneys. At any rate this has been suggested.

The whole matter is one which is capable of study and which is important enough to be studied. In colleges, especially, the physicians who are in charge of the physical side of the students' development should be able in a few years to solve the questions here brought up.

1. Münch. med. Wochschr., 1906, vol. liii, p. 1865.

CONTAGIOUSNESS OF LATE SYPHILIS.

There has always been a feeling of so much repulsion with regard to syphilitic lesions of any stage that this of itself has been sufficient to make people take precautions against possible inoculation. There has been a definite persuasion in the minds of most physicians that the later lesions of syphilis, that is, those occurring more than two years after the initial lesion, are not capable of conveying the disease. This has been considered particularly true with regard to the gummatous lesions which occur after the disease has run a course of several years. It is not always easy to distinguish absolutely between secondary and tertiary lesions, but gummata have always been considered as belonging to the third stage, and as being essentially non-contagious. In recent years some doubts of this have been expressed, and now it would seem that a sufficient number of cases have been collected to prove that there is enough danger of contagion to make the taking of proper precautions after contact with such sores a matter for serious consideration.

It is true that exposure to tertiary lesions has not been followed in a great many cases by infection. An explanation of this as was pointed out by Dr. Charles Mallory Williams[1] in an article on the "Contagiousness of Gumma," it may be found in the facts that tertiary lesions are much rarer than secondary, constituting less than 5 per cent. of all cases of syphilis in large clinics; that tertiary lesions are often single, while secondary lesions are usually multiple, thus adding to the danger of contagion; and finally, that tertiary lesions occur on portions of the body as a rule from which infection does

1. Medical Record, July 14, 1906; abstracted in The Journal A. M. A., July 28, 1906, page 305.

not readily take place. Only slightly more than 7 per cent. of all syphilitic patients in Neumann's clinic had tertiary lesions on the genital organs. All these conditions lower the possibility of infection to a considerable degree and have undoubtedly been of great influence in producing the impression that tertiary lesions are never contagious.

There is scarcely an authority in venereal diseases, however, who has not seen one or more cases in which the only possibility of the explanation of the occurrence of syphilis was contagion from tertiary lesions. Among those who have reported such cases are Fournier, Jullien, Bumstead, Brandis, Neisser, Finger, Lassar, Ehlers, Brouardel, Gron and Bovero. Fournier and Lassar have reported more than one case in which they were satisfied that there had been a conveyance of syphilis from a tertiary lesion. This is quite enough to require that we should be conservative at least with regard to the contagiousness of such lesions. It is true that, as a rule, attempts to inoculate syphilis into monkeys by means of the products of tertiary lesions failed in the hands of the French observers, and especially of Metchnikoff, though inoculations from secondary lesions were very frequently successful, but the German observers Finger and Neisser report several positive inoculations with tertiary material so that both of them have been ready to concede that gummata are caused not alone by the toxins of syphilis, as they used to think, but are also probably due to the action of the causative micro-organism of syphilis.

As might be expected, the broken-down material of a gumma probably does not contain actively infectious material. The micro-organism of syphilis seems to be very delicate in this matter and continues to exist only in thoroughly vital tissues. It is well-known that inoculations of syphilis from dead bodies, either in the course of autopsy or later in the dissecting room, have never been reported.

As some of the autopsies on syphilitic subjects have been undertaken within a few hours after death, and occasional accidental injuries have been produced during such autopsies, yet without positive results, it would seem clear that the microbe of syphilis dies almost simultaneously with its host. It would not be surprising then that it should not be found alive and vigorous in the devitalized portions that make up so much of the gummatous lesion. At the most it would be only at the very edge of the gumma where this shaded off into healthy tissues that the microbe might continue to live. This may account for the fact that so far the spirochete which is coming to be rather generally accepted as the micro-organism of syphilis has not been found in gummatous tissues. It may also account for the infrequency of infection from such tissues.

It is clear, however, from the present state of our knowledge in the matter, that there has probably been over confidence in the supposed non-virulence of tertiary lesions, and that hereafter greater care will have to be exercised by the physician himself, for some of the reported cases of contagions were in physicians, and that it will be necessary to insist that patients should take greater care to avoid the possibility of infecting others while in this stage of syphilis.

PALLIATIVE SURGICAL OPERATIONS IN CHOKED DISC.

Three recent articles from most competent men (Spiller and Frazier,[1] Starr[2] and Horsley[3]) emphasize the importance of surgical procedures—palliative and radical—in the treatment of cases of intracranial disease in which the symptoms are those of general brain pressure. One point especially brought out in these papers is the very great importance of early surgical interference when, as often exists in these cases, the optic nerve is involved. In his consideration of palliative surgical procedures, Horsley says: "In no case of optic neuritis (not, of course, of toxemic or anemic origin) should the process be allowed to continue after it has once been diagnosed, and if blindness results therefrom the responsibility is very heavy on any one who fails to advise such a simple procedure as opening the dura mater." Starr does not insist so emphatically on palliative operations, but he quotes encouraging cases. Spiller says that palliative operations should be performed early in every case in which symptoms of brain tumor are pronounced and before optic neuritis has advanced far, especially when syphilis is improbable or when antisyphilitic treatment has been employed.

Of course, palliative operations are useless, so far as the optic nerve and its function are concerned, if they are delayed until optic neuritis has become advanced. In deciding on this point Horsley says: "Yellowish-white stippling, patches of exudation or opal white atrophic changes, especially when associated with macular figures, indicate that the secondary changes in the disc are likely to be permanent and therefore, in proportion to their development so the vision will be impaired; whereas when the loss of vision has been dependent simply on the swelling of the disc then not only is the sight saved, but largely improved."

In these papers striking cases are quoted, showing the good effects of palliative surgical procedures on the optic nerve and vision, and also in the relief or lessening of all the pressure symptoms, including the headaches. Cases are also quoted which show the result of a lack of proper surgical interference. Horsley quotes the case of a woman who developed symptoms of brain tumor with acute optic neuritis and who was told that nothing could be done surgically. Subsequently, and after some treatment with the iodids the neuritis subsided into

---

1. Spiller and Frazier: THE JOURNAL A. M. A., Sept. 1, 8, 15, 22.
2. Starr, M. Allen: THE JOURNAL A. M. A., Sept. 22, 1906, p. 926.
3. Horsley, Sir Victor: Brit. Med. Jour., 1906, p. 411.

complete atrophy and blindness, while the cerebral lesion gradually retrogressed. Unfortunately it is given to every ophthalmologist to see such cases.

Another very unfortunate class of cases exists. In some of the cases with brain pressure symptoms, the condition does not bring about death for several years, while blindness may occur fairly early in the process of the disease and thereby the final months of life of these patients be made more miserable.

Horsley says, and it is true, that the gravity of the responsibility in these cases does not seem to be generally recognized. The three papers mentioned here will attract wide attention and will force on many men a realization of the proper course to pursue in dealing with the optic neuritis in these cases.

PRESIDENT ELIOT ON THE FUTURE OF MEDICINE.

The longer formal addresses at the recent dedication of the Harvard Medical School are noteworthy productions. President Eliot discusses in a most intelligent and sympathetic manner "The Future of Medicine," and Professor Welch, with his customary broad grasp and clearness, dwells on "The Unity of the Medical Sciences."[1]

President Eliot lays stress on the fact that in the past the physician devoted himself very largely to the treatment of diseases already developed and injuries already incurred. There will always be need for services of this kind and for medical schools to fit men for such service. But in the future more than in the past the medical profession must concern itself with the prevention of disease. Hence the study of the causes of disease and of the means of prevention must be continued with increasing energy. Not only must liberal provision be made for scientific investigators to make discoveries and create new knowledge, but medical men must see to it that intelligent practical application is made of the new knowledge for the protection of the health of human beings in all sorts of climates and environments. It is not enough that the epochal work of Reed and his colleagues proved how yellow fever is communicated—for years physicians must teach the people of the South how they now can protect themselves successfully against yellow fever.

This brings us to the point in the address on which we wish to place particular emphasis, namely, the new function of the medical profession of teaching the people in general directly how diseases are caused and how prevented. In this work a beginning has been made, as witness the campaign against tuberculosis in particular. This function must be extended, and President Eliot calls on the medical schools to provide popular expositions concerning water supplies, foods, drinks, drugs, the parasitic causes of disease, and modes of communication of all communicable diseases. Museums and popular lectures are needed. "Selected physicians should become popular teachers, as well as private practitioners." In this work should be enrolled the intelligent and unselfish country practitioner as well as the college professor and the health officer.

President Eliot's concluding remarks in regard to the broad character of the education necessary to fit men for the practice of modern medicine and for successful medical investigators show, like the other parts of his address, a truly remarkable grasp of the needs of medicine and he merits well the eulogy pronounced on his work in behalf of medical education by Professor Welch: "To have recognized fully from the beginning of his administration the importance of the vitalizing union of the medical school with the university, to have striven patiently with full grasp of the problems and with intelligent sympathy with the needs of medicine for the uplifting of the standards of medical education, and, with the aid of his medical colleagues, to have planted these standards where they now are in the Harvard Medical School, is not the least of the many enduring services which President Eliot has rendered to American education."

1. Both addresses appear in full in *Science*, October 12, and The Journal contained abstracts in its full report of the dedication, October 6, p. 1113.

A COUNTY BACTERIOLOGIST.

A noteworthy appointment has recently been made by the authorities of Ontario County, New York, namely, that of a county bacteriologist at a salary of $1,500 a year. The *Medical Times*,[1] from which we learn of this innovation, points out that this is probably the first appointment of its kind in the country. Ontario County has a population of 50,000, the largest city being Geneva, with 11,000. The rest of the population is largely agricultural. Special legislation was necessary in order to make the appropriation; the appointment was nonpolitical, and the services of the bacteriologist are to be free to all the physicians of the county, under the supervision of the health officers. Ontario County is worthy of commendatory congratulations for this wise and beneficial action, which other counties will do well in studying with a view to doing likewise. Only by some such arrangement as this will it be possible to secure for all the people in rural communities and smaller cities the immediate practical benefits of bacteriology and pathology in the diagnosis and treatment of disease, and in questions of public health and sanitation. By the prompt discovery of an outbreak of typhoid fever or of diphtheria, and the application of modern preventive measures, the county bacteriologist may prevent financial loss to the community in comparison with which the outlay for his salary and laboratory is quite insignificant, to say nothing of the far more important result in the conservation of health and life. It seems quite natural that with time the office of county bacteriologist will expand naturally so as to include also the kinds of work that would fall to a county pathologist. The two kinds of work are so closely related that it is difficult to imagine their practical separation at this time. To the county bacteriologist, or pathologist, whatever name he be called (pathologist is perhaps more comprehen-

1. October, 1906.

sive), would be referred not only bacteriologic work for diagnostic and other purposes, but also such work in microscopic and chemical diagnosis, e. g., of suspicious growths, pathologic exudates, urine, blood, etc., as many physicians find they can not themselves do satisfactorily. The county pathologist could be called on also to perform autopsies in medicolegal as well as in other cases. There is then a large field of usefulness for the county pathologist and the county laboratory, without limitation in any manner of the work of the ordinary practitioner, which, however, this new office would render more effective and more accurate. The general educational influence and the stimulus to better work on the part of physicians that would come from the county laboratory should not be overlooked. We hope that Ontario County may find many imitators and that county medical societies will discuss this matter with a view to the necessary education of public sentiment.

THE CHICAGO MEAT INSPECTION REGULATIONS.

During the active agitation about the pure food laws and the exposures at the Chicago stockyards, the Chicago Medical Society appointed a committee to investigate the regulations for meat inspection at the Chicago Union Stockyards. That committee has now made its report, which is printed in the *Bulletin of the Chicago Medical Society,* October 15. The report states that the regulations are more rigid in general than those of other countries and include all, or nearly all, the precautions that the committee considers essential for the protection of the public, with possibly a suggestion that they might be a little more strict as regards animals suffering from hog cholera or swine plague. In some particulars, as in regard to actinomycotic abscesses, they consider them unnecessarily rigid, and the same is true as regards the condemnation of hogs suffering from localized tuberculosis, the carcasses of which, they think, might safely be used for lard by rendering at high temperature. It would certainly appear from the general tenor of their report that the Chicago regulations are certainly efficient for the protection of the public against diseased meats. The committee publishes as an appendix letters from such authorities as Drs. Welch of Johns Hopkins, Theobald Smith of Harvard, E. O. Jordan of the University of Illinois, J. G. Rutherford, veterinary director-general of Canada, and others, indorsing the opinions expressed in the report. In Dr. Welch's letter emphasis is laid on the importance of special training and competence of meat inspectors, and the committee gives its endorsement of the recommendation and insists on the necessity of more ample educational provisions and better remuneration for this important work. With our present system of municipal appointments, perfect fitness is not assured, even in the better remunerated positions. With the government inspection, however, under the new law, it may be assumed that thoroughly adequate methods will be followed and that American meats will be exceptionally safeguarded as compared with those from other sources throughout the world.

THE ALLEGED INCREASE OF INSANITY.

A London physician, Dr. Forbes Winslow, is the alleged authority for the statement that the world is going mad and that if the present rate of increase of insanity continues, as it seems likely to, the sane individual will soon be the exception and not the rule. He is said to support his opinion by statistics, but statistics are sometimes queer things. It will be remembered that Mark Twain once figured out that at the rate of shortening that the Mississippi was undergoing, according to statistics, the cities of New Orleans and St. Louis were bound to be united, and it may be that insanity statistics can be used in the same way. We should be rather inclined to think that the world is growing saner, that its standards of sanity, as well as of morals and other things, are becoming more exacting, and that the great apparent increase of mental disorders can be accounted for, at least in part, by this fact. We recognize and segregate the insane more than ever before and have shifted a not inconsiderable number of those who were formerly regarded as simply criminals, and punished as such, into this category. It is the more general recognition of the exceptional character of insanity that helps to make its apparent increase the more noticeable. That there is an increase in the number of the insane can not be denied; the crowding into cities, with the consequent greater stress of life and other abnormal social conditions, are probably largely responsible, and in this country we have, in addition, the disturbing factor of immigration which is responsible for a large proportion of the population of our asylums. We may be overdoing the matter in the present phases of our social progress, but we may feel reasonably sure that an acceptable equilibrium will be reached before things get to the worst. Even now there are communities in which the increase has apparently come to a standstill. Insanity is a problem of the day, but it is not so much of one as the alarmists would have us believe.

CHEYNE-STOKES RESPIRATION.

The peculiar type of periodic respiration first accurately described by the great Irish clinicians has long been known to the profession as a not infrequent accompaniment of certain forms of uncompensated heart disease and of cerebral compression. The sign, *per se,* so far has not been of any great diagnostic significance, though from the standpoint of prognosis it has usually been regarded as a distinctly unfavorable portent, often unjustly. It has been universally held that the mechanism of the sign, though obscure, was doubtless the same in all cases, no matter what the character of the primary disease. The recent work of Eyster[1] is of interest in this connection, as it shows that the form of Cheyne-Stokes breathing which accompanies cerebral compression differs from that which occurs in connection with cardiac and renal diseases. In Cheyne-Stokes respiration due to cerebral compression, the period of respiratory activity is associated with a rise in blood pressure, while in that due to the other conditions the rise in blood pressure corresponds to the period of apnea. The observa-

1. Bull. Johns Hopkins Hosp., September, 1906; also Journal of Experimental Medicine, 1906, vol. viii, p. 565.

tion may have more than theoretical importance, for it can be imagined that in semi-conscious patients with this form of breathing the relation between the blood pressure and the phase of respiration may incline the clinician to regard the condition as cerebral or otherwise as the case may be.

Medical News

COLORADO.

New Hospitals.—The Santa Fe system has decided to erect a new hospital at La Junta, to cost $30,000.——The La Junta Sanitarium Association contemplates the erection of a new hospital to accommodate 25 patients and to cost about $11,000.

Medical Women Give Luncheon.—The Women's Medical Society, Denver, gave a luncheon to the women members of the Colorado State Medical Society, October 12. Covers were laid for 25, and Dr. Kate Lindsey, formerly a medical missionary in South Africa, gave an address.

Health of Colorado Springs.—Dr. P. Oliver Hanford, health commissioner of Colorado Springs, reports a death rate for August of 15.37 per annum. Only one case of scarlet fever was reported during August, and less typhoid fever than obtained in the corresponding month of last year.

ILLINOIS.

Hospital Burns.—The Isolation Hospital, Granite City, was burned October 16, with a loss of $1,500.

Sanitarium Incorporated.—Dr. Broughton's sanitarium at Rockford has been incorporated, with a capital of $40,000, by Dr. Russell Broughton, J. T. Robertson and R. K. Welch.

Smallpox at Galesburg.—At present there are five cases of smallpox at Galesburg, with three foci of infection. The special need of the city is an isolation hospital, which will probably be built in a short time.

To Establish Psychopathic Institute.—A most important conference of state officials and others interested in public philanthropy was held under the auspices of the State Board of Public Charities at Springfield, Oct. 18 and 19, 1906. The result of its deliberations promises a marked advance in the method of administering the public charitable institutions of the state. Following the recommendations of the board, the following general plan for improving the efficiency of institutions for the care of the insane was discussed and the more important recommendations approved:

1. State care of all insane, epileptics and feeble-minded now in county almshouses; and of dependent consumptives, calling for the establishment of a state village for epileptics and a state sanatorium for consumptives.

The superiority of state care is urged since some counties can provide only the most primitive arrangements, while under state supervision every patient could have the advantage of modern equipment and expert care. Attention was called to the fact that the presence of epileptics among insane patients is mutually detrimental, and segregation of consumptives among the insane and in prisons was recommended.

2. Uniform local administration by a medical general superintendent in charge of each hospital with senior physicians, paid internes, superintendents of nurses and sufficient nursing and attendant staff taught in a compulsory high-grade training school; and a dietetist, on the medical side; and a stewart or business manager, under the medical general superintendent, on the business side.
3. Hydrotherapeutic treatment for acute hopeful cases of insanity.
4. More ample hospital provision for physically sick insane.
5. Industrial reëducation for chronic types of insanity.
6. More amusement and recreation for patients.
7. The abolition of mechanical restraint and soporifics as far as possible.
8. Pay patients.
9. Uniform medical and other records.
10. More thorough classification of patients.

It is suggested that the senior physicians should be competent to take charge of special departments and that one at least should be a woman and one a surgeon with special experience in gynecology. The internes should include a dentist with proper mechanical skill and equipment. The training school for attendants should have as one of its principal functions the elimination of unfit employés and the abolition of improper methods. The dietetist should have charge of the preparation of food, thus avoiding undue waste in this direction as well as in the purchase of food.

11. Creation of a state psychopathic institute.

This is to be a teaching institution and to be attached to one of the state hospitals with ample clinical and laboratory facilities. It is to be presided over by an expert in psychic physiology and pathology, who will be able to give instruction and inspiration to the physicians in charge of the various hospitals and to advise and assist them in their scientific work. Each hospital should be provided with a laboratory and better facilities for autopsies should be afforded. But one such institution has been established in this country while there are 22 in Germany.

12. An additional institution for the feeble-minded, including feeble-minded women of the child-bearing age. The feeble-minded should be classified into improvable and custodial cases; the present asylum for feeble-minded children was established for the improvable class, but has been forced to take custodial cases.
13. Consideration of physical changes to provide adequate ventilation and to put all buildings and equipment into satisfactory shape. Survey of the various asylums shows that with one exception they fall considerably short of furnishing the amount of air space desirable, the average shortage being 191 cubic feet per patient.
14. It is proposed to change the name of the Asylum for Incurable Insane to the General Hospital for the Insane.
15. Consideration of systems of charity administration for state institutions.
16. The establishment of uniform grades of service, with maximum and minimum salary limits in each grade; of uniform general rules, with special rules issued by the superintendent to cover local needs; and of a uniform nomenclature of positions of employment.

Dr. George Zeller, superintendent of the Bartonville Insane Asylum, objected to the use of mechanical and medicinal restraint of insane patients, and advocated the repeal of the Illinois statute which legalizes mechanical restraint. The conference passed a resolution recommending the establishment of a psychopathic institute, and it is stated that such an institute will be established either at Elgin or Kankakee. The necessary funds will be taken from the general appropriation until a special appropriation can be secured for this purpose. Committees were appointed as follows:

State Care, Including New Institutions: Miss Lathrop, Dr. Webster, Dr. E. Evans, Dr. Churchill, Mrs. Bourland.
Medical Administration and Uniform Records, Internes: Dr. McAnnally, Dr. Podstata, Dr. Wilhite, Dr. Davis.
Hydrotherapy and Industrial Re-education and Recreation: Dr. Podstata, Dr. McAnnally, Dr. Carriel, Dr. Sanger.
State Psychopathic Institute: Dr. Greene, Dr. Podstata, Dr. W. E. Taylor.
Improvement of Buildings and Grounds and Equipment: Dr. Emil G. Hirsch, Dr. Zimmermann, Dr. W. E. Taylor.
Problem of the Feeble-Minded: Mrs. Bourland, Dr. C. B. Taylor.
System of Charity Administration: Dr. Hirsch, Miss Lathrop, Dr. McAnually, Mrs. Bourland.
Uniform Grades, Rules, Salaries and Nomenclature: Mr. Moulton, Dr. Athon, Dr. Podstata, Dr. W. E. Taylor.
Local Business Administration: Dr. Hirsch, Dr. Greene, Dr. W. E. Taylor.
Special Committee on Joliet Prison: Dr. Hirsch, Dr. Webster, Mr. Zimmermann.

Chicago.

Donations to Charities.—At the quarterly meeting of the Schwabenverein donations amounting to $1,150 were made to the hospitals of Chicago.——By the will of the late Adolph Loeb $500 was bequeathed to the Michael Reese Hospital and $250 to the Alexian Brothers' Hospital.

Deaths of Three Quarters.—During the nine months ended September 30, 21,651 deaths were reported, an increase of 916 as compared with last year, and an increase of 1.4 per cent. in the annual death rate. Pneumonia caused 3,008 deaths; consumption, 2,444; Bright's disease, 1,592; heart diseases, 1,522; violence, 1,322, and cancer, 1,002.

Personal.—Dr. Edmund J. Doering has returned from Europe.——Dr. J. S. Clark has finished his services as interne at the Illinois Charitable Eye and Ear Infirmary and will practice in Freeport.——While making a hurry call in South Chicago, October 18, the ambulance was overturned and Dr. Sidney McLeod, the ambulance physician, was severely cut and bruised.

Deaths of the Week.—During the week ended October 20, 539 deaths were reported from all causes, equivalent to an annual mortality rate of 13.72 per 1,000. The deaths numbered 11 more than for the preceding week and 73 more than for the corresponding week of 1905. Heart diseases caused 59 deaths; acute intestinal diseases, 54; consumption, 52; pneumonia, 47; nephritis, 45; violence (including suicide), 40. There was an increase of 4 deaths from diphtheria as compared with the preceding week, and three times as many deaths from scarlet fever.

Warning Concerning San Francisco Refugee.—THE JOURNAL is asked to warn the profession against a man who is said to represent himself as Dr. L. Lloyd Shaw. He tells a hard luck story of being burnt out in San Francisco and asks a little financial aid to send his wife to some neighboring town where her friends live—or for other equally legitimate purposes. He claims to have been employed on newspapers for some years and sometimes represents that he has just obtained a job on one of the Chicago daily papers. He seems undisturbed when informed that his story is exactly like that which is often heard from dead beats. He dresses well, is about 5 feet 9 inches in height, weighs about 150 pounds, is smooth shaven, has dark hair streaked with gray, and an eye that rarely looks one in the face. He says that he graduated from Rush Medical College in the year 1886. That name is found in the list of that class, but without any address. One of the members of that class states that there was such a man in the class who was doing newspaper work at that time.

INDIANA.

Donation to Hospital.—St. John's Hospital, Anderson, has received $10,000 bequeathed by the will of the late John Hickey.

Medical Library.—Arrangements have been made by the Vigo County Medical Society to use a room in the basement of the new library building, Terre Haute, where its library of more than a thousand volumes will soon be installed.

Medical College Opens.—The formal opening of the Indiana Medical College, Medical Department of Purdue University, took place October 4, before a mass-meeting of the entire student corps at Indianapolis. Dr. Henry Jameson, dean of the medical faculty, delivered the address and introduced the president of the university, Dr. E. W. Stone, who also addressed the meeting.

Physicians Ill and Injured.—Dr. Lowery H. Bear, Vevay, went to Cincinnati for an operation for appendicitis, October 7.——Dr. Franklin W. Cregor, Carthage, was thrown from his buggy in a runaway accident October 5, and sustained severe cuts, bruises and lacerations.——Drs. Charles Houghland and Barton, Milroy, and Dr. Albert J. Shauck, Arlington, were thrown from an automobile going at a high rate of speed October 1, but, fortunately, were only slightly injured.

Communicable Diseases.—Smallpox has appeared in Richmond and all the children in the school which the affected child attended have been ordered to be vaccinated.——Owing to the prevalence of scarlet fever the public school of Westfork was ordered closed October 5 by the health authorities. The disease thus far is mild in form.——A district school in Clay Township has been closed on account of an epidemic of scarlet fever. Thus far 15 cases have been reported in the school.

Personal.—Dr. Joseph F. Somes, Vincennes, has been appointed surgeon for the Vandalia Lines, vice Dr. William H. Davenport, resigned.——Dr. Reuben H. Leavitt has assumed charge of the female medical department, Dr. Alaric T. Payne of the male medical department, and Dr. Leon J. Willien of the gynecologic department of St. Anthony's Hospital, Terre Haute.——Dr. Edward T. Griffith, Muncie, has returned from Alaska.——Dr. G. E. Fulton, Bluffton, returned from Europe, October 8.

September Diseases and Death.—Cerebrospinal meningitis was extraordinarily prevalent in September, 50 deaths being reported. There were nine fewer typhoid deaths than in September, 1905, but more cases were reported. The disease exists in every county of the state, usually in mild form. Rheumatism came next in order of prevalence, and then followed tonsillitis, diarrhea, typhoid fever, cholera morbus, cholera infantum, bronchitis and dysentery. Pneumonia was reported thirteenth in order of prevalence and influenza was fifteenth. Five cases of smallpox were reported in nine counties, with 2 deaths. Pneumonia caused 93 deaths, or 45 less than for the corresponding month of 1905; consumption caused 291 deaths; cancer, 95; violence, 196; diarrheal diseases, 426, and diphtheria, 31. The board has issued a circular to all counties, urging that antitoxin be furnished free to people unable to pay for it, and sounds a strenuous note of warning urging the early use of antitoxin as a curative and prophylactic measure in diphtheria.

KANSAS.

Donation to Hospital.—Mrs. M. J. O'Mara, Tonapah, Nev., has sent to Dr. George Emerson, Winfield, a donation of $1,000 for St. Mary's Hospital.

Sanitarium Opens.—The Independence Hospital and Sanitarium, under the charge of Dr. Frank W. Shelton, opened for the reception of patients, October 1.

Personal.—Dr. Andrew L. Skoog, assistant superintendent of the Parsons State Hospital Asylum, has resigned to accept a similar position in Colorado. He will be succeeded at Parsons by Dr. Hubbard.

Against Unlicensed Physicians.—The Franklin County Medical Society is making a determined fight against unlicensed practitioners. One "cancer doctor," it is reported, has been found guilty and been fined $50, and it is announced that other arrests will follow.

Disease Prevalence.—During August the State Board of Health reports 209 cases of typhoid fever, with 32 deaths; 71 cases of tuberculosis, with 31 deaths; 47 cases of diphtheria, with 7 deaths; 32 cases of scarlet fever, with 2 deaths, and 29 cases of smallpox and 22 cases of measles, with no deaths. With the exception of measles, August, 1906, shows a very material falling off in contagious diseases.

Communicable Diseases.—The physicians of Iola state that the epidemic of typhoid fever has begun to abate.——Diphtheria is reported to have broken out in Montana Township, Labette County. There are 17 cases of diphtheria among the school children and two of the ward schools have been closed on this account.——Diphtheria is reported to be gaining a strong foothold in Leavenworth.——Two of the public schools of Emporia have been closed on account of the prevalence of diphtheria.——The city schools of Lawrence have been closed as a precautionary measure, on account of an epidemic of diphtheria.——The Union Heights public school in Burns was closed September 28 on account of the prevalence of diphtheria. During September, 28 cases of diphtheria were reported in Topeka, one less than for the same period of 1905.

MARYLAND.

Baltimore.

Lectures on Psychology.—Dr. James N. Baldwin, of Johns Hopkins University, Baltimore, on October 20 began a course of lectures on "Educational Psychology," before the teachers of the Baltimore schools.

Personal.—Dr. John M. Bergland has returned from a trip to Indian Territory.——Dr. Thomas J. O'Donnell was badly bruised by being thrown from his carriage in a runaway accident, October 13.——Dr. William H. Battsell has returned from Europe after an absence there of two and a half years.——Dr. Lewellys F. Barker was elected president of the Johns Hopkins Medical Society, October 15, and Dr. Rufus I. Cole, secretary.——Dr. Charles W. McElfresh was elected president of the University of Maryland Hospital Medical Society, October 6.

MASSACHUSETTS.

Diphtheria.—In the Avon Home for Children, Cambridge, 22 out of 30 children have been attacked by diphtheria. In eight of the cases the patients were so ill that they were removed to the city contagious hospital.

Janet in Boston.—Prof. Pierre Janet of Paris, on October 15, gave the first address, of a course of 15 lectures at the Harvard Medical School, on "Classical Symptoms of Hysteria." Three lectures are to be given each week, and are open to all medical students, practitioners, advanced students and teachers of psychology.

Milk Inspection.—The milk inspector of Boston reports that his department has examined 20,653 specimens during the last year, and that of 5,559 specimens tested for bacteria, more than 10 per cent. showed pus, or streptococci, or both. The number of suits brought against the milk department is not quite so large as last year.

Communicable Diseases.—One of the rooms in the Coverly School, Malden, has been closed by the Board of Health on account of the prevalence of diphtheria.——Typhoid fever is reported to be prevalent in Natick, South Natick, Wellesley and Needham, and impure milk is assumed by the State Board of Health to be the cause of the outbreaks.

New England Alumni.—At the meeting of the New England Alumni Association of Albany Medical College, held in Boston, October 9, Dr. Harvey W. Van Allen, Springfield, was elected president; Dr. Creighton W. Skelton, Providence, R. I., vice-president; Dr. Alfred H. Hoadley, Northampton, treasurer, and Dr. Walter G. Murphy, Hartford, Conn., secretary, the two latter being reëlected.

College Opens.—Tufts College Medical School has opened for its annual session. Dr. Frederick J. Cotton has been appointed assistant professor of clinical surgery; Dr. Gardner W. Allen has resigned as assistant professor of genitourinary diseases, and Dr. Charles M. Whitney has been appointed lecturer and Arthur L. Chute instructor in this department. Dr. H. Warren White has resigned as assistant professor of theory and practice of medicine.

Personal.—Dr. Frederick E. Jones, Quincy, has been appointed medical examiner of the county of Norfolk——Dr. Walter B. Cannon has been appointed George Higginson professor of physiology and Dr. W. T. Porter professor of comparative physiology in the Harvard Medical School.——Dr. Hentve, Pottstown, has been appointed superintendent of the Framingham Hospital and Training School for Nurses.——Dr. Walter J. Marcley, superintendent of the Massachusetts Sanatorium for Consumptives, Rutland, has been appointed provisionally to take charge of the Minnesota State Sanatorium for Consumptives, Walker.——Dr. Fred M. Stiles has succeeded Dr. Henry D. Chadwick, resigned, as president of the Waltham Medical Society.

MICHIGAN.

Pesthouse Robbed.—The pesthouse of Ironwood was broken into a few nights ago and a considerable amount of bedding stolen.

Academy Election.—The annual meeting of the Detroit Academy of Medicine was held October 9, and Dr. Delos L. Parker was elected president, Dr. Andrew P. Biddle, vice-president, and Dr. Harrison D. Jenks, secretary-treasurer (reëlected), and Dr. Arthur H. Bigg, director.

Communicable Diseases.—The health officer reports that there are at present 9 cases of scarlet fever in Muskegon.——The health officer of Lansing reports 7 cases of smallpox, which are under quarantine.——Several cases of measles have been discovered in Kalamazoo Street School, Lansing.

Will Not Reinstate College.—The State Board of Registration in Medicine, it is reported, has removed the name of the Michigan College of Medicine and Surgery from its list of schools whose graduates are qualified to be examined by the board. On October 10 Dr. Hal C. Wyman appeared before the board to protest against this action, but the board refused to make any change, on the ground that the conditions complained of last June have not been altered during the summer vacation.

Vital Statistics.—The deaths reported in August were 3,237, an increase of 458 over July, and an increase of 446 over the corresponding month of 1905. This was equivalent to an annual death rate of 14.3 per 1,000. Of the decedents, 868 were infants under one year of age and 777 were individuals more than 65. Tuberculosis caused 224 deaths; typhoid fever, 45; diphtheria, 29; scarlet fever, 12; measles, 8; whooping cough, 43; pneumonia, 63; diarrheal diseases, 548; meningitis, 40; cancer, 150; and violence, 266. During the month 3,969 births were reported, equivalent to an annual birth rate of 18.1 per 1,000.

Personal.—Dr. William M. Bailey, Detroit, who was seriously injured in a street-car accident, has so far recovered as to be able to be taken to his home from the hospital.——Dr. and Mrs. Alexander G. McLeod, Calumet, are at present in California.——Dr. James A. Ardiel, Grand Rapids, has returned from Great Britain.——Dr. Fannie L. Draper, Jackson, sails this month for Foo Chow, to take charge of the Methodist Hospital in that place.——Dr. O. M. Vaughan, Covert, has been reëlected president of the Van Buren County Superintendents of the Poor.——Dr. Charles J. Sorsen, Laurium, has returned from a trip abroad.——Dr. J. Harry Cox has resigned as assistant mining physician at Painesdale, for the Champion Mining Company.——Dr. W. Cahn, Saginaw, has been appointed as assistant to Dr. A. D. Aldrich, Winona.

MISSISSIPPI.

College Opens.—The Mississippi Medical College, Meridian, was formally opened for its first annual session, October 1, with about 100 students in attendance. Dr. William W. Hamilton, president of the college faculty, called the assembly to order and addresses were delivered by the Hon. Hardie R. Stone, Dr. Nathan L. Clarke of the faculty, and E. M. Monies and R. A. Venable of the board of trustees. Dr. N. L. Craig is dean of the faculty; Dr. William W. Hamilton, president; Dr. Thomas A. Barber, vice-president; Dr. W. O. Bethea, secretary, and Dr. Thomas J. Houston, secretary-treasurer.

Extension for Insane Hospital.—The trustees of the Mississippi Insane Hospital, Meridian, have awarded the contract for a small dormitory, a four-room cottage and a hospital building for the asylum, the latter to cost about $20,000.

Von Gohren's Estate.—The estate of the late Dr. Ludwig H. Von Gohren, who died last month, at Bay St. Louis, has been appraised at $20,000.

MISSOURI.

Opening of Medical College.—The Ensworth-Central Medical College, St. Joseph, opened for its annual session September 15.

Phthisis Sanatorium.—It is proposed by the officials of Kansas City to establish a tuberculosis sanatorium, outside, but near the city, so that sufferers from tuberculosis who become public charges may be cared for. A site is being considered on the highlands in Clay County, overlooking the Missouri River. It is estimated that the farm can be purchased and the sanatorium equipped at an initial cost of not more than $4,000.

Contagious Diseases.—The Eugene Field School, East Joplin, has been closed on account of exposure to diphtheria.——One case of smallpox has developed in the State Industrial Home for Girls, Chillicothe. The building has been fumigated and all the inmates have been ordered to be vaccinated.——The public schools of Pacific were closed October 3 on account of diphtheria.——An epidemic of scarlet fever is said to be prevalent in the northern part of Jasper County and many country schools have been compelled to close.

Personal.—Dr. Christopher C. Morris, superintendent of the St. Louis Baptist Hospital, has returned from Europe, and was given a banquet by his medical associates October 1.——Dr. George O. Coffin, Kansas City, has returned from Europe.——Dr. D. E. Wilhelm has been appointed assistant police surgeon of Kansas City, vice Dr. George P. Pipkin, resigned.——Dr. Herbert A. Goshorn has been appointed assistant house surgeon at the Kansas City General Hospital.

Hospital Items.—The Kansas City General Hospital is expected to be under roof before cold weather sets in. Provision is to be made for a temporary heating plant for the winter.——The official reception of the Ellen M. Osborne Hospital, St. Louis, was held September 25.——A jubilee service was held at the Mayfield Sanitarium, St. Louis, when a $15,000 mortgage was burned by the surgeon-in-chief of the institution.——An informal reception was held October 20 at the new hospital of the St. Louis and San Francisco Railroad, St. Louis. The building is of fireproof construction and thoroughly equipped. A novel feature in the institution is that inclines take the place of stairways and can be used by the patients either for walking or for rolling chairs. The kitchens and dining rooms are located on the top floors. Dr. George W. Cale, chief surgeon of the Frisco System, transferred his office from Springfield to the new hospital September 18, and the hospital was opened for patients October 22.——The addition to the Deaconess' Hospital, St. Louis, was dedicated with imposing ceremonies September 20. The cost of the building with the furnishings will exceed $90,000 and the building will accommodate 90 patients.

NEW JERSEY.

Brouwer Not Guilty.—After a long trial Dr. Frank Brouwer, Tom's River, indicted for murder of his wife by poisoning, was found not guilty, October 17.

Genet Taylor Honored.—The Camden County Medical Society tendered a banquet to Dr. H. Genet Taylor, October 9, at which Dr. E. L. B. Godfrey responded to the toast of the honored guest. Dr. Joel W. Fithian presided.

Sanitary Inspector Poisoned.—Dr. Charles Cunningham, sanitary inspector of the Hammonton board of health, is ill from ptomaine poisoning, due, it is said, to a can of salmon.

Local Society Organized.—The physicians of Vineland have organized the Vineland Medical Society, with Dr. Theodore Foot, president; Dr. George Cunnigham, vice-president, and Dr. John H. Winslow, secretary-treasurer.

Health Conference.—The first annual conference of the state and local boards of health of New Jersey was held in the state house, Trenton, October 19 and 20. The conference was in charge of Dr. C. F. Brackett, president of the State Board of Health, and the chief subjects discussed were:

Every sanitary district should be provided with an isolation hospital.

Abandoned wells should not be used as receptacles for sewage and waste liquids.

Disinfectioon of infected apartments may be secured by washing floors, woodwork and furniture with bichlorid of mercury, 1-1,000,

by the destruction by fire of articles of little value, by boiling of infected wash goods and by treating woolen garments to exposure for 12 hours to formaldehyd.

Infectious diseases should be reported to the local board of health and patients should be isolated.

Local boards of health can render valuable service in preventing the sale of unwholesome milk and in the legislation for the abatement of nuisances. Only those nuisances can be attacked which have caused or may cause sickness or death, or which are prohibited by the law.

Smoke nuisances and noise nuisances have not been proved directly to affect the public health.

Joint municipalities of small population should join in the appointment of a health officer. Among the important duties of boards of health is the periodic inspection of all buildings in their respective jurisdictions, to detect insanitary conditions. Ordinances to prevent spitting on the floors of public buildings or public conveyances, on sidewalks and street crossings should be passed and enforced by every sanitary district.

Measures for prevention of the spread of infectious diseases, except in very rare instances, should not include the closing of schools, churches and public buildings.

NEW YORK.

New York City.

New Hospital Building.—The New York Infirmary for Women and Children is raising money for a new hospital building, promises of over $94,000 having been received. The present building has 70 beds, a dispensary and a large outdoor department. Last year 1,043 patients were treated in the hospital, 45,389 in the dispensary and 8,968 visits were made to homes of patients.

The Carpenter Lecture.—Dr. Harvey Cushing, Baltimore, delivered the Wesley M. Carpenter lecture at the Academy of Medicine October 18. His subject was "A Discussion of Some Early and Some Late Complications of Cranial Injuries and Their Treatment. Based on the Histories of Three Illustrative Cases." On this occasion the portrait of the late Dr. Paul F. Mundé, painted by Mrs. Mundé and presented by Dr. A. Jacobi, was presented to the academy.

Contagious Diseases.—There was reported to the sanitary bureau for the week ended October 13, 390 cases of tuberculosis, with 169 deaths; 205 cases of diphtheria, with 22 deaths; 113 cases of typhoid fever, with 15 deaths; 73 cases of scarlet fever, with 1 death; 50 cases of measles, with 2 deaths; 33 cases of whooping cough, with 11 deaths; 5 cases of cerebrospinal meningitis, with 4 deaths; and 9 cases of varicella, a total of 878 cases, with 224 deaths.

New Hospital Pavilion.—A new pavilion to St. Luke's Hospital was opened October 18. The wing is called the Margaret J. Plant Pavilion, after the widow of Henry Bradley Plant, who contributed $450,000 of the $600,000 which the pavilion cost. The purpose of the pavilion is two-fold: that patients of wealth may have the advantages of skilled hospital treatment, and that the money derived from this source may be devoted to free wards. The ward will accommodate 75 patients, and it is possible for those wishing to be cared for luxuriously to pay as high as $350 per week for accommodations. The new building occupies one of the most commanding sites in the city, overlooking Morningside Park, and is built in the French Renaissance style.

The City Milk Supply.—The health commissioner, Dr. Darlington, after spending a week in making inspections of the dairies throughout the state, is of the opinion that the milk supply of the city is better than it ever has been. So far as the inspections go, there is an improvement of 100 per cent. over the conditions last year, and New York is now receiving purer and better milk than ever before. While the Board of Health does not condemn pasteurization, it believes that the only real safety for the consumer lies in a pure supply in the beginning, as pasteurization does not destroy the bacilli of tuberculosis. The fact that milk is sold in 25,000 places in New York and that the daily consumption is about 1,500,000 quarts, makes it evident that the thirty inspectors now employed are not adequate to the task of inspecting all milk. While the number of inspectors has been doubled during the past year, there is still work for a much larger corps.

NORTH CAROLINA.

District Society Meeting.—Dr. James A. Burroughs, Asheville, councilor for the tenth district, has issued a call for a meeting of delegates from each county society in the district, to be held at Asheville, November 5, to organize the Tenth District Medical Society.

Personal.—Dr. J. Howell Way, Waynesville, has been appointed supervising state medical examiner for the Royal Arcanum.——Dr. H. Q. Alexander, Davenport, state senator from Mecklenburg County, is seriously ill with typhoid fever.——Dr. John R. Carr, Durham, has gone to Vienna to study.——Dr. Armstead K. Tayloe, Washington, was operated on at the Washington City Hospital for appendicitis, October 9.

Hospital Notes.—Mr. W. F. Snyder, Salisbury, has donated property valued at $13,000, with the sole restriction that the site shall be used permanently as a hospital for the people of that city. An additional subscription of $7,000 was quickly secured and work on the erection is to begin immediately.——The new Rutherfordton Hospital was formally opened for reception of patients, October 10. It will be under the charge of Drs. Henry Norris and Montgomery H. Biggs, Philadelphia.

OHIO.

Fined for Illegal Practice.—On October 3, "Dr." L. K. Stoddard, New York City, said to be an itinerant cancer specialist, charged with the illegal practice of medicine, was fined $25 and costs at Columbus.

Addition to Hospital.—As the present quarters of Mercy Hospital, Columbus, are overcrowded, the directors are planning to build an addition containing 50 rooms. The cost of the building will be about $20,000.

Communicable Diseases.—Typhoid fever is reported to be epidemic at Kenton and Greentown, and a number of cases are reported from Toledo.——Diphtheria is reported to be epidemic at Clifton, Cincinnati, Cleveland and Springfield.

Medical Library Open.—The Cleveland Medical Library Association opened its addition to the library building, October 7. The building contains a fireproof room for storing valuable goods and an auditorium seating about 300 people. The cost of the addition has been about $20,000.

To and from Europe.—Dr. Alexander M. Steinfeld, Columbus, has returned from Europe.——Dr. Alfred S. Maschke, Cleveland, has returned after a year's absence abroad.——Dr. Ode E. Portman, Canton, sailed from Rotterdam, October 6.——Dr. Henry S. Sheffield, Elyria, left September 17 for Europe.

State Board Officers Elected.—At a meeting of the State Board of Medical Registration and Examination for reorganization, the following officers were elected: Dr. Harris H. Baxter, Cleveland, president; Dr. August Ravogli, Cincinnati, vice-president; Dr. George H. Matson, Columbus, secretary; and Dr. Sylvester M. Sherman, Columbus, treasurer.

Alumni Organized.—The Cincinnati Chapter of the Alumni Association of Miami Medical College organized October 1, with the following officers: President, Dr. William H. Campbell; vice-presidents, Drs. Abram D. Murphy, Mrs. Frances J. Iliff, Clayton B. Conwell and G. K. Dennis; secretary, Dr. George S. Mytinger, and treasurer, Arthur J. Markley.

District Association Meeting.—The third annual meeting of the Tenth District Medical Association was held in Lancaster October 4. The following officers were elected: President, Dr. W. Stanley Samson, Lancaster; vice-presidents, Drs. Ralph W. Holmes, Chillicothe; W. P. Snell, Mount Vernon, and Argus B. Swisher, Marysville; and secretary-treasurer, Dr. John H. J. Upham, Columbus.

Colleges Open.—The Cleveland College of Physicians and Surgeons opened for its annual session, October 24. The principal address was given by Prof. G. O. Headley, Ohio Wesleyan University, on "Chemistry as a Servant of the Medical Profession."——The opening exercises of Toledo Medical College took place October 1.——The Medical Department of Western Reserve University, Cleveland, opened for its regular session October 1.

Personal.—Dr. James T. Hanson, Gallipolis, has been appointed superintendent of the Athens State Hospital.——Dr. Van Wagner, Bridgeport, has been appointed health officer to fill the unexpired term of the late Dr. William M. Oates.——Dr. Elias C. Logsdon, Zanesville, is reported to be seriously ill with diphtheria.——Dr. J. Garfield Alcorn, physician to the state penitentiary, Columbus, has resigned to take up private practice.——Dr. Henry Baldwin has been appointed health officer of Springfield, vice Dr. John M. Buckingham, deceased.——Dr. James B. Dougherty is ill with typhoid fever at his home in New Berlin.——Dr. Albertus C. Wolfe has been elected professor of therapeutics in the Ohio Medical University, Columbus, vice Dr. Theodore W. Rankin, who has taken the chair of medicine, in place of Dr. George M. Waters.——Dr. Hunter H. Powell, Cleveland, director of the medical staff of St. Anne's Maternity for 25 years, was given a complimentary banquet, September 25, by his associate physicians, at which the Sisters in charge of the hospital presented him

with a silver loving-cup.——Dr. C. F. Reiff, Fremont, has been appointed a member of the Board of Public Service, vice Dr. Martin Stamm, resigned.

PENNSYLVANIA.

Home Selected for Criminal Insane.—The selection of the site in Wayne County for the State Hospital for the Criminal Insane was approved by Governor Pennypacker, October 17. The land selected is composed of 625 acres and was secured for the nominal consideration of $5. The land was really the gift of the Delaware & Hudson Railroad Company, and is located at Far View, 20 miles from Scranton. Culm banks on the land will, it is said, yield coal enough ot supply the institution for 20 years. There is an abundant flow of pure water from springs and small streams. The greatest elevation is 2,000 feet above sea level.

State Asylum Crowded.—The report of the State Hospital for the Insane, Norristown, shows that the buildings are entirely inadequate to the demands. In the present female buildings the normal capacity accommodates 985 women patients, but 1,277 are being cared for. The condition of the male department is still more crowded, and for the 1,255 patients only 128 attendants are available. The admissions to the institution are rapidly on the increase, and only two improvements have been made by the state during the last four years. In the building assigned to violent women, which was originally constructed to accommodate 80 patients, 229 are now being treated.

Philadelphia.

Medical Club Meeting.—At the quarterly reception and meeting of the Medical Club, October 20, Drs. Edward Anthony Spitzka and George McClellan, the recently elected professors of anatomy in Jefferson Medical College, were the guests of honor. Officers were nominated, to be balloted for in January.

Bequests.—Bequests of $3,000 each were made to the following named institutions by the will of the late George W. Fox: Friends' Asylum for the Insane, Little Sisters of the Poor, and the Home for Aged and Infirm Colored People.——By the will of the late Julius Streeter, the Protestant City Mission receives $6,000.

Personal.—Sir Almroth E. Wright, M.D., F.R.S., London, delivered a lecture in the College of Physicians, October 22, on "The Treatment of Bacterial Diseases by the Inoculation of Corresponding Vaccines."——Dr. David Birney was thrown from his carriage October 14, and painfully injured.——Dr. DeForest Willard, who has been ill for several months, has recovered and is now at Hot Springs, Va.

Health Report.—The total number of deaths reported for the week aggregated 469. This is a decrease of 24 from the number reported last week, and an increase of 71 over the number reported in the corresponding week of last year. The principal causes of death were: Typhoid fever, 13; diphtheria, 13; consumption, 60; cancer, 21; apoplexy, 15; heart disease, 53; respiratory disease, 45; enteritis, 24; Bright's disease, 39; suicide, 4; accidents, 11, and marasmus, 9. There were 202 cases of contagious disease reported, with 29 deaths, as compared with 202 cases and 19 deaths in the preceding week.

VIRGINIA.

Arrested for Selling Cocain.—Eight negroes were arraigned at Alexandria, October 13, to answer the charge of selling cocain.

Personal.—Dr. A. S. Priddy, Bristol, has been appointed superintendent of the Southwestern Hospital for the Insane, Marion, vice Dr. Robert J. Preston, deceased.——Dr. John E. Harris, Berryville, has been appointed local surgeon for the Norfolk and Western Railway.——Dr. James F. Bryant, Franklin, has been appointed surgeon-general of the first brigade, Virginia Division, United Confederate Veterans, vice Dr. John H. Claiborne, Petersburg, deceased.

Colored Society Election.—The second annual session of the Dominion Medical and Surgical Society ended at Richmond October 4. The following officers were elected: President, Dr. Charles R. Alexander, Petersburg; vice-presidents, Drs. Robert J. Boland, Roanoke, and R. A. Michael, Surrey; corresponding secretary, Dr. Harrison L. Harris, Richmond; recording secretary, Dr. J. A. Crowder, Petersburg; treasurer, Dr. Robert E. Jones, Richmond, and journalist, Dr. Edward R. Jefferson, Richmond. The society considered subjects relative to the hygiene and sanitary conditions of the colored people, and the questions of tuberculosis, malaria and other diseases which increase the death rate among the urban colored population.

WEST VIRGINIA.

Leper Dies.—George Raschid, the Assyrian leper, whose travels through West Virginia and Maryland a few months ago came near causing serious complications between the authorities of these states, died in a shanty near Pickings, W. Va., from heart disease, October 19. The body is said to have been cremated in the shanty in which he had lived, by order of the county authorities.

GENERAL.

Alvarenga Prize.—The College of Physicians of Philadelphia announces that the next award of the Alvarenga prize, being the income for one year (about $180) of the bequest of the late Señor Alvarenga, will be made on July 14, 1907, provided that an essay deemed worthy of the prize shall have been offered. Essays may be on any subject in medicine, but can not have been published. They must be typewritten, and must be received by Dr. Thomas R. Neilson, secretary of the college, on or before May 1, 1907. Each essay must be sent without signature, but marked with a motto and accompanied by a sealed envelope having on its outside the motto of the paper and within the name and address of the author.

CANADA.

University News.—Sir Wilfrid Laurier, prime minister of Canada, has made the University of Laval the beneficiary of an insurance policy on his own life for $5,000. His example will probably be followed.——The dominion government will be asked to grant $25,000 to further equip the biologic and bacteriologic departments of Queen's University, Kingston.

Winnipeg Medical Society.—The first regular meeting of this society was held October 5, when the president, Dr. Gordon Bell, delivered the annual presidential address. The following officers were elected: President, Dr. E. W. Montgomery; vice-president, Dr. J. R. Davidson; second vice-president, Dr. N. J. McLean; secretary-treasurer, Dr. C. H. Vrooman; councilors, Drs. McKenty, MacKay, Galloway and Todd.

Hospital News.—Winnipeg General Hospital treated 397 patients during the week ended October 13; 237 were men, 127 women and 33 children. The out-patients numbered 85.——The Winnipeg Isolation Hospital is quarantined with 25 smallpox patients.——Dr. Alex. Campbell, superintendent of the Winnipeg General Hospital, who has been ill with appendicitis for two weeks, is again attending to his duties.——Virden (Man.) Hospital was opened October 9.——A new hospital is to be established at Selkirk, Man., and the subscriptions now amount to $4,200.——Dr. F. Montizambert, director-general of public health, Ottawa, is at Victoria, B. C., in connection with improvements to the leper hospital at D'Arcy Island.

Quebec and Reciprocity with Great Britain.—The College of Physicians and Surgeons of Quebec, at a meeting held September 26, took the first step toward securing reciprocity with Great Britain, as provided for in the General Laurie Amendment (1905) to the British Medical Act, by adopting the following resolutions, the latter of which having appended to it the subsequent proviso:

Resolved, That the College of Physicians and Surgeons of the Province of Quebec beg the legislature of the Province of Quebec at its coming meeing to send a request to his majesty's privy council demanding the application of the Medical Act of 1886 and the amendments of 1905 to the Province of Quebec.

Resolved, That on a favorable answer from the privy council, the College of Physicians and Surgeons of the Province of Quebec enter on the necessary negotiations with the General Medical Council of Great Britain, in order to assure the establishment of reciprocity between Great Britain and the Province of Quebec:

Provided, That those who, having obtained the British license and are demanding the license of the Province of Quebec, shall, prior to their British registration, have fulfilled all the requirements of our medical act in regard to the obtaining of our license.

The idea of this proviso is designed to prevent "irregulars" in the province of Quebec crossing the Atlantic and securing registration in Great Britain and then returning and demanding and compelling their registration in the Province of Quebec.

Canadian Societies Oppose Low Insurance Fees.—The *Bulletin Médicale de Québec* for September contains reports of several county society meetings in which the question of life-insurance fees was taken up. The Arthabaska society postponed the discussion until greater harmony on the subject prevailed, but the Portneuf society adopted a resolution fixing the minimum rate for a life-insurance examination at $5 and for a lodge at $2. The societies at Joliette, Beauce and Chicoutimi have taken similar action, and several members of the Joliette society reported that the insurance companies had paid the fee without protest. The Portneuf secretary writes

that in certain districts where this fee is in vogue the insurance agents take "ambulant physicians" with them to make the examinations, who charge only $3 or less for their services. He adds: "We are not acquainted yet with this race of ambulant physicians, but its existence seems to be established. We are told that it originated in the cities. Those who have had opportunity to study specimens of this new species close at hand write that they have the same appetites, the same manners and the same customs as charlatans. At the risk of attracting some specimens of this new species into our domain the society proposes to adopt the new tariff, although it will not go officially into effect until the next meeting of the society. In the meanwhile the members are free to adopt it individually at any time." A proposal was received from the Joliette society asking that the members of all the neighboring county societies agree to publish their articles in the same medical journal, so that by subscribing to this journal a complete file of the proceedings of the various medical societies can thus be kept. The proposal was rejected as too exclusive a measure.

FOREIGN.

The Schaudinn Endowment.—The German Dermatologic Society, at its recent annual congress, appropriated $1,250 to be presented to the Schaudinn endowment fund, and also voted to have the volume of its transactions dedicated: "In Memoriam Fritz Schaudinn," with a reproduction of his portrait.

Behring's Tulase Reported Ineffectual.—Bernheim of Paris is the president of the *Oeuvre de la Tuberculose Humaine.* He created a sensation at the recent Antituberculosis Conference by reading an article describing his examination of a number of patients who are being treated by Krehl with Behring's tulase. Krehl himself was away on a vacation, but Bernheim was given every opportunity to examine the patients, study their clinical charts, etc., and he announced that the tulase treatment had evidently proved completely ineffectual.

Unsuspected Leper Town in Portugal.—The cable states that the town of Castroverde, 50 miles from Lisbon, attracted the attention of the authorities by its high death rate. Medical experts sent to investigate the cause found 127 cases of leprosy among the inhabitants, the disease never having been recognized before, and no measures having been taken to isolate those affected or to prevent their going to other towns. The place has been quarantined now, and the entire country is on the alert to discover cases of leprosy elsewhere.

Seventieth Birthdays of W. Waldeyer and E. von Bergmann.—Waldeyer's seventieth birthday was celebrated by his friends October 6, but von Bergmann's does not occur until December 16. Waldeyer's works embrace nearly every field of morphology, and he was the first to proclaim that the cancer cell is an epithelial cell, which conception Virchow did not accept. Waldeyer's name is familiar from his numerous topographic works, his collective reviews of various subjects, his successful career as a teacher, his faithful attendance at all medical anthropologic and anatomic congresses, and his devoted services to the local scientific societies. The *Deutsche med. Wochschr.* for October 4 gives a sketch of his career, with his portrait.

Vital Statistics in Constantinople.—According to the Constantinople correspondent of the *Lancet*, the new and energetic prefect of Constantinople, Rêshid Pasha, is about to introduce a sanitary reform, which, if realized, will prove to be of great service to the population of the Ottoman metropolis. He intends to reorganize the public service of vital statistics which up to now has been in a very unsatisfactory condition, and to introduce sanitary statistics of a more regular and precise character. The sanitary inspectors of each municipal district will henceforward have to furnish exact information concerning the different infectious diseases. The precise number of persons suffering from these maladies will also have to be recorded and much greater attention will be paid to the rate of mortality. A Turkish newspaper states that it is desirable to include in this sanitary reform the whole Ottoman empire and to enjoin on the provincial sanitary inspectors the duty of sending to the prefecture of the capital regular monthly reports concerning the vital statistics of their vilayets.

The Rémond Nursery at Lyons.—An endowed institution has recently been opened at Lyons to receive healthy babies born prematurely or under weight from other causes. The institution is connected with an outlying public convalescent home, and all the infants born at the maternities in town under normal weight are sent there and nursed at the breast, under constant medical oversight, until they reach the average weight for infants of their age. There are three buildings, each entirely separate and arranged for eight wet nurses and 16 nurslings. The nurses are mothers from the maternities who are paid a small sum daily for each child they nurse, both their own child and the foster child. The most scrupulous care is taken to exclude every possible chance of infection, the mere suspicion of syphilis or other contagious disease in the mother or child excluding the infant from the "Nourricerie." In case infection should occur in one of the buildings, that one can be closed and disinfected without interfering with the workings of the institution as a whole. The way in which the infants thrive is the most eloquent testimony to the value of such an institution, the nurse, her child and the foster child, all prospering far beyond the average, according to Plauchu's report in *Obstétrique* for September.

Plague Conditions in Calcutta.—Consul-General Michael, Calcutta, reports that the most prominent feature in the plague history of Calcutta is the alarming recrudescence of the disease, the mortality from which having declined from 8,222 in 1903 to 4,689 in 1904, again rose to 7,011. Other disappointing features of the year's plague history were the increased virulence of the disease and the conspicuous increase of mortality in the sparsely populated areas to the south of the town. The measures taken to combat the disease underwent considerable alteration during the year. A large staff of medical inspectors was employed to investigate the cause of all deaths in the city from whatever cause, and these investigations throw considerable light on the causes of general mortality. The demolition of plague-infected huts has been abandoned, because, in the absence of any arrangements for rehousing the dislodged population, demolitions aggravated the evils of overcrowding in the vicinity of operations. A satisfactory feature of the year's work was the far larger percentage of living cases ascertained. The statistics of the year's work confirm the facts previously reported in regard to the small number of houses in which plague infection occurs. Even in the case of houses in which more than one death occurred the infections were generally simultaneous. It is noteworthy also that the mortality in kutcha huts was about double that in masonry houses, where most of the cases occurred on the ground floor. The reason may possibly be that infection is more easily carried on mud floors than on masonry plinths, which can be more thoroughly cleansed. Little success was attained in the crusade against rats, although various methods of destruction were employed. Little progress was also made with inoculations, which are still unpopular. The question whether it is possible to pass by-laws under the municipal act to compel owners of grain godowns to make them rat proof has been referred to the advocate-general for his opinion.

Second International Congress for the Insane.—This congress was held recently at Milan, Tamburini presiding. Marie of Paris delivered an address on the necessity for farm colonies for the insane, for epileptics and for backward adults. Lucien-Graux urged the establishment of special public institutions for the hospital care of the nervous, public sanatoria for the nervous in hygienic sites, open to anyone without previous declaration. A resolution proposed by Mariani was adopted urging that in countries in which the mild cases of insanity are not yet boarded out in families, a committee of alienists, appointed by the government, should draw up a set of plain, simple, detailed instructions, explaining the essence and the aims of "familial assistance" of the insane, and that a copy of these instructions should be placed in the hands of every country physician, without exception, with the request that he should inform the rural population in regard to the matter and use his influence for the adoption of the system and to further its workings. Another resolution urged the care of persons predisposed to insanity, and of persons dismissed from asylums, facilitating their return to normal work and watching over the moral and material welfare of their families, coördinating for this purpose the efforts of the charitable municipal and medical organizations. Another resolution urged the fusion of the various organizations that care for the insane, for backward children, alcoholics and criminals, as there are so many connecting links between them, and combined effort will be much more effectual. The fifth resolution was devoted to special prophylactic and curative measures in regard to the tuberculous insane, both those boarded out in families and those in asylums. The sixth resolution asked that mentally deficient children should receive special medico-pedagogic training. On the recommendation of Frank of Zurich it was voted to organize an international committee for the etiologic study of and for prophylactic action in regard to nervous and mental affections and the causes entailing them.

The committee will organize an international institute for these purposes, and will strive to obtain the coöperation of the various governments to complete and coördinate investigation into the causes of degeneracy, so as to propose remedies. The transactions of the congress are being published in the *Archives de Neurologie* and other special journals.

LONDON LETTER.

(From Our Regular Correspondent.)

London, Oct. 13, 1906.

A Villa Asylum for Lunatics.

Lord Roseberry opened at Bangour, in Linlithgowshire, an asylum which the lunacy board of Edinburgh has erected on the villa or segregate system for the care of the city's insane poor. This is the first complete example in Great Britain of this form of asylum. Accommodation will be provided for 1,000 inmates.

Body Exhumed as the Result of an Unfounded Attack on a Physician.

An inquest has been held under extraordinary circumstances on the body of a widow, aged 63, who died Dec. 1, 1905. About two months ago the body was exhumed and an inquest was held, which was adjourned. The exhumation took place at the request of the brother of the deceased, who made an affidavit that the physician was in a great hurry to get the body buried. As a matter of fact, the burial took place six days after death. The brother also stated that he believed that the death of his sister was due either to administration of improper drugs or to incorrect treatment. At the inquest the doctor stated that he had first treated the woman in 1898 for dyspepsia. Three years later symptoms of cardiac degeneration set in. In 1904 Dr. Rose Bradford saw the patient with him and entirely agreed with his treatment. As to the funeral, he had nothing to do with it. Evidence was given by Dr. Willcox, analyst of the home office, and Dr. F. J. Smith, professor of forensic medicine at the London hospital, that the body showed no indications whatever of poisoning. The jury returned a verdict that the certificate of death given by the doctor was perfectly correct and that there was no ground for the imputations made.

The Specificity of Agglutinins.

Dr. Sidney Martin, F.R.S., reports experiments undertaken to determine whether the agglutins formed in the rabbit in response to infection with the colon bacillus, the typhoid bacillus, the paratyphoid bacillus and the *B. proteus vulgaris* have any effect on each of the other microbes. He finds that the agglutinin of the *B. proteus vulgaris*, although very active against this microbe, has no action against the other bacilli mentioned. The *B. proteus vulgaris* is, therefore, widely separated from the other three bacilli not only by its culture and chemical characteristics, but also by the agglutinins it forms in the living body. The other bacilli show some overlapping in their agglutinating reactions. Thus the agglutinin of the typhoid bacillus formed after prolonged treatment of the animal reacts slightly with the colon bacillus and with the paratyphoid bacillus. In most cases, however, the reactions were incomplete. The agglutinin of the colon bacillus reacted very slightly with the typhoid bacillus and not at all with the paratyphoid bacillus. The agglutinin of the paratyphoid bacillus, on the other hand, reacted slightly with the typhoid bacillus and more markedly, though somewhat irregularly, with the colon bacillus.

Identification of Skin Bacteria.

Dr. M. H. Gordon has endeavored to establish a bacteriologic test by which particles shed from the skin may be detected in air. This test is based on the fact that although a variety of staphylococci occur on the skin there is no staphylococcus which on the application of differential physiologic tests shows characteristics permitting of its ready distinction from other staphylococci. This organism occurs far more frequently than any other variety. It frequents the epidermis of the hand, cheek, scalp and forearm with such persistency that it may be considered characteristic thereof in much the same way that *B. coli communis* is characteristic of the large intestine, and *brevis* of the mouth. Dr. Gordon believes this staphylococcus to be identical with the organism observed by Welch and named by him *Staphylococcus epidemidis albus*. Dr. Gordon also describes another staphylococcus which he finds particularly abundant on the scalp. It possesses characters by which it can readily be differentiated from other staphylococci, and it is particularly serviceable in detecting particles of scurf. Dr. Gordon examined outdoor and indoor air with the view of determining whether his tests could be relied on for detecting in air the presence of skin particles detached from the human body and obtained very encouraging results. On three occasions he examined open air for staphylococci characteristic of skin. Although seventeen different kinds of staphylococci were obtained, not one of them could be identified with *Staphylococcus epidermidis albus*. On the other hand, this staphylococcus was obtained in the air of barber shops and in the air of an operating theater during use.

The Wellcome Research Laboratories.

The second report of the laboratories attached to the Gordon Memorial College at Khartoum and founded by Mr. H. S. Wellcome has been published. The editor and director of the laboratories, Dr. Andrew Balfour, less than three years ago started work at Khartoum with one laboratory boy and two black servants. He is now aided by a chemist, a traveling naturalist, an economic entomologist and two European assistants. Two Carnegie research fellows have been invited to conduct investigations there, the one working on chemical, the other on bacteriologic or pathologic lines. A floating laboratory for collecting museum specimens from the various rivers will soon be organized. The anti-mosquito work is most successful. Originally more than half of the wells and pools were infected; now anopheles and malaria are practically banished and the stegomyia is seldom found. The amount of oil that had to be used per well was found to never exceed half a pint, and even two ounces were found ample if none was lost in splashing. Only six men are engaged in this work under an English inspector, so that for less than $500 per annum Khartoum is kept practically free from malaria and from the perpetual torment of mosquitoes. Dr. Balfour states that 16 genera comprising some 35 species culicidæ have now been found in the Soudan.

The Transmission of Plague by Rats.

In his recently-issued report to the local government board Dr. Klein reports some important experiments on this subject. Most investigators have met with little or no success when they attempted to produce plague in rats or other animals by feeding them with plague cultures or with fresh organs of animals dead of plague. Dr. Klein has repeatedly fed guinea-pigs, rats and mice without positive results. It occurred to him that the reason of the failure was that the bacilli were destroyed by the secretion of the stomach during digestion. He suspected that if the bacillus could reach the small intestine in living state its power of multiplication would not be destroyed, but might, on the contrary, be assisted by the alkaline medium found there. To test this theory, he fed animals with plague bacilli either in a dry state with the food or sufficiently protected to enable them to pass through the stomach unscathed. He used gelatin cultures from two weeks to two months old which had become dried, though they still contained active bacilli. He found that this material either alone or mixed with wheat or rice and then well dried was capable of infecting rats, mice and guinea-pigs fed with it. Similar results were obtained when pieces of plague organs were mixed with wheat, rice or flour and then dried. A considerable proportion of the animals were infected and died between the fourth and sixth days. It was found that the infection took place in the ileum at or about Peyer's glands. In this locality there was hemorrhage with great multiplication of plague bacilli. This condition was found not only in the cavity of the intestine and on the free surface of the mucous membrane, but also within the villi themselves and in all parts of the intestinal wall. It also spread to the mesenteric glands, which in turn infected the vascular system of the other viscera with crowds of bacilli. The intestinal and renal excreta of animals infected in this way contain numerous bacilli. Hence in natural infection such excreta when mixed and dried with foodstuffs provide a ready means of spreading the contagion. These investigations suggest that man may contract the disease through the intestinal tract from ingesting food contaminated with plague material in a semi-dried condition. A similar suggestion has been put forward by Dr. Simpson with regard to the origin of the septicemic form of plague in man. Dr. Klein also investigated the degree of resistance against desiccation which the plague organism exhibits when associated under diverse conditions with various materials, such as foodstuffs, earth and sand. The vitality of the bacillus added to earth and sand in the form of a gelatin culture remained during the autumn for a long time unimpaired—in earth even after seven and one-half weeks and in sand over six weeks. In summer the duration of vitality was not so long. These experiments show the possibility that under natural conditions during plague seasons plague expectoration and intestinal mucus charged with masses of the bacillus may remain infective for a dangerously long period.

VIENNA LETTER.

(From Our Regular Correspondent.)

VIENNA, Oct. 8, 1906.

Vienna from the Medical Student's Point of View.

As a large and constantly increasing number of American physicians come every year to Vienna for the purpose of studying in the extensive hospitals here, a few lines regarding the accommodations, attractions, the facilities for learning and hospital advantages in this city may be useful to those who intend to come here. Vienna, the capital of Austro-Hungary, is a city of 1,980,000 inhabitants, and is situated in the center of a very important line of commerce and travel, thus being the natural place for the government and official bodies. As the number of hospitals and able doctors in the provinces beyond is none too large, numerous cases of disease come voluntarily or are sent by their doctors to the capital, so that the population, whence the hospitals draw their material, may be safely estimated to be upward of 3,000,000. For the army of patients there are altogether nine large public hospitals, so that the educational facilities are fairly centralized and a good supply of interesting cases guaranteed. In parentheses it may be added that the system of private hospitals is hardly known here, so that nearly all the hospital patients come under the heading of those available for instruction. The chief or general hospital, Das Allgemeine Krankenhaus, an ancient building with more than 2,000 beds, in which all the stars of the Vienna medical school used to teach, comprises three clinics each for surgery and medicine, each with about 100 beds; two clinics each for gynecology, dermatology and syphilis, ophthalmology, mental and nervous diseases, and one each for otology, laryngo-rhinology and pediatrics. Apart from these clinical wards, which are devoted specially to the purposes of clinical lectures and teaching, there are surgical, medical and gynecologic wards, and "extraordinary professors," from whose ranks the "regular professors" are chosen. Of the clinical teachers some have a well-known name, like Pollitzer, Schrötter, Chiari, von Noorden, Neusser, Finger, Hochenegg and Fuchs. Many of them not only speak English fluently, but also lecture in the English language in special classes. In the gynecologic clinics, which are united with the maternity department, and are under Professors Chrobak and Schauta, over 8,000 lying-in cases are managed yearly, a number sufficient to supply the student with a good experience.

Besides this general hospital there are the Wiedner Hospital, the Rudolf Hospital and the Poliklinik, connected with the medical department of the university, in which clinical lectures are given also by professors during the "semesters" or terms. The winter semester lasts from October till March 31, the summer semester from May 15 to July 15. The fees for clinical "semester" lectures are low, about $6 being the maximum, while special lectures are more expensive. A very good opportunity for anatomic and dissecting work is offered in the "Anatomisches Institut," under Professors Zuckerkandl and Toldt, for pathologic anatomy and bacteriology in the Pathologisch-anatomisches Institut, under Professors Weichselbaum and Kretz, and for histology of the nerves in the institute of Professor Obersteiner. In these official "institutes" the fees for working and material come to something like $10 to $15 per term of eight weeks. A completely new and modern building is now ready for the study of physiology, under Professor Exner, and ample means for research are provided for those students who desire to devote their time to this branch

As all the medical teaching is governed by the senate of the medical faculty of the university, and as the university itself is a central institution, there is an enormous advantage in the fact that all the accessory institutions mentioned above are in the same quarter or district of Vienna, called Alsergrund, and are within easy access of each other. In the same district are numerous opportunities for cheap and good lodging. For the last few years this whole part of the district has been used by medical students as lodging quarters, and the tenants of the flats make it their special business to let rooms to this class of lodgers. A good, quiet room may be rented for $8 to $12 a month (there is no weekly payment here) near all the central institutes, and sometimes board may also be obtained for about $30 or $35 a month; but it is possible to get it even much cheaper, so that $8 to $10 per week should cover the expenses of a decent mode of living. There are also private dining houses for medical students, with low prices. Several boarding houses of the English fashion are also to be found in Vienna, but they are, of course, more expensive. For the information of those who are planning to stay in Vienna, I may mention the following streets as suitable and convenient: Spitalgasse, Alserstrasse, Lazarethgasse, Pelikangasse, Kochgasse, Skodagasse, Schlösselgasse, Währingerstrasse and Garnisonsgasse. If board is not obtained with the room, there are good restaurants with excellent food and low prices in these streets, and cafés with their world-renowned Vienna coffee and rolls for 10 cents (equal to 50 hellers or half a krone). A cup of splendid coffee with white rolls may be had at any time, while a good dinner can be had for less than half a dollar, and a supper for 30 cents is very good.

These figures are meant for a good but not luxurious mode of living. Of course, there is no limit for one who wants to spend more. The best way of getting out of culinary troubles is to combine a few gentlemen who are willing to dine together. Some landlady is always ready to cook for them. Gentlemen coming over with their families have also no trouble in finding rooms or furnished flats according to their wishes.

There is an "American Medical Society" in Vienna, in which new arrivals will be cordially received, and where they may obtain information on all subjects concerning lodging, board and medical courses. The seat of this society is in the Café Klinik, corner of Spitalgasse and Lazarethgasse, opposite the General Hospital. THE JOURNAL will be found on file there. The present secretary is Mr. Herrman L. Kretschmer, Schlösselgasse 13/9. The society conducts many lectures and special courses, and nearly all English-speaking physicians in Vienna, both from England and America, are members of the society. Further information may also be obtained at the Pension Welser, Vienna IX, Höfergasse 5, where members of the society meet for their meals. Membership in this society actually means the removal of all difficulties from the path of the newcomer. The best means of getting information is to write to or speak personally with the secretary of the American Medical Society, Vienna IX, Café Klinik, Spitalgasse. For those who wish to read in the library there are two well-equipped libraries. One is the large reading room (Lesezimmer) of the "Universitäts-Bibliothek," comprising about 400,000 books, and the other is the "Aerztliches Lesezimmer" in the hospital, with about 22,000 books and periodicals. English medical works are provided in abundance, and access to these libraries is easily obtained. Gentlemen who wish to spend a longer time in the wards find it not a difficult matter to obtain the post of "hospitant" in the wards. They have the same rights as ordinary hospital officers, but not their duties, and are unpaid. Thus, for instance, the clinics for dermatology, medicine, syphilis, eye diseases and otology are frequented by American "externes" or "hospitants."

As regards the classes arranged by privat docents and various professors, the following may be mentioned: Professor Kovaes has diagnostic classes for internal diseases, $10 for six weeks, very many American students; hematology by docent Türck, $25, four to six weeks; surgery of the genitourinary system, docent Zuckerkandl, $20, four weeks, many English surgeons; gynecology and dermatology, especially for Americans; surgery of the ear by Alexander, Neumann, Hammerschlag, $15 to $20, six to eight weeks. Hajek's classes on rhinology are well known, also those of Chiari and Koschier. The fees are between $20 and $40, including operations on patients. Surgical practice on the cadaver is obtainable as a special course. Urbantschitsch and Pollitzer's classes on otology are well frequented by English-speaking physicians, and Finger's English classes on dermatology are an old-established institution. Furthermore, it is possible to get up a special class for nearly any branch of medicine, if the lecturer is guaranteed a minimum fee of a sum varying between $100 and $150 for the whole class, so that there is a vast opportunity for both practical and theoretical teaching at a low cost to the individual members of the class.

The situation of Vienna amid fine picturesque scenery, within easy reach of the Alps—a two hours' railway ride brings one to the Schneeberg, 5,900 feet high, or to other high mountains —makes it a very pleasant place to live in. The water supply is considered to be among the best if not the best of all large towns, so that typhoid or other water-borne epidemics are actually absent. The death rate for the last decade is constantly declining and stands now at 18.7 per 1,000. The only drawback is the prevalence of tuberculosis, but this may be safely overlooked, as only the poorer classes of the population are affected in a degree higher than in America, while those classes with which the student comes in contact are just as healthy and clean as anywhere else. Vienna is a rich, healthy, beautiful and quaint capital, with unparalleled opportunities for cheap and world-renowned medical education, so that time and money are well spent.

Pharmacology

THE POPULAR SYNTHETIC REMEDIES, THEIR USE AND MISUSE.

J. O. SCHLOTTERBECK, PH. D.
Dean of the School of Pharmacy, University of Michigan.
ANN ARBOR, MICH.

[Dr. J. O. Schlotterbeck, a member of the Council on Pharmaey and Chemistry, in a paper read before the Wayne County (Mich.) Medical Socicty, and published in the *Journal of the Michigan State Medical Society,* calls attention to the increasing employment by the medical profession of various proprictary articles and also mentions the laxity in the use of the word synthetic. From his article we quote:]

It was not uneommon to hear the word used indiscriminately in connection with true synthetics, fictitious synthetics, decomposition products, and even mixtures pure and simple. This is not surprising when we consider that some knowledge of the chemistry of a compound is essential to a proper classification, and further that the terminology of the majority of the army of new remedies is anything but suggestive of composition. In fact, it may be said that many of the titles appended to new remedies have for their chief recommendation brevity and euphony, in addition to an utter lack of significance. Again, owing to the relatively slight attention given to the subject of organic chemistry in medical colleges in the past as well as the present, many physicians are not in a position to distinguish between classes of chemical remedies, even when a scientific or semiscientific nomenclature is employed. A very prominent physician recently expressed his belief that the status and efficiency of the medical profession would be largely enhanced if some of the spectacular courses of present day medical curricula were replaced by more thorough training in the chemistry, pharmacology and prescription of definite chemical compounds. It is needless to say, it is scarcely open to argument in faet, that in this age of synthetic remedies the physieian should have at his command a discriminating knowledge of organic chemistry.

But what is a synthetic compound? Let us compare the preparation of a synthetic with the construction of a building, a rather homely illustration, but one which will answer the purpose. Edifiees of widely differing architecture are constructed by bringing together not in a heterogeneous mixture, but according to definite plans, a number of structural units more or less different in character. When the buildings are finally completed we have new structures entirely unlike the units of which they were built. They are comparable with the synthetic compounds prepared in the laboratory. Now, if an edifice be demolished and resolved into the original structural units or elements of which it was composed, these units could be compared with decomposition products when a compound is subjected to analysis. Synthetics are made by the established ehemical process called synthesis, which is the uniting of simple compounds or elements to produce complex ones. Synthesis is, therefore, a constructive process, the opposite of analysis, which is a destructive or demolishing process.

A scientific illustration of the principles of synthesis and analysis is well exemplified in the investigation of the composition of water, one of the first experiments which the beginner in chemistry performs. By electrolysis water is decomposed into its elements, hydrogen and oxygen, in the proportion of two volumes of the former to one volume of the latter. This you will recognize as the analysis of water. Now, by exploding this same mixture of hydrogen and oxygen with the spark from an induction coil, the elements unite chemically with the formation of water. This is clearly the synthesis of water.

In the domain of organic chemistry the construction of the pharmacopeial synthetic hexamethylenamina, better known by the names urotropin and cystogen, is a little more complex, but readily understood. When a mixture of stronger water of ammonia and solution of formaldehyd in certain proportions is allowed to stand for about twelve hours, a condensation takes place and the famous urinary antiseptic is formed. The reaction takes place according to the following equation:

$$4NH_3 + 6CH_2O = (CH_2)_6N_4 + 6H_2O$$

This is one of the simplest illustrations of synthesis.

Apomorphin is a well-known article of the pharmacopeia, which is often incorrectly classed as a synthetic. When the alkaloid morphin is heated in a sealed tube with strong hydrochloric acid, it is broken up into two new compounds, the base apomorphin, and water, as folows:

$$C_{17}H_{19}NO_3 = C_{17}H_{17}NO_2 + H_2O$$

The identity of the original alkaloid is destroyed and the resulting product is less complex than the morphin. The apomorphin was obtained by a destructive or analytic process, therefore, it can not be called a synthetic product, but rather a decomposition product, or a derivative of morphin, if you wish.

While the chemist uses the word synthesis and, therefore, synthetic for all compounds, whether organic or inorganic, made by the construetive process, the physician and the pharmacist commonly connect the word with organic compounds used in medicine.

There is a firmly established impression among a large class of pharmaeists and physicians that all synthetics are coal-tar products. This is far from the truth. A little later I will show that there is a very large proportion not derived from any of the products contained in coal tar. When bituminous or soft coal is subjected to destructive distillation, that is, heated in retorts without excess of air, the compounds originally existing in the coal are split up into simpler ones, some of which are gaseous, some liquid and some solid. The coal gas, when it leaves the retort is passed through water, which absorbs the ammonia, the resulting gas water being our principal source of ammonia. The coal tar was formerly considered a nuisance and could be obtained for the manufacture of sidewalks and pavements at a very low figure. It is still used to a slight extent in my home city for that purpose, but I doubt very much that the average citizen of Detroit gets an opportunity to see and smell coal tar. It is one of the most valuable by-products in the manufacture of coal gas and commands a ready market, because of the valuable constituents it contains.

When coal tar is subjected to fractional distillation that portion of the distillate which floats on water is called light oil. That which has approximately the specific gravity of water, and, therefore, swims in water, is called dead oil, and that which sinks in water is called heavy oil. A further fraction obtained at temperatures as high as 400 degrees C. constitutes anthracene oil from which the parent substance of many coal-tar dyes is obtained. The residue in the retort is pitch, used in making varnishes, etc. This classification of the fractions is not uniform with all producers, some collecting more fractions and others less. Over eighty different chemical compounds have been isolated and identified in the fractions obtained in the distillation of coal tar, but there are only a few of these of great commercial importance because of the cost of separation. The most important products are benzene or benzole from the light oil; naphthalene or tar camphor from the dead oil; phenol or carbolic acid from the heavy oil, and anthracene from the anthracene oil.

It may be of interest to show by materials and formulæ how one of the most popular classes of synthetic antipyretics is developed. When benzene (not benzin obtained from petroleum) is treated with strong nitric acid under certain conditions, the nitric acid radicle NO_2 enters the benzene nucleus or ring and water is split off. The resulting compound is a yellow liquid of bitter almond odor but of altogether different composition from the true oil of bitter almond. This oil is commonly called oil of mirbane and is used to perfume cheap soaps, floor oils, polishing pastes and so on. When this nitrobenzene is reduced by means of Fe and HCl, whereby nascent hydrogen is generated amidobenzene or phenylamin is formed. The common name for this compound is anilin or anilin oil. It is poisonous and was once administered in the form of the sulphate and hydrochlorid as an antipyretic. It was this property of anilin that suggested the introduction of acetanilid. Now by boiling anilin oil with glacial acetic acid, H_2O is split off and the acetyl

group or acetic acid radicle replaces the hydrogen of the amido group with the formation of acetanilid. This is easily purified by recrystallization.

This series of reactions will show how easily and cheaply this synthetic is made:

1. $C_6H_6+HNO_3=C_6H_5NO_2+H_2O$
   Nitrobenzene
   $C_6H_5NO_2+2Fe+6HCl=C_6H_5NH_2+Fe_2Cl_6+2H_2O$
   Amidobenzene or Anilin
3. $C_6H_5NHH+HOOC.CH_3=C_6H_5NH.OC.CH_3+H_2O$
   Acetic Acid Acetanilid

By substituting other acids for acetic acid a great variety of derivatives can be made with physiologic action, on the whole the same as acetanilid. If salicylic acid be used in place of acetic acid we obtain salicylanilid; benzoic acid will make benzanilid; gallic acid gallanilid; formic acid, formanilid, and so one. If bromin be substituted for one H in the para CH group, we obtain synthetic asepsin; with iodin, iodacetanilid; if the CH_3 group be substituted for H in the NH group, exalgin is obtained.

The manufacture of phenacetin is a little more expensive, but not very much more difficult than the manufacture of acetanilid. Starting with phenol or carbolic acid and treating with HNO_3, we obtain paranitrophenol. The sodium salt can easily be made by adding to it NaOH and by heating this with C_2H_5I, paranitrophenetol is obtained. By reduction again with Fe and HCl, as in the manufacture of acetanilid, the NO_2 group, is reduced to the NH_2 group, and we have paraphenetidin. On boiling this with glacial acetic acid, the substitution takes place in exactly the same manner as in the formation of acetanilid. It may be regarded as acetanilid, in which the OC_2H_5 group replaces one H atom. It would be known then also as ethoxyacetanilid or as acetphenetidin. By developing these two antipyretics, although it may seem somewhat complex, one is able to appreciate the relationship existing between them and explain that the superiority of phenacetin is due to the entrance in the acetanilid molecule of the ethoxy group.

1. $C_6H_5OH+HNO_3=C_6H_4NO_2OH+H_2O$
   Paranitrophenol
2. $C_6H_4NO_2OH+NaOH=C_6H_4NO_2ONa+H_2O$
3. $C_6H_4NO_2ONa+IC_2H_5=C_6H_4NO_2OC_2H_5+NaI$
   Paranitrophenetol
4. $C_6H_4NO_2OC_2H_5+Fe+6HCl=C_6H_4NH_2OC_2H_5+Fe_2Cl_6+2H_2O$
   Paraphenetidin
5. $C_6H_4NHH.OC_2H_5+HOOC.CH_3=C_6H_4.NH.OC.CH_3.OC_2H_5+H_2O$
   Acetic Acid Phenacetin

Here, too, there are a large number of derivatives possible by introducing other acid radicles than acetic. Lactic acid gives lactophenin; salicylic acid produces saliphen; citric acid, citrophen; propionic acid, triphenin; mandelic acid, amygdophenin. The physiologic action of all of these compounds and a number of other derivatives of phenetidin are fundamentally the same.

The antipyretics just spoken of are coal-tar derivatives or synthetics, but of a list of over thirty synthetics which I found on the shelves of an Ann Arbor pharmacist, more than half were not derived from coal-tar products. In this list the following were from coal-tar: antipyrin, acetanilid, phenacetin, exalgin, lactophenin, nosophen, orthoform, salophen, agurin, xeroform, saccharin, salol, methylene blue, phenolphthalein. Those derived from other sources were iodoform, chloral hydrate, chloralamid, heroin, protargol, argyrol, sulphonal, trional, urotropin, betaeucain, euquinin, tannigen, tannalbin, aristol, duotal, thiosinamin, veronal, urethan.

Kopp's Baby's Friend Still at Its Deadly Work.

The newspapers of Duluth, Minn., recently chronicled the death of a child from what one paper characterized as "patent dope." We communicated with Dr. A. J. Braden of Duluth, the attending physician in the case, and he sends us the following report:

History.—On Sept. 7, 1906, I was called to attend a six-months old child. The child was vigorous and healthy when born and had always been breast-fed. When it was about two weeks old it was troubled with colic, and on the advice of a neighbor the mother administered a preparation known as Kopp's Baby's Friend. This was at first given in doses of from 5 to 8 drops and was gradually increased until at the time of my visit the child was receiving a teaspoonful at a dose. The mother informed me that she always gave at least one such dose daily and that some days she gave two. She would not admit that she ever gave more than two doses in one day, but I am convinced from my conversation with her that the child received the two doses more days than it did the one.

Examination.—When I saw the child the pupils were pinpoint in size and it had the appearance of being deeply narcotized. The child was pale and waxy in color and the body was emaciated; in fact, the infant appeared to be in the last stages of marasmus.

Remarks.—The child died September 8. As this child was healthy at birth, was breast-fed, never had diarrhea or other sickness, I believe that its death was due to chronic opium poisoning, and I so reported it in the death certificate.

I may state that within a few days after a birth is reported in Duluth, a sample bottle of Kopp's Baby's Friend finds its way to the parents, and I know of two instances in which the preparation was introduced in this way and in which it was being used daily several months afterward.

Proprietary Prostitution.

Under this head, the *California State Journal of Medicine* says:

"Some time ago THE JOURNAL of the American Medical Association published a statement to the effect that most proprietaries, no matter how exclusively they may have been presented to the medical profession at first, eventually become 'patent medicines,' in the sense that they are later advertised directly to the public and encourage self-medication. A very forcible example of just that very progress from the doctor and the medical journal to the general public and the lay publication has been furnished recently. Some few years ago Mr. Alpers, one of the leading pharmacists of New York, became interested in guaiacol preparations and derivatives and produced a substance which he called 'triacol (Alpers).' It was presented to the medical profession, and, we believe, found to have some merit. Doubtless it was sent around and a number of physicians 'sampled.' Doubtless, too, a number of hospitals received supplies of it and used it. It was advertised in some of the larger medical journals and was, apparently, a perfectly ethical preparation. But now comes the sequel. Having developed a certain market in the medical profession, and having secured a certain quasi-medical endorsement, the scheming proprietors, the Alpers Chemical Co., throw off the mantle of decency and come before the public. In the last issue of one of the lay magazines (*Ainslee's*) appears the following advertisement:

> "'Physicians prescribe Triacol (Alpers). Triacol (Alpers) has been accepted by physicians as the most perfect combination of certain approved remedial agents for the treatment and cure of diseases of the organs of respiration. Coughs, bronchitis, bronchial asthma and other diseases of the respiratory organs promptly yield to the action of this scientific preparation. Triacol (Alpers) is not a "patent medicine." It is a strictly ethical preparation, extensively and successfully used in hospitals and in private medical practice. Interesting booklet sent on request, telling what triacol (Alpers) has done and is doing to cure coughs, bronchitis, etc. Thousands of physicians approve triacol and praise it. At all department stores and druggists. Price, $1, express prepaid.'

"Now, is not that nice? And Mr. Alpers stood for years as a leader in scientific pharmacy and his voice was listened to with respect in the deliberations of the American Pharmaceutical Association. Is it to laugh or to weep?"

Silver Preparations in Conjunctival Disease.

Myles Standish (*Ophthalmic Record*, August, 1906) remarks that while a positive result from laboratory tests is of value, negative laboratory results form a very poor foundation for clinical advance. He refers to the recent experiments of Dr. Derby, which are supposed to show the inefficiency of silver preparations and which illustrate the difficulties of trying to reproduce clinical conditions in the laboratory. On account of the difficulty with which the gonococcus is cultivated, the experiments were made with the *Staphylococcus aureus*. Clinical experience, however, seems to show that the bactericidal action of silver is much greater in cases of gonococcic infection than in that of staphylococcic. It is highly probable also that the condition which is omitted in the laboratory and which makes the growth of the gonococcus on ordinary media so difficult,

may be the very one which makes silver efficacious in the treatment of the disease.

The reason that ordinary clinical observation is of small scientific value is that it is impossible to control all the conditions and to keep the patient under constant supervision. Standish believes that these objections are obviated in such an isolation ward as the Gardner Building of the Massachusetts Charitable Eye and Ear Infirmary. Here the conditions surrounding the patient, he states, are absolutely under control. The cases selected for observation were cases of gonorrheal ophthalmia with clear cornea. Of 50 cases of ophthalmia neonatorum treated with silver nitrate corneal affection developed in 6 per cent. In 150 cases treated with protargol the cornea became infected in 3 per cent. In 201 cases treated with argyrol, the cornea became infected in 2 per cent. In adults the proportion of cases in which the cornea became infected was much greater, being about 42 per cent., but in only approximately 7.5 per cent. was the outcome a blind eye.

Standish's conclusions are that "the modern silver preparations are efficient in the control of gonorrheal infection of the conjunctiva, and that they have greater bactericidal properties in this disease than the laboratory experiments on other micro-organisms would lead us to expect."

Standardization of Non-official Remedies.

In the treatment of digestive disorders, due to an insufficient secretion of saliva, the administration of the starch-digesting ferment, diastase is often recommended. Besides those malt extracts, which contain active diastase, various forms or brands of diastase are offered for sale. The source of these products differs widely and we have diastase obtained from malt, diastase extracted from the pancreas of animals and diastase of fungoid origin.

Diastase is not official in the United States Pharmacopeia and no standard of quality has been established for it. It is, therefore, but natural that the different brands as found on the market will differ very much in strength.

That this is true is shown by W. H. Blome, University of Michigan (*Pharm. Rev.*, 1906, p. 260), who examined four commercial brands and found two of them practically worthless.

This examination brings out another important point, namely, that the activity of these preparations varies decidedly with the conditions of the experiments. Thus, a certain brand was capable of changing a much larger quantity of starch to *dextrin* than was another brand, but when these two brands were judged according to the amount of starch converted to *sugar* then no great difference in activity was shown.

This difference in action is not surprising when the widely different sources of the ferment is considered; it points out the need of the adoption of some standard method for the valuation of diastase preparations. As far as possible, such a method should indicate their value as an aid to digestion.

"Patent Medicines" and Artificial Foods in Australia.

According to the *Pharmaceutical Journal*, Sept. 15, 1906, the Federal House of Representatives of Australia has passed the following motion:

1. In the opinion of this house, in the interest of the health of the community of Australia, it is desirable that all "patent" or proprietary medicines, all infantile and artificial foods, all medical and surgical appliances which purport to cure or to alleviate any disease to which the human frame is subject, should be critically examined on entry into the commonwealth: (a) To ascertain their contents and composition. (b) To ascertain their value from a curative standpoint. (c) To ascertain their value as food. (d) To ascertain their value as remedial agents.
2. It is further desirable that the exact pharmaceutical composition or construction should be set out clearly on the label or package of each bottle, tin box or parcel, and that a clear definition be given of the ailment they profess to cure or alleviate.
3. In the event of the description on the bottle, tin box, package or parcel being false or misleading to the purchaser, then all such articles shall be refused admission into the commonwealth, and all such as have been landed and not cleared shall be destroyed.

The government already possesses authority to enforce these regulations, and Sir William Lyne, minister of customs, expressed a determination to stop the importation of undesirable goods.

Correspondence

Pathologists in Hospitals for the Insane.

St. Peter, Minn., Oct. 22, 1906.

To the Editor:—Laboratories in hospitals for the insane in the Middle West are not so uncommon as the editorial in The Journal, October 6, would imply. There are a number of them, and the laboratory in this hospital has been in existence since 1894. This laboratory was started as an adjunct to the clinical work of the hospital, rather than as a place to study the morbid histology of the brain, although the latter has not been neglected; and the "continued careful study of the rich material in these institutions" has shown us that they are unworked mines of clinical and pathologic wealth in general medicine, which have been overlooked and ignored, while time and attention has been given to the study of the morphology of the brain, and the histology of its cortex; as if in them was constituted the pathology of insanity, and with the implication that the brain existed and performed its functions independently of the rest of the organism.

Your readers may be surprised to hear that the opportunities for clinical and laboratory study in general medicine, are as great, and in some respects much greater than those existing in the average general hospital; and the knowledge to be gained of the processes in disease is much greater, because there are so many patients, and they live in the hospital continuously. While, because of the hospital régime, the ordering of the diet and occupation of the patient, and the control of his conduct; everything else but the condition to be studied can be eliminated, and this is particularly true in the study of the chronic degenerative processes in the vegetative organs. Furthermore, the work done in the laboratory has shown us that the true pathology of insanity is somatic, and has to do with the processes of nutrition and waste as they are affected by acute disease or degenerative change in the body organs.

If medical men generally would interest themselves in the clinical work in hospitals for the insane, and encourage bright young men to seek experience in general medicine in them, much would be done to put the study of insanity on a truly scientific basis; to separate psychiatry from metaphysics, and to eliminate the superstition and preconceived ideas concerning the insane that so seriously hamper the work of these institutions.

It is to be hoped, therefore, that the medical profession in Illinois will encourage other work in the laboratories to be established, besides the study of the morbid histology of the brain and general nervous system, and the manifestations of morbid psychology, which are, after all, results, not causes.

H. A. Tomlinson.

Warning Against Fraudulent Insurance Agent.

Fargo, N. D., Oct. 6, 1906.

To the Editor:—There is a man traveling about the country representing himself as an agent of the Columbian Life Insurance Company of Boston. He goes by the name of Bailey and other aliases; he sells stock and appoints agents. The officials of the company inform me that he has swindled a great many doctors and that they have had detectives on his trail, but have not been able to get him. He is a large man, weight 240 pounds, about 5 feet 11 inches tall, dimple in chin, gray or blue eyes, poses as a Mason and an Elk. I believe publicity in The Journal and request for other journals to copy might save a good many doctors money and might be means of apprehending this criminal. P. H. Burton, M.D.

[This case was the subject of a warning in The Journal, May 12, 1906, page 1463.]

The Necessity for Better Provision for Legal Medicine.

Philadelphia, Oct. 13, 1906.

To the Editor:—May I trespass on your space so far as to plead not guilty, or at least, *non vult*, to the indictments by some of your correspondents in The Journal, October 13, page 1208. I do not think I was sarcastic; I did not intend to be. I objected to regarding lectures by a lawyer as sufficient to constitute a course in medical jurisprudence for

medical students. I did not express a doubt, that, as far as they go, the lectures are satisfactory, but they are not likely to go far enough, and it appears that I was not astray in my view of their scope.

I am quite willing to second Dr. Cattell's encomiums of Coroner Jermon, but this improved condition is not yet a year old, and my statements had reference to the course of events in the coroner's office for nearly a generation. It would require too much space to prove it, but I feel sure that a statistical inquiry would show that the creditable features Dr. Cattell enumerates are but secondary in the general history of the office in this city. Moreover, the reform wave is probably now on its ebb.

HENRY LEFFMANN.

Marriages

CHARLES C. HARROLD, M.D., to Miss Helen Shaw, both of Macon, Ga., October 23.

JOHN A. BRUCE, M.D., Boston, to Miss Ada Bromilow Lake of Chicago, October 24.

CHARLES FISHER OSGOOD, M.D., to Miss Ella Hubenthal, both of Ogden, Utah, October 10.

WILLIAM A. MILLER, M.D., to Mrs. Amy Richardson, both of Sheridan, Wyo., recently.

EUGENE FREDERICK WARNER, M.D., to Miss Dorothy Alness, both of St. Paul, October 9.

M. A. FLATLEY, M.D., Antigo, Wis., to Miss Eugenie Shea of Ashland, Wis., October 9.

L. AUSTIN BURR, M.D., to Miss Josephine Raney, both of Bloomington, Ill., October 17.

ALBERT C. MCGEAGH, M.D., Pittsburg, to Miss Myrtle B. Price, at Pittsburg, recently.

ARTHUR M. SMITH, M.D., Los Angeles, Cal., to Miss Ellen Leona Milligan of Chicago, October 18.

SAMUEL LLOYD MCCARTHY, M.D., Altoona, Pa., to Miss Marian Miller of Media, Pa., October 6.

EDWIN M. CHAUNCEY, M.D., Girard, Mich., to Miss Myrtle Campbell, at Girard, Mich., October 10.

JAMES RUFUS LITTLETON, M.D., Augusta, Ga., to Miss Mary King Marland of Griffin, Ga., October 2.

JOHN J. SULLIVAN, JR., M.D., Scranton, Pa., to Miss Frances Mary O'Neill of Philadelphia, October 10.

HERMAN JOHN BRACKNEY, M.D., Sheldon, Iowa, to Miss Carrie May Soesbe of Greene, Iowa, October 17.

WILLIAM H. MATCHETTE, M.D., Hancock, Mich., to Miss Mabel Hambitzer of Houghton, Mich., October 10.

ERNEST LAWRENCE PARKER, M.D., Worcester, Mass., to Miss Sally Leeds Bufford of Dorchester, Boston, recently.

LEWIS S. THORPE, M.D., Los Angeles, to Miss Edith Lilliencrantz of Oakland, Cal., at her country home near Aptos, October 11.

Deaths

James Stewart, M.D. McGill University, Medical Department, Montreal, 1869; L.R.C.P. and L.R.C.S., Edinburgh, 1883; from 1883 to 1891 professor of materia medica and therapeutics, and thereafter professor of medicine and clinical medicine in McGill University, and surgeon-in-chief of the Royal Victoria Hospital; a well-known specialist on nervous diseases; honorary president of the section of medicine at the Pan-American Medical Congress, 1896, and vice-president of the St. Andrew's Society, Montreal, 1897, died at his home in Montreal, October 6, from cerebral hemorrhage, after an illness of nine days, aged 59..

George Douglas, M.D. New York University, New York City, 1845; a member of the New York State Medical Society, Chenango County (N. Y.) Medical Association; an honorary member of the Medical Society of the State of California; a member of the International Medical Congresses in 1876, 1887 and 1890; a member of the first Pan-American Medical Congress, 1893, and formerly president of the Rocky Mountain Medical Association; one of the oldest practitioners of Chenango County, died at his home in Oxford, October 10, from hemorrhage of the bladder, aged 83.

Joseph Wylie Maxwell, M.D. Kentucky School of Medicine, Louisville, 1859; a veteran of the Civil War, and thereafter a professor in the Kentucky School of Medicine and also in the Louisville College of Medicine; for several terms a member of the board of council, board of aldermen and board of school trustees of Louisville; notable as an inventor and chemist, died suddenly from cerebral hemorrhage, at his home in Louisville, October 12, aged 73.

Randell Croft Stoney, M.D. Medical College of the State of South Carolina, Charleston, 1897; a member of the American Medical Association, Medical Society of the State of California and San Francisco County Medical Society, of San Francisco; contract surgeon United States Army during the Spanish-American War, with service in the Philippine Islands, was instantly killed in a street-car accident in San Francisco, October 1.

George Wollage Pratt, M.D. Geneva (N. Y.) Medical College, 1845; for more than 50 years editor of the Corning *Daily Journal;* postmaster of Corning for one year; for seven years collector of the port of Corning, and for several terms a member of the board of managers of the St. Lawrence State Hospital, Ogdensburg, died at his home in Corning, N. Y., October 3, after a long illness, aged 85.

John F. Jenkins, M.D. University of Michigan, Department of Medicine and Surgery, Ann Arbor, 1866; a member of the American Medical Association and Michigan State Medical Society; once vice-president of the Southern Michigan Medical Society; for 34 years an esteemed and successful practitioner of Tecumseh, Mich., was found dead in his office, October 12, from heart disease, aged 72.

Adam Uriah Holladay, M.D. Memphis Hospital Medical College, Memphis, Tenn., 1900; for two years secretary of the Craighead County (Ark.) Medical Society; a member of the Tri-State Medical Society and the Tipton County (Tenn.) Medical Society, died at his home in Randolph, Tenn., September 20, from malarial hematuria, after an illness of 30 hours, aged 31.

Bonner Huxley Cavitt, M.D. Barnes Medical College, St. Louis, 1903; of Hoxie, Ark.; a member of the Arkansas State Medical Society and Lawrence County Medical Society; local surgeon for the St. Louis, Iron Mountain & Southern Railroad, died in the Missouri Pacific Hospital, St. Louis, September 20, from remittent malaria, after an illness of four weeks, aged 26.

Max Hempel, M.D. Medical Department of Washington University, St. Louis, 1901; a member of the American Medical Association and of the St. Louis Medical Society of Missouri; of wide repute as an educator and writer on scientific matters, died at Mullanphy Hospital, St. Louis. October 9, from carcinoma of the stomach, after a long illness, aged 43.

Harvey Donnel Owen, M.D. Medical Department of the University of Tennessee, Nashville, 1897; a member of the American Medical Association, the Oklahoma State Medical Association and the Pottawatamie County Medical Society, died at his home in Keokuk Falls, Okla., from remittent malarial fever, October 3, after an illness of three weeks.

William D. Sullivan, M.D. McGill University, Medical Department, Montreal, 1879; a member of the American Medical Association; of High Springs, Fla.; a surgeon of the Atlantic Coast Line, died in the Odd Fellows' Sanitarium, Gainesville, Fla., four days after an operation, from acute kidney disease, October 5, aged 54.

John M. Quick, M.D. Eclectic Medical Institute, Cincinnati, 1856; auditor of Franklin County until 1860; secretary of the local board of health of Brookville from 1890 to 1894, and physician to the Franklin County Infirmary from 1894 to 1900; the oldest practitioner of Brookville, Ind., died October 13, aged 88.

Alfred H. Robbins, M.D. University of Buffalo, Medical Department, 1850; for more than half a century a practitioner of Rochester, Ind.; representative from Fulton County in the state legislature for three terms, died at his home in Rochester, October 8, from senile debility, aged 80.

Robert L. Morrison, M.D. University of Maryland School of Medicine, Baltimore, 1896, of Parkersburg, W. Va., died at the home of his uncle in New York City, October 15, from the effects of an abscess at the base of the brain for which operation had been performed, aged 35.

John Lee Gordon, M.D. University of Maryland School of Medicine, Baltimore, 1845, died at the home of his son in Columbus, Ohio, from acute bronchitis, October 8, aged 86.

William Harvey Axtell, a practitioner of Mercer County, Pennsylvania, for 65 years; some-time coroner of Mercer County, and for 25 years school director, died at his home in Sheakleyville, September 19, from senile debility, after an illness of eight months, aged 90.

Francis Volney Cox, M.D.; some-time secretary of the Ohio Valley Medical and Surgical Society and of the Surgical Society of Ohio, died at his home in New Martinsville, W. Va., September 27, from cancer of the rectum, after an illness of four years, aged 55.

William E. Todd, M.D. Bellevue Hospital Medical College, New York City, 1878; a prominent physician of Jackson, Miss., and for many years city physician of Jackson, died at his home in Jackson, October 13, after an illness of several days, aged 49.

Merrill Gaylord Pingree, M.D. Bennett College of Eclectic Medicine and Surgery, Chicago, 1880; who had been ill for a number of years, is reported to have committed suicide, October 15, by gunshot wound of the head and gas asphyxiation, aged 60.

Theodora E. Vassault, M.D. Medical Department of the University of California, San Francisco, 1900, of San Francisco, died in the San Francisco Hospital for Women and Children, from cerebral hemorrhage, August 20.

J. R. Jones, M.D. Missouri Medical College, St. Louis, 1859; one of the earliest settlers of Neosho County, Kansas, died at his home near Chanute, from heart disease, after an illness of several years, October 13, aged 70.

Dennis Henry Carr, M.D. Tufts Medical School, Boston, 1906; of Dorchester, Boston; house surgeon at St. Vincent's Hospital, Worcester, died suddenly in that institution, October 4, from uremia, aged 30.

Cicero Berlin, M.D. Medical College of Ohio, 1863; president of the Auglaize County Medical Society; the oldest practitioner of the county, died at his home in Wapakoneta, Ohio, October 12, aged 79.

Edwin W. Eldridge, M.D. Cincinnati College of Medicine and Surgery, 1879; formerly coroner of Wabaunsee County, Kansas, and a practitioner of Kansas City, Kan., died October 7, in Alamogordo, N. M.

Eugene Van Ness, M.D. Pennsylvania Medical College, Philadelphia, 1861; a chemist of New York City, died in his laboratory from the effects of hydrocyanic acid, self-administered, October 12, aged 60.

James William Savage, M.D. New York Homeopathic Medical College and Hospital, 1861, died at his home in Bath, Maine, September 18, from diabetes, after an illness of 15 years, aged 76.

Zenas Carey, M.D. Physio-Medical Institute, Cincinnati, 1867; some-time a lecturer in the college from which he graduated, died suddenly at his home in Bangor, Iowa, October 9, aged 73.

Pietro Sganga, M.D. University of Palermo, Sicily, 1898; formerly surgeon in the Italian army, was found dead at his home in Providence, R. I., from heart disease, October 10, aged 36.

Charles E. Oatis, Jr., M.D. College of Physicians and Surgeons, Baltimore, 1879, died at his home in Hazelhurst, Miss., October 8, from nephritis, after a long illness, aged 49.

Anthony J. Weitenberger, M.D. Detroit (Mich.) College of Medicine, 1899, died at his home in Detroit, from pneumonia, October 8, after an illness of three weeks, aged 27.

Guido Katzenmayer, M.D. Bellevue Hospital Medical College, New York City, 1883, died at his home in New York City, October 13, after an illness of five weeks, aged 74.

James D. Sharp, M.D. Louisville Medical College, 1892, of Baconton, Ga., died at the home of his parents in Fort Gaines, Ga., October 3, after an illness of six months.

David J. Erwin, M.D. Fort Wayne (Ind.) College of Medicine, 1884, died suddenly at his home in Lake City, Mich., October 11, from heart disease.

Henry A. Laurent, M.D. University of Heidelberg, Germany, 1891, died at his home in New York City, October 12, from nephritis, aged 43.

Jacob F. Hifsh, M.D. Baltimore, died at La Misa, Cal., September 12, from disease of the throat, after an illness of three months, aged 26.

Franklin W. Courtney, M.D. Cincinnati College of Medicine and Surgery, 1876, died at his home in Carenero, La., October 6, aged 54.

Peter C. Meengs, M.D. Rush Medical College, Chicago, 1891, died at his home in Ukiah, Ore., from pneumonia, recently.

The Public Service

Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending October 20, 1906:

Eastman, William R., asst.-surgeon, returned to Army General Hospital, Presidio of San Francisco, from leave of absence.

Buck, Carroll D., asst. surg., reported at San Francisco, for duty at the Army General Hospital.

Maus, Louis M., deputy surgeon-general, granted hunting leave for ten days.

Pinkston, Omar D., asst.-surgeon, reported for duty as surgeon of the transport *Sherman*.

Heysinger, James D., asst.-surgeon, granted leave of absence for fourteen days.

Stedman, Chester J., asst.-surgeon, granted leave of absence for one month.

Rhoads, Thomas L., asst.-surgeon, left Fort Riley, Kans., for his station, West Point, N. Y.

Skinner, George A., asst.-surgeon, arrived at Fort Snelling, Minn., per telegraphic instructions, Headquarters, Department of Dakota.

Jones, Harold W., asst.-surgeon, arrived at Presidio of Monterey, Cal., from duty in Sequoia National Park.

Lewis, William F., asst.-surgeon, relieved from duty as attending surgeon at Chicago, and ordered to Fort Snelling, Minn., for duty.

Chidester, Walter C., asst.-surgeon, granted leave of absence until Jan. 15, 1907; resignation accepted to take effect that date.

Lyster, William J. L., asst.-surgeon, left Fort McIntosh, Texas, on leave of absence for two months, twenty-four days.

Richardson, George H., contract surgeon, ordered from Presidio of Monterey, Cal., to duty at the Depot of Recruits and Casuals, Angel Island, Cal.

Merrick, John N., contract surgeon, granted leave of absence for one month, with permission to ask an extension of one month.

Chase, Alpha M., contract surgeon, ordered from Fort Clark, Texas, to Fort Sam Houston, Texas, for temporary duty.

Treuholtz, Clarence A., contract surgeon, returned to Army General Hospital, Fort Bayard, N. M., from temporary duty at Fort Wingate, N. M.

Marvin, Marion F., contract surgeon, left Fort Mansfield, R. I., and arrived at Fort H. G. Wright, N. Y., for temporary duty.

Richardson, William H., contract surgeon, left Fort Monroe, Va., and arrived at Camp of Supply, Newport News, Va., for duty.

Repp, John J., contract surgeon, ordered from Philadelphia, to the Army General Hospital, Washington Barracks, D. C., for duty.

Felts, Robert L., contract surgeon, left Fort Sam Houston, Texas, on leave of absence for three months.

Burkart, John L., contract surgeon, ordered from Chicago to Fort Sheridan, Ill., for duty.

Dulin, Charles T., contract surgeon, ordered from North Yakima, Wash., to Whipple Barracks, Ariz., for duty.

Garcia, Leon C., contract surgeon, ordered from St. Louis, to Fort Riley, Kan., for duty.

Jarrett, Arthur R., contract surgeon, ordered from Brooklyn to Fort Totten, N. Y., for duty.

Tyler, George T., contract surgeon, ordered from Baltimore to Fort Monroe, Va., for duty.

Navy Changes.

Changes in the Medical Corps, U. S. Navy, for the week ending Oct. 20, 1906:

Pryor, J. C., surgeon, detached duty at the Marine Barracks, Washington, D. C.; to additional duty at U. S. Naval Medical School Hospital, Washington, D. C.

Field, J. G., surgeon, additional duty at Marine Barracks, Washington, D. C.

Derr, E. Z., medical director, commissioned a medical director in the United States Navy from Sept. 6, 1906.

Eagling, E., pharmacist, U. S. N., retired, died at Yokohama, Japan, September 22, 1906.

Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ending October 17, 1906:

Eager, J. M., assistant surgeon-general, directed to proceed to Harrisburg, Pa., for special temporary duty, on completion of which to rejoin his station in Washington, D. C.

Godfrey, John, surgeon, placed on waiting orders effective Oct. 13, 1906.

Grubbs, S. B., P. A. surgeon, leave of absence granted by bureau letter of August 30, 1906, revoked.

Wille, C. W., P. A. surgeon, directed to proceed to New Orleans for special temporary duty, on completion of which to rejoin his station at Gulf Quarantine.

Houghton, M. W., acting asst.-surgeon, leave of absence granted for 15 days from Oct. 15, 1906, amended so as to be effective from October 20, 1906.

Shehan, L. B., acting asst.-surgeon, granted leave of absence for 17 days from Aug. 21, 1906.

Shehan, L. B., acting asst.-surgeon, granted leave of absence for 30 days from July 21, 1906, on account of sickness.

Waikley, W. S., acting asst.-surgeon, granted leave of absence for 5 days from Oct. 15, 1906, and excused for a further period of six days without pay from Oct. 20, 1906.

BOARD CONVENED.

A board of medical officers was to meet in Baltimore, Oct. 17, 1906, for the purpose of making a physical examination of a cadet of the Revenue Cutter Service, said board to continue in session until Oct. 23 for the purpose of examining other cadets of the Revenue Cutter Service: Detail for the board: Surgeon L. L. Williams, chairman; Asst.-Surgeon Friench Simpson, recorder.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended Oct. 19, 1906:

SMALLPOX—UNITED STATES.

Georgia: Chatham County, Oct. 10, 2 cases.
Illinois: Moline, Sept. 23-30, 2 cases.
Indiana: South Bend, Sept. 29-Oct. 6, 1 case.
Missouri: St. Joseph, Oct. 2-9, 1 case.
Tennessee: Knoxville, Sept. 29-Oct. 6, 1 case.
Texas: Houston, Sept. 29-Oct. 6, 1 case (imported).
Wisconsin: Appleton, Sept. 29-Oct. 13, 3 cases.

SMALLPOX—FOREIGN.

Africa: Cape Town, Aug. 25-Sept. 1, 1 case.
Brazil: Bahia, Aug. 25-Sept. 15, 9 cases; Rio de Janeiro, Sept. 2-15, 3 cases.
Chile: Antofagasta, Aug. 14-Sept. 8, 55 cases, 15 deaths; Coquimbo, Aug. 11-31, 65 cases, 5 deaths; Iquique, Aug. 23-Sept. 8, present.
Ecuador: Guayaquil, Sept. 1-15, 19 deaths.
Great Britain: Bradford, Aug. 25-Sept. 18, 2 cases.
India: Bombay, Sept. 4-11, 1 death; Calcutta, Sept. 1-8, 1 death; Karachi, Aug. 26-Sept. 2, 4 cases; Madras, Aug. 25-Sept. 7, 3 deaths; Rangoon, Aug. 18-25, 2 deaths.
Italy: General, Sept. 21-27, 3 cases.
Nicaragua: Sept. 27-Oct. 4, 1 case.
Russia: Moscow, Sept. 8-15, 6 cases; Odessa, Sept. 8-22, 2 cases; St. Petersburg, Sept. 1-8, 1 case.
Spain: Barcelona, Sept. 20-30, 11 deaths.
Turkey: Constantinople, Sept. 8-16, 1 death.

YELLOW FEVER.

Cuba: Guines, Oct. 13, 1 case, 1 death; Havana, Oct. 10-16, 10 cases, 1 death; Santa Clara Province, Oct. 11-13, 2 cases.
Ecuador: Guayaquil, Sept. 1-15, 2 deaths.
Mexico: Merida, Sept. 23-29, 4 cases, 4 deaths; Tustepec, 1 case; Vera Cruz, 1 death.

CHOLERA—INSULAR.

Philippine Islands: Manila, Aug. 18-Sept. 1, 58 cases, 48 deaths; Provinces, 639 cases, 490 deaths.

CHOLERA—FOREIGN.

China: Fuchau, Aug. 10, present.
India: Bombay, Aug. 28-Sept. 18, 161 deaths; Calcutta, Aug. 25-Sept. 8, 15 deaths; Rangoon, Aug. 18-Sept. 8, 11 deaths.

PLAGUE.

Australia: Sydney, July 22-28, 1 case.
Brazil: Bahia, Aug. 25-Sept. 1, 1 case, 1 death; Campos, Sept. 10, 1 case; Rio de Janeiro, Sept. 2-15, 16 cases, 3 deaths.
China: Fuchau, Aug. 10-Sept. 10, present; Hongkong, Aug. 11-18, 3 cases, 2 deaths.
India: General, Aug. 25-Sept. 1, 3,503 cases, 2,523 deaths; Bombay, Aug. 28-Sept. 18, 82 deaths; Calcutta, Aug. 25-Sept. 8, 19 deaths; Karachi, Aug. 26-Sept. 2, 6 cases, 4 deaths; Rangoon, Aug. 18-Sept. 8, 188 deaths.
Japan: Formosa, Aug. 21-31, 1 case, 4 deaths.
Peru: Lima, Sept. 1-12, 4 cases; Paita, Sept. 1-8, 1 case, 1 death.

Society Proceedings

COMING MEETINGS.

Mississippi Valley Medical Association, Hot Springs, Ark., Nov. 7-8.
American Public Health Assn., Mexico City, Dec. 3-7.
Southern Surg. and Gyn. Assn., Baltimore, Dec. 11-13.

ST. LOUIS MEDICAL SOCIETY.

Regular Meeting, held Oct. 6, 1906.

SYMPOSIUM ON THE INDICATIONS FOR THE INTERRUPTION OF PREGNANCY.

Diseases of the Kidneys.

DR. HENRY SCHWARZ called attention to the different significance of induced pregnancy according to the period of pregnancy and according to the purpose for which it is undertaken. He said we should speak of induced labor when the interruption is attempted near term, and induced abortion and miscarriage when attempted in the early days of pregnancy. Premature labor is attempted either in the interest of the mother or of the child. If it is attempted in the interest of the fetus one must be sure that the fetus is viable. In this case pregnancy must be beyond the thirty-second week and the child must show signs of life. Under favorable conditions a fetus of twenty-four weeks' gestation may continue to live, but the majority of children born near the twenty-eighth week die. Whenever it is desired to induce premature labor in the interest of the child, the pregnancy must be up to the thirty-second week. When it is desired to interrupt pregnancy in the interest of the mother, it is a different matter. After the thirty-second week it should be remembered that there is a good chance of saving the child by the use of incubators and milk specially prepared. There is no satisfaction or glory in the performance of miscarriage for the sake of saving the mother's life. By Cesarean section the mother and child can sometimes be saved. It is only when two or more reputable physicians are of the opinion that a woman is in danger of dying that there is justification in the performance of a miscarriage. No individual physician should attempt to decide it alone.

The speaker said that in twenty-seven years' practice of special kind (obstetrics), only diseases of the kidneys called for the interruption of pregnancy near term. Distinction must be made between kidney diseases that have existed before pregnancy occurred and kidney disorders arising during the term of pregnancy. Chronic kidney diseases call for no interruption of pregnancy during pregnancy. In cases of chronic nephritis the destruction of kidney tissue is more rapid during pregnancy and in most cases of albuminuric retinitis detachment of the retina and atrophy of the optic nerve have led to blindness. While kidney disease of a chronic nature does not call for an interruption of pregnancy, once it has occurred it certainly justifies the physician in warning the patient against pregnancy and teaching her how to prevent conception.

As to kidney diseases arising during pregnancy, the fetus is in as much danger as the mother. It is then a question of rapidly removing the contents of the uterus to save the mother as well as the child. When death approaches a mother the fetus is in great danger of asphyxiation during the agonal stage.

Tuberculosis.

DR. L. M. WARFIELD said that recognized authorities hold and urge opposite views on this subject. The importance of the subject can be seen when a consideration is given to the number of pregnant women who have tuberculosis. Bacon claims that 1 per cent. of pregnant women have tuberculosis. All authorities agree that when pregnant women have tuberculosis abortion should be attempted during the early stages of pregnancy, as this condition leads to thickening of the vocal cords and eventual death by asphyxia. Unless tuberculosis is recognized before the end of the third month, intervention is useless. Freund states that in his experience with tuberculous pregnant women, spontaneous abortion is frequent. Some claim that 24 per cent. of children from tuberculous mothers are born dead.

While tuberculosis of the lungs is apt to show during pregnancy, and while it may become worse after delivery, still this is not always true. Tuberculosis of the lungs, in itself, is not an indication for the interruption of pregnancy. Freund, in 4,000 cases of pregnancy, saw 26 cases of tuberculosis of the lungs. All had normal labors and no bad results. He saw 21 severe cases, 7 of which aborted. Five died after abortion. In advanced cases the child should receive the benefit of the doubt; in mild cases the mother.

The internist and the obstetrician should work hand in hand on this question. The examination of the lungs in pregnant women is of as much importance as the measurement of the pelvis; in fact, more so. Particular attention should be paid to the convalescence of pregnant women from colds, grippe, etc. The diagnosis of malaria should not be accepted in such cases.

The speaker advised that no tuberculous mother should nurse her child. He concluded by summarizing as follows: Tuberculosis of the larynx is the greatest danger in pregnant states. In advanced cases of tuberculosis of the lungs in pregnant women, there should be no interruption of pregnancy. In early tuberculosis of the lungs, with loss of weight, interruption of pregnancy is perhaps feasible. There is only one rule: If abortion is to be performed, it should be done early.

Diseases of the Heart.

Dr. W. H. Vogt said that abortion is indicated when there is absolute danger to the life of the pregnant woman. He called attention to the fact that sometimes patients attempt to deceive their physicians by magnifying symptoms so as to make them practice an abortion. The question of danger to the pregnant woman from heart disease has been exaggerated. The prognosis is usually better than is commonly thought. Vignet claims that 13 per cent. of pregnant women with cardiac disease suffer during pregnancy, while Poroc claims as as many as 65 per cent. Yet many women with cardiac disease go through pregnancy and labor without trouble. In some cases the cardiac disease is overlooked and the patient has her normal labor without any disturbance. Among the various heart lesions mitral stenosis is considered to be the most dangerous. Lusk claims that beyond the sixth month this complication will prove absolutely fatal. Others claim that some patients recover. Aortic insufficiency comes next, then mitral insufficiency. Jackson reports 13 cases of pregnant women with all the various kinds of cardiac lesions and with all the complications. Of these, all but 2 patients went to normal term and labor. Of all these patients only one died. It has been claimed that spontaneous abortion always occurs in uncompensating lesions of the heart. This has been denied. The fact seems to be that if a woman has an uncompensating heart lesion she will not go through pregnancy normally, but if the lesion is compensating she will do so.

If a pregnant woman is found with a heart lesion she should be controlled carefully. She should not be informed of her heart trouble. Even if disturbances of compensation occur, the fetus may be carried to full term. Patients should be warned not to work, nor to exert themselves climbing stairs. Mild exercise may be practiced. If symptoms arise indicating disturbance in compensation, put the patient to bed, apply ice bags to the region of the heart, use liquid diet, digitalis and strophanthus. If, with all these measures, compensation is not established, then the question of the interruption of pregnancy can be considered. The dangerous symptoms are of least gravity during pregnancy, graver during labor and gravest during the puerperium. Labor must not be induced too hastily, because after induced labor the sudden drop in blood pressure may kill the patient. On the other hand, one should not wait too long. Dr. Vogt stated that if during the course of pregnancy disturbances of compensation occur that resist amelioration by proper treatment, there is then justification in inducing premature labor. It occasionally happens that there is a history of great trouble in these cardiac disease patients in previous pregnancies, in which cases, with consultation, the question of inducing labor should be considered, yet even in such cases care should be taken because it does not always follow that trouble in one pregnancy will be followed by trouble in the next.

As to the question of prohibition of marriage of women who have heart disease, it may be said that if a patient is able to attend to her social duties, is able to be about, marriage should not be prohibited.

Hyperemesis.

Dr. B. W. Moore said that hyperemesis is more common in France and America than in Germany, and more common in the well to do than among the poorer classes. There is a great variation in its frequency and in its gravity. Frank says that he has never seen a case of hyperemesis in which abortion is indicated. Yet in France, 180 cases were collected, with a mortality of 72. For the purpose of the present discussion, it was assumed that hyperemesis is fatal unless a therapeutic abortion is practiced. This complication may be divided into three classes: (1) Reflex or neurotic vomiting; (2) toxic; (3) uremic. Abnormalities of the genital tract have been said to be the cause of reflex vomiting, such as ovarian cysts, hydatiform mole, twin pregnancies, etc., yet they do not exist in all cases. The fact that treatment of these abnormalities has been followed by relief of the vomiting has also been used to explain the vomiting, yet the fact that the vomiting ceases after using irrational drugs offsets this argument. It has been said by Kaltenbach that it is a true functional neurosis, a condition comparable to hysteria. He claims that it should be treated like hysteria and that therapeutic abortion is never indicated. He says that by proper treatment, rest, isolation, quiet, this form should never result fatally. It should be borne in mind where pregnancy is unwelcome that this form of vomiting occurs. There are cases of vomiting at will practiced to induce the physician to perform an unnecessary abortion.

As for toxic vomiting, Williams of Johns Hopkins collected postmortem findings in 12 fatal cases in which lesions were found in the liver, resembling those of acute yellow atrophy. The origin of the toxic material that produces these lesions has been actively sought. Vogt claims that these toxic conditions are related to eclampsia. Differentiation from other forms of vomiting is not possible. The ordinary chemical examination of the urine may be negative. Yet in the terminal stages the skin may become icteric. Death occurs with coma. The urine at this stage shows blood, albumin and casts. In acute yellow atrophy of the liver the urea is decreased and the ammonia is increased. To Williams of Johns Hopkins is due the credit for pointing to an analogous condition of the urine in cases of toxic vomiting. These changes in the urine occur before the symptoms actually occur. In reflex vomiting, there is not such change in the urine.

DISCUSSION.

Dr. F. J. Taussig said that it is the duty of the obstetrician to inform the general practitioner when to perform abortion and when not to do so. The following rules should be observed: The special conditions which call for an interruption of pregnancy should be defined; the pregnancy should be interrupted only when the physician has consulted one or more physicians and their approval has been obtained; the consultant should be some person of note in the community, for the dangerous practice of one unscrupulous practitioner calling another unscrupulous practitioner into consultation is not to be overlooked. The speaker said that inasmuch as the community and municipality is the loser by the performance of therapeutic abortion, an advisory board of three persons should be appointed to act as a means of protecting the community.

Dr. B. M. Hypes called attention to the fact that in all cases of pregnancy the physician's duty requires him to watch and examine his patient from the time he is employed shortly after conception until he delivers the woman. He should remember that the pregnant woman is a patient from the time she is impregnated until she has delivered her child and is well. He said that he has attended many women with heart disease of long standing and has yet to see a case in which therapeutic abortion was necessary.

Dr. George Gellhorn said that the authors emphasized the point that while indications for therapeutic abortion exist in many cases apparently, yet induced labor is not often necessary. He called attention to another group of indications for the interruption of pregnancy which arise from pathologic conditions within the uterus or genital sphere. Tumors must be mentioned in this connection. It is now recognized that ovarian tumors call for their removal, but never for the interruption of pregnancy. Fibroids rarely interfere with the completion of pregnancy and hardly ever furnish an indication for therapeutic abortion. The condition is different with cancer. In a case of pregnancy complicated by a cancer, differentiation must be made between pregnancy in the first or second half, secondly, between operable and inoperable cancer. In cases of pregnancy complicated by cancer, interruption of pregnancy must be proceeded with at once and the growth removed, that is, in the first half of pregnancy period. In the second half of the pregnant period, if the cancer is operable, the chances for the mother and for the child should be weighed, and in the majority of the cases the woman should be allowed to go to full term and delivery be executed then by a Cesarean section, leaving the mother to her fate. The same holds true of inoperable cancer. Retroflexion of the uterus, he said, also has a bearing on this question. These

cases are frequent. Yet in the majority of cases the retroflexed uterus will correct its position and rise in the abdominal cavity. In other cases the retroflexion will result in spontaneous miscarriage. In only the small majority of cases will the pregnant uterus remain in its normal position; in such cases the uterus should be at once replaced. In most cases this replacement is successful, but in those cases of failure there is a most dangerous condition to deal with, one which calls for an urgent indication of therapeutic abortion.

CALIFORNIA ACADEMY OF MEDICINE.

Regular Meeting, held Sept. 26, 1906.

DR. G. H. EVANS in the Chair.

Action of Amyl Nitrite Inhalations on the Blood Pressures.

DR. A. W. HEWLETT reported a series of observations on the action of amyl nitrite inhalations on man. The systolic and diastolic pressures were determined by the Erlanger instrument. The usual action on the systolic pressure in young healthy adults is a primary fall within the first minute of 10 to 15 mm. of mercury (exceptionally to 40 mm.), and a secondary rise above normal during the second and third minutes of an equal or somewhat greater amount. The diastolic pressure falls with the primary fall of systolic pressure and then gradually rises to the normal. The pulse pressure, or difference between the two, falls very slightly during the primary fall of systolic pressure and rises very considerably during the secondary rise, sometimes in the latter instance becoming twice the normal pulse pressure for the individual. The changes in pulse pressure depend for the most part on the amount of blood expelled from the heart at each systole. At the time of the great increase of pulse pressure during the second and third minutes, the excursions of the left ventricle, as seen during an *x*-ray screen examination, could be seen to be much greater than before the inhalation. The pulse rate was greatly accelerated during the first minute, after which it returned to normal. The total amount of blood expelled from the heart was increased throughout the action of the amyl nitrite, in the early stages on account of the more rapid heart action, and during the later stages on account of the increased amount of blood expelled at each systole. In some cases no fall of pressure occurred, only the secondary rise. Amyl nitrite, therefore, both dilates the peripheral blood vessels and increases the output from the heart. The blood pressure depends on the relation that exists between these two factors. Ordinary therapeutic inhalations do not necessarily lower the blood pressure, but they practically always increase the flow of blood. A few experiments with large doses of nitroglycerin showed that this drug frequently fails to lower the blood pressure even when it produces marked headache and throbbing in the vessels. Possibly in such cases it also dilates the blood vessels and increases the output from the heart.

DR. H. M. SHERMAN stated that Crile found that nitroglycerin lowers the blood pressure of animals in surgical shock, and that its use is therefore contraindicated in this condition. Crile showed that it is very difficult to raise the pressure in a system of elastic tubes by increasing the output from the pump that is supplying these tubes with fluid. This fact leads him to question the correctness of Dr. Hewlett's explanation of the action of amyl nitrite.

DR. W. W. KERR stated that the dose of nitroglycerin varied greatly for different individuals. The largest amount that he has given without producing trouble was 18 minims of the 1 per cent. solution every four hours. These variations may be accounted for by supposing that it dilates the arteries leading to the brain to different degrees in different individuals. The circulatory apparatus can not well be compared to a pump on account of the many nervous adjustments that regulate it.

DR. HEWLETT stated that experiments have shown that the nitrites lower the blood pressure of animals, while on man other investigators besides himself have found more of a rise than a fall. Possibly the different results of animal experiments are due to differences in the dose employed. Therapeutic doses, pushed to their limit, were used in these observations. Possibly toxic doses would have lowered the blood pressure. The blood pressure is no indication of the amount of blood delivered by the left ventricle into the aorta, for it may be influenced equally well by changes in the contraction of vessels at the periphery.

BRITISH MEDICAL ASSOCIATION.

Seventy-fourth Annual Meeting, held in Toronto, Ontario, Aug. 21-25, 1906.

(*Concluded from page 1322.*)

Treatment of Typhoid Fever.

F. J. SMITH, M.D., London, condemned the milk diet in typhoid fever and favored the use of solids, provided they have no seeds or other small substances likely to cause trouble. He also favored giving a patient food when he wants it and not when he does not want it, and said he had had good results from these methods. In his experience the period of convalescence had been lessened by at least 10 days by this means. The hard seeds of fruit, such as lemons, oranges, grapes, figs, etc., should be kept out of the stomach of the patient, or where fruit of this kind is given it should be given in liquid form, strained through a cloth sufficiently fine to prevent any of the seeds or solid matter going through.

SIR THOMAS BARLOW, M.D., London, the president, supported Dr. Smith's contention, but believed that care should be taken not to give the patient so much solid food that it would become a mechanical menace to the well-being of the patient.

THE JOURNAL has already referred editorially to this discussion on typhoid.

Rheumatism in Children.

DR. A. D. BLACKADER, Montreal, believed that acute rheumatism is an infectious disease, which has no geographical bounds, but presents itself under varied manifestations. He compared the characteristics seen in America with those met in England. He then considered the frequency of rheumatic arthritis, the importance of muscular pain, the association of tonsillitis with rheumatic infections and its significance, the fibrous nodules and the infrequency of their appearance in America. In conclusion he dwelt on the frequency and importance of affections of the heart in childhood, with special reference to rheumatism, and the prophylaxis and general treatment of the condition.

Acute Intestinal Diseases of Children.

DR. CHARLES G. KERLEY, New York City, in his paper, "Prevention of the Acute Intestinal Diseases of Infants During the Summer Time," stated that the most important factor in treating such diseases consists in their prevention, which may be readily brought about by proper feeding methods. In improper feeding, which causes intestinal disorder and derangement of digestion, lies the foundation of summer diseases. Unclean food he believes to be the root of the evil. Faulty feeding methods do their part and an absence of appreciation on the part of physicians and laymen that an attack of acute indigestion in summer is dangerous and needs proper treatment, also plays a part. Few cases of intestinal disease are severe at the outset, and if the minor symptoms which are first noticeable are properly treated, the result is seldom serious. If, however, the disease is allowed to develop, severe and fatal results may be the penalty. He advises that with the first sign of gastrointestinal derangement in infants, milk should be discontinued at once, and that nothing but water should be given the baby until the doctor has arrived. Frequently, for a day or two after this, the diet should be of barley water or rice water as a substitute for milk. In large municipalities the solution of the death rate among infants has been the establishment of milk depots where clean, pure, wholesome milk may be obtained at cost, or even gratis. Mothers in tenement houses should be advised by trained nurses in the care of children. The author related an experiment made last year in which 50 tenement children were placed under the care of a physician, who visited his patients every day and saw that they were fed on safe milk, with the result that not one of these infants, ranging from three to

nine months old, died during the summer period. He concurred thoroughly in the advice of Dr. Charles A. Hodgetts, Toronto, as regards the advisability of establishing milk depots and the general control of the milk trade by the municipality. The farmer should receive a good price if he supplies proper milk, and if his service is satisfactory his remuneration should be commensurate with the service rendered.

Forms of Arteriosclerosis.

DR. OSKAR KLOTZ, Montreal, contributed a paper to the discussion on the forms of arteriosclerosis, their classification and the experimental production. Experimental arterial lesions produced in animals are either degenerative, affecting mainly the media, or regenerative, in which the intima proliferates, when little or no degeneration is seen. The substances used to produce degenerative changes belong to the class of high-pressure drugs, but high pressure in itself does not lead to the medial lesions. There is a direct degenerative action of the drugs on the muscle fibers of the media and later of elastic fibers, but when the latter once give way aneurismal dilatation follows, the degeneration being of a fatty nature. Intimal regeneration is consequent to bacterial toxins, the proliferation being confined to the endothelial layer and the subendothelial cells. Where only intimal lesions are present aneurisms are not formed. The character of these experimental lesions can be compared to those in man to a certain extent. Here lesions entirely degenerative are met with in the Moenckeberg type of peripheral arteriosclerosis, and with the form of this disease found in the aorta, both of which processes are confined to the media. The experimental bacterial lesions of vessels simulate chronic endarteritis deformans.

Cancer.

DR. G. H. A. CLOWES, Buffalo, N. Y., told of the investigations conducted at the Gratwick Laboratory for Cancer Research, Buffalo. As a result of these investigations, it was believed that cancer might be due to some infectious agency. Experiments had been made on mice and the disease had been found to be transmitted from one animal to another. He detailed the conditions under which mice might be rendered immune. While he did not yet feel justified in applying this treatment to human beings, he could not tell to what further research in this direction might lead.

DR. E. F. BASHFORD, London, England, stated that so far as investigations under the Imperial Cancer Research Fund, of which he is director, indicated, cancer is not increasing in the United Kingdom. He held out no hope for the discovery of any cure for the malignant parasite in the near future. He believed cancer was the result of old age, that is, that it attacked individuals in the latter third of life and was not infectious.

DR. H. RUSSELL GAYLORD, Buffalo, cited an instance in which certain rats developed cancer after having been kept in a cage in which certain other rats suffering from cancer had been confined, and stated that this was not an isolated instance.

Sleeping Sickness.

DR. FREDERICK W. MOTT, London, England, stated that the sleeping sickness, trypanosomiasis, was spreading along the lines of commercial communication in Africa, that it had reached China and that it now affected white people as well as natives, was generally carried by the bite of a fly from an infected person to a healthy individual, and that no cure had been found for the disease.

KENTUCKY STATE MEDICAL ASSOCIATION.

Fifty-sixth Annual Meeting, held at Owensboro, Oct. 10-12, 1906.

(*Continued from page 1308.*)

Resolutions Adopted.

The following resolutions were adopted:

PUBLIC POLICY AND ADVERTISING.

Resolved, That the Committee on Public Policy and Legislation shall also act as the Press Committee, with the authority and duty of conferring with a like committee of the State Press Association in regard to advertising and all matters of mutual interest to the medical profession and the public press.

INSPECTION OF PUBLIC SCHOOL CHILDREN.

WHEREAS, It is a well known fact that the spread of contagious and infectious diseases is largely increased on the opening of public schools, many preventable diseases becoming epidemic and being carried by the pupils who are permitted to attend without proper medical examination; be it therefore,

Resolved, That the Committee on Public Policy and Legislation be instructed to have a bill drawn up and presented to the next General Assembly of the State of Kentucky compelling cities of the third and fourth class to appoint a competent medical man as medical inspector of schools.

EXPERT TESTIMONY.

WHEREAS, Medical expert testimony, as at present developed before a judicial tribunal in Kentucky, is misleading to the jury and unsatisfactory in its results, and we believe the interests of litigants would be best served by having the medical evidence weighed by a jury of experts; therefore be it

Resolved, That we urge the legislature of the State of Kentucky at its next regular session to pass a measure which will establish a method by which expert testimony may be embodied in charge of a judge, the purpose being to take the consideration of expert medical testimony out of the hands of the jury.

INQUISITION OF LUNACY.

Resolved, That we condemn the present methods of inquisition of lunacy and believe that the determination of sanity should be made by a commission of qualified medical men.

PRIVILEGED COMMUNICATIONS.

Resolved, That we urge on the Kentucky State Medical Association the importance of the act introduced in the last legislature protecting professional communication from patient to physician from forced disclosure on the witness stand and urge every member of the profession to explain the purpose of the act to his local representative in the legislature.

The Insurance Fee Question.

The following report of the committee on life-insurance examinations (Drs. J. W. Ellis, Masonville; D. C. Bowen, Elizabethtown, and T. J. Shoemaker, Morganfield), was unanimously adopted and the secretary was instructed to send a copy to every doctor and newspaper in Kentucky:

Your committee on insurance has carefully considered the subject of medical examinations and the reduction of fees, proposed by certain of the old line companies, and submits as its report the following preamble and resolutions:

WHEREAS, The recent official investigations of the three great life insurance companies of New York clearly developed that the medical departments were among the few which were not honeycombed with mismanagement or corruption; and,

WHEREAS, The legislation resulting from the investigation intended to cure evils existing elsewhere was at once seized on as a justification for a long premeditated, concerted and systematic plan for debauching these departments by lowering the standards and compensation for medical examiners, employing and importing into every section recent graduates and men who have failed in practice, as well as representatives from the lowest grades in the profession, thus destroying what has always been recognized as a fundamental safeguard in sound life insurance; and,

WHEREAS, While nothing could justify such a short-sighted course, the official reports of the income and expenses of the insurance business in this state and the country at large, last year, and during all of its history, and the facts in regard to the recent legislation in New York make ridiculous the plea that the action was necessary in the interest of economy or was caused by such legislation. Now, therefore, be it

Resolved, By the Kentucky State Medical Association, in annual convention assembled, That this organized and concerted attempt to lower the standard and compensation of medical examiners all over this country is not only most unjust and degrading to our profession, but is so unsound as a business proposition that it can not but ultimately prove most expensive and dangerous to all policyholders in these companies, made up of our patrons and ourselves;

Resolved, That a large experience having demonstrated that the thorough and painstaking examination of every applicant for insurance can not be made for less than five dollars, we recommend that this amount be fixed as the minimum fee, and shall be morally binding on all members in this state on and after January 1, 1907;

Resolved, That in view of the vast interests involved we urge the profession in every county in this state to meet at the earliest practicable day and arrange for organized resistance to this organized and inexcusable oppression. We advise that this be done outside of the society, and that, so far as possible, it include every reputable physician in the county, whether a member of the society or not. We advise that the agreement be not made a test of membership, our reliance being on the justice of our cause, a spirit of mutual helpfulness and coöperation, and our evident duty to protect the best interests of policyholders;

Resolved, That we pledge our cordial support to those companies which have so managed their affairs that they have never been tainted with charges of corruption, and consequently have not found it necessary to degrade their medical subordinates, or otherwise destroy the protection of policyholders, and our secretary is hereby instructed to publish a list of such companies in each issue of the journal, on condition that they are approved by our active and fearless state commissioner of insurance.

Resolved, That we also pledge our support to the International Policy Holders' Association in every effort it may make for the protection of the interests of policyholders; that our secretary is hereby instructed to furnish each county society in Kentucky with an ample supply of ballots for the tickets supported by this association for trustees of each of such companies, and that we appeal to the profession in each county and state in the United States to coöperate with us in this movement.

Resolutions were adopted pledging the members of the Association not to make any insurance examinations for less than $5.00. The following resolution was also adopted:

Resolved, That this association, representing the medical profession in every county in Kentucky, pledges its cordial and continuous support to Hon. Henry W. Prewitt, state commissioner of insurance, in the manly, active and systematic warfare he is making to protect the interest of policy holders against a great, far reaching danger, and we urge the profession in every county to co-operate with him in this work in every possible way.

Increased County Representation.

Chapter IV, Section 2, was amended to read as follows:

Each component county society shall be entitled to send to the House of Delegates each year one delegate for every 25 members or major fraction thereof, but each component society which has made its annual report and paid its assessment as provided in the constitution and by-laws, shall be entitled to one delegate.

The Kentucky Profession.

Dr. C. Z. Aud, Cecilia, in the president's address, spoke of his visits throughout the state in the interest of the association and dwelt with special pride on the class of men he found practicing medicine in the mountains of Kentucky. He declared in favor of patronizing local medical schools, but that it would be better to have fewer and higher grade schools. He emphasized the injustice of life insurance companies trying to cut down fees in cases of medical examination, and urged the physicians to stand firm for just fees because the companies depend almost solely on the physician to protect their interests and they should not be miserly in paying for such protection.

Technic of the Diagnostician.

DR. WM. A. JENKINS, Louisville, delivered the Oration in Medicine. He stated that a man to be a good physician should be an expert diagnostician. He should have a perfected technic, a good constitution and accurate powers of observation. He must know anatomy and physiology. He must be thorough, exact and exhaustive. To his book knowledge there should be added common sense. It is important always to do the same thing in the same way so that a mistake is impossible.

Drainage.

DR. W. O. BULLOCK, Lexington, delivered the Oration in Surgery. He said that drainage is indicated in suppurative conditions wherever they may be reached; after extensive operations in clean cases to relieve pressure within the chest and abdomen; in operations on the thyroid gland and in certain diseases that can not be extirpated satisfactorily. The disadvantages of drainage, especially abdominal, were said to be increased discomfort, prolonged convalescence, liability to hernia; liability to obstruction from pressure or adhesions; danger of reinfection through the drain and the limited efficiency of the drain. Modern surgery, he said, is striving to minimize the necessity of drainage.

Early Diagnosis and Treatment of Pulmonary Tuberculosis.

DR. W. F. BOGGESS, Louisville, thought that the difficulty of making an early diagnosis of pulmonary tuberculosis is often overestimated, and that in the south the early symptoms of the disease are often confused with malaria and treated accordingly. He urged making it a routine practice to examine the lungs of anemic girls who complain of having stomach trouble. Environment, not heredity, often assists in making a diagnosis. He insisted on the necessity of getting absolute control and the coöperation of the patient in order to treat him successfully. He endorsed the value of sanatorium treatment in the case of those individuals who can afford it, but expressed the belief that the climate of Kentucky is just as suited for the treatment of pulmonary tuberculosis as is any other climate, a statement to which those who discussed this paper did not agree. At home there should be plenty of fresh air, day and night, and food rich in albuminoids should be given, especially milk and eggs. Drugs, he said, should be avoided as much as possible, except to meet specific indications.

Tuberculosis of Peritoneum.

DR. LEWIS S. MCMURTRY, Louisville, reviewed the clinical history of this affection, and stated that it is fully twice as common in women as in men, the infection in women probably making its way into the peritoneum through the Fallopian tubes. He reported a case which illustrated the difficulty of diagnosis, the symptoms simulating those of an inflammatory affection of the pelvis and of dermoid cyst of the ovary. The patient died six months after the operation with pulmonary involvement. There had not been any fluid in this case, only a matting together of the intestines with the formation of extensive adhesions. In another case there was a considerable effusion, the case presenting all the physical signs of an ovarian cyst. Opening the abdomen and evacuating the fluid resulted in a permanent cure. He said that in general tuberculosis of the peritoneum the operation should not be performed, except to treat complications, such as obstruction of the intestine. In the ulcerative form of the disease operation always is contraindicated.

DR. JOSEPH WALSH, Philadelphia, called attention to the fact that in postmortem examinations he has often found the appendix to be the seat of tuberculosis, and he expressed the belief that the appendix may be the starting point of a tuberculosis of the peritoneum, an opinion in which Dr. McMurtry concurred.

Gonorrhea Up to Date.

DR. J. T. WINDELL, Louisville, stated that nitrate of silver, used carefully, is the ideal agent in the treatment of all cases of gonorrhea, and that the hydrostatic irrigation method of Janet has no equal.

DISCUSSION.

DR. W. W. ANDERSON, Newport, protested against the term gonorrheal rheumatism used by the author, and stated that it should be referred to as being a gonorrheal arthritis because it is not rheumatism. He also urged that steps be taken to teach the laity of the seriousness of an attack of gonorrhea and to educate them not to resort to "patent medicines" and proprietaries under the mistaken impression that they can cure themselves.

DR. WILLIAM BAILEY, Louisville, thought that a higher estimate of mortality would do much to prevent gonorrhea, and that the law ought to impose a penalty on any man who spreads this disease. Physicians, he said, should impress on the laity that this is one of the worst infectious diseases known to medicine and not a mere cold or something that can be cured in a few days or even a few weeks.

DR. R. B. GILBERT, Louisville, called attention to the prevalence of gonorrheal ophthalmia. It is his routine practice to have the woman take strong antiseptic vaginal douches twice daily before labor so as to keep the genital tract as clean as possible. He said what is believed to be an ordinary leucorrhea is often really a gonorrhea, and no chances should be taken in these cases.

DR. J. W. O'CONNOR, Louisville said that all laws looking toward the stamping out of gonorrhea by restriction are worthless. Good results can be obtained only by educating the laity by means of public lectures and pamphlets, as is done in Germany.

DR. J. M. RAY, Louisville, urged the profession to do all in its power to aid in the passage of suitable laws to stamp out gonorrhea inasmuch as 33 1/3 per cent. of blind children in public institutions are blind because of an attack of gonorrheal ophthalmia. He said that given a case of gonorrheal ophthalmia in a full grown nine months baby, with proper treatment the change for recovery is very favorable, but in the case of a prematurely born baby he has never seen one recover from the disease.

DR. J. G. CARPENTER, Stanford, urged that the subject of gonorrhea ought to be quarantined until he has recovered completely. At the wind-up he should be sounded, and he should not be dismissed as cured until his urethra is of normal caliber. He should not be permitted to marry until a year afterward. He suggested that every man who has gonorrhea be branded in some way, such as wearing a red emblem, remarking that then the disease soon would be stamped out.

DR. J. M. MATHEWS, Louisville, urged the education of the laity in everything pertaining to gonorrhea, pointing out to them the conditions that are caused by this disease, the lives

that are wrecked. He urged that the ministers talk about it to their congregations; that the press write about it; physicians should talk and write about it. He suggested that the governor of every state appoint a commission of five physicians, one of them to be a genitourinary specialist, whose duty it shall be to examine every man who wishes to marry and to issue a certificate permitting such marriage if he is in good health and free from gonorrhea.

Surgical Treatment of Bladder and Urethra.

Dr. Archi. Dixon, Henderson, considered lithotrity the best procedure in cases of stone in the bladder of the female. The vesicovaginal incision for large stones, he thinks, has nothing to recommend it. He urged the necessity of early operation in every case of traumatic rupture of the urethra, not excepting even those cases in which catheterization is possible and in which the rupture is only interstitial. An early resort to external urethrotomy will greatly hasten the number of cases of contracted urethras or so-called traumatic strictures.

Using Elasticity of Lung Tissue in Treatment of Injuries of Thorax and Its Contents.

Dr. E. W. Ford, Hartford, reported the case of a man who had been shot through the lung, an abscess developing later. Thinking that the pus was in the pleural cavity, Dr. Ford proceeded to drain, but without achieving the desired result. He put in a rubber tube, which served as an inlet for air. The following day the symptoms had abated in severity and pus was flowing freely from the mouth of the patient, but none from the sinus, the air pressure on the inside of the lung being equalized by that on the pleural surface, so that the pus was forced through the trachea barely allowing room for respiration in the right lung.

Cystoscopy and Ureteral Catheterization.

Dr. Carl Lewis Wheeler, Lexington, reviewed the history of the invention of the cystoscope and the technic of its employment, and showed that the ureteral catheter is valuable not only as a means of diagnosis but also for the treatment of urethritis and pyelitis, for dilating the ureter in cases of stricture; for injecting oil to facilitate the passage of a stone, and to promote the healing of a ureteral fistula. By the aid of the cystoscope, he said, it is possible to ascertain the true condition of the bladder and to get the separate urine from each ureter, and of performing lavage of the renal pelvis, which is the only effective treatment of uretero-pyelitis, barring the catarrhal type, and of beginning nephritis due to extension of inflammation from the renal pelvis.

Adynamic Ileus.

Dr. Fred L. Koontz, Louisville, suggested that inasmuch as the words dynamic and ileus are opposed in meaning it would be better to adopt the term adynamic, reserving the term dynamic for spasm of the intestinal muscle. He said that the treatment, to be of any avail, must be resorted to early. Enterostomy should be done only when the ileus is due to mechanical causes and when the condition of the patient will not permit of the adoption of other measures. While this procedure will save life, he does not recommend it to the exclusion of other measures.

Surgery of Pancreas.

Dr. John R. Wathen, Louisville, is of the opinion that the disease of the pancreas is far more frequent than is generally supposed. He agrees with M. H. Richardson that surgery of the pancreas is encouraging, even in the most progressive lesions, and that it is a field which encourages abundant research. As the result of careful examination made on the cadaver, he found that the anatomy of the pancreas, as usually taught, is incorrect.

Primary Sarcoma of Spleen.

Dr. G. A. Hendon, Louisville, said that only 35 cases of primary sarcoma of the spleen have been recorded since 1850. The tumor is always circumscribed and does not disseminate until very late in the course of the disease. The prognosis at the operation is always good, even in its late stages. All the abdominal fistula may be involved in malignant disease, except the spleen, which is the last of the abdominal fistula to become involved in the malignant process. Of 18 patients operated on, 13 made a good recovery; only 3 had a recurrence; 4 died from extensive metastasis, rendering the operation purely exploratory, therefore, only one death can be charged to the operation. Dr. Hendon reported one case and exhibited the specimen. The patient is in good health.

Cysts of Pancreas.

Dr. T. S. Lewis, Lexington, reported a case which emphasizes the danger of pancreatic disease following neglected cases of cholelithiasis. The patient, a woman, aged 44, suffered from stomach trouble for five years. She had bilious attacks every two or three months, lasting from three to four days to a week. Several stones were passed and operation was advised. On opening the abdomen a large fluctuating tumor presented, pushing the transverse colon downward and forward and the stomach to the left. It proved to be a cyst of the pancreas containing about three quarts of a thin watery fluid of a yellowish-green color. The sac was washed out thoroughly with normal saline solution and was stitched to the edges of the wound. Convalescence was uneventful, except for the abnormous quantities of fluid that came from the sac, and the digested, moth-eaten appearance of the abdominal wall around the mouth of the fistula. The patient made a good recovery.

Cholelithiasis Treated by Olive Oil.

Dr. R. Alexander Bate, Louisville, presented evidence to show that olive oil does dissolve fresh cholesterin calculi and that all conditions characterized by an excess of organic acids are accompanied by gallstones, and that, in nearly every instance, cholelithiasis is amenable to medical teaching. Only the bilirubin calcium calculi appear unchanged in the evacuations of those receiving olive oil internally. Surgery, Dr. Bate said, supplies the mechanical effect impossible to medicine, and has undoubtedly saved lives where exhaustion would have taken place before solution of the calculi could occur. Of 14 patients observed by the author, all of which had had some medical treatment, three were operated on and died. In two instances a recurrence took place. Nine patients had been apparently cured by the medicinal treatment.

Tuberculosis.

Dr. Joseph Walsh, Philadelphia, stated that a person in good health is practically immune from tuberculosis. A run-down condition of health, due to overwork or dissipation, however, will create a susceptibility. Despite the popular belief to the contrary, he emphasized the fact that tuberculosis is not hereditary. He does not believe that the tendency to the disease even is inherited, though on this point there is still some difference of opinion. Observation of cases where the disease has appeared in families would rather lead to the belief, however, that the children of a tubercular parent are less susceptible than others. It has been shown that the children of tubercular parents rarely die of the complaint under fifteen years of age, in spite of the fact that they have been exposed to the contagion by the closest contact from infancy. Tuberculosis is communicated from the parent to the child, as measles or scarlet fever might be, but it is not inherited.

Europe, he said, is still in advance of the United States in its provision for the treatment of tuberculosis. England, France and Germany have many more sanatoria than there is in this country, but Walsh believes that better work is being done in those that we have. Climatic conditions are not essential factors in the cure of consumption. In the cure of tuberculosis, therefore, the only things necessary are rest, fresh air and good nourishment under proper direction. The best place to get proper direction or discipline is in a sanatorium. The purpose of the sanatorium is three-fold: (1) The cure of the patient; (2) The education of the patient and his friends in the way of prevention, in order to avoid further contagion; (3) The prevention of further contagion on the part of the patient for the time he is in the sanatorium. Early cases of tuberculosis with the ambition to get well and the patience to carry out a protracted course of treatment, can be cured in their own homes. It is, however, many times easier for the patient to carry out the necessary régime in a sanatorium.

Are sanatoria advisable? Dr. Walsh said it is only necessary to look over the world and see the opinions of both lay and medical men who have studied the subject. On the continent of Europe, that is, omitting England, the sanatoria are supported principally by insurance companies. In Germany, every employed individual, whether male or female, must be insured not only against death, but also against disability produced either by accident or disease. The insurance companies found that by building sanatoria they could not only cure a certain number of cases of tuberculosis, but they could prevent the disease in a sufficiently large number of others to make it worth the while.

COLORADO STATE MEDICAL SOCIETY.

Thirty-sixth Annual Meeting, held at Denver, Oct. 9-11, 1906.

(*Continued from page 1321.*)

Hemorrhagic and Gangrenous Pancreatitis.

DR. O. P. JOHNSON, Boulder, reported four cases of hemorrhagic pancreatitis in which the common bile duct and pancreatic ducts had separate openings. Dr. Johnston also reported a typical case of Hodgkin's disease, and exhibited the patient.

DISCUSSION.

DR. WILLIAM N. BEGGS, Denver, referred to the importance of distinguishing between two conditions, one classified by Mayo Robson as the ultra acute form, which is to be regarded as the primary hemorrhagic condition, with the inflammatory phenomena added as a result, and the acute form, which is to be regarded as an acute parenchymatous pancreatitis with the hemorrhagic condition superadded. He believes that the acute parenchymatous form of pancreatitis is in nearly all instances toxic, the acting toxin being variable. Little is known about the means of diagnosing the fulminating form of the disease.

As to the cause of death, the view has been advanced that pressure, stretching or mechanical injury to the celiac plexus is the cause of the fatal result. Another theory is that death is due to total suspension of the so-called internal secretion of the pancreas, the secretion formed by the islands of Langerhans, which, by extensive death of the pancreatic tissue, are involved.

DR. FRANK E. WAXHAM, Denver, narrated a case of Hodgkin's disease which he saw five years ago. The patient was a young man, 23 years of age. The glands of the neck were very much enlarged. There was a tumor of the liver as large as a fist that could be clearly outlined. The case was inoperable. The patient was placed on *x*-ray treatment, and the result was marvelous, in that the enlargement of the glands, in the course of three months, entirely disappeared. The tumor of the liver also disappeared. There were no unpleasant results followed the use of the *x*-ray. Two years later the enlargement of the neck and the tumor of the liver had not returned. A year later the patient was still well.

Management of the Diabetic.

DR. E. P. HERSHEY, Denver, said that the treatment varies according to the individual. Much harm is done by too rigid a diet. Acidosis, acetonuria, gastric disturbances and complications arise from a fixed diet. Carbohydrates may be given, if done so judiciously. The scientific technic is too difficult to be carried out by the general practitioner. Close observation, however, will aid much in the line of diet. It is possible that diabetes is first a functional disorder, eventually creating a vicious cycle. The treatment directed along this line will accomplish better results than any other. He cited several cases in which he has employed anhalonium (Mescale-button) in this disease with gratifying results.

DISCUSSION.

DR. H. A. BLACK, Pueblo, said that the dietetic and hygienic management of diabetes has with him proven most successful. The dietetic treatment should not look to the elimination of the carbohydrates, but the individual should be considered and the diet so altered that the strength of the patient will not only be maintained, but increased. Many of these patients are nervous, spare in build, and they suffer the most if the carbohydrates are withdrawn. These patients should be given fat meats that they can assimilate, care being taken not to disturb the digestion, and combined with them as much carbohydrates as the patient will tolerate. It will be found very often that if there is complete withdrawal of the carbohydrates for three or four weeks, the patients will be able to take more of this class of food than they could before. Exercise should be adapted to the special individual.

DR. E. C. HILL, Denver, has used the fluid extract of anhalonium in several cases of diabetes mellitus, with better results than he obtained from codeia and other agents.

DR. HERSHEY, in closing, said he has never used a remedy that has effected so many cures, or has been as beneficial to the patient, as the fluid extract of anhalonium. He usually commences with six minims, four times a day. This may be increased, according to the judgment of the physician.

Dietetics: Diagnostic and Therapeutic Value.

DR. C. D. SPIVAK, Denver, presented some general considerations of the physiology and pathology of nutrition. He considered the diagnostic value of test-meals and test-diets for ascertaining the digestive functions of the stomach and bowels and its relation to pain, discomfort, palpitation of the heart, etc. He alluded to the therapeutic value of foods acting medicinally as tonics and sedatives in general, and as gastric and intestinal tonics and sedatives in particular; acid and antacids, anodynes, anthelmintics, motor excitants, emetics, diuretics, diaphoretics, aphrodisiacs, lactogogues, etc. In discussing organo-therapy he spoke of the use of testiculin, spermin, thyroidin, adrenalin, cerebrin, medullin, etc., kephir koumiss cures; grape and orange cures, vegetarian and meat cures; water and dry cures; fasting and forced feeding.

The Profession and Its Advancement.

DR. H. G. WETHERILL, in the president's address, said that we have reason to be proud of the achievements of the American Medical Association in its coördinate bodies, state and county, in the direction of better organization and increased membership. In these particulars the Colorado State Medical Society has shared in the honors, more than doubling its membership in three years, and establishing itself on a basis that makes it a power in the community and a source of strength and inspiration to every one of its members. In its effort to raise the standard of medical education the American Medical Association, he said, has adopted a particularly commendable policy, and the minimum standard, as suggested by the Council on Medical Education, and adopted by the Association, should be universally approved and adopted by all medical schools, and its provisions rigidly and conscientiously enforced.

He commended THE JOURNAL of the Association and its courageous editor for the stand they had taken against the venders of nostrums and secret proprietary preparations.

The time is at hand, he said, when the number of graduates in medicine should be diminished rather than increased, and he believes that measures must soon be adopted for the further limitation of the number of medical graduates each year. Incidentally, he has hoped that this might be promoted in Colorado through the transformation of one of the medical schools into a postgraduate school of medicine. As there are but four cities on this continent where such postgraduate schools are conducted—Chicago, New York, Philadelphia, and New Orleans—it would be fitting and timely and altogether advantageous if one Colorado medical school could be so transformed. He hopes the day is not far distant when this suggestion may be considered seriously and some practical solution of the problem presented.

It has seemed to him that the recent graduates of medical schools are prone to give themselves over to special and limited practice far too soon after graduation, and with insufficient preparation for special work, depriving themselves also of the broadening influence of a few years of general practice.

In Denver the unrestricted and unlimited hospital privileges offered all comers have induced many untrained and incom-

petent persons to undertake serious surgical work which they can not execute with a reasonable degree of safety to the patient or to their own or to the hospital's reputation, with the result that there has been a too great, needless and inexcusable sacrifice of human life, and the hospitals and surgeons have been obliged to bear the reputation so acquired and share the opprobrium.

He condemned graft and grafters in the medical profession, and censured those who divide fees and give commissions.

Gastrointestinal Toxemia.

Dr. Herbert B. Whitney, Denver, described a form of gastrointestinal toxemia in infancy and childhood which, he said, is fairly common, but is not described in books. It pursues a typical course of from four to seven days. The chief symptom is fever. The gastrointestinal symptoms are not characteristic and are often lacking. The diagnosis is made by exclusion, meningitis and pneumonia being oftenest suggested. The prognosis is generally good. Complications are rare. Illustrative cases were cited.

Principles of Infant Feeding.

Dr. A. G. Taylor, Grand Junction, said there is no substitute for mother's milk. The proper food for an infant deprived of Nature's method of feeding, is cow's milk, properly modified. The so-called prepared foods are not to be recommended. Whether or not the child is to become a healthy and vigorous adult depends to a large extent on its nutrition in the earlier months of its life. Of all the factors that enter into the problem, digestion and assimilation stand preëminently at the head. The child should be fed in such a manner as not only to escape the early effects of indigestion, diarrhea, etc., but the subsequent dangers of nutritional diseases, as scurvy, rickets and marasmus, and the possibility of degenerative troubles.

Swing of the Pendulum, or Renaissance of Internal Medicine.

Dr. T. B. Moore, Canon City, said that internal medicine has been partially eclipsed in the last two decades by the brilliant achievements of surgery. As young men are attracted by the latter, they neglect the former, despite great advances. Surgery is attractive, in part, because of better compensation. The question of fees, especially the division of fees in referred cases, must soon be settled by a fuller recognition of the claims of the general practitioner.

The chief factors in producing conditions antecedent to the beginning of the renaissance are ignorance of the public in relation to medical matters; failure to emphasize therapeutics and prescription writing by medical teachers; an awakened public as the result of exposure of fraud by proprietary medicine, and nostrum vendors; an outraged profession as a result of unethical advertising in medical journals. The coming renaissance will relegate polypharmacy to the rear. There will be improved therapy as a result of a more rational conception of disease.

Has Regular Medicine Kept Pace with the Art of Healing?

Dr. J. K. Miller, Greeley, said that from the earliest prehistoric application, the art of healing has been modified from century to century. Regular medicine was the first system which was established with any permanency. It met its first opposition about the dawn of the nineteenth century in the discovery of similars by Hahnemann. The regular school was then, and is now, so closely wedded to medicines that it often proceeded to its detriment along lines as unscientific as those of veriest quackery. It must be held responsible for the heterodox systems now clamoring so loudly for patronage and state recognition. The trend of modern life, the search for wealth, the dissipations of comfort and luxury have produced many physical evils in which medicine does not obtain. Divine healing, Dowieism, Eddyism and kindred cults have met with such unprecedented recognition as to indicate the necessity of emphasizing psychic rather than material remedies.

The Free Dispensary as a Factor in the Tuberculosis Crusade.

Dr. A. S. Taussig, Denver, spoke of the benefits to be derived from the free dispensary by the public and the medical profession. He pointed out the harm that follows in the wake of free dispensaries. He laid stress on the duties of medical colleges and other organizations that support free dispensaries, and pointed out the relations of such dispensaries to the medical profession at large.

Physician in Politics.

Dr. Charles F. Andrews, Longmont, believes the time is opportune for the medical profession to take a political stand and thereby receive proper medical legislation. All practitioners should be known politically as men who place their membership in the American Medical Association far above all partisan political faith. Physicians should study city, county, state and national politics.

The Doctor and the Public.

Dr. E. Stuver, Ft. Collins, pointed out (1) the ancient origin and function of the early physicians. (2) The demoralizing effect of the Dark Ages on medical science. (3) The relative importance hitherto attached to war or life-destroying as compared with medicine, a life-saving vocation. (4) The necessary qualifications for the successful physician; (a) he should have a strong physical organization; (b) he should have a broad, thorough, general and scientific education; (c) he should be of unimpeachable character, and should have careful moral training. (5) A properly qualified and impartial board of examiners should pass on the character and qualifications of every applicant who desires to practice medicine. (6) Physicians should take an active part in all sanitary matters. (7) "Patent" and "fake" medicines should be opposed by the united efforts of the medical profession.

Surgical Aspects of Stomach Disorders From the Standpoint of the Internist.

Dr. James Rae Arneill, Denver, said there is an increasing tendency to resort to the surgical treatment of certain chronic and acute diseases of the stomach. Operative interference should not be indiscriminate, but should be controlled in most instances by a careful, painstaking study and resort to well-recognized diagnostic measures. He described cases which are cured or helped by surgery; also cases which surgery does not help. Increasing experience is teaching more wisdom in the selection of cases. The surgeon and the internist should work hand in hand, as correct diagnosis and accurate appreciation of the *tout ensemble* are of paramount importance. He considered the easily applied and useful diagnostic measures, and presented conclusions drawn from a study of cases before and after operations.

Observations on Experimental Stomach Surgery.

Dr. A. R. Pollock, Antonito, reported observations based on thirty-six operation on dogs. 1. Gastroenterostomy by the Murphy button; at the end of three days the abdomen was opened, and button found *in situ*. 2. Gastroenterostomy by the Murphy button; at the end of five days the abdomen was opened, and button found *in situ*. 3. Gastroenterostomy by the Murphy button; at the end of six days button was found free for 4/5, but still holding by 1/5 of its circumference. 4. Gastroenterostomy by the Murphy button; at the end of eight days the button was found in the ileum a few inches below the site of anastomosis. 5. Gastroenterostomy by the Murphy button; button passed by animal on tenth day. 6. Gastroenterostomy by the Murphy button; on fourteenth day button was found in the ileum. 7. Gastroenterostomy by the button; on fifteenth day button was found *in situ*, although the tissue in the bite of the button had sloughed away. He concludes that the time required for the button to free itself and pass from the site of anastomosis varies greatly, but at least seven days are required.

Ectopic Gestation.

Dr. T. A. Stoddard, Pueblo, said that Tait was the first to formulate conditions and methods of procedure definitely. The true cause is indefinite and more difficult of elucidation in individual cases than are the causes of appendicitis. It is certain, however, that the malformation of tubes and uterus is no more a causative factor than diseased condition of these organs. Many cases go unrecognized, nature coming to the

rescue and the patients recovering; others die after the first sudden exhausting hemorrhage, and this is more likely to occur when the rupture is near the uterine end of the tube, and hence during the early weeks of the existing pregnancy. He does not believe that a long period of sterility is in any sense an indication—in conjunction with other symptoms—of the existence of an ectopic gestation.

The diagnosis, if possible, should be made before rupture; but many patients do not consult a physician until rupture; in fact, rupture sometimes occurs before the patient suspects that she is pregnant.

Surgical procedure is the only thing to be considered for the relief and cure of these patients. Attempts to palliate the condition or to destroy the fetus by hypodermics, electricity or medicine belongs to a past age, when abdominal surgery was scarcely thought of. Operation through the vagina is an evidence of grave uncertainty of diagnosis, and can only result in incomplete and bungling surgery, and is only attempted by men who have made or are making strenuous efforts to convert the vaginal canal into a highway by which they may reach notoriety.

Mind Cure: Its Service to the Community.

DR. RICHARD C. CABOT, Boston, said that the mind cure movement has rendered notable public service because its main ideas are important and in spirit, if not in their letter, true. The mind cure movement exerts the force of healthy criticism on the tendency of physicians to (a) ignore the possible aggravation of disease by mental effects of the methods of diagnosis and treatment which they use; (b) to encourage the truth habit; and (c) to treat neurotic cases either by an attenuated and diluted mental régime or by "sitting on the safety-valve."

Bradycardia in Appendicitis.

DR. MAURICE KAHN, Leadville, does not recall encountering bradycardia in a case of appendicitis that did not present gangrene. In the last six cases of gangrenous appendicitis in which this symptom was evinced the diagnosis of the gangrenous stage was made before operation, based on the bradycardia alone, so that given a case presenting other unmistakable signs of appendicitis, with a subnormal pulse, a tentative diagnosis of gangrene may be maintained.

The cause of this symptom in appendicitis is probably to be ascribed to the absorption of a ptomain or ptomains into the system which act on the cardiac centers or ganglia, as is not infrequently seen in jaundice, chronic digestive disturbances, etc., but is not akin to the slow pulse observed during convalescence from some of the acute fevers, wherein it is local evidence of impaired reactive power, the result of inanition. Cases were cited in point.

Peritoneal Drainage.

DR. D. P. MAYHEW, Colorado Springs, prefers the rubber tube of large caliber to glass tubes or gauze. He reported seven cases of diffuse purulent peritonitis, with one death, which were treated with drainage and but little surgery. The indications in these cases are met best by rapid operation, with as little handling of the abdominal contents as possible, even to the point of allowing the original focus to remain, if not easily and quickly removed; drainage in the Fowler position by means of tubes or gauze, or both, brought out at the lowest available point, and reaching the lowest pouch of the peritoneum; copious salt solution enemata, three to four quarts in twenty-four hours; prevention of peristalsis by allowing nothing by the mouth. If these procedures be followed faithfully, the mortality may be kept down to a comparatively low point.

Attitude of General Practitioner Toward Obstetrics.

DR. E. E. EVANS, Fort Morgan, emphasized the importance of cleanliness in obstetric work, including the refusal of the general practitioner to attend labor cases when in attendance on patients ill with contagious diseases. He said there is a crying need for teaching more thoroughly the more common operations of obstetrics, and that obstetrics should receive more consideration in comparison with surgery.

The Successful Obstetrician.

DR. D. V. MEIKLEJOHN, Somerset, said that practical bedside work is essential in the training of the new physician. Obstetrics receives too little attention in our societies. Close cropping of the hair and washing of external parts with soap (sterile), and an antiseptic douche, prepare the average patient for labor. Frequent examinations are fraught with danger. The same may be said with regard to introducing fingers into the vagina to assist in delivering the placenta by making traction on its folds. He sees no objection to making slight traction on the cord and delivering the placenta by Credé's method. Perineal lacerations should be repaired at once; cervical lacerations not until after the lying-in period. He sees no merit in the abdominal binder, but uses it more as a placebo.

Miscellany

Influence of Thyroid Feeding on Susceptibility to Poisons.—The experiments of Reid Hunt (*Jour. of Biologic. Chemistry*, Vol. 1, No. 1) show that thyroid feeding renders white mice much less susceptible to the toxic action of acetonitril, but has no effect on the toxic dose of sodium nitroprussid or of hydrocyanic acid. This indicates that the thyroid preparation does not act by increasing sulphur compounds by metabolism of proteids, but by some specific antitoxic power. Proteids (such as casein, nutrose, peptone), nuclein and preparations of the thymus and of the suprarenal glands counteract to some extent the neutralizing or protective power of thyroid gland against acetonitril. It was found that thyroidectin increased slightly the susceptibility of mice to acetonitril.

What Is an Alkaloid?—W. A. Puckner in the *Pharmaceutical Review*, 1906, Vol. XXIV, p. 228, discusses the meaning attached to the term alkaloid by different authorities. He states:

> It is well known that the term "alkaloid" is subject to several definitions. While some apply the term to all vegetable bases, that is, to basic bodies occurring in plants, others restrict the word to those basic substances derived from, or related to pyridine. According to the latter interpretation caffein, theobromin and even morphin are not alkaloids. Further, whether the first or second definition be accepted, the term base is still open to different interpretation. While some alkaloids react with water to form hydroxids which are strongly ionized and hence are "strong bases" and form well-defined salts, the hydroxids of others show little tendency to ionize, hence their salts, in presence of water, because of hydrolysis break up into free base and acid. Thus while salts of caffein may be prepared, these when dissolved in water are so largely hydrolized that the free base may be abstracted from such a solution by means of immiscible solvents. Therefore, even if the first definition be adopted it is still a question whether or not caffein is to be considered an alkaloid. In the seventh revision of the United States Pharmacopeia caffein is described not as an alkaloid, but as a feebly basic substance; yet under the prescribed tests of purity appears one which "shows the absence of other alkaloids" and one is left in doubt whether or not caffein is considered to be an alkaloid In the eighth revision it is again stated to be a feebly basic substance, but the test just referred to is said to indicate "absence of alkaloids" and from this it would appear that, officially, caffein is not an alkaloid. With this point of view the subcommittee on proximate assays appears not to have agreed, since fluid extract of guarana is required to contain in 100 cc. "3.5 gm. of the alkaloids from guarana."

The Milk Question in Maryland.—The association of a number of the citizens of Maryland in the effort to advance the cause of the prevention of tuberculosis which resulted in the holding of the Baltimore Tuberculosis Exhibition has resulted in similar combined effort to improve the milk supply. This was attempted by a series of public lectures and exhibitions of model dairies, nurseries, laboratories, etc. The results are not yet fully known, but according to H. W. Steele (*Charities and the Commons*, Aug. 4, 1906), more rigid inspection by public officials has been secured, dairymen have been stimulated to improve their methods, the physician is demanding more "certified milk," and the layman takes more thought concerning the milk which he uses than he ever did before. This number of *Charities and the Commons* contains some instructive pictures of the exhibition and abstracts of the various lectures. J. S. Fulton draws a striking picture of the possibilities of the contamination of milk by the middleman after

it has left the dairy, and urges that clean milk can only be secured by requirements which will necessitate an increase in price to the consumer. G. W. Goler states it as his belief that most babies become sick because they are infected by the bacteria and poisons of stable manure contained in dirty milk, and that to keep children well it is necessary to protect them from the dirt in milk just as much as we would protect them from diphtheria or scarlet fever infection. S. C. Prescott believes that the farmer's side of the case has not always been fairly considered. He thinks that "if the farmer were to receive five or six cents a quart and were told how to produce clean milk, many of them would do it. This would mean, of course, that milk should cost the consumer ten cents, which is a reasonable figure compared with the cost of other foods." G. M. Kober, in treating of morbific and infectious milk, again emphasizes the fact that "ideal milk supplies can not be attained without increased cost of production, and in the interest of public health and the many helpless babes deprived of their natural food, we should be loyal to our American conception of 'square deal.'" The concluding lecture is by A. Jacobi, and deals with the "Rôle of Pure Cow's Milk in Infant Feeding." These articles indicate a gratifying public interest in this important subject. The necessity of providing pure food for babies is so evident as to need no comment except to approve every effort in this direction. It may be debated, however, whether or not the nutritive value of milk as a food for adults will justify any great increase in its price. At ten cents a quart milk solids would cost about forty cents a pound, or making allowance for the greater nutritive value of fat, would be six times as expensive as flour. If practicable, it would seem that the goal might be more surely reached by encouraging the production of a special milk for infants, children and invalids, allowing the sale of a cheaper milk for adults, which, however, should be made to conform to reasonable regulations regarding cleanliness.

The Labyrinth in Various Animals and Birds.—Albert A. Gray, Glasgow, in the *Journal of Laryngology, Rhinology and Otology*, reports his studies of the anatomy of the internal ear in sixteen mammals, and finds that the various orders and species present differences in three main types. 1, Differences in shape of the cochlea; 2, differences in size of the perilymphatic space of the semicircular canals; 3, differences in the size of the otoliths. The cochlea appears in mammals in two types in addition to the peculiar type of the organ found in the monotremes. These types are the sharp-pointed cochlea found in the carnivora and the rodents, and the flattened cochlea found in man, monkeys, lemurs, ungulates and cetacea. The one exception found among the carnivora is the seal. In regard to the perilymphatic space, Gray states that in the human subject this space is large and well developed, and that it has been assumed that such would be the case in the lower animals, but investigation proved that this is not the case. Man is one of the exceptions to a very general rule. In mammals, as a rule, the perilymphatic space is either very small or even completely absent in the canals. The exceptions to this rule are man, monkeys and seals. Gray states, however, that it is possible that the original type of the mammalian labyrinth possessed a well-developed space as in the reptiles and birds. This is the type invariably found in all the specimens examined. At present, he states, the presence of a well-developed perilymphatic space in the canals may be regarded as indicating a labyrinth of a more ancient type. He considers the presence or absence of this space a valuable guide to the relationship of different orders and species of animals, and that its value is enhanced by the fact that the space does not appear to have any physiologic function, even as regards equilibrium. The otoliths of mammals have seldom been examined carefully, it being assumed that they are small. This assumption, Gray states, is in the main correct, but he has discovered two exceptions, the porpoise and the seal.

Chemical Discoveries in Switzerland and Germany.—According to the *Zeitschrift des Allgemeinen osterreichen Apotheker*, a commercial treaty is under consideration between Switzerland and Germany which will give the protection of the patent laws to chemical discoveries. It is proposed by the Swiss federal council, however, to except medicines from the protection of patents. This is in accordance with the desires of the Swiss pharmaceutical association that the price of these articles may not be enhanced. The chemico-pharmaceutical industry demands protection for the process of preparation with the intent that the material, the medicine as such, shall remain free. This request is warmly supported by the press of Basle, a city which is prominent in chemical manufacture. It is claimed that the chemist has the same interest in the discovery of a remedy as in any other technically applicable discovery. The exclusion of new processes of manufacture of medicines from the protection of the patent laws must have the effect of restraining the eagerness of the chemist to enter on such investigations. To secure the protection of pharmaceutico-chemical processes the chemical trade of Basle has addressed a circular letter to the members of the national council and the committees of the national and cantonal legislatures. The representatives of the chemical industries claim that patenting the process of manufacture will not increase the price of the medicine. But a writer in *Der Bund* refutes this claim by showing that the price of articles protected by patents on manufacturing processes are from ten to fifteen times higher in Germany than in Switzerland. The sudden cheapening of patented products when the patent expires indicates the same thing. It is noticeable that the German manufacturers in making application for patents are careful to include other processes for making the same product, so far as possible, thus securing to themselves the same monopoly as if the product itself were patented.

Intestinal Putrefaction.—Leo F. Rettiger thus summarizes the results of his work on putrefaction in the *Journal of Biologic Chemistry*, August, 1906. Putrefaction is the work of anaërobes, and of all the organisms examined thus far of strict anaërobes only. The best known of the putrefactive anaërobes are *Bacillus putrificus*, the bacillus of malignant edema and the bacillus of symptomatic anthrax. Egg-meat mixture and blood fibrin are readily decomposed by them, yielding the foul-smelling products that are so characteristic of real putrefaction, particularly mercaptan. In pure cultures of these organisms, however, indol, skatol and phenol are not produced, or only in very minute quantities. Except in a few rare instances, putrefactive organisms of the above type have not been observed in feces, either of normal persons or of those suffering with pernicious anemia, even when the stools had a decidedly offensive odor. In the large majority of cases, however, feces have a more or less putrefactive action on the egg-meat mixture, sometimes causing a reduction in the bulk of the proteid of from 25 to 30 per cent. This action is most pronounced, as a rule, after heating the tubes for ten minutes at 80 C. This heating favors putrefaction, probably by destroying organisms of the colon group already existing in the tubes and thus removing their inhibitory influence. The *Bacillus enteritidis sporogenes* of Klein is regularly present in human feces, and although commonly regarded as being a purely fermentative organism, it may be at least partly responsible for putrefactive changes in the intestine. The observations recorded in this paper strongly support the view of Bienstock that the *Bacillus coli communis* and *Bacillus lactis aërogenes* are not harmful inhabitants of the intestine, as is so often thought, but that their function is a protective one. Their presence in any putrefying medium is a hindrance to the work of the putrefactive bacteria, and therefore serves as a check on their activities.

Solubility of Uric Acid.—His and Paul found the solubility of uric acid in water to be nearly 1 part in 40,000. A. E. Taylor (*Jour. of Biologic. Chemistry*, January, 1906), finds that in bovine blood saturated with carbonic acid it is soluble to the extent of 1 part in 1,000, or forty times as soluble as in water. The increase of solubility is not due to combination with the alkaline metals of the blood, which is prevented by the presence of excess of carbonic acid. The increased solubility due to absorption by colloids is considerable since a solution of neutral globulin in water will hold about five times the amount soluble in the same volume of water. The larger part of the uric acid must therefore be held in some

complex combination, in which the uric acid figures in all probability as the molecule. Taylor calls attention to some misconceptions regarding the relations of the uric acid in the blood. There are only two kinds of uric acid salts with metals known. For instance we have mono-sodium urate and di-sodium urate. Both these compounds are alkaline, the mono-sodium urate being only feebly so. The so-called quadri-urate does not exist so far as known. Taylor believes that the blood can not properly be called alkaline, but is in reality neutral, and that variations in the solubility of uric acid in the blood do not depend on variations in the alkalinity of that liquid. He has found uric acid present in bovine serum, but has made no study of human blood serum as the quantities of blood necessary render such an investigation impractical.

The Awakening.—The whole medical profession of this country is just waking up to the fact that it has been slumbering and dreaming for many, many years, says the *California State Journal of Medicine*. But already signs of a new activity are in evidence in many portions of our country. In many communities the best physicians will not make insurance examinations for less than $5. They are discussing the lodge practice evil and coming to realize the insult to professional intelligence in proffering a pittance for wholesale professional services. Most physicians who are not either moribund or densely ignorant are beginning to ask "impertinent" questions about the composition of the all too numerous "secret proprietary" medicines offered to them by glib-tongued "detail men." Occasionally we hear a protest against the gratuitous educational remarks of some boorish drummer who undertakes to tell physicians all about the special and particular virtues and advantages of the nostrum manufactured by his particular "house." Most of the state journals are very much awake and are working hard to try and wake the slumbering members of the profession; but, unfortunately, some are either asleep or, to judge from their advertising pages, are to be classed with the predatory privately owned journals. Doubtless the respectable element in these particular associations will prevail in time and these few state journals will then cleanse themselves and "be good."

Proprietary Remedies in Austria.—While in the United States organized attempts to oppose the encroachments of proprietary remedies have originated entirely or almost entirely with the medical profession, in Austria, according to the *Pharmazeutische Post*, Aug. 12, 1906, the matter has been taken up by the pharmacists who have prepared a list of prescriptions called "*prescriptiones Vicnnenses*," which are to be used as substitutes for the principal specialties and which are to be kept in stock by the pharmacist who will dispense them on physicians' prescriptions in ordinary medicine bottles and with any additions that the physician may order. The objectionable literature that reaches the patient with the original packages of the ordinary proprietaries is thus avoided and the medicine is at the same time cheaper for the patient. The physician is not obliged to write out every time the exact ingredients of the mixture, but can refer to it by a convenient name. These preparations have been devised by a Vienna specialty commission representing a number of Austrian pharmaceutical societies, and an appeal has been made to medical men to give the movement their support on the ground of economy to patients, avoidance of self-prescribing, control of quality of drugs, retention of confidence of patients.

A Plea for Organization.—The medical profession of the United States is on trial to-day before the people of this great country as to whether it is capable of compact and complete organization. The unit is the county society. Unless we can combine these in a strong state body we are scattered bands and can accomplish but little. By united action we can make the county and state societies what we will to make them—we can adopt such means and put such men in power as will best promote and represent the aims we have in view. The power is with us if we only choose to organize and use it. The opportunity is a great one; and no physician can afford to be dominated by the little things and withdraw his hand from the greater work. For self-protection alone we need this power—we need it, too for higher reasons, which every true physician appreciates, to increase the usefulness of a noble and responsible calling, and bring better rewards to those who serve faithfully. The cost is insignificant, the good to be attained is boundless, or at least bounded only by our faith and our work. Let us come together and stand together like men.—B. F. Eager, in *Kentucky State Medical Association Bulletin.*

The Value of the Hospital Kitchen.—The first place in which all the best scientific knowledge of food as a remedial agent should be applied is in the hospital kitchen. The hospital kitchen of the future will rival the operating-room in cleanliness and convenience when it is clearly recognized that the skill of the physician or surgeon is of but little avail if the diseased and inflamed tissue can not be replaced by normal conditions. Nothing but food can furnish the blood-current with the substances from which the cells may choose those essential to them. However fully he may be sustained for a time by the products of the chemist, it is of the utmost importance to the final recovery of the patient that he desire natural food in sufficient quantity to regain his strength. The neglect of the heart of the whole hospital, the kitchen, is hard to understand until we realize that this same neglect permeates the community in regard to individual homes, and that the medical schools treat of food only in relation to disease, and not in relation to healthful living.—*National Hospital Record.*

A Higher Plane of Conduct.—Why do we linger on the threshold of the most promising organization ever set before us when the needs of the times demand this of almost every calling, not only to succeed but to survive? It is hardly reasonable to say that there is more selfishness and unscrupulousness in this than in other vocations, when the calling itself demands and develops the higher and more generous traits—when the very atmosphere not only tends to develop these, but to restrain the baser tendencies. Considered even from a selfish standpoint, organization would enable us to maintain a higher standard by the mutual improvement and inspiration of association, making us better acquainted with each other and giving us more sympathy one for another, and clearing away many times misunderstandings, and keeping us all, by a sort of generous rivalry, on a higher plane of conduct and bearing toward one another and toward the world.—B. F. Eager, in *Kentucky State Medical Association Bulletin.*

Separation of Morphin from Glycerin.—H. M. Gordon (*Amer. Journal of Pharmacy*, 1906, page 464) reports that separation of morphin from solutions containing glycerin is exceedingly difficult. After trying various methods he found that the following gave the best results: The glycerin solution of morphin sulphate is treated with an excess of normal iodin solution and the liquid diluted with water to about three times the original volume. On standing over night about 80 per cent. of the morphin taken crystallized out as the characteristic morphin hydrogen triiodid. The crystals were collected on a small filter, washed with water containing a little Wagner's reagent and then dissolved by adding a few cubic centimeters of a 10 per cent. solution of sulphurous acid. In this way the alkaloid is obtained in a liquid perfectly free from glycerin. On adding a slight excess of potassium carbonate and heating to about 100 degrees for a minute or two the alkaloid will crystallize out on standing.

Liability in France for Surgeon's Fee.—It is reported that a surgeon was called to a very sick woman in Paris, and that her mother begged the physician to "save her daughter at any price." An operation was performed, but the patient died. The surgeon's fee was $6,000, which the woman's husband, a comparatively poor man, was unable to pay. The surgeon then sent the bill to the mother and, on her refusal to pay, appealed to the court. The court held the husband responsible and freed the mother from all liability, but appeal to the higher courts resulted in a reversal of this decision. The judge accepted that the appeal to the surgeon to save the daughter at any cost was an order to operate, and the mother was compelled to pay the fee.

Detection of Formaldehyd in Milk.—S. F. Acree has investigated Hehner's test (*Jour. of Biol. Chem.*, August, 1906) and finds that it is sensitive to the degree that it will detect 1 part of formaldehyd in 250,000. By fractional distillation it is possible to collect the formaldehyd so as to detect 1 part in 3,000,000 in 20 c.c. of milk. No other aldehyd tested gave the reaction except vanillin. The reaction is due to the proteids of the milk and is more intense the greater the proportion of proteid. Other complex proteids give the same reaction. The most intense reaction is produced by the globulin from squash seed; this becomes a valuable substance to add to solutions to be tested for formaldehyd. The reaction is made by mixing the milk with an equal volume of water and four volumes of concentrated sulphuric acid in which there is a small amount of a ferric salt. If formaldehyd is present in minute quantity the solution soon acquires a violet color.

History of Medicine.—Just why medical colleges do not provide for the teaching of the history of medicine is because the curriculum is already filled to overflowing, and the harassed student does not need to be further overburdened. One may think what he will, but the reason why so many seek the walks of medicine in life is to make a livelihood, believing it can be done with very little work. After trying for a while the tyro generally finds that he has made a huge mistake, and very often wishes for other employment. The study of medicine is a pleasurable and interesting study; the practice is a very different thing. One way to accomplish instructing the student body in both the history of medicine and the code of ethics is to take these matters up in their own medical and literary societies, which now seem to be pining away for want of support. We can not too often keep before us the example of the masters of the past.—*Dominion Medical Monthly.*

Toxicity of Sodium Chlorid.—W. J. V. Osterhout (*Jour. of Biologic. Chemistry*, March, 1906), has shown that dilute solutions of sodium chlorid quickly kill spores and young plants of certain algæ, although they will all live in distilled water for weeks, and will live and grow in sea water or in mixtures containing small quantities of magnesium chlorid, magnesium sulphate, potassium chlorid, and calcium chlorid in addition to sodium chlorid. The added salts taken singly are nearly as poisonous as sodium chlorid, but in their mixture the individual toxic actions counteract each other so that the solution is harmless. Loeb has termed such a mixture a balanced solution and has emphasized the fact that the blood as well as the sea water is in fact such a solution. Such investigations are very suggestive of the disturbance that may arise from changed relations among the inorganic salts of the blood.

Colloidal Form of Strychnin.—O. H. Brown (*Jour. of Biol. Chem.*, August, 1906) finds that strychnin mixed with hydrogen dioxid and albumin, yolk of eggs, or organic extracts will gelatinize in about six weeks, producing a mixture or compound with the proteid which is toxic by the stomach only after digestion has occurred, and is only very slightly toxic if injected subcutaneously. It is not probable that the strychnin is oxidized by the hydrogen dioxid, but other antiseptics can not be substituted for it in the production of the strychnin jelly. The presence of the albumin or other organic matter in the jelly appears to interfere with the ordinary tests for strychnin. It is probable that other alkaloids may combine with proteids in a similar way. The experiments of Brown indicate that this is certainly the case with suprarenal alkaloid.

Acetonuria After Anesthesia.—The study of the urine in 41 cases of anesthesia by Helen Baldwin (*Jour. of Biologic. Chemistry*, January, 1906) confirms the results of Greven, Brewer, Bevan and Favill, who found acetone in the urine following anesthesia. Dr. Baldwin found it in all but three cases. The other characteristics of the urine were higher specific gravity and more strongly acid reaction. The amounts of ammonia and of organic acid were usually decreased, and the products of intestinal putrefaction were not materially altered. The kind of anesthetic and the duration of the anesthesia exerted no particular influence on the appearance of the acetone, and as the anesthetic in these cases was followed by no untoward result the appearance of acetone may be regarded as a perfectly normal phenomenon after anesthesia.

Book Notices

How to Suppress a Malpractice Suit, and Other Medical Miscellanies. By Thomas Hall Shastid, A.M., M.D., LL.B. Cloth. Pp. 128. Price, $1.50. Marion, Ill.: Marion Publishing Co., 1906.

To judge from the title on the cover and from the running heads on each page throughout this book, one would naturally conclude that it was a treatise on "How to Suppress a Malpractice Suit." As a matter of fact there is but one chapter devoted to the subject, and the book bears the title of this chapter. The advice given in this first article is of such a character that no honorable, self-respecting physician could follow it. The other chapters are on various matters of more or less interest to physicians and make interesting reading.

Technique du Traitement des Tumeurs Blanches. By F. Calot, Chirurgien en chef de l'hôpital Rothschild, etc. Paper. 192 Illustrations. Pp. 272. Price, 7fr. Paris: Masson et Cie, Editeurs, 1906.

The words "*Tumeurs blanches*" are the French equivalent of the English popular term "white swellings" commonly used to signify the tuberculous swellings of the joints. In the present volume the subject is considered from a therapeutic point of view and the treatment mainly advocated is not that of long lasting fixation in plaster casts or resection, but the use of intra-articular injections of antiseptics, including mixtures of ether, creosote and iodoform, or camphorated naphthol in glycerin, formulas for which are given. The technic is given in the fullest detail and the author, basing his opinions on his own experience, advocates this in preference to all other methods, though he does not entirely exclude the use of orthopedic measures in the treatment or of operations in special cases, and, of course, he does not neglect the later methods of massage, electrization and exercise. The principal thing in his method, however, is to get at the tuberculous focus, and this by methods other than severe cutting operation. To insure the functional recovery the plaster applications should not be continued too long, and the limb should be kept at rest six months after the removal of the envelopes. By this means Calot claims he can cure the great majority, even 90 to 100 per cent. of the cases, and if an ankylosis or stiff joint should still be the result, the limb will nevertheless be in good position without loss of length and capable of doing considerable good service. The cure will require also much less time than by the old non-cutting methods and can be accomplished by the ordinarily skilled practitioner without serious risk. He claims a personal knowledge of over a thousand cases of cure treated almost exclusively by this method. Whether the method is all that the author claims for it is yet to be proven.

Influence of the Mind on the Body. By P. DuBois, M.D., Professor in the University of Berne. Translated from the Fifth French Edition by L. B. Gallatin. Cloth. Pp. 63. Price, 50c. net. New York: Funk & Wagnalls Company, 1906.

This little work is intended for the public rather than for physicians. It is a readable and sensible explanation of the principal facts regarding the effect of the mind on the body in the production of morbid feelings and the simulation of actual disease. We say actual disease, although the disease as it is felt by the patient is often sufficiently real to him at least, and it appears that the increase of nervousness in our modern civilization is as marked abroad as it is in this country. The hygienic instructions here given are sensible, and we believe the translation and presentation of the work to the English reading public will do good. The translation is admirable and the publishers have produced the work in a very attractive form.

Le Vieillissement Artificiel des Vins et Spiritueux. By Frantz Malvezin, Directeur de Penophile, etc., 16 Illustrations. Paper. Pp. 95. Price, 1 fr. Paris: Jules Rousset, 1906.

This work is of economic rather than of medical interest, but the subject has also its medical side. Wines and liquors are perhaps, of all articles of diet, if they could be thus included, the ones most subject to sophistication and adulteration. It is very possible, if not indeed probable, that by far the largest proportion of the alleged foreign wines and liquors sold in this country never saw a foreign country, or, if they did, are not the genuine article they claim to be. Moreover, the genuine article itself, in its most desired pure and perfect state, is not always obtainable at its place of production, and when it is

thus obtained it is only as the result of a tedious process of aging, care and treatment, involving enormous losses which correspondingly increase the price of the perfected article. To prevent such losses and for the profit of the producers, some 60 or 70 patents have been issued in France for the artificial perfection of French wines and cognacs during the last 25 years. The present little volume treats of the methods of artificially aging the French wines and liquors, a sort of sophistication that is objectionable insomuch as it may be reasonably assumed that the artificial process can hardly reproduce the natural product, and it is not likely that it will bring about the possibility of a more authenticated supply of the average French wines and liquors in common use. As the French manufacturer in the story said to his son, "You can make wine of anything, even grapes."

PRESERVATIVES IN FOOD AND FOOD EXAMINATION. By John C. Thresh, M.D. (Vic.). D. Sc. (Lond.). F. I. C., and Arthur E. Porter, M.D., M.A. (Cantab). Cloth. Price, $4.50. Pp. 484. Philadelphia: P. Blakiston's Son & Co., 1906.

The great interest at the present time in the question of food preservatives is likely to secure a wide circulation for the book before us. The names of the authors, in themselves, tend to create confidence in the general accuracy and fairness of the treatise, and a rather detailed examination of this book shows that such confidence on the part of the reader will not be misplaced. In addition to a discussion of the nature and amount of preservatives ordinarily added to certain classes of foods, methods for the detection and estimation of various impurities and preservatives are given, and the legal aspects of the subject from an English standpoint are presented with great fulness. On the whole, the book can be depended on for an impartial view of the many vexed questions that arise in connection with these topics. It might be, indeed, urged that the desire to maintain a judicial attitude has sometimes led to mention or even elaboration of data of doubtful value; but while the evidence is so conflicting as at present it is to err in the right direction. Altogether the book can be recommended as a fair and full summary of our present knowledge regarding food preservatives, their abuses and dangers. Later editions of the work, if they appear, will probably treat the material in a more critical fashion; and, it might be added, new evidence that will permit of more critical treatment is sadly needed in many directions. Some plates of doubtful value and an excellent index conclude the volume.

A TEXT-BOOK OF SANITARY AND APPLIED CHEMISTRY, or The Chemistry of Water, Air and Food. By E. H. S. Bailey, Ph. D., Professor of Chemistry, University of Kansas. Cloth. Pp. 343. Price, $1.40. New York: The MacMillan Company, 1906.

This is not a medical work, but is intended for students who have had a high-school course in chemistry and to whom some knowledge of the applications of chemistry to the daily life of the household will be useful. While primarily intended as a text-book, it includes material derived from government reports and elsewhere, so that it will prove valuable for general information and reference. Some experiments are introduced which generally require simple apparatus. The sanitary teachings of the book are generally correct. The notion that sewer gas is a source of infection is corrected by the statement that sewer air has been found to contain fewer microbes than outside air! The statement that certain waters may convey malaria is liable to give rise to misapprehension, although offset by the statement that collections of water in shallow pools give opportunity for the breeding of mosquitoes that transmit the infection. Some instructive examples of the dependence of epidemics on the nature of the water supply are given, but the bacteriologic side of the subject receives rather scant notice, in consideration of its importance.

The very sensible remarks regarding cereal breakfast foods will tend to produce a more just estimate of the value of these "predigested" foods in relation to the cereals from which they are obtained. The results of Atwater's experiments on alcohol are given due credit, but the conclusion is reached that "although alcohol has some right to be regarded as a food, yet it is not a food of any practical importance." While the book is perhaps not sufficiently detailed for the use of the physician, it may well be recommended to lay readers who desire to gain a knowledge of these important subjects.

Medical Education and State Boards of Registration

COMING EXAMINATIONS.

NEVADA State Board of Medical Examiners, Carson City, November 5. Secretary, S. L. Lee, Carson City.

NEBRASKA State Board of Health, State House, Lincoln, November 7-8. Secretary, Geo. H. Brash, Beatrice.

MAINE Board of Registration in Medicine, Portland, November 13. Secretary, Wm. J. Maybury, Saco.

CONNECTICUT Medical Examining Board, City Hall, New Haven, November 13-14. Secretary, Charles A. Tuttle, New Haven.

MASSACHUSETTS Board of Registration in Medicine, State House, Boston, November 13-14. Secretary, Edwin B. Harvey, State House,

WEST VIRGINIA State Board of Health, The Frederick, Huntington, November 13-15. Secretary, H. A. Barbee, Point Pleasant.

Tennessee Secretary's Annual Report.—In Dr. T. J. Happel's annual report to the State Board of Medical Examiners, he recommends some rules for conducting examinations, which will doubtless be of interest to all examining boards. We abstract these rules briefly as follows:

1. There should be a watcher or floor walker at every examination.
2. The examiners should be in the room constantly and free from other work than that of conducting the examination.
3. Time allowances should be strictly followed.
4. No applicant should be allowed to leave the room until he has completed his examination and handed in his paper and then not be allowed to return.
5. Applicants should be seated as few as possible at each table, and no one be allowed to leave his seat during the examination.
6. Give only one set of questions to any one applicant.
7. Questions for each subject should be in separate sealed packages to be opened in the examining room, and then only as needed.
8. No new set of questions should be given out to any applicant until all applicants have handed in the preceding set.
9. No students or other parties not connected with the examination should be allowed in the room.

The report favors the arrangement made by some states where a board of preliminary examiners must pass on the entrance credentials of prospective college students, and also recommends an amendment to the medical laws requiring graduation from a medical college having four years of seven months each, as a requirement for license, in addition to the passing of an examination. The report also calls attention to the lack of graded courses of lectures in some medical colleges, the same lectures being delivered to all classes alike. It is urged that this should never be, since first-course students can not understand medical teachings adapted to the fourth-year classes. Students should always be required to be in actual attendance at the school from the time of its opening.

Illinois May Report.—Dr. J. A. Egan, secretary of the Illinois State Board of Health, reports the written examination held at Chicago, May 23-25, 1906. The number of subjects examined in was 16; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 394, of whom 373 passed and 21 failed. The following colleges were represented:

PASSED.

College.	Year Grad.	Per Cent.
College of P. & S., Chicago (1906), the grade of 75 was reached by one, 76 by three, 77 by one, 78 by eleven, 79 by twelve, 80 by nineteen, 81 by twenty, 82 by seventeen, 83 by twenty-four, 84 by seventeen, 85 by seven, 86 by four, 87 by one, 88 by five, and 89 and 93 by one each.		
Northwestern Univ. Med. School (1906), the grades of 76, 77 and 78 were reached by one each, 79 by seven, 80 by ten, 81 by three, 82 by fifteen, 83 by ten, 84 by nine, 85 by fourteen, 86 by 6, 87 by seven, 88 by three, 89 and 90 by five each, and 93 by one.		
Rush Med. Coll. (1905) 88; (1906), the grades of 80 and 82 were reached by one each, 83 and 84 by three each, 85 by five, 86 by four, 87 by one, 88 by four, 89 by seven, 90 by three, 91 by two, 92 by four, and 94 by one.		
Hahnemann Med. Coll., Chicago (1906), the grade of 75 was reached by two, 77 and 78 by one each, 79 and 80 by three each, 81 and 82 by two each, 83 by four, 84 by three, 85 by one, 86 by two, and 89 by one.		
Jenner Med. Coll. (1906), the grades of 75, 76 and 77 were reached by two each, 78 and 79 by four each, 80 by three, 81 by two, 82 by four, and 83 by two.		
Illinois Medical College (1906), the grades of 78, 81 and 82 were reached by one each, 84 by two, 85 and 86 by one each and 87 by two.		
American Coll. of Med. and Surg., Chicago	(1906)	80, 85
American Med. Miss. Coll.,	(1905) 80, 81; (1906)	81, 81, 85
Bennett Med. Coll.	(1906)	76, 79, 81
College of Med. & Surg., Chicago	(1906)	76
Dearborn Med. Coll.	(1906)	75, 76, 78, 78, 80, 83
National Med. Univ., Chicago	(1906)	75, 84
University of Iowa	(1906)	85
Harvard Univ. Med. School	(1904)	82, 83
Washington Univ., St. Louis	(1905) 78; (1906)	85
Toledo Med. Coll.	(1906)	82, 83, 83

Eclectic Med. Inst., Cincinnati	(1906)	79, 82
University of Toronto	(1905)	85
Queen's University, Kingston, Ontario	(1906)	83
University of Strassburg, Germany	(1906)	83

FAILED.

American Coll. of Med. & Surg., Chicago	(1905)	68
College of P. & S., Chicago	(1906)	66, 67, 71, 72, 74
College of Med. & Surg., Chicago	(1906)	60, 66, 68
Hahnemann Med. Coll., Chicago	(1906)	63, 72
Hering Med. Coll	(1906)	65, 68, 70
Illinois Med. Coll	(1905)	74
Jenner Med. Coll	(1906)	53, 64, 73, 74
Northwestern Univ. Med. School	(1906)	70
Eclectic Med. Inst., Cincinnati	(1879)	63

Illinois Reciprocity Report.—Dr. J. A. Egan, secretary of the Illinois State Board of Health, sends us a report of physicians licensed through reciprocity since the beginning of the year. The following colleges were represented:

College.	Year Grad.	Reciprocity with.
George Washington University	(1905)	Maryland
Rush Medical College	(1901)	Iowa
American Med. Miss. College	(1903)	Kansas
Hahnemann Medical College, Chicago	(1905)	Iowa
College of P. and S., Chicago	(1900)	Iowa
Keokuk Med. Coll. of P. and S.,	(1900), (2, 1901), (2, 1903), (1905)	Iowa
University of Iowa	(1902), (1904), (3, 1905), (2, 1906)	Iowa
Medical Coll. of Indiana	(1904)	Michigan
Medical Coll. of Indiana	(1905)	Indiana
University of Kansas	(1906)	Kansas
University of Maryland	(1893)	Maryland
University of Missouri	(1904)	Wisconsin
Creighton Med. Coll.	(1906)	Nebraska
University of Oregon	(1899)	Michigan
Laval University, Montreal	(1897)	Michigan

Missouri April and August Reports.—Dr. J. A. B. Adcock, secretary of the Missouri State Board of Health, reports the written examinations held at St. Louis, April 10-12, 1906, and Aug. 8-10, 1906. The number of subjects examined in was 12; total number of questions asked, 90; percentage required to pass, 75.

At the April examination the total number of candidates examined was 214, of whom 188 passed, including 30 non-graduates, and 91 failed, including 21 non-graduates. The following colleges were represented:

PASSED.

College.	Year Grad.	Per Cent.
Rush Med. Coll.	(1899) 82; (1904)	80
College of P. & S., Chicago	(1906)	75, 75
Northwestern Univ. Med. School	(1904)	78
University of Iowa, Homeo. Dept.	(1894)	82
University of Kansas	(1906) 75, 77, 78, 78, 79, 80, 83, 85	
University of Louisville	(1893)	75
St. Louis University (Marion-Sims-Beaumont Med. Coll.), (1905) 80, 84; (1906), the grade of 75 was reached by seventeen, 76 by four, 77 by five, 78 by seven, 79 by five, 80 and 81 by three each, 82 by one, 83 by two, and 84, 85 and 86 by one each.		
Barnes Med. Coll. (1905) 75; (1906), the grade of 75 was reached by seven, 76 by two, 77 and 78 by one, and 79 by two.		
Washington University (1905) 75, 76; (1906), the grade of 75 was reached by four, 76 by one, 77 by two, 78 by six, 79 by two, 80 by six, 81 by two, 83 by five, and 84, 85 and 86 by one each.		
American Med. Coll., St. Louis (1906), the grade of 75 was reached by three, 78 by one and 79 by two.		
College of P. & S., St. Louis (1906), the grade of 75 was reached by five, and 78 by one.		
University of Missouri (1906), the grade of 75 was reached by three, 77 and 78 by one each and 80 by two.		
Eclectic Med. Univ., Kansas City	(1906)	75, 75
University Med. Coll., Kansas City (1906), the grade of 75 was reached by five, 76 by one, 77 and 78 by two each, 79, 80, 81, 82 and 84 by one each.		
Ensworth Central Med. Coll. (1906), the grade of 75 was reached by two, 77 by one and 81 by two.		
University of Buffalo	(1899)	75
University of Budapest, Hungary*		75
University of Palermo, Italy*		76

FAILED.

University of Kansas	(1906)	65
Homeopathic Med. Coll. of Missouri	(1905)	37
St. Louis University (Marion-Sims-Beaumont Med. Coll.), (1906) the grades of 60 and 62.5 were reached by one each, 65 by three, 66 by two, 66.5 and 67 by one each, 69 and 70 by two each, and 71 by five.		
College of P. & S., St. Louis (1897) 67; (1905) 57, 61, 71; (1906) 50, 60, 61, 64, 64, 65.5, 69, 70, 71.		
Amer. Med. Coll., St. Louis	(1906)	59, 70
Barnes University (1904) 60; (1905) 64; (1906) 42.5, 63, 64, 67, 68, 69, 70, 70, 70, 70.5, 71, 71.		
Washington University	(1906)	71
University Med. Coll., Kansas City	(1906)	70
Eclectic Med. Univ., Kansas City	(1906)	56.5, 61, 63
Ensworth Central Med. Coll. (1905) 66, 67; (1906) 57, 62, 64, 67, 67.5, 70, 70, 71.		
Eclectic Med. Inst., Cincinnati	(1905)	56
Memphis Hosp. Med. Coll	(1904) 72; (1906)	74
University of the South	(1905)	71
Wisconsin Coll. of P. & S.	(1897)	70
Imperial Poo Chy Yuen, China*		
Palermo University, Italy*		

* Year of graduation not given.

At the August examination the total number of candidates examined was 94, of whom 27 passed, including 6 non-graduates, and 67 failed, including 8 non-graduates. The following colleges were represented:

Jefferson Med. Coll.	(1899)	75
University of Pennsylvania	(1896)	75
Vanderbilt University	(1872) 75; (1906)	82
Wisconsin Coll. of P. & S.	(1897)	75
University of Athens, Greece	(1889)	75

PASSED.

College.	Year Grad.	Per Cent.
Hahnemann Med. Coll., Chicago	(1905)	75
Rush Med. Coll.	(1903)	88
University of Louisville	(1906)	76
Tufts Coll. Med. School	(1903)	77, 82
Coll. of P. & S., St. Louis	(1897) 75; (1906)	75
Barnes Med. Coll.	(1906)	75, 75, 78
Washington University	(1905) 82, 83; (1906)	75, 75
St. Louis University (Marion-Sims-Beaumont Med. Coll.)	(1906)	83

FAILED.

Hahnemann Med. Coll., Chicago	(1888)	75
Keokuk Med. Coll., Coll of P. & S.	(1906)	64, 66
University of Kansas	(1906)	56
University of Louisville	(1894)	66
Eclectic Med. Univ., Kansas City	(1906)	43, 55
Barnes Med. Coll. (1895) 72; (1906) 56, 59, 60, 65, 66, 66, 68, 71, 73, 73.		
St. Louis University (Marion Sims-Beaumont Med. Coll.), (1906) 48, 54, 59, 61, 66, 67, 67, 68, 68, 68, 69, 69, 70, 70, 70, 72, 73.		
Washington University	(1906)	64, 68, 73
Ensworth Central Med. Coll.	(1905) 64; (1906)	47, 57
Coll. of P. & S., St. Louis (1905) 37, 58; (1906) 47, 51, 59, 65, 65, 69, 70, 73.		
American Med. Coll., St. Louis	(1906)	68
University of Nashville	(1906)	58
University of the South	(1900)	68
Meharry Med. Coll	(1905) 64; (1906)	59, 59, 68, 68

The following questions were asked at the August examination:

ANATOMY.

1. Give description with points of ossification of (a) parietal, (b) frontal, (c) occipital, bones, and (d) femur. 2. Describe superficial and deep palmar arch, brachial artery branches and relationship. 3. Describe brachial plexus and great sciatic nerve. 4. Describe the portal circulation. 5. Name flexor muscles of hand, extensor muscles of same. 6. Describe Scarpa's triangle, popliteal space. 7. Describe (a) superior longitudinal sinus, (b) lateral sinus (c) torcular herophili. 8. Give short description of pericardium. 9. Give short description of pleura. 10. Give anatomy of kidney.

CHEMISTRY.

1. (a) Give specific gravity of albuminated urine. (b) Also two tests for albumin in the urine. 2. (a) What are the antidotes for bichlorid of mercury? (b) Treatment (chemically) of poisoning from same. 3. Give properties of nitrous oxid or "laughing gas." 4. What is the chemical composition of pancreatic juice? 5. Give chemical characteristics of hydrate of chloral?

PHYSIOLOGY.

1. Give steps in the digestion of piece of buttered bread. 2. What effect does diet have on the secretion and constituents of milk? 3. (a) Give function of thyroid body; (b) What effect does its removal have? 4. Define metabolism. 5. What are some of the important characteristics of enzymes? 6. (a) What are leucocytes? (b) Give their functions in the normal body. 7. Locate and give function of cardio-inhibitory center, and cardio-augmenter center. 8. (a) Give brief description of secretion of urine; (b) On what does the quantity secreted depend? 9. What is diaphragmatic, what costal respiration? Give examples. 10. Describe the pneumogastric nerve, and give function of same.

PATHOLOGY.

1. Discuss cell division and growth. 2. Discuss hereditary predisposition. 3. Give the pathology in contracted kidney. 4. What is a tumor? Give brief discussion of this formation. 5. Discuss (a) caseation, (b) calcification.

BACTERIOLOGY.

1. What is infection? What is immunity? Through what agencies may the body protect itself from the consequences of infection? 2. Name the common pyogenic micro-organisms and describe the microscopic appearance and the behavior of the staphylococcus pyogenes aureus in osteomyelitis. 3. What is meant by an antitoxin? What is serum therapy? Illustrate by two diseases conditions in which it is successfully employed. 4. Describe in detail Widal's test in typhoid fever and explain the principle on which it is based. 5. Give (a) The characters of the tetanus bacillus. (b) How does it induce its effects? (c) On what theory is tetanus antitoxin administered?

PRACTICE.

1. Give etiology, symptoms, and treatment in following diseases: Pyelitis. 2. Acute ascending (Landry's) paralysis. 3. pneumothorax. 4. Dilatation of the heart. 5. How would you diagnose cerebral hemorrhage? 6. Give treatment and general management in such case. 7. What are the most reliable signs of death. 8. What is meant by sympathetic disturbance? Give an example. 9. Discuss autoinfection. 10. Give symptoms and treatment of Grave's or Basedow's disease.

SURGERY.

1. Give in detail the treatment of a recent open fracture of the tibia. 2. What are the symptoms of a subglenoid dislocation of the humerus? Describe the steps in its reduction by manipulation, and mention the dangers which may be connected with the reduction. 3. Given a wound of the scalp, what investigation of the wound is necessary? Describe in detail the surgical treatment. 4. What are the symptoms and what is the treatment of a gunshot wound of the kidney? 5. Give and explain the symptoms of a

strangulated inguinal hernia? 6. How would you differentiate between a fracture at the neck of the femur without impaction and a dislocation? Give Bryant's and Nélaton's lines for making the measurements. 7. Detail the clinical symptoms and the surgical treatment of an empyema. 8. What are the clinical symptoms and what is the surgical treatment of a purulent effusion into the kneejoint? 9. Describe the different avenues through which the urinary bladder in the male may be emptied surgically. 10. Give the differential diagnosis between an aneurism of the popliteal artery and an abscess in the popliteal space.

OBSTETRICS.

1. Give diagnosis, prognosis and treatment of placenta prævia. 2. Give diagnosis, prognosis and treatment of puerperal eclampsia. 3. Describe normal labor in L. O. A. presentation. Give care of mother before, during and after labor. 4. Describe asphyxia neonatorum. Give forms and treatment. 5. Give different presentations that may be met in obstetrical practice. Differentiate a foot from a hand presentation; knee from elbow. Give treatment of each. 6. What is the bag of waters? What is its function during pregnancy? During labor? 7. How would you diagnose pregnancy at the third month, fifth month, full term? 8. How diagnose hourglass contraction with retained placenta. Give treatment. 9. Define involution. Define subinvolution. Give cause and treatment of same. 10. After the fifth month how may death of fetus *in utero* be recognized? What should be done?

GYNECOLOGY.

1. What is salpingitis? Give causes, pathology and treatment. 2. When should the uterine cavity be curetted? What are the dangers to be avoided? 3. Diagnose simple from gonorrheal vaginitis. Give treatment of each. 4. Define amenorrhea, dysmenorrhea, menorrhagia and leucorrhea. Give probable cause of each. 5. What is the difference between anteversion, retroversion and prolapsus of the uterus? To what extent does each influence the pregnant uterus?

MEDICAL JURISPRUDENCE.

1. What is tyrotoxicon, and in what found? 2. What are ptomains and in what found? 3. What is insanity? 4. Give different forms of insanity. 5. Give appearance of gunshot wound, at entrance and at exit.

THERAPEUTICS.

1. Give therapeutic action of aconite. 2. Give therapeutic action of belladonna. 3. Give therapeutic action of digitalis. 4. Give therapeutic action of nux vomica. 5. Give therapeutic action of opium. 6. Give therapeutic action of veratrum. 7. Give therapeutic action of mercury. 8. Give medical treatment of measles. 9. Give medical treatment of scarlet fever. 10. Give medical treatment of diarrhea.

HYGIENE.

1. What precautions are necessary and what is length of quarantine of (a) variola, (b) scarlatina, (c) diphtheria, (d) yellow fever. 2. (a) Give composition of milk, (b) how sterilized, (c) how peptonized, (d) how modified, (e) why is it necessary to modify milk for infant feeding? 3. Give per cent. of (a) oxygen, (b) nitrogen (in air), (c) what effect has burning lamp (or gas) on atmosphere? (d) Mention deleterious substances existing in sewer gas. 4. (a) How much water per day, in ounces, should be consumed by an average adult? (b) Mention most frequent pollution of water. (c) Give test for organic matter in same. 5. (a) Give general outline for disinfection and fumigation (b) and comparative value of the following: (1) formaldehyd, (2) sulphur, (3) chlorin.

Nevada May and August Reports.—Dr. S. L. Lee, secretary of the Nevada State Board of Medical Examiners, reports that no applicants were examined at either of these meetings, but that 86 applicants were registered on presentation of satisfactory credentials. The following colleges were represented:

MAY MEETING.

College.	Year Grad.
College of P. and S., San Francisco	(1898), (1900), (2, 1902), (2, 1905).
California Med. Coll.	(1903), (2, 1905)
University of California	(1898), (1902)
Cooper Med. Coll.	(1892)
Denver Homeo. Med. Coll.	(1904)
Bennett Med. Coll.	(1900)
Hahnemann Med. Coll., Chicago	(1905)
Jenner Med. Coll.	(1903), (1905)
Central Coll. of P. and S., Indianapolis	(1901)
Medical Coll. of Indiana	(1903)
Hospital Coll. of Med., Louisville	(1901)
Louisville Med. Coll.	(1905)
University of Maryland	(1905)
Baltimore Med. Coll.	(1904)
College of P. and S., Baltimore	(1903)
Saginaw Valley Med. Coll.	(1903)
University of Michigan	(1896), (1898)
College of P. and S., Minneapolis	(1886)
University Med. Coll., Kansas City, Mo.	(1904)
University of Buffalo	(1887)
Bellevue Hosp. Med. Coll.	(1899)
Long Island Coll. Hosp.	(1883)
College of P. and S., New York	(1879), (1896)
Willamette University	(1879)
Western Pennsylvania Med. Coll.	(1897), (1901)
Jefferson Med. Coll.	(1891)
Medico-Chirurgical Coll., Philadelphia	(1905)

AUGUST MEETING.

California Med. Coll.	(1894), (1904), (5, 1906)
University of California	(1902), (1905)
College of P. and S., San Francisco	(9, 1906)
Cooper Med. Coll.	(1889), (1897), (1901), (1902), (1905), (1906)
Denver and Gross Med. Coll.	(1904), (1905)
American Med. Miss. Coll.	(1900)
Hahnemann Med. Coll., Chicago	(1901)
College of P. and S., Chicago	(1905)
Rush Med. Coll.	(1889)
College of P. and S., Kansas City, Kan.	(1901), (1904)
Tulane University	(1887)
College of P. and S., Baltimore	(1905)
Baltimore Med. Coll.	(1906)
Boston University	(1888)
Harvard Med. School.	(1894)
University Med. Coll., Kansas City, Mo.	(1905)
Ensworth Med. Coll.	(1890)
Barnes Med. Coll.	(1896), (1900)
University of Nebraska	(1905)
Willamette University	(2, 1906)
Jefferson Med. Coll.	(1877)
Memphis Hosp. Med. Coll.	(1904)
Fort Worth University	(1906)

Arizona July Report.—Dr. Ancil Martin, secretary of the Board of Medical Examiners of Arizona, reports the written examination, held at Phoenix, July 2-3, 1906. The number of subjects examined in was 9; total number of questions asked, 90; percentage required to pass, 75. The total number of candidates examined was 9, all of whom passed. The following colleges were represented:

PASSED.

College.	Year Grad.	Per Cent.
University of Southern California .... (1899) 83;	(1904)	75.5
Sioux City Coll. of Med.		*91.7
Harvard Med. School	(1894)	81
University of Michigan	(1906)	83.2
Long Island Coll. Hosp.	(1905)	80.3
Cleveland Homeo. Med. Coll.	(1906)	81.9
Med. Coll. of Virginia (1905) 85;	(1906)	85.5

* Year of graduation not given.

New York Reciprocates with Ohio.—We learn from Dr. Howard J. Rogers, commissioner of education of New York, that reciprocal relations have been satisfactorily arranged between that state and Ohio. New York now reciprocates, therefore, on the basis of an examination, with New Jersey, Michigan and Ohio.

Nebraska Statistics for 1905.—We learn from Dr. George H. Brash, secretary of the Nebraska State Board of Health, that we failed to receive the report of one examination given by that board in 1905 and, therefore, failed to include it in the statistics published in our Educational Number, Aug. 25, 1906. The corrected statistics of Nebraska colleges, therefore, are as follows:

GRADUATES OF NEBRASKA COLLEGES EXAMINED BY STATE BOARDS OF REGISTRATION DURING 1905.

Nebraska Colleges.	Total Examined.	Pass'd	Fail'd.	Percentage Failed.	No. of States Examining.
University of Nebraska—R..	45	36	9	20.0	9
Creighton Medical Coll.—R..	41	36	5	12.2	10
Lincoln Medical College—E.	22	16	6	27.8	4

Increased Entrance Requirements.—Since the weakest part of medical education in the United States is the low requirements of preliminary education, the announced increase in entrance requirements by a number of medical colleges is decidedly encouraging. The tendency seems to point toward a preliminary requirement by the university medical schools of two years in a college of liberal arts, and toward furnishing the opportunity whereby medical students may secure the degrees of B.S. and M.D. in six years. Is it possible that eventually the fundamental branches included in the first two years of the medical course will be given entirely in universities, in the last two years for the B.S. degree, and by instructors who devote their entire time to teaching, leaving to the medical schools the remaining two (or three) years devoted to the clinical branches? Be that as it may, with the large number of colleges which offer abundant opportunities to any one who has ambition enough to secure a liberal education regardless of his financial condition, there is no longer any excuse for adhering to the present ridiculously low minimum standards of entrance requirements. In our Educational Number (Aug. 25, 1906), we mentioned nine medical schools requiring for admission one or more years in a college of liberal arts. Seven of these require two or more years. Twelve other colleges were mentioned as having announced increased requirements to become effective at a later date. To be added to this group is the Medical Department of the University of Nebraska, which intends to increase its preliminary requirements to one year in a college of arts on or before Jan. 1, 1909.

The faculties of the Medical College of Ohio, Cincinnati, and of the American Medical Missionary College, Chicago, announce that after Jan. 1, 1910, they will require in addition to a four-year high school education a preliminary year to be devoted to physics, chemistry, biology and languages.

Therapeutics

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulæ and outlines of treatment are answered in these columns.]

Infantile Diarrhea.

The intestinal lesion in this condition is generally a superficial catarrhal inflammation involving the mucous membrane of the stomach, and of the small and large intestines, according to the *Practitioner*, and is brought about by putrefactive changes in the alimentary tract. Absorption of the toxic substance then takes place and produces the severe symptoms and perhaps collapse. In severe infections gross lesions may occur in the lower portion of the ileum and in the colon. The most frequent etiologic factors in the production of such diarrheas in children are as follows:

1. Errors in diet which are liable to cause acute dyspepsia.
2. Certain predisposing causes, such as irregularity in feeding of children, bad hygienic surroundings, delicate children with low resisting powers, tender age.
3. Hot weather.

The treatment of such diarrheas should be considered under two headings: 1, Prophylactic; 2, curative.

The prophylaxis, according to Holt, consists in sending infants to the country. The laity should be educated to the importance of proper rules of feeding, the dangers of overfeeding, and the importance of a proper diet for a child who has just been weaned.

The sale and transportation of milk should be placed under legal regulations. The milk of the poor should be sterilized during the summer. All bottles, spoons, nipples and teething rings should be properly sterilized.

In the treatment of a case of infantile diarrhea the first thing to be done is to correct all bad hygienic surroundings. The child's diet must be carefully restricted or food withheld entirely for a short time. Thirst must be relieved by bland fluids, given frequently and in small amounts. Water may be freely allowed unless vomiting is present. Barley water, albumin water, whey, veal and chicken broth may be substituted for milk, but they must be given in small quantities and a careful watch must be kept on the child's stools.

If vomiting persists, it is a good plan to administer copious draughts of cold water, previously boiled. This will be readily taken and may be almost immediately vomited. This will cleanse the stomach and is a fair substitute for lavage. The contents of the small intestine should then be thoroughly cleansed by the administration of castor oil, given to a child one year old in two-dram (8.00) doses. In this way the entire intestinal tract will be cleared out and, according to the author, will cause no griping, while its after-effects are soothing. Castor oil, however, can not be well borne if the stomach is in a state of irritation, as it is very liable to increase the irritation. In such instances calomel should be given in one-quarter-grain doses (.015) every hour up to six doses, or until the usual green stools appear. Intestinal antiseptics may be tried, such as salol, in one or two grain doses (.06-.12), given every two or three hours, or resorcin in one-grain (.06) doses every two or three hours, but both are liable to cause some irritation of the infant's stomach and cause the vomiting to recur.

In severe cases, stimulants such as brandy, may be required. A child one year of age may take an ounce of brandy in the twenty-four hours. It should always be well diluted with water, eight or ten parts, and given in small quantities at frequent intervals. This may be followed by a saline purge such as tartarized soda, magnesium sulphate or magnesium citrate.

The following combination is of value:

℞. Magnesii carb.....gr. iii |20
Magnesii sulph.....gr. x |65
Spts. chloroformi.....m. iii |20
Aquæ menth. pip. q. s. ad.....f℥i 4|
M. Fiat mistura. Sig.: To be taken at one dose. Or:
℞. Tinct rhei.....m. vii |50
Magnesii sulph.....gr. vi |40
Syr. zingiberis.....m. v |30
Aquæ fœniculi q. s. ad.....f℥i 4|
M. Fiat mistura. Sig.: At one dose.

If fresh signs or symptoms of intoxication arise, such as may be indicated by a rise of temperature and a rapid pulse with great prostration, the foregoing treatment must be repeated. According to Holt, irrigation of the bowels is advisable in all cases, as it hastens the effect of the cathartic and assists in removing the offensive contents which accumulate in the lower bowel. A long rectal tube should be used and a normal saline solution should be injected into the bowel at a temperature of 100 F.

If the stomach is irritable, champagne is preferable for older children and must be similarly administered, but in small amounts.

Mercury in Syphilis.

Corrosive sublimate, according to Stevens in his "Therapeutics," is a reliable salt of mercury, though somewhat more irritant than the protiodid. He recommends its administered in the pill form or in solution, given in doses of grain 1/20 each (.003) and gradually increased to grain 1/12 (.005) three times a day after food. He state that the addition of a small amount of opium usually serves to allay any gastric or intestinal irritation. Late in the secondary stage it may be combined with potassium iodid as follows:

℞. Hydrargyri chloridi corros.....gr. iss-ii |09-.12
Potassii iodidi .....3iv-vi 15-25|
Syr. sarsap. co.....f℥iss 45|
Aquæ q. s. ad.....f℥iii 90|
M. Sig.: One teaspoonful in water after meals.

Hypodermically the corrosive sublimate is one of the best preparations of mercury to employ. Sodium chlorid should be added to the solution, according to Stevens, to prevent the formation in the tissues of an insoluble albuminate. They may be combined as follows:

℞. Hydrarg. chloridi corros.....gr. vi |40
Sodii chloridi.....gr. xl 2|65
Aquæ dest. .....f℥i 30|
M. Sig.: From 10 to 20 minims to be injected once daily into the tissues.

[The best location for injection is deep into the muscles of the gluteal region, selecting a new site for each injection.—Ed.]

Other combinations of mercury to be used in the treatment of syphilis are recommended by the "Cyclopedia of Medicine and Surgery" as follows:

℞. Hydrarg. chloridi corros.....gr. ii |12
Pulv. opii.....gr. viß |50
Ext. guaiaci.....3ss 2|
M. Fiant pillulæ No. xxiv. Sig.: One pill three times a day. Or:
℞. Hydrarg. bichloridi.....gr. i |06
Tinct. rhei |
Tinct. cinchonæ, āā.....℥i 30|
M. Sig.: One teaspoonful twice a day. Or:
℞. Hydrarg. biniodidi.....gr. i |06
Potassii iodidi .....3ii 8|
Aquæ menth. pip. q. s. ad.....f℥iii 90|
M. Sig.: One teaspoonful after each meal.

Acute Pharyngitis.

In the treatment of acute pharyngitis the same authority recommends that the patient be put to bed and an initial dose of calomel grain 1/6 (.01) given every hour for six or eight doses, followed by a saline purge. A hot mustard footbath is also recommended.

The following combination is advised internally:

℞. Tinct. aconiti.....m. xv 1|
Sol. potassii citratis.....f℥ii 60|
Flix. aromatici .....f3iv 25|
Aquæ camphoræ q. s. ad.....f℥iv 120|
M. Sig.: One tablespoonful every three hours.

If much edema be present the following combination is of value:

℞. Tinct. opii f3i 4
Tinct. belladonnæ.....m. xv 1
Aquæ camphoræ q. s. ad.....fʒiv 120
M. Sig.: One tablespoonful every three or four hours.

If there is a rheumatic tendency, sodium salicylate should be given in 10 (.65) grain doses, as necessary.

Locally small pieces of ice may be taken into the mouth every two or three hours and the following combination applied locally:

℞. Mentholis .....gr. vi 40
Olei amygdalæ f3ii 8
M. Sig.: Apply locally on a swab every three hours.

Gonorrhea.

Robinson, in *Amer. Jour. Clinical Medicine*, recommends the following combinations as astringent injections after the disappearance of the gonococci, in the treatment of gonorrhea:

℞. Zinci sulphatis.....gr. viii 50
Aquæ dest. .....fʒiv 120
M. Fiat solutio. Sig.: Use as an injection four times daily. Or:

℞. Zinci sulphatis.....gr. viii 50
Plumbi acetatis.....gr. viii 50
Aquæ dest. .....fʒiv 120
M. Sig.: Use as an injection three or four times a day.

The following combination is recommended by Potter as an injection after the acute symptoms have subsided:

℞. Zinci sulphatis.....gr. viii 50
Plumbi acetatis.....gr. x 65
Ammonii chloridi.....gr. x 65
Aluminis .....gr. x 65
Aquæ rosæ .....fʒiv 120
M. Sig.: Use as an injection. Or:

℞. Resorcinol 3ss 2
Acidi borici.....gr. xx 1 30
Zinci sulphatis.....gr. x 65
Aquæ dest. .....fʒiv 120
M. Sig.: Use as an injection three times a day. Or:

℞. Zinci sulphatis
Plumbi acetatis, āā.....gr. viii 50
Tincturæ opii f3i 4
Tinct. catechu f3ii 8
Aquæ dest. q. s. ad.....fʒiv 120
M. Sig.: Use as an injection three times a day. Or:

℞. Zinci sulphatis.....gr. iv-viii .25-.50
Bismuthi subcarb. 3iii 12
Bismuthi subgal. 3i 4
Sol. hydrastis aq.....fʒi 30
Pulv. acaciæ.....3iss 6
Aquæ dest. q. s. ad.....fʒiv 120
M. Sig.: Shake well before using and inject three times a day.

Medicolegal

Validity of Law Authorizing Revocation of Certificate for Advertising Relative to Venereal Diseases.

The Supreme Court of Michigan had before it in the case of Kennedy vs. the State Board of Registration in Medicine the question of the constitutionality of the state law authorizing the board to revoke a physician's certificate for the insertion in a newspaper of an advertisement relative to venereal diseases. Subdivision 6 of section 3 of No. 237 of the Public Acts of Michigan of 1899, as amended in 1903, provides: "The board of registration in medicine shall refuse to issue a certificate of registration provided for in this section to any person guilty of grossly unprofessional and dishonest conduct of a character likely to deceive the public, and said board shall, after due notice and hearing, revoke a certificate issued subsequent to the date of the passage of this act, or subsequent to the date of the passage of Act. No. 237 of the Public Acts of 1899, for like cause or for offenses involving moral turpitude. . . . And provided further, after the passage of this act, the board may at its discretion revoke the certificate of registration, after due notice and hearing of any registered practitioner who inserts any advertisement in any newspaper, pamphlet, circular, or other written or printed paper, relative to venereal diseases or other matter of any obscene or offensive nature derogatory to good morals."

The court says that in support of his contention that this section was unconstitutional, the complainant cited several cases. Matthews vs. Murphy (Ky.), 63 S. W. Rep. 785; ex-parte McNulty, 77 Cal. 164; Hewitt vs. the Board of Medical Examiners (Cal. Sup.), 84 Pac. Rep. 39. The strongest and best reasoned of these cases was Matthews vs. Murphy. That case alone would receive consideration because the grounds on which it was held inapplicable made all the others inapplicable. In that case it was held that a statute giving the State Board of Health authority to revoke a certificate to practice medicine on proof that the holder was guilty of "grossly unprofessional conduct of a character likely to deceive or defraud the public" was unconstitutional on the ground that the statute did not advise the physician "in advance what act or acts may be in violation of its provisions. . . . He might do an act which he regarded as entirely proper, which neither violated moral law nor involved turpitude, still such acts might, in the opinion of the State Board of Health, amount to unprofessional conduct, and which in its opinion did or was calculated to deceive or defraud the public. . . . The legislature in effect has attempted to commit to the State Board of Health the right, after the physician has done some act, to determine what its effect is to be, and, if in its judgment he should be deprived of the right to practice his profession, it can inflict the punishment on him by revoking his license." This reasoning presented no argument for declaring unconstitutional that part of subdivision 6, under which the defendants were proceeding to try the complainant, viz., that giving them authority to revoke his certificate because he inserted an advertisement in a newspaper relative to venereal diseases. Indeed, in deciding Matthews vs. Murphy, the court recognizes the constitutionality of such a law. This is shown by the following quotation from its opinion, viz: "If the legislature desires to declare for what acts or conduct a physician's license to practice medicine shall be revoked it is competent to do so, and to vest in some tribunal authority to investigate and try the charge which may be made under such a statute." What the Supreme Court of Michigan would have decided had the constitutionality of the first part of subdivision 6 been necessary to be decided it does not intimate, unless such intimation may be found in the above remarks.

But, further, as to the law which authorized the defendants to revoke the complainant's certificate on the ground that he inserted an advertisement relative to venereal diseases in a newspaper, the court says that it might fairly be stated that all of the many reasons which he advanced in support of the contention that it was unconstitutional rested on the assumption that the revocation of that certificate was an exercise of judicial power, and that all of his objections to the constitutionality of the law were completely answered by saying that this assumption was unfounded. This was shown so clearly by the opinion of the Supreme Court of Minnesota in State vs. Board of Medical Examiners, 34 Minn. 389, that the argument in that opinion is made a part of this. And this doctrine is supported by other authorities. See Meffert vs. State Board of Medical Registration, 66 Kan. 710; State vs. Webster, 150 Ind. 607; Dent vs. West Virginia, 129 U. S. 114, and, so far as the court has been able to discover, there is no authority against it.

Nor does the court consider that the statute in question violates the rule that a statute can not deprive one of the right to seek redress in a court for the invasion of a constitutional right. It says that if this statute is observed no one will be deprived of a constitutional right, and in that case a provision for an appeal to a court is not essential. If through non-observance of the statute the complainant or any other physician is deprived of a constitutional right, there is nothing therein which prevents his obtaining adequate redress in a court.

Mental Infirmity Not Proved by Tendency to It.

The Court of Appeals of Maryland says, in the will case of Horner vs. Buckingham, that evidence that a person has a disease which may or must eventuate in mental disease can not prove, or standing alone tend to prove, that at a given point of time he is actually so afflicted. The tendency to mental infirmity can not *per se* prove the infirmity. It must be shown by facts. If a person has always shown through many years a high degree of mental soundness, in fact through his entire life, a jury ought not to be permitted to pronounce him insane, merely because a medical expert can be found who will testify that he is affected with a disease that may eventually produce insanity, without other facts being shown that tend to prove that his speech or conduct is such as reasonably warrants the conclusion that such point has actually been reached.

Right of Executors to Allow Physician's Bill.

The Second Appellate Division of the Supreme Court of New York holds, in re Title Guaranty and Trust Company and others, where there was an estate consisting of several millions of dollars' worth of real and personal property and a physician's bill amounting to $4,000, that it was error in the surrogate to cut the bill in two. It says that the physician who treated the testator in his last illness devoted his entire time to that labor, and testified that the amount which he charged for his services was fair and reasonable. The executors paid him in that belief, and there was no reason whatever to believe but that in doing so they considered that they were acting in the best interests of the estate. Nor was anything to be found in the record to indicate that, had the bill been rejected and a lawsuit followed, the estate would have been any better off financially. The question was not whether the services of the physician should have been rendered for less. It was whether the executors exercised their honest judgment in believing it to be a proper claim and in paying it. Even if they erred in judgment, that fact alone would not make them personally liable.

Intent and Requirements as to Physical Examinations.

The Appellate Division, Second Department, of the Supreme Court of New York says, in the personal injury case of Goldenberg vs. Zirinsky, brought by a non-resident, that while it entertains no doubt of the power of the court to compel the plaintiff to submit to a physical examination under the terms prescribed in the Code of Civil Procedure, this is an encroachment on the common law rights of litigants, and it should not be extended beyond the exact limits fixed by the statute, and all of its requirements should be observed. There is no inherent power in the court to direct a physical examination. The power is derived wholly from the statute, and as the purpose of the examination is that the evidence may be taken by physicians or surgeons designated by the court and made available for either or both parties to the action, it is entirely reasonable that the order should be served on the party who is called on to act. The court never acquired any jurisdiction by an order served on the plaintiff's attorney.

Furthermore, the court says that the order in question in permitting the defendant to have his own medical adviser present, even though a like privilege was accorded the plaintiff, was enlarging the scope of the statute. It was not intended that such physical examination should be accorded to an adverse party for the purpose of enabling him to discover the weak points and to ignore the strong ones. The intent was to have an examination by physicians or surgeons designated by the court, owing no obligations to the parties; the evidence so brought ought to be available to either party. The defendant, by demanding a physical examination, under the fair intent of the statute, takes the risk of producing evidence which will be detrimental to him through the discoveries of disinterested witnesses, and the provisions of section 873 of the Code of Civil Procedure that "such examination shall be had and made under such restrictions and directions as to the court or judge shall seem proper," does not authorize the admission to such examination of the physicians of one or both of the parties.

Current Medical Literature

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

Medical Record, New York.

October 13.

1 *Bath Treatment of Typhoid Fever in Private Practice. S. Baruch, New York.
2 *Pathogenesis and Therapeutics of Cancer. R. Bell, London, England.
3 *Operative Treatment of Acute Gonorrheal Epididymitis. F. R. Hagner, Washington, D. C.
4 Effects of Absinthe. E. E. Walker, New York.
5 *Roentgenography of the Stomach. M. Einhorn and L. G. Cole, New York.
6 *Three Cases of Pott's Disease and one Case of Coxalgia Occurring in Adults and Presenting Unique Features. J. T. Rugh, Philadelphia.

1. **Bath Treatment of Typhoid in Private Practice.**—Baruch declares that in the management of a case of typhoid fever the chief aim of the physician should be the enhancement of the patient's resisting capacity to the toxemia which threatens his life. The damage sustained by the nerve centers is the measure by which the mildness or severity of a case of typhoid fever is gauged. Cold baths must not be regarded as cooling procedures. Cold baths prevent lethal complications by reason of their sustaining effects on the central nervous and circulatory systems. The form of the bath and its temperature must be adapted to the condition of the patient.

2. **Pathogenesis and Therapeutics of Cancer.**—Bell believes that cancer is a disease independent of any specific agent from without. From his point of view, if a person is a gross feeder, especially if he indulges in an excessive amount of animal food, and if there is present a constipated habit which has a pernicious effect on the thyroid gland, it may be concluded that there exist the three most important factors whose combined influence is sufficient to provoke a tendency to cancer.

3. **Operative Treatment of Acute Gonorrheal Epididymitis.**—Hagner has had excellent results with the open method of treating gonorrheal epididymitis. It is a rational procedure. The danger to the patient is slight. The infiltration of the epididymis disappears more rapidly under the operative treatment than under any other. The danger of permanent injury to the testicle and epididymis is lessened. The patients are absolutely relieved of pain on recovery from the anesthetic. The systemic symptoms are promptly relieved.

5. **Roentgenography of Stomach.**—Einhorn and Cole have examined a considerable number of patients with the *x*-rays and are convinced that this method is an excellent one. When the stomach is entirely or partly empty, the patient is given a pint of milk into which one ounce of subnitrate of bismuth has been suspended by thorough mixing. The patient is then at once skiagraphed in a standing or recumbent posture. The time of exposure is usually ten or fifteen seconds. An investigation of the colon, by exposing the patient to the rays a second time on the day following, may be made. By this proceeding no instrument is introduced into the stomach.

6. **Pott's Disease and Coxalgia.**—The interesting features of the first case cited by Rugh are the development of a primary tuberculosis of the spine in a woman 70 years old, with no apparent causative history, and the early and rapid onset of paralytic symptoms even before the appearance of the knuckle in the spine. The second patient is a man 50 years old. The primary focus of disease was in the testicle, while there was secondary infection of the spine and kidney. The third patient is a man 37 years old. The onset of the disease was extremely slow in spite of heavy work constantly performed, and in the absence of all mechanical treatment. The case of coxalgia reported illustrates the impossibility of pronouncing a case of tuberculosis cured.

New York Medical Journal.

October 13.

7 *Reciprocity in Medical License. R. A. Vander Veer, Albany, N. Y.
8 Advances in the Surgery of the Nervous System Considered from the Standpoint of the Neurologist. T. H. Welsenburg, Philadelphia.

9 Recent Advances in Laryngology and Rhinology. C. H. Knight, New York.
10 Local Anesthesia in the Operative Treatment of Anorectal Diseases. S. G. Gant, New York.
11 *Preliminary Report on the Use of X-rays in Neuritis. J. H. Comroe, York, Pa.
12 Medical Complications and Treatment of Pneumonia. A. C. Morgan, Philadelphia.
13 *Hydrotherapeutic Treatment of Chronic Rheumatism. J. J. Levy, Syracuse, N. Y.
14 Urethral Diverticula and Cul-de-sacs. N. E. Aronstamm, Detroit.

7. Reciprocity in Licensure.—Vander Veer describes the methods employed by the New York Board of Regents for establishing reciprocity in medical licensure.

11. X-Rays in Neuritis.—Comroe has employed the *x*-rays in selected cases of neuritis in which the cause has been removed either partially or wholly and which thereafter resisted all modes of hygienic, therapeutic, dietetic and hydrotherapeutic treatments. Six cases are reported. Comroe insists that: 1. The *x*-ray should be employed in the treatment of neuritis only after all other judicious methods of therapy have failed. 2. The exposure should be directed over as wide an area as may be safe, and frequently repeated in the beginning. 3. The strength of the current and duration of the exposures should, as a rule, be in direct ratio to the approximate distance of the affected nerve structures from the cutaneous surface overlying them. Idiosyncrasies must be carefully sought. 4. Relief, if obtained, usually makes its appearance early in the treatment. 5. Obstinate cases should receive "tonic" treatment with a medium tube for some time after the patient has been apparently cured so as to further assure permanency.

13. Hydrotherapeutic Treatment of Chronic Rheumatism.—The treatment employed by Levy may be summed up as follows: The patient is given an electric light bath, temperature 150 F., duration 20 minutes, to be followed by a circular douche 90 F., duration one minute; this is followed by a Scotch douche to the affected joints, and this in turn is followed by a general massage with special attention to the affected joints or muscles. Three treatments a week are usually sufficient for these cases.

Boston Medical and Surgical Journal.

October 11.

15 *Acute and Chronic Indigestion. J. B. Deaver, Boston.
16 *Observations in One Thousand Adenoid Operations. F. B. Sprague, Providence, R. I.
17 Killian's Operations. H. P. Mosher, Boston.
18 Hysteria from the Point of View of Dissociated Personality. M. Prince, Boston.

15. Acute and Chronic Indigestion.—Deaver states that most cases of acute dyspepsia are undeniably medical. Most cases of chronic dyspepsia can now be relieved by surgical means. Therefore, a correct diagnosis is the essential prerequisite to successful treatment. Careful physical examination of the abdomen and other regions of the body, and a reliable history of the patient, are of much more value than chemical examination.

16. One Thousand Adenoid Operations.—These 1,000 cases reported by Sprague were about equally divided among the two sexes, there being 503 male and 497 female. The age limit ranged from six months to 37 years. The largest number at any one age was 64 patients at 8 years of age. Dividing the age limit into periods of seven years each, about 30 per cent. were during the first seven years; 50 per cent. during the second seven years, and 20 per cent. during the third period of seven years; there being only 28 patients over 21 years of age; 13 of these being over 30 years old. In 905 cases, or about 90 per cent., the adenoids were associated with hypertrophy of the faucial tonsil, some with but a slight degree of hypertrophy, and others enormously enlarged. In these cases there was also more or less hypertrophy of the whole pharyngeal lymphoid ring. The remaining 95 patients had the hyperplasia of the nasopharyngeal adenoids alone. Investigation as to the cause of the trouble did not lead to very satisfactory results. Five cases were dated to attacks of diphtheria, five to whooping-cough, seven to measles, five to scarlet fever, one to mumps, and while the diseases of childhood undoubtedly help in the causation of this hyperplastic lymphoid condition, the data are so incomplete and negative, and so many children have enormous growths who never had any of the exanthemata that their importance in the etiology of the growth is not great. All but two patients of this series were operated on under ether anesthesia. A few anesthetics were started with nitrous oxid gas. On the whole, Sprague thinks that clear ether is better, as the adenoid patients always require more ether than others, and it is necessary to have the system saturated with it before beginning the operation. Sprague was called on to operate the second time in only two instances. He describes his technic in detail.

St. Louis Medical Review.

October 6.

19 Résumé of Pathologic Physiology of the Abdominal Visceral Tracts. B. Robinson, Chicago.
20 Acute Autointoxication from Fecal Stasis. W. F. Waugh, Chicago.

October 13.

21 Uncinariasis (Hook-worm Disease); Its Relation to Grave Anemia. L. M. Warfield, St. Louis.

Lancet-Clinic, Cincinnati.

October 13.

22 The Rôle of Heredity in Reducing Degeneracy in Man to the Minimum. R. C. S. Reed, Stockton, Ohio.

American Journal of Medical Sciences, Philadelphia.

September.

23 Toxemic Vomiting of Pregnancy. J. W. Williams, Baltimore.
24 *Elephantiasis Nervorum of the Scalp; A Manifestation of von Recklinghausen's Disease. H. F. Helmholz, and H. Cushing, Baltimore.
25 *Graphic Methods in the Study of Cardiac Diseases. A. D. Hirschfelder, Baltimore.
26 *Insufficiency of the Tricuspid Valve in the Course of Pernicious Anemia. R. B. Preble, Chicago.
27 *Elephantiasis Non-parsitica, Secondary to Chronic Cardiac Disease and Repeated Edema of Pregnancy. T. W. Hastings, New York.
28 *Results of the Biterminal Transplantation of Veins. A. Carrel, and C. C. Guthrie, Chicago.
29 *Essential Pentosuria in Two Brothers. T. C. Janeway, New York.
30 *Value of Massive Doses of the Salicylates in the Diagnosis and Treatment of Acute Articular Rheumatism. T. W. Clarke, Cleveland, Ohio.
31 *A New Blood Filaria of Man; Filaria Philippines. P. M. Ashburn, and C. F. Craig, Manila, P. I.
32 *Splenomedullary Pseudoleukemia, with Secondary Myelophthisic Anemia. C. E. Simon, Baltimore.
33 *Infections of the Biliary Tract, with Special Reference to Latent (or masked) and Typhoid Infections. A. O. J. Kelly, Philadelphia.

24. Elephantiasis Nervorum of Scalp.—The patient whose condition Helmholz and Cushing record presented, in addition to many of the commoner features of von Recklinghausen's disease, a relatively unusual type of diffuse superficial tumor formation on the left side of the head, a site at which there had been present for several years previously a large brown spot. Twelve years ago the patient was struck by a horse's hoof on the left side of his head, the scalp being severely bruised. About a year after the injury the present tumor began to develop. The tumor was in the form of a drooping or sagging of the scalp, which progressed so rapidly that in four years' time the scalp covered part of the left cheek, and the ear stood out at right angles from the head and was considerably lower than the right ear. There were no subjective symptoms. The tumor was readily movable. On palpation it felt like a relaxed and emaciated mamma. A flap of the scalp large enough to restore the symmetry of the patient's head was removed. The thickening of the scalp was found to be due almost entirely to edematous connective tissue which after hardening in formalin was quite tough and could be pulled off readily in sheets and sometimes also in small cords that resembled nerve fibers. The authors give a full report of the pathology of this affection and review the literature on the subject.

25. Study of Cardiac Diseases.—Hirschfelder's paper is illustrated with diagrams showing the various points brought out. It would be impossible to do justice to the article in an abstract without reproducing the illustrations.

26. Insufficiency of Tricuspid Valve During Pernicious Anemia.—Preble reports four cases, occurring in two women and two men, aged 70, 53, 40 and 40 years respectively. Each case was accompanied by a positive, systolic centrifugal pulse in the external jugular veins. The two women died. In none of the cases was there any cyanosis, dyspnea, passive congestion of the liver, or edema of the legs or body cavity. While all the

cases showed some enlargement of the heart, in no instance did it compare in degree with that seen in the commoner instances of tricuspid insufficiency.

27. **Elephantiasis Non-Parasitica.**—Hastings is of the opinion that a chronic cardiac disease and some local lymphatic deficiency in the right leg were the etiologic factors in his case, which occurred in a woman 28 years of age. With each of four pregnancies there had been moderate bilateral edema of the legs. Following the death of her husband the patient began to work as a silk-winder, an occupation which necessitated constant walking to and fro. Within two years the right ankle began to swell during the day, the swelling subsiding at night, and gradually over a period of one and a half years the leg below the knee became much involved. For four years the permanent swelling has been increasing slowly. There has been no urinary disturbance and the urine has never been milky. Aside from bandages properly applied, rest with elevation of the limb, when possible, and massage, the treatment has been directed to the cardiac disease.

28. **Biterminal Transplantation of Limbs.**—As the result of further experiments, Carrel and Guthrie conclude that a venous segment interposed between the cut ends of an artery quickly undergoes anatomic change, assuming the character of an artery and performing the arterial functions.

29. **Essential Pentosuria.**—The two cases reported by Janeway are a reproduction of those already on record in that they show the usual clinical history.

30. **Massive Doses of Salicylates in Rheumatism.**—Clarke discusses the effects of large doses of salicylates, as high as 20 grains hourly, in the treatment of acute articular rheumatism. The method of treatment employed by him consisted of giving sodium salicylate every hour, if the patient was awake, in doses varying from 10 to 20 grains, until the toxic symptoms appeared. The salicylate was then stopped, to be resumed when the symptoms disappeared, and then given in doses of 10 or 20 grains every two to four hours, stopping again with each recurrence of toxic symptoms. The amount of salicylate required to produce symptoms of its full effect has varied from 75 to 360 grains, the average in a series of 74 cases being 200 grains. Clarke says that these massive doses are borne well, as a rule, without nausea, vomiting or depression. The effect of this sudden saturation with the drug is a very rapid fall of the temperature to normal. The relief obtained is most striking. The swelling subsides rapidly, sometimes before the pain, and sometimes persists in a mild degree for a day or two longer. Cardiac complications, instead of being increased in frequency by this method of treatment, seem to be lessened. Clarke urges that the toxic symptoms must be watched for carefully, the drug being stopped immediately on their appearance.

31. **Filaria Philippinensis.**—*Filaria philippinensis* is a small sheathed filaria found by Ashburn and Craig in the blood of a Visayan prisoner in Bilibid prison, Manila, at all hours of the day and night, but always in small numbers. At the time of their observations is seemed rather more numerous at night, though even then it was, at times, hard to find. The greatest number found in one slide was seven. Once they examined 17 spreads and found but one parasite. This was one day at noon. On another occasion a slide taken at noon showed five organisms. They are of the opinion that this filaria represents a new species for the reasons given in the detailed description of the worm, because of its lack of periodicity, and because of the rarity of filariasis in the Philippine Islands, where all the conditions would seem favorable to the rapid spread of infection were the parsite one of any of the previously known varieties.

32. **Splenomedullary Pseudoleukemia and Myelophthisic Anemia.**—Simon makes this diagnosis as furnishing the most probable explanation of the clinical findings in the case reported by him, that of a man 79 years of age. There was no enlargement of lymph glands and there was practical absence of any clinical symptoms. Examination of the blood shewed a very interesting condition. The red cells numbered 2,195,000; the hemoglobin was 25 per cent.; the color index was 0.58. While there was a certain amount of variation in size and form of the red cells, there was no manifest tendency to macrytosis or oval form; true poikilocytes were not numerous. The cells were pale and showed no evidence of polychromasia, while granule cells were present in fair numbers. Nucleated red cells were not found. The leucocytes numbered 22,000. The differential count showed: lymphocytes, 92.6 per cent. (of which 2 per cent. large lymphocytes); large mononuclears, 1.6 per cent.; polynuclear neutrophiles, 5.6 per cent.; mast cells, 0.6 per cent.

33. **Infections of Biliary Tract.**—Kelly's observations are based on a statistical study of the clinical and other phenomena of 216 patients operated on by one surgeon during the last six years. Kelly's personal work comprised a study of the gall bladders removed by this surgeon; of the pathologic lesions at the necropsy in some of the fatal cases, and in other cases in which operation was not done; of the pathologic lesions at the operation on some of the patients, and a bacteriologic study begun at the time of operation in 70 of the cases, and at the necropsy in a few of the fatal cases. The length of this article precludes abstracting it.

Journal of Nervous and Mental Disease, New York.
October.

34 *Subdivision of the Representation of Cutaneous and Muscular Sensibility and of Stereognosis in the Cerebral Cortex. C. K. Mills, and T. H. Weisenburg, Philadelphia.

35 *Ear Affections and Mental Disturbances. E. Amberg, Detroit, Mich.

34. **Cutaneous Muscular Sensibility and Stereognosis.**—The main object of Mills and Weisenburg's paper is to present the following propositions: 1. That the cortical representation of cutaneous and muscular sensibility is independent of motor representation, that it surrounds the motor zone, and that it is subdivided into a mosaic of centers, each center or group of centers being anatomically and functionally correlated to a motor center or centers. 2. That every muscle or group of muscles producing a movement or movements which are represented by separate centers in the cortex, is topographically related to a segment of the skin, which has also a definite cortical center, this center correlated anatomically and functionally with the motor center. 3. That stereognostic representation like that of cutaneous and muscular sensibility and of movements, has also its independent cortical area and is subdivided after the manner of the motor and sensory area. Four cases in point are cited.

35. **Ear Affections and Mental Disturbances.**—According to Amberg, the ear participates in the production of mental disturbances, directly and indirectly. As an organ of sense, its functional disturbance may disharmonize the normal state of thinking. The mental disturbance can be brought about in two ways: First, by causing hallucinations, respectively, illusions, the influence of which is more or less strong, according to the predisposition of the afflicted individual. Entirely different from these disturbances are those in which the ear and its surrounding parts are simply the place in which a toxemia is primarily created, or in which an abscess engaged the vitality of the body. Both conditions, while entirely different from each other clinically and pathologically, can produce mental disturbances and aggravate pre-existing mentally abnormal conditions.

Amberg thinks it very probable that also without a predisposition a mental disturbance can be created if, for example, the annoying subjective noises create a state of exhaustion, e. g., neurasthenia. These conditions are of great import from a forensic point of view and must be considered in declaration of witnesses. Physicians are confronted with the important question whether the consent to an operation is required of an adult patient whose mental activity is temporarily interfered with and who is unable to judge about his condition, also if the consent of the relatives is necessary in such a case. Amberg believes that the ears of inmates of insane asylums should be examined, and that patients suffering from mental disturbances who exhibit phenomena on the part of the organ of hearing should be examined not only for pathologic conditions of the ear, but also of other organs, such as the kidneys, on account of the fact that the disturbance in the ear, although

in itself a new center, may only be a reflex disturbance. The benefit of surgical interference in ear affections should be bestowed on the insane in need of it.

Texas State Journal of Medicine, Fort Worth.
October.

36 *Empyema of the Gall Bladder. H. M. Doolittle, Dallas.
37 *Abscess of Temporo-Sphenoidal Lobe. J. Mullen, Houston.
38 Paresis. J. S. Turner, Terrell.
39 *Case of Acute Mastoiditis Complicated by Ulceration and Rupture of the Esophagus. J. O. McReynolds, Dallas.
40 Conservatism in Operative Gynecology. W. L. Brown, El Paso.
41 Cinders in the Eye. R. H. T. Mann, Texarkana.
42 *Gunshot Wounds of the Abdomen. J. H. Smart, Dallas.

36. Empyema of Gall Bladder.—Doolittle discusses the clinical history of this affection and reports one case which illustrates some of the most important points of the diagnosis and technic.

37. Abscess of Temporosphenoidal Lobe.—Mullen reports a case in which a Schwartz-Stacke operation was performed successfully. Owing to the age of the patient, 7 years, and his extreme restlessness it was necessary to make the daily dressings under chloroform anesthesia. The patient was in the hospital 43 days and during this time he was chloroformed 42 times. The diagnosis in this case was rendered more than ordinarily difficult by the entire absence of local symptoms. Another interesting feature of the case was the intense leucocytes and its gradual decrease as drainage improved and the amount of pus decreased.

39. Acute Mastoiditis Complicated by Ulceration of Esophagus.—In the case reported by McReynolds there existed a perfectly plain acute mastoiditis which followed a subacute involvement of the mastoid antrum and middle ear cavity. The patient was operated on but shortly afterward went into a condition of extreme shock, during which he died. At the postmortem examination it was found that death was due to a complete rupture, three inches in length, in the lower third of the esophagus supervening on an extensive ulceration of the walls of the esophagus with a resulting profuse and fatal hemorrhage. No unusual strain had been placed on the esophagus on the morning of the rupture; in fact, the patient had eaten practically no food for about one week.

42. Gunshot Wounds of Abdomen.—Smart is of the opinion that the proper procedure in cases of abdominal gunshot wounds is to get the patient speedily to a hospital and to explore promptly for injuries and to repair them when found. He reports five cases, with three recoveries. One death was caused by shock, and the other by peritonitis.

Journal Missouri State Medical Association, St. Louis.
October.

43 *Pyuria. E. G. Mark, Kansas City, Mo.
44 Use and Abuse of the Obstetrical Forcep. A. L. Gray, St. Joseph, Mo.
45 Gastric Neuroses. V. A. Bles, St. Louis.
46 Criminal Abortion; A Prevailing Evil Against the Unborn Generation; A National Crime Committed for Mere Social Promotion. T. F. Lockwood, Butler, Mo.
47 *Best Time to Give Quinin. R. L. Johnson, Rolla, Mo.
48 Suppuration of Maxillary Sinus with Involvement of Ethmoidal Cells and Sphenoidal Sinuses. H. J. Jurgens, Edina, Mo.
49 Value of Jaundice as a Diagnostic Factor in Disease of the Biliary Passages. J. Q. Chambers, Kansas City.

43. Pyuria.—Mark discusses the chronic form of pyuria arising from suppurative processes in the urogenital tract in which pus in the urine is the most persistent and tangible symptom. He considers the catheterizing cystoscope the most valuable apparatus for segregating the urine.

47. Best Time to Give Quinin.—According to Johnson, the best time to give quinin in malaria is immediately on the commencement of the sweating stage, to promote its remedial absorption and its prompt elimination. He gives the drug in one dose of from 15 to 25 grains.

Journal of the Minnesota State Medical Association and the Northwestern Lancet, Minneapolis.
October 1.

50 Cardiospasm. H. S. Plummer, Rochester, Minn.
51 Notes on Ocular Syphilis. E. S. Strout, Minneapolis.
52 Calorimetric Principle in Infant-Feeding. J. P. Sedgwick, Minneapolis.
53 *The Business Problem of the General Practitioner. C. Johnson, Willmar, Minn.
54 Gastroenteritis. H. Hughes, Mankato, Minn.

53. Business Problem of General Practitioner.—Johnson says that from a high idealistic standpoint the medical profession is regarded as a charitable organization which should be forgetful of self and ever devoted to the service of others irrespective of hope or expectation of reward. As a matter of fact, medicine, as a business vocation, does not compare favorably with other vocations for return on investment and energy extended. Physicians have not paid enough attention, he says, to the business aspect of their profession; hence, their incomes are ridiculously small, although, because of the boasting habits of physicians, they are believed to have much larger incomes than they do have. So many factors are operating to reduce the physician's income that this matter ought to be discussed fully at every medical meeting. Johnson believes that in thorough organization of the profession lies salvation. If the county, state and national societies will stand behind every member whenever and wherever he is assailed in his rights and in his pocketbook, then there will be a thoroughly organized and prosperous medical profession.

Bulletin of the Johns Hopkins Hospital, Baltimore.
October.

55 *Bacteriologic Examinations of the Conjunctival Sac in Typhoid Fever and in Pneumonia. R. L. Randolph, Baltimore.
56 *Tuberculosis Work in Europe. J. Walsh, Baltimore.
57 Moses Maimonides. D. I. Macht, Baltimore.
58 *Observations on Paroxysmal Tachycardia. A. D. Hirschfelder, Baltimore.
59 *A Simple Method for the Quantitative Determination of Proteids in Milk. T. R. Boggs, Baltimore.

55. Conjunctival Sac in Typhoid and Pneumonia.—Based on an examination of 100 cases of typhoid fever and 48 cases of lobar pneumonia occurring in the wards of the Johns Hopkins Hospital, Randolph concludes that the bacterial flora of the conjunctival sac during typhoid fever and pneumonia shows practically no difference from the conjunctival flora of individuals who are in perfect health. Randolph states that it does not seem unreasonable to suggest that the exposed mucous surfaces throughout the body are inhabited by bacteria which perform for their resting place functions of a protective character by making the surroundings uncongenial to bacteria of other kinds.

56. Tuberculosis Work in Europe.—Walsh concludes his paper as follows: 1. Although the sanatoria in the United States are probably accomplishing better results in individual cases, we have not a sufficient number of sanatoria. Germany, with only two-thirds our population, not one-tenth our area, and not one-twentieth our wealth, has more sanatoria, and is spending three times the amount of money on them. 2. We are not using all the means that might be employed to build and to maintain sanatoria, like insurance companies, beneficial societies, etc. 3. We are lacking in hospitals for advanced cases, and until we get them, wards in general hospitals should be set aside for the care of the tuberculous. Such wards in addition to caring for the consumptive will help in the education of the general physician, the residents, the nurses and the patients. 4. The tuberculosis dispensaries as managed in France or in Germany are the most important elements in the crusade against tuberculosis, and we are woefully lacking in them. A city the size of Philadelphia should have at least half a dozen, and it has one. Baltimore should have three or four, and it has one. Such dispensaries might be supported as follows: One by the city (as in New York City), one by charity, and one by a combination of beneficial societies.

58. Paroxysmal Tachycardia.—Hirschfelder reports a case of paroxysmal tachycardia in which the patient's condition was improved very much by the administration of 2 mg. of atropin within two hours. The drug was used in 5-minim doses of the tincture, repeated once or twice at half-hour intervals.

59. Quantitative Estimation of Proteids in Milk.—Boggs finds that phosphotungstic acid in hydrochloric acid solution precipitates instantly all the proteids in a finely divided condition. The precipitate contracts evenly in a vertical direction and reaches a constant minimum volume for twenty-four hours. The supernatant fluid is clear and gives no trace of

proteid by any tests. The solution employed is composed as follows: Phosphotungstic acid, 25 grams; distilled water, 125 c.c. After thorough solution is obtained there is added 25 c.c. of concentrated hydrochloric acid, diluted with 100 c.c. of distilled water. This yields 250 c.c. of a 10 per cent. solution of phosphotungstic acid in about 3 per cent. hydrochloric acid. The solution is quite stable if kept in a dark bottle, and gives satisfactory results after months of standing. In a series of over 300 precipitations of various milks the results were surprisingly uniform, particularly in human milk.

Colorado Medicine, Denver.
September.

60 Case of Round Worms in an Adult. M. D. Gibbs, Van Houten, N. M.
61 Case of Rupture of the Uterus. W. H. Swan, Colorado Springs.
62 Albumosuria of Phthisis. J. F. McConnell, Colorado Springs.
63 Dermatoses and Dry Climate. J. M. Blaine, Denver.
64 Treatment of Eclampsia. E. Lawney, Denver.
65 Operative Methods in Puerperal Eclampsia. H. G. Wetherill, Denver.
66 *Medical Organization. E. Stuver, Ft. Collins.

66. **Medical Organization.**—Stuver says that medical organization prevents misunderstandings, ill will and envy, and promotes fraternal feeling and friendship. A good medical society stimulates scientific activity and a healthy rivalry in improving individual efficiency and skill. Such work creates a good impression in the community where it is done, and secures higher fees and greater regard for the men who are doing it. Stuver says that if every physician, individually and collectively, through his local medical society, used his best efforts to secure a pure water supply and to protect it from contamination, for every village, town and city in the nation, it would not be long before typhoid fever would be almost entirely eliminated as one of the scourges of our land. If every doctor insisted that no milk should be sold except that obtained from healthy, properly-cared-for cows, there would be an immense reduction in the infant death rate. If a united profession firmly insisted and demanded the passage of pure food laws, whereby adulteration and sophistication would be punished by severe penalties, and that every package made should contain a true statement of its ingredients and their exact proportions, there would be a great reduction in ill health from that kind of poisoning, and in malnutrition caused by lack of nutrient ingredients. If we had a united and enthusiastic profession calling attention to the benefits arising from vaccination in the prevention of smallpox, the use of antitoxin in the prevention and treatment of diphtheria, and other preventive and sanitary measures, we would hear very little of antivaccination cranks and the evils following their hysterical propaganda; the cheap assaults of still cheaper medical journals, against antitoxin, and the ever-recurring campaign of misrepresentation and abuse of the anti-vivisectionists against the world's greatest benefactors. Stuver urges physicians to organize; to act as a unit; to pull together; to outline a plan of campaign, and then everyone to work toward a common goal. Educate the public on these important topics, and besides being members of a better prepared, better paid and more highly respected profession, physicians will have the proud consciousness of knowing that they have fought a good fight; that they have battled for decency, truth and right, and that their efforts have not been in vain.

The West Virginia Medical Journal, Wheeling.
October.

67 What Can the General Practitioner Do in the Early Recognition and Cure of Mental Disease? W. H. Yeakley, Davis, W. Va.
68 *Value of Union in the Medical Profession—How Remedy the Defects of Organization. A. S. Grimm, St. Mary's.
69 Recent Surgical Operations. J. H. Branham, Baltimore, Md.
70 *Diagnostic Value of the Cystoscope and Ureteral Catheter. J. E. Cannaday, Paint Creek.
71 A Year's Work in Obstetrics, Facts, Figures and Comments. H. K. Owens, Elkins.

68. **Value of Union in the Medical Profession.**—Grimm points out many instances where the organization of the medical profession is beneficial to its members. Such an organization affords an opportunity for physicians to meet and to discuss matters of interest professionally, financially and socially. These meetings, he says, afford an opportunity for a free discussion of the nostrum evil, of life-insurance fees and many other burning questions. He recommended that a circular be printed enumerating the advantages of union and the good the association has accomplished notwithstanding the indifference of the profession at large, this circular to be mailed to each member of the medical profession who does not belong to the association.

70. **Diagnostic Value of Cystoscope and Urethral Catheter.**—Cannaday believes that the cystoscope as an accurate scientific instrument is of comparatively recent inception and perfection; that the other mechanical aids to the collection of the separate urines are not by any means absolutely dependable; that the cystoscope and urethral catheter have their limitations, shortcomings and defects, and are not ideal; that these appliances are of especial value in diagnosing the causes of hematurias, in the discovery of calculi and foreign bodies in the bladder; that a careful study of the ureteral orifices gives more than an inkling of the conditions present in ureter and kidney. Definite information concerning the origin of a pyuria can be elicited by the use of the cystoscope and ureteral catheter which could not have been obtained in any other way.

International Clinics, Vol. II. (Sixteenth Series), Philadelphia.

72 *Prognosis and Treatment of the Chronic Valvular Diseases of the Heart. D. Rochester, Buffalo, N. Y.
73 Prevention and Treatment of Acute Nephritis. J. M. French, Cincinnati, Ohio.
74 Treatment of Migraine, with Special Reference to the Use of Cannabis Indica. G. C. de LaCarriere, Paris, France.
75 Prophylaxis of Nervous Disease with Special Reference to Educational Influences in the Growing Child. P. Zenner, Cincinnati, Ohio.
76 Pulmonary Abscess Ending in Recovery without Operation; A Study by Means of the Roentgen Rays. J. M. Anders, and G. E. Pfahler, Philadelphia.
77 Diagnosis and Treatment of Abscess and Gangrene of the Lungs, with Special Reference to Operation. F. T. Lord, Boston.
78 The True Significance of Uric Acid. W. H. Porter, New York.
79 Clinical Types of Persistent Vomiting. H. C. Moffitt, San Francisco.
80 Use of Discarded Street Cars in the Open-air Treatment of Tuberculosis. J. J. Walsh, New York.
81 An Unusually Large Aneurism of the Abdominal Aorta. H. Goodloe, St. Louis, Mo.
82 Cardiac Lesions Associated with Arteriosclerosis. F. C. Wilson, Louisville, Ky.
83 Miscellany from the Paris Medical World; The Use of *X*-rays as a Social Question; Heroinomania; Serum Treatment of Exophthalmic Goiter, and of Hemophilia. C. K. Austin, Paris, France.
84 Infantile Derangements due to Improper Breast Feeding, with Suggestions for the Prevention and Treatment of Constitutional Disorders, Such as Rickets and Marasmus. L. Fischer, New York.
85 Hysterical Neuroses of the Stomach, with Report of a case of Rhythmical Borborygmi of Hysterical Origin. J. H. Lloyd, Philadelphia.
86 Tumors of the Mammary Gland, with Special Reference to Their Diagnosis, Prognosis, and Treatment. W. L. Rodman, Philadelphia.
87 Jacksonian Epilepsy due to Brain Tumor; Operation; Recovery; Tuberculous Abscess of Shoulder-Joint, Mistaken for Progressive Muscular Atrophy. M. Schlapp, New York.
88 Principles of the Treatment of Fractures, with a Special Consideration of those of the Upper Extremity. G. G. Ross, Philadelphia.
89 Experimental Researches Bearing on Surgical Intervention in Nephritis. A. Rovighi, Bologna, Italy.
90 Disorders of the Umbilicus, with Special Reference to the New-born and the Infant; I. Umbilical Hernias. A. E. Gallant, New York.
91 Fetal Hydrocephalus as a Cause of Delay in Labor. J. W. Ballantyne, Edinburgh, Scotland.
92 The Female Perineum and its Repair. W. A. N. Dorland, Philadelphia.
93 Gonorrhea in Women. C. Lockyer, London.
94 Two Cases of Ectopic Pregnancy with some Unusual Features. L. Frank, Louisville, Ky.
95 Choice of Medicinal Agents for Topical Use in Gynecologic Practice. C. D. Palmer, Cincinnati, Ohio.
96 Intratracheal and Intralaryngeal Injections. W. G. B. Harland, Philadelphia.

Philippine Journal of Science, Supplement III, Manila.
August 15.

97 New or Noteworthy Philippine Plants. V. E. D. Merrill, Manila, P. I.

Texas Medical News, Austin.
September.

98 Treatment of Paralysis Agitans. G. F. Butler, Chicago.
99 Alcohol in the Treatment of Typhoid Fever. W. O. Wilkes, Waco.
100 Diseases of the Biliary Tract—Special Reference to the Pathology and Differential Diagnosis of Cholecystitis and Cholelithiasis. W. L. Crosthwait, Holland.

Wisconsin Medical Journal, Milwaukee.

September.

101 The Clinical Aspect of Stomach Surgery. A. J. Ochsner, Chicago.
102 Appendicitis and the Differential Diagnosis of Appendicitis in Children. F. E. Sutherland, Janesville.
103 Contract and Club Practice. W. H. Saunders, Kenosha.
104 Infant Feeding. J. Binnie, Poynette.

The Medical Standard, Chicago.

October.

105 Notes from Nothnagel's Clinic. G. B. Hassin, Chicago.
106 German Gynecology. L. Waite, Chicago.
107 Practical *X*-ray Therapy. N. M. Eberhard, Chicago.
108 Tractus Genitalis in Splanchnoptosis. B. Robinson, Chicago.

Milwaukee Medical Journal.

September.

109 The Value of Clinical Tests Used in Typhoid Fever. C. A. Sanders, Waupaca, Wis.
110 Signs and Symptoms of Value in the Prognosis of Typhoid Fever. H. H. Milbee, Marshfield, Wis.
111 Intestinal Hemorrhage and Perforation. C. v. Neupert, Jr., Stevens Point, Wis.
112 Management of Typhoid Fever in Private Homes. S. W. Keys, Weyauwega, Wis.
113 Therapy of Hemorrhages of Stomach and Intestines. J. Bruess, Milwaukee.

Cleveland Medical Journal.

October.

114 Myocarditis in Acute Infectious Diseases. J. H. Lowman, Cleveland.
115 Scope and Aim of Orthopedic Surgery. H. O. Feiss, Cleveland.
116 Surgery of the Gall Bladder and Bile Ducts. A. F. House, Cleveland.
117 Case of Poisoning with Hellebore. J. W. Boss, Birmingham, Ohio.

Albany Medical Annals.

October.

118 Nil Desperandum as an Article of the Refractionist's Materia Medica. G. M. Gould, Philadelphia.
119 Tumors of the Trachea. C. F. Theisen, Albany.
120 Address to Graduates of the Samaritan Hospital Training School for Nurses. G. A. Blumer, Providence, R. I.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal.

September 29.

1 Delimitation of General Paralysis of the Insane. W. J. Mickle.
2 *Etiology of Dementia Paralytica. A. R. Diefendorf.
3 *Cerebral Localization and the Study of Psychiatry. C. K. Mills.
4 The Insanity of Inebriety. T. D. Crothers.
5 Dementia Præcox. C. K. Clarke, A. Meyer and F. X. Dercum.
6 Types of the Devolutional Psychoses. C. B. Farrar.
7 Proposed Sterilization of Certain Mental Degenerates. R. R. Rentoul.
8 Mind in Medicine. A. T. Schofield.
9 Rational Psycho-Therapeutics. P. Dubois.
10 *Cerebral and Ophthalmic Complications in Sphenoidal Sinusitis. St. Clair Thomson.
11 *Pneumotoxin. A. MacFadyen.
12 *Rupture of Interstitial Tubal Pregnancy; Hysterectomy. G. B. Hunt.

2. **Etiology of Dementia Paralytica.**—Diefendorf expresses the belief that this disease is increasing in its prevalence, and particularly in cities. Studying 172 cases at the Connecticut (U. S. A.) Hospital for the Insane, he found that there is one paretic from the country to 5.4 from the city, and one male to 3.9 females. Among the women the striking fact is that 17 per cent. of them were prostitutes. Examining closely into the importance of the prominent etiologic factors in several occupations which show great proneness to paresis, it was evident that alcohol and syphilis predominate. The average age at onset is 42 years, the limits being 23 and 68, the largest number of cases occurring between the ages of 35 and 40. Defective heredity also is a potent etiologic factor. Excessive alcoholism was present in 60.2 per cent. of the cases. Spyhilis occurred in 52.5 per cent. of the cases. Head injury existed in only 23 per cent. Defective heredity existed in 41 per cent. Insolation occurred in only 1.2 per cent. of the cases, and plumbism in only one case. Physical and mental overwork were causes in only 4.9 per cent. of the cases, and emotional shock in 3 per cent. Diefendorf considers these conditions as contributory, contracted only in producing the causation of paresis, and believes that the actual cause is still unknown.

3. **Cerebral Localization.**—Mills discusses particularly the cerebral mechanism of hallucinations and illusions and the classification of the forms of insanity. He says that the factors which should be considered in attempting a classification of insanity are: 1. The structural rests or aberrations due to heredity, which predispose the brain to mental disease. 2. The course and prognosis of the form of insanity—elements of age and development periods here largely entering. 3. The election of particular cerebral mechanisms by the exciting causes, bacterial or toxic, of the attack of insanity. The best general subdivision of insanities is, he believes, into the teratologic or abiotrophic and the pathologic or acquired. Under teratologic insanities he classes first the dementias due to structural arrest (embryonal apotentiality), including (a) congenital idiocy and imbecility, (b) dementia præcox, (c) dementia choreica and other presenile dementias, (d) senile dementia. Second, the insanities due to structural insufficiency, not of such degree as to produce primary dementia. Under this head would be included (a) the melancholia-mania group, (b) paranoia, (c) hysteria, (d) epilepsy, (e) psychasthenias. The second great division comprises the pathologic insanities. Under this head would be included: First, those due to diffuse destructive organic disease, as (a) the forms of imbecility or mental defect due to postnatal causes, (b) general paresis, (c) syphilitic insanity due to gross lesions and degenerations (d) traumatic insanities; second, the insanities due to toxemias and exhaustion.

10. **Complications in Sphenoidal Sinusitis.**—Thomson reports two cases in which the sphenoidal origin of intracranial suppuration was fully established. In one case it assumed the form of acute suppurative basic meningitis, and in the other that of thrombophlebitis of the cavernous sinus. In both cases the diagnosis was made during life and was confirmed by postmortem examination. Thomson states that the reason why the association of sphenoidal sinusitis with disease in the orbital and cranial cavities has not been hitherto more fully substantiated is that medical men do not attach much importance to the condition of the nasal cavities, either at the bedside or on the postmortem table.

11. **Pneumotoxin.**—McFadyen succeeded in extracting an acute lethal toxin from the bodies of virulent pneumococci, and is now carrying on a series of immunizing experiments with a view to procuring an antitoxic serum.

12. **Interstitial Tubal Pregnancy.**—Hunt reports a case in which the gestation sac was situated in the wall of the uterus. The patient, a multipara, aged 30, was seized with sudden pain in the left side of the lower abdomen which led to the diagnosis of ruptured tubal pregnancy. At the operation a small ruptured sac full of clotted blood was seen projecting from the wall of the uterus just above the point of the emergence of the left tube. In order to stop the hemorrhage it was necessary to do a hysterectomy. The patient recovered.

The Lancet, London.

September 29.

13 Pharyngeal Abscesses. G. E. Waugh.
14 *Arterial Blood Pressure in Heart Disease. H. J. Starling.
15 Streptococci Pathogenic for Man. F. W. Andrewes and T. J. Horder.
16 Thoracotomy for Traumatic Hemothorax Due to a Wound of an Intercostal Artery. D. Duff and J. Allan.
17 *Two Cases of Hepatic Abscess Treated by the Transpleural Operation. H. Taylor.
18 *Endemic Hematuria. P. G. Stock.
19 *A Case of Alnhum. D. M. Alexander and R. Donaldson.
20 *Study of a Case of Plague. J. B. Cleland.
21 *The Suprapubic Dressing. G. H. Colt.

14. **Arterial Blood Pressure in Heart Disease.**—Starling found that no matter how bad the condition of the patient or how ineffective the work of the heart, the arterial blood pressure is never below normal in any case of so-called heart disease. He emphasizes the importance of a reading of arterial pressure in all cases of failing heart because it furnishes an index as to the treatment. A number of cases in point are cited.

17. **Hepatic Abscess.**—In the two cases reported by Taylor the abscess, instead of making its way toward the abdominal wall, took an upward course, making it necessary to approach the abscess through a transthoracic incision.

18. **Endemic Hematuria.**—Stock reports 65 cases of endemic hematuria that were caused by the bilharzia nematobium. In view of the fact that these organisms are invariably killed by acute infections, Stock suggests the hypodermic injection of Wright's antityphoid serum in the treatment of these cases. Two of his patients are now being treated accordingly.

19. **Ainhum.**—Alexander and Donaldson report the case of a seaman, a native of Jamaica, aged 44, who suffered from ainhum for about 20 years. There was no history of loin pains, of any other persons in the family having suffered from this disease or from epilepsy, or of the patient having at any time worn toe rings. He had gone barefooted until he was 14 years old, but there was no jungle and very little grass at his home, thus precluding trauma as the cause of his trouble.

20. **Plague.**—According to Cleland, the onset of signs and symptoms in plague is the first indication of commencing the recovery from the disease. He thinks this observation may throw some light on the lengthy incubation periods of various infectious diseases. He believes that the skin and inoculation theory of plague is a correct one.

21.—See abstract in The Journal, Dec. 2, 1905, page 1763.

The Journal of Tropical Medicine, London.

September 16.

22 Sprue and Chronic Intestinal Lesions. J. Cantlie.

Glasgow Medical Journal.

September.

23 *Unusual Case of Ruptured Tendo Achillis. D. Macartney.
24 Case of Marked Paroxysmal Dyspnea, Occurring in a Patient with Double Aortic Disease, and Wherein, After Death, Were Disclosed Striking Appearances of Chronic Mediastinitis. J. S. M'Kendrick.
25 Clinical and Pathologic Aspects of a Fulminating Case of Epidemic Cerebrospinal Meningitis of the "Convulsive Comatose Type" of Tourdes. G. A. Allan and J. S. Dunn.

23. **Rupture of Tendo Achilles.**—Macartney reports the case of a young man, aged 19, who sustained a rupture of the left tendo Achilles, the time and circumstances connected with the injury being unknown. There was a rounded, tumor-like mass at the mid-leg composed presumably of the contracted free end of the tendon and part of gastrocnemius muscle. Macartney made a transverse incision through half of the muscle well up the leg, split the muscle vertically by a longitudinal incision down its middle to a short distance above the tendon, then bringing the upper part of the muscle down to the lowest portion of tendon sheath. The inverted portion of the muscle was stitched to both sides of the sheath by a dozen or so of sutures of strong catgut. Enough of the muscle tissue survived the restored power to the limb. Nine months after the operation the patient walked well and without limping.

The Dublin Journal of Medical Science.

September.

26 Clinical Report of the Rotunda Hospital. E. H. Tweedy.
27 Two Cases of Infantile Hemiplegia. D. J. O'Connor.
28 A Note on the Opsonic Index. B. Brooke.

Presse Médicale, Paris.

29 (XIV, No. 71.) Considérations générales sur le service de santé au combat (sanitation in war.) F. H. Renaut.
30 *Dilatation aigue du cœur chez le nouveau-né et asphyxie bleue (acute dilatation of heart in the newly born and blue asphyxia). J. Ferreira.
31 *Improvisation d'un milieu opératoire a la campagne (operations in the country). P. Sikora.
32 (No. 72.) Les nouvelles théories des solutions dans leurs rapports avec la médecine. S. Leduc.
33 Complications pulmonaires et pleurales des corps étrangers des bronches latents on méconnus. Perrin and J. Parisot.

30. **Acute Dilatation of the Heart in the Newborn.**—Ferreira says that in the asphyxia of the new born it is not enough to stimulate the respiration, but that the myocardium must be stimulated also. It frequently happens that the asphyxia is due to acute dilatation of the heart, and he has been able to save a number of infants, apparently otherwise doomed, by measures addressed to the myocardium. If the circulation is interfered with from any cause, the right auricle becomes exhausted by the excess of pressure, and it stretches and the child is born with the symptoms of "blue asphyxia." Systematic percussion, especially the sensation of resistance to the finger rather than the sounds, reveals this acute dilatation of the right auricle, and it is a frequent finding at autopsy of new-born infants. Sometimes a probe can be passed readily from one auricle into the other. Examination of the blood discloses excess of blood corpuscles. The condition of blue asphyxia, he states, is merely an acute phase of cyanosis. In both cases there is acute dilatation of the right auricle. Injection of camphorated oil has given excellent results in his experience. He injects 1 or 2 c.c. of a mixture of 0.3 gm. camphor in 30 gm. of olive oil. An artificial carbonated bath, according to Mougeot, has a manifest tonic action on the myocardium. Tapping massage of the precordial region also has a tendency to incite the myocardium to contract with greater energy.

31. **To Improvise an Operating Room.**—Sikora gives minute instructions how to transform any room and patient into an aseptic operating field. The main reliance is on boiling and singeing, but he advises raising the boiling point of water, etc., by adding sodium carbonate or borate. A handful of wood excelsior can be used instead of a brush for scrubbing, after thorough sterilization. A thermocautery can be improvised out of a long pair of forceps held with a wet compress, and artificial serum can be easily prepared by boiling a level teaspoonful of salt in a quart of boiled water for three-quarters of an hour. All the vessels and spoons, etc., used should be singed inside and out. He has improvised an operating table by placing a kitchen chair on a table, resting on the edge of its seat and back, and fastened immovably. A broomstick was then tied across the highest crossbars of the chair, and a blanket was thrown over the whole and a sheet over this. The patient's shoulders rested on the table, while the pelvis and thighs rested on the sloping back of the chair and the legs on the projecting ends of the broomstick on each side. He found this much firmer and better than any arrangement of cushions or manual support. Five dishes are necessary for the disinfectants for the hands, etc., and seven if there is an assistant. If there is no immediate haste the room should be emptied, washed and sprayed with peroxid of hydrogen, but in case of haste, he isolates the furniture, floor and ceiling by covering them with freshly laundered sheets. Still better isolation is obtained by supplementing these measures by tacking one edge of a sheet to the ceiling or throwing it over a rope, to curtain off in this way three sides of the space reserved for the operation, leaving open the side toward the light, with a fourth sheet for a roof over the space. In selecting a room, light is the main consideration.

Archiv f. Verdauungskrankheiten, Boas', Berlin.

Last indexed, page 312.

34 (XII, No. 4.) Acidity of Gastric Juice in case of Chronic Obstipation.—Das Verhalten der Magensaftacidität bei chronischer Obstipation. F. Samuely.
35 Fat-splitting Capacity of Stomach.—Ueber die Fähigkeit des Magens, Fett zu spalten. S. von Pesthy.
36 Untersuchung über die phosphorhaltigen Bestandtheile der Darmschleimhaut (phosphorus-containing elements in intestinal mucosa). A. Borri.
37 *Sahli's New Test of Stomach Functioning Without the Use of the Stomach Tube.—Die Desmold-Reaktion und ihre radiologische Welterbildung durch Schwarz. L. Horwitz.
38 Nature of Nothnagel's "Yellow Mucous Granules" in Infants' Stools.—Ueber das Vorkommen und die Natur der Nothnagelschen "gelben Schleimkörner" in den Säuglingsfæces. O. Spiegel.

37. **Desmoid Reaction as Test of Stomach Functioning.**—Sahli's desmoid test of the stomach functioning has been described in these columns, his original communication having been summarized on page 1820 of vol. XLIV, June 3, 1905. Horwitz has been applying the test in 44 cases of various gastrointestinal affections, and has been impressed with the importance of the findings. He says that examination of the stomach contents after a test meal is unquestionably the best means of testing the functioning of the organ, but in case the use of the stomach tube is contraindicated for any reason or its findings are dubious, the desmoid test will be found very instructive. It is especially instructive when the little bag of goldbeater's skin is filled with bismuth, 1.5 gm., and tied with thread, and ingested during a test breakfast, according to Schwarz's modification of the test. Radioscopy then shows the little bag as a round black spot in the lowest part of the stomach. The patient should lie on the left side to retain the bag in the stomach as long as possible, and should take noth-

ing during the entire day except tea and water. Sahli first used goldbeater's skin for the little bag, but as he found that this material varied so widely in thickness and resistance, he now uses thin rubber tissue and ties the bag with No. 00 catgut, depending on the digestion of the catgut to release the contents of the bag. He includes in the bag 0.05 gm. of methylene blue with or without 0.1 gm. iodoform and about 0.04 gm. each of licorice extract and powder. Schwarz thinks that the methylene blue is liable to diffuse through too thin a membrane. Horwitz answers the various criticisms of the desmoid test, showing that none of them actually discredits it, and that it has unquestionably an important sphere of its own. Sahli says that the green aspect of the urine from 4 to 6 up to 20 hours afterward, indicates a positive reaction, and that in such a case the digesting power of the gastric secretions is approximately normal. Sahli examines the urine at long intervals, up to 20 hours, to allow for variations in absorbing capacity. Horwitz believes that an interval of even 15 hours throws grave doubt on the stomach functioning. In such a case the test should be repeated and possibly preceded by giving a little methylene blue beforehand, to test the absorbing capacity. If radioscopy shows the bismuth bag as a round spot in the stomach or intestines later than three hours, hypoacidity or anacidity may be assumed. When the connective tissue of which the bag is made is digested at any point, the bismuth escapes and spreads out over the region. If this occurs in an hour and a half after swallowing the bag, extreme hyperacidity is present. If it does not occur until two hours, moderate hyperacidity may be assumed. If it occurs in two and a half hours, normal conditions prevail. If not until after three and a half hours, slight hypoacidity may be assumed, and extreme hypoacidity if from four to four and a half hours elapse before the contents of the bag escape; five hours indicates anacidity.

Horwitz applied the desmoid test after dinner after previously testing the stomach contents after a test breakfast. All the evidence indicates that the raw connective tissue of the desmoid bag is not digested by the pancreatic or intestinal juice, only by the gastric juice, and only when this contains free hydrochloric acid and pepsin. The findings in his cases harmonized in nearly every instance with those of the preceding examination of the stomach content. He directed the patients to urinate before dinner and then at 3 hour intervals, until the urine had turned green, sending him each sample separately. The desmoid test gave invariably negative results in cancer cases. Alkaline urine has to be boiled with acetic acid to oxidize the chromogen of the methylene blue. Schwarz's radiologic findings contradict some well-established ideas in some respects, for instance, in his extensive experience, he never found ingesta of any kind retained longer than 10 hours in a stomach free from stenosis and of comparatively normal size. The normal stomach, he found, did not always digest catgut 00, while this was sometimes digested by the intestinal juice. Horwitz did not try the Schwarz modification of the desmoid test.

Beiträge z. Klinik der Tuberkulose, Würzburg.

Last indexed, vol. xlvi, page 1976.

39 (V, No. 4.) *Conjugal Tuberculosis.—Lungenschwindsucht beider Ehegatten. W. Weinberg.
40 *Sodium Silicate in Treatment of Pulmonary Tuberculosis and Participation of Silicic Acid in Production of Lung Stones.—Ueber die therapeutische Verwendung des kiesel-sauren Natriums und ueber die Beteiligung der Kieselsäure an der Bildung von Lungensteinen. Zickgraf.
41 Beiträge zur Statistik und Klinik der Tuberkulose. J. Wiesel.
42 Hemoptysis in an Infant.—Zur Lehre der Hämoptoe im Säuglingsalter. J. Kasten.
43 *A Thousand Sanatorium Cases.—Tausend Heilstättenfälle. J. Nagel.
44 *Ueber Tuberkulose der Schädelbasis (of base of skull). W. Stockert.

39. **Conjugal Tuberculosis.**—Weinberg's statistics show that widows and widowers, surviving the deaths from tuberculosis of their consorts, suffer from tuberculosis in double the percentage exhibited by the rest of the population. Widows are more frequently affected than widowers, and the proportion is larger in the crowded homes of the poor than among the well-to-do. His statistics were collected at Stuttgart, and are classified and tabulated.

40. **Value of Sodium Silicate in Tuberculosis.**—Zickgraf has been experimenting with sodium silicate as a means to aid the organism in its battle against the tubercle bacilli. Its use was suggested by Kobert in 1901, as mentioned in these columns at the time. The silicate becomes deposited in the morbid process and helps to transform the fibrous connective tissue proliferation into permanent cicatricial barriers. His experience has confirmed its absolute harmlessness in internal administration. It is absorbed in the body and appears in the urine merely as an increased amount of the normally present silicic acid. It seems to exert a slight leucotactic action on its way through the blood, while its share in the petrification of the tuberculous tissue is important. Some of his 22 patients had coughed up calculi from the lungs. One in particular had been tuberculous for ten years and had treated himself with an herb tea for a long time. The herbs used were rich in silicates, and probably they were responsible for the large proportion of silicates found in the calculi from the lungs. The French have long been proclaiming that one of the most potent factors in tuberculosis is the "demineralization of the body." If this be true, Zickgraf says, the administration of silicic acid is progress in the right direction. It supplements the ordinary hygiene and dietetic measures, and the results in the 22 cases in which Zickgraf applied this treatment were highly encouraging. It is possible that the silicic acid is better adapted for the desired purpose than any other mineral yet tried.

43. **One Thousand Tuberculous Patients Treated at Cottbus Sanatorium, 1900-1904.**—Nagel analyzes this material and summarizes the lessons learned. In the large majority of cases the effects of the sanatorium treatment were the restoration to health and to complete earning capacity with no signs of recurrence to date. The findings on examination after several years are tabulated from various points of view.

44. **Tuberculosis of Base of Skull.**—Stockert's patient was a butcher of 22, of a healthy family. He had had several attacks of articular rheumatism and during the last nine months had headache and pain in the left upper jaw, with other symptoms suggesting a tumor at the base of the skull. Meningitis developed and he died suddenly from arrest of the respiration. A tumor was found as surmised, but it proved to be a tuberculous lesion instead of the assumed cancerous growth. The tumor had involved the left base of the skull, grown around the left optic nerve, and penetrated down into the pharynx. The clinical and microscopic findings were those of a malignant growth, but the microscope showed it to be a granulating tuberculous process. A small, apparently fresh tuberculous process was discovered also in the left apex.

Berliner klinische Wochenschrift.

45 (XLIII, No. 31.) Ueber die Antiamboceptoren gegen die komplementophile Gruppe des Amboceptors. E. Friedberger and C. Moreschi.
46 *Injurious Action of Light and Air on Milk.—Ueber belichtete Perhydrasemilch. H. Much and P. H. Römer (Marburg). Concluded.
47 (No. 32.) *Bilateral Resection of Upper Jaw.—Die beiderseitige Oberkiefferesektion. O. Hildebrand.
48 Weiteres zur Kenntnis der myeloiden Umwandlung (transformation). H. Hirschfeld.
49 Head's Zones in Respect to Affections of Digestive Organs.—Zur theoretischen und praktischen Bedeutung Head'scher Zonen bei Erkrankung der Verdauungsorgane. L. Kast.
50 *Paraffin-Injektionen und -Impiantation bei Nasen und Gesichts-Plastiken (nose and face). H. Eckstein.
51 (No. 33.). Ueber Polyarthritis chronica deformans. H. Curschmann.
52 *Ptomain Poisoning and Paratyphus.—Fleischvergiftung und Paratyphus. H. Trautmann (Hamburg).
53 Determination of Sugar in Urine.—Ueber Zuckerbestimmung im Harn. S. Rosenberg.

46. **Action of Sunlight on Milk.**—Much and Römer announce that the results of their tests have demonstrated that sunlight and oxygen alter the taste of milk after even a brief exposure. They affect the fat in the milk, altering it to a kind of tallowy consistency from oxidation of the fat. Milk thus altered is liable to affect infants injuriously. They advise that milk bottles should be wrapped in black, red or green paper. The same effects are observed after exposure to sunlight with their perhydrase milk as with ordinary raw milk. The advantages claimed for their aseptic perhydrase milk were summarized in these columns recently. They treat ordinary milk with peroxid of hydrogen which sterilizes it completely.

The peroxid of hydrogen is then eliminated with a "catalase" derived from beef cattle. Milk thus treated seems to keep indefinitely, they state, even without ice.

47. **Bilateral Resection of Upper Jaw.**—Hildebrand has had fine functional and cosmetic results after excision of a cancer in the soft parts of the palate or upper jaw. He illustrates his technic, with the excised parts. Only 30 cases are on record of complete resection of the upper jaw, and hitherto no effort has been made to cover the defect. This he accomplished by a transverse incision across the palate, separating the sound soft palate from the diseased soft parts of the hard palate. After removal of the jaw he sutured the mucosa of the cheek to the raw edge of the soft palate, and also sutured the mucosa of each cheek together, across the gap. The newly formed palate is quite low, but it soon retracts and the aspect of the roof of the mouth approximates normal, while the patient can swallow and talk naturally.

50. **Paraffin Prothesis.**—Eckstein brings this subject down to date, with illustrations of patients, instruments, etc. He has injected paraffin into the nose in 200 cases, the majority were cases of inherited syphilis. He has found implantation of a triangle of silver wire a great help for the permanence of the results obtained. In time the middle part perforates the skin, and he cuts off this projecting part. He has made about 2,000 single injections in hundreds of cases of all kinds, without a mishap. He uses paraffin with a high melting point and sometimes implants several cold thin sheets instead of softening and injecting the paraffin.

52. **Ptomain Poisoning and Paratyphus.**—Trautmann ascribes both of these to the same origin. The rapid onset of the symptoms from the former and the slow onset and mild form of the symptoms of paratyphus he ascribes to the fact that in ptomain poisoning the phase of incubation has been gone through with in the animal or meat before the toxins reach man. In paratyphus, on the other hand, man has to pass through a stage of incubation, and the resulting formation of toxins is not so extreme as in the disease in the animal producing the ptomains.

Deutsches Archiv f. klinische Medizin, Leipsic.
Last indexed, page 1333.

54 (LXXXVII, Nos. 5-6.) *Ueber die durch Nebennieren-Präparate gesetzen Gefäss- und Organ-Veränderungen (changes due to suprarenal preparations). J. Biland.
55 Ueber Harnsäurebestimmung durch direkte Fällung (direct precipitation test for uric acid). Meisenburg.
56 *Ueber Mast-Zellen-Leukämien. G. Joachim.
57 *Funktionelle Pankreas-Achylie. A. Schmidt (Dresden).
58 *Forms of Sepsis Originating in Urinary Passages.—Katheterfieber durch Staphylococcus pyogenes albus. Allgemein-Infektion mit Bakterium coli. G. Jochmann.
59 Diffuse Phlegmone des ganzen Esophagus und Magens (of entire esophagus and stomach). M. Pfister.
60 Blood Coagula in Sputum in Case of Chronic, Hemorrhagic Bronchitis.—Ueber das Vorkommen von Blutgerinnsein im Auswurf. W. Ebstein (Göttingen).
61 Ueber die medikamentöse und diätetische Behandlung des Blasen- und Nierenbecken-Katarrhs (of bladder and renal pelvis). G. Ediefsen.
62 Relations Between Duration of Disease and Age of Intestinal Lesions in Typhoid Fever.—Beziehungen zwischen Krankheitsdauer und Alter der Darmläsionen beim Abdominal-Typhus. E. Wennagel.
63 2 Fälle von Adams-Stokes'scher Krankheit mit Dissoziation von Vorhof- und Kammer-Rhythmus und Läsion des His'schen Bündels. E. Schmoll (San Francisco).
64 *Zur Pathologie der Nierenkrankheiten, nach klinischen Beobachtungen bei totaler Harnsperre (total anuria). H. Pässler.
65 *Zur Kenntnis der durch das sogen. Bact. paratyphi hervorgerufene Erkrankungen. Rolly.

54. **Changes in Vessels and Organs After Injection of Suprarenal Preparations.**—Biland relates the pathologic anatomic changes found in 18 rabbits after injection of suprarenal preparations, with or without potassium iodid. The results conflict in some respects with those published by others.

56. **Mast Cell Leukemia.**—Joachim reports the details of 2 cases of what he calls "mast cell leukemia," as the proportion of mast cells reached 56.4 per cent. in one and 53.6 per cent. in the other case. He thinks the affection is a variety of myelemia. The prognosis is less favorable than that of ordinary myelemia, especially in respect to Roentgen treatment.

57. **Functional Pancreas Achylia.**—Schmidt analyzes 3 cases that have come under his observation in which the pancreatic secretion seemed to be partially or totally suspended. In 2 patients the trouble dated from childhood, and with its ups and downs at times reduced them to a menacing condition. In the third patient the trouble appeared as an acute, recurring affection, with participation of the liver in the disturbances. Treatment with pancreas preparations is indicated as a matter of course, he states, but it should be supplemented by regulation of the diet and treatment of concomitant stomach disturbances. The value of regular rinsing of the stomach can not be overestimated in chronic intestinal affections. It is encouraging, he declares, to know that functional pancreatic achylia is not only amenable to treatment, but that a complete cure can be realized in time, even in the most chronic cases. The first patient was a lad of 12 who had had severe chronic diarrhea for six years. No organic affection could be discovered, but the stools contained nearly four times as much fat as normal stools, while the total mass on a test diet was 5,048 moist and 117 dry. The corresponding figures in normal stools are 249.5 and 59.3. The second patient was a man of 41 with diarrhea from childhood, much worse during the last six years, very weak and emaciated, with slight motor insufficiency of the stomach. The stools showed macroscopic remains of meat, much fat and microscopic starch, with acid fermentation and small flakes of mucus containing bile pigment, suggesting slight catarrh of the small intestine. Under the regular use of a preparation of pancreas substance and daily rinsing of the stomach the patient continued to improve and in the course of five months all the symptoms of gastrointestinal disturbance had vanished. The third patient was a man of 47 who suddenly presented symptoms of digestive disturbance, abdominal pain, vomiting, diarrhea, moderate enlargement of the liver and slight icterus. There was no mucus in the stools, but macroscopic relics of undigested meat and much fat, microscopic fat crystals, drops of neutral fat and starch grains were noted, and Schmidt's "bag test" gave positive findings in all the cases. This test is based on the fact that the pancreatic secretion is the only one able to digest nuclear substance, and a small cube of beef in a little bag of thin silk gauze passes unmodified through the digestive tract unless it is acted on by the pancreatic secretion.

58. **Sepsis Originating in Urinary Passages.**—Jochmann reports 3 cases; in one the sepsis was due to streptococci and in the others to the colon bacillus. One patient was a man of 22 who had a stricture in the urethra as a sequel of gonorrhea. About eighteen months later cystitis developed, followed by general infection with the colon bacillus. The fever displayed a marked intermittent type, with unusually steep ascents, accompanied by chills. The leucocytes numbered 9,200 in one and 9,800 in the other case.

64. **Pathology of Kidney Affections.**—Pässler reports the case of a woman of 42 who died the twelfth day of absolute anuria resulting from compression of both ureters by a cancerous growth. From study of the phenomena observed and of similar cases that have been published he deducts the following conclusions: 1. If the assumption is correct that the phenomena of acute eclamptic uremia are the consequences of an intoxication, the supposed "uremic poison" can not be a body present in normal urine. 2. Hydremic plethora may induce edema, but the edema in this case differs materially from the so-called typical dropsy of acute nephritis. Even hydremic plethora plus retention of waste matters was unable in the case reported to induce the production of edema of the type of anasarca accompanying acute nephritis. The tracing of the blood pressure in the case related sustains the theories which ascribe the rise in the arterial blood pressure in nephritis to retention of elements of the urine.

65. **Paratyphoid Affections.**—Four cases are described and the clinical picture of a paratyphoid affection is drawn. It seems to be essentially a severe gastroenteritis with a tendency to bleeding and hemorrhagic processes, with consecutive ulcerations, liable to occur irregularly at any part of the gastrointestinal canal.

Deutsche medizinische Wochenschrift, Berlin and Leipsic.

66 (XXXII, No. 37.) Die Behandlung der Epilepsie. E. Redlich. Clinical lecture.
67 *Suction Mask to Act on the Lungs.—Eine Lungensaugmaske zur Erzeugung von Stauungs-Hyperämie in den Lungen. E. Kuhn (Berlin).
68 Beitrag zur Aspergillus-Mykose der menschlichen Lunge. F. Solmersitz.
69 Dietetische Beobachtungen an Lungen-Kranken. W. v. Stoutz and H. Ulrici.
70 *3 Fälle von Polyglobulie mit Milz-Tumor (enlarged spleen). J. Bence.
71 Behavior of Spleen in Case of Carcinoma.—Das Verhalten der Milz bei Carcinom. J. C. Hollister (Chicago).
72 Bemerkungen zur Hände-Disinfektion und Asepsis bei Laparotomien. A. Sippel.
73 *Muskel-Transplantation bei Behandlung der Kinderlähmung (infantile paralysis). A. Sachs.

67. **Mask to Induce Hyperemia in the Lungs.**—Kuhn refers to the fact that Bier's attention was attracted to the advantages of artificial hyperemia in therapeutics by the observation that cardiac defects accompanied by stasis of the blood in the minor circulation are extraordinarily rarely associated with tuberculous lesions. On the other hand, any cause that induces anemia in the lungs is almost certain to be accompanied by them. He discusses other facts which tend to show that tuberculous lesions do not locate where there is hyperemia from any cause; the anemic regions are those affected. Kuhn has noticed that there is always considerable hyperemia in the lungs of suffocated persons. On these premises he has devised a means to promote the healing of tuberculous lesions in the lungs by inducing partial suffocation. The mask he uses for the purpose restricts the intake of air while it does not interfere with the expiration of the air through mouth and nose. The result is that the inspired and expired air under these conditions acts on the surface of the lung the same as a suction cup applied to any other part of the body. The suction actually has more favorable conditions here than elsewhere, as the superficially located, thin-walled capillaries are more accessible here than elsewhere. The inspiration lasts longer than usual, and this keeps the air longer in contact with the blood. Roentgen views, he states, show that the lungs are flooded with blood after the use of the mask, especially the upper portions which seem to feel the effect of the suction most strongly. He has applied the mask to 40 patients, and always with good effect, even in the case of a woman who had been spitting blood. The procedure is merely an exaggeration of the natural physiologic conditions, and he thinks that it can not do harm. No untoward effects were observed in any instance.

70. **Polycythemia With Enlarged Spleen.**—Bence reports 3 cases in detail. He treated the patients with repeated venesection, and each time the general condition showed marked improvement, the congestions and the headache were relieved. Inhalation of oxygen had a similar effect. He administered daily from 50 to 100 liters of oxygen, after which the patients always felt much better, losing their dizziness. The chief disturbances experienced by the patients are due to the overfilling of the vessels from the extreme viscosity of the blood. If the blood can be rendered more fluid, these disturbances subside, and this can be accomplished with venesection and inhalation of oxygen. Koranyi had a patient with 7,400,000 reds; six days of oxygen inhalations reduced the number to 6,000,000. The inhalations were kept up for three months or more, and by the end of a year the number was 4,800,000. The patient was improving when she began the oxygen, but it certainly helped in the favorable course. In one case Bence restricted the patient to a fluid and semifluid diet. The effect on the viscosity of the blood seemed to be beneficial and the patient felt much better on this régime.

73. **Transplantation of Muscle in Treatment of Infantile Paralysis of Arm.**—Sachs has successfully applied Hildebrand's method of transplanting the pectoralis major to take the place of the paralyzed deltoid muscle. The results are such that he does not hesitate to call the procedure ideal. A muscle does not atrophy if its nerve is retained intact, with the vessels that nourish the nerve, even if otherwise the muscle is excluded from the circulation. He warns that in transplanting a muscle it must be handled as gently as possible. A difference was observed in the ultimate growth of one part of the muscle which had been slightly injured while detaching it. The patient was a child of 6; the paralysis was of four years' standing. Under chloroform, the incision was carried from the fourth rib, corresponding to the origin of the pectoralis major, along the sternum, then above and parallel to the clavicle to the middle of its outer third, and then down at a right angle as far as the spine of the scapula. The flap was turned back toward the arm, exposing the entire pectoralis major and the deltoid. The pectoralis was then detached from its origin and from the sternum and clavicle until it hung only by its tendon and the nerve in its connective tissue. It was then swung over the deltoid—describing an arc of 90 degrees—and was sutured to the lateral margin of the clavicle at the acromion and to the lateral margin of the spine of the scapula. The direction of its fibers corresponded with that of the paralyzed and much atrophied deltoid muscle. The fibers of the sternal margin of the pectoralis were sutured to the lateral margin of the clavicle. The arm was immobilized in a horizontal position to prevent traction on the transplanted muscle. The nerve and fibers were found to be amply long enough. Six months after the operation the transplanted muscle can be felt distinctly and responds to electric stimulation. There is nothing to show the loss of the pectoralis major on the chest, the pectoralis minor seems to have compensated it, and the functional results are surprisingly good.

Mitteilungen a. d. Grenzgeb. d. Med. u. Chir., Jena.
Last indexed, page 1335.

74 (XVI, No. 3.) Ueber Appendicitis. T. Wette (Weimar).
75 Ein seltener Fall von Stenose des Magens und des obersten Dünndarmes (of stomach and upper duodenum). H. v. Haberer.
76 *Zur Embolie und Thrombose der Mesenterial-Gefässe (vessels). A. Rittershaus.
77 Zur Frage der Rezidive nach Blinddarmentzündung (recurrence after inflammation of the cecum). Karrenstein.
78 *Consequences of Temporary Closure of Ureter. Die Folgen des zeitweiligen Ureterverschlusses. E. Rautenberg.
79 *Nerve Grafting in Facial Paralysis from Neurologist's Standpoint.—Ueber Nervenpropfung bei periph. Facialislähmung vorwiegend vom neurol. Standpunkte. M. Bernhardt. (Berlin).

76. **Embolism and Thrombosis of Mesenteric Vessels.**—Rittershaus has had occasion to observe at Essen Ruhr a case of ileus as the consequence of occlusion of a mesenteric artery. The patient was a man of 71 with moderate peripheral arteriosclerosis, who had frequently complained of abdominal pains and vomiting. He finally presented the symptoms of ileus, and an operation was performed. Hemorrhagic necrosis of the lower part of the ileum was discovered, and by exclusion it was assumed to be the result of closure of the mesenteric vessels. The part of the gut affected was resected and, except for distressing singultus, the patient seemed on the road to recovery without pain, fever or pronounced peritonitic symptoms, but on the fifth day he succumbed to heart failure. Autopsy showed embolism of several of the branches of the mesenteric artery and resulting atheromatous changes in the aorta. A second patient was a man of 46 who had had articular rheumatism three years before, followed by trouble with the heart, dyspnea and general fatigue at the slightest exertion at times. A return of these symptoms was accompanied by others suggesting aortic insufficiency and stenosis with secondary enlargement of the heart and pericarditis. After transient improvement under heart tonics, signs of infarcts in the lungs developed with pains in the left lower abdomen and anuria with final heart failure. An embolus was found in the inferior mesenteric artery, evidently originating in the extremely atheromatous aorta. The infarcts in the abdomen had either been of long standing or had been compensated by collateral circulation. Only 6 out of the 55 cases known of occlusion of a mesenteric artery terminated in recovery. A review of the more recently published cases shows that the diagnosis was generally merely that of ileus of unknown cause. Sudden violent pain was the initial symptom in most cases, followed by colic-like pains over the entire abdomen. The part of the intestine involved was resected in 5 cases, with recovery in 2. Sprengel warns decidedly against operative treatment in a case of well-developed hemorrhagic infarct. When there is no

sharp limitation of the diseased and sound parts, it is wiser, he thinks, to refrain from resecting, as the resisting power of the peritoneum has already been lost, but Rittershaus advocates surgical intervention to relieve the patient of the tormenting symptoms of ileus, and if possible to resect the necrotic part, although both of his patients succumbed shortly after such an operation.

78. **Consequences of Temporary Occlusion of Ureter.**—Rautenberg's experiments were made chiefly on rabbits. Temporary occlusion of the ureter was invariably followed by increasing atrophy of the kidney substance, a progressive degenerative process terminating in chronic albuminuria and death. Dogs and cats seem more resistant.

79. **Nerve Grafting for Peripheral Facial Paralysis.**—Bernhardt's study of this subject from the standpoint of the neurologist suggests a number of points useful to bear in mind in attempting such an operation. His analysis of the published cases shows that long duration of the paralysis is not a contraindication.

Münchener medizinische Wochenschrift.

80 (LIII, No. 30.) *Hot Water-Alcohol Disinfection in Obstetrics and Abdominal Surgery.—Ueber den Wert der Heisswasser-Alkohol-Desinfektion für die Geburtshilfe wie für den Wund-Schutz von Bauchwunden. O. v. Herff.
81 *Erfahrungen in der Behandlung der spinalen Kinder-Lähmung (paralysis). O. Vulpius.
82 Zur Kenntnis der Diphtherie. G. Salus.
83 New Terms for New Conceptions in Immunity, etc.—Allergie. C. v. Pirquet.
84 Ueber Formen und Ursachen des Infantilismus. G. Anton.
85 *Ueber das Westphalsche Phänomen bei kruppöser Pneumonie der Kinder (in children). N. A. Kephallinos.
86 Poppy Capsules.—Ueber Mohnkapsein. Tischler.
87 Bilateral Abducent Paralysis with Intense Pain in Back of Neck, after Spinal Anesthesia.—Ein Fall von doppelseitiger Abduzenslähmung, verbunden mit aussergewöhnlich heftigen und lange anhaltenden Nackenschmerzen nach Rückenmarksanästhesie. M. Landow.
88 Ueber 2 Fälle von epidemischer Genickstarre (cerebrospinal meningitis). Broer.
89 Ueber Blutdruckmessungen (measurement of blood pressure). B. Feliner and C. Rudinger.
90 Die Elektrotherapie der Kreislaufserkrankungen (cardiovascular affections). L. Raab. (Concluded).
91 To Send Material for Examination.—Wie sollen Untersuchungsobjekte eingesandt werden? H. Durck.
92 *Relations between Cancer and Tuberculosis.—Die Beziehungen zwischen Krebs and Tuberkulose. W. Weinberg.

80. **Hot-Water-Alcohol Disinfection in Obstetrics and for Protection of Abdominal Wounds.**—It has been von Herff's experience at Basle that the Ahlfeld technic of hot-water-alcohol disinfection is admirably adapted for obstetric practice and also as a preliminary to laparotomies. In 5,000 maternity cases during the last five years in which it was used, fever was observed in a total of 15.7 per cent. from all causes; in 8.2 per cent. it was of puerperal origin. The total mortality was 0.7 per cent. and the mortality from puerperal fever was 0.09 per cent., while it was zero in the cases that developed in the institution. The alcohol shrivels the skin and tans it, as it were, preventing the escape of germs, and reducing the possibility of self-infection from the vicinity. The results of this method of disinfection have been so excellent in his experience that he considers himself not only justified, but bound to recommend this simple technic in the warmest terms to others.

81. **Principles of Treatment of Spinal Paralysis of Children.**—Vulpius' article was the opening address on this subject at the Lisbon congress. The first requisite of treatment is to render an orthopedic apparatus unnecessary. Arthrodesis may be all that is possible in cases of total paralysis of all the muscles moving the joint when the remains of function in the muscle are insufficient to prevent flail action of the joint. He has performed this operation on the ankle, knee and shoulder, but never on the hip joint, elbow or wrist. The joint is opened and scraped to expose and to freshen the bone substance at a number of places, the surfaces being left irregularly grooved. A silver wire is used to fasten the shoulder, but no fixation is used for the other joints, except immobilization in a plaster cast for at least three months. The result, especially with the shoulder, he states, is very good. The only ultimate drawback is the occasional consecutive scoliosis. In partial paralysis, tendon grafting is wonderfully effective. When possible he resects and transplants the entire muscle or tendon. If only partial transplantation is possible, he cuts the muscle up into its belly to obtain the strongest possible hold. He prefers "descending" transplantation, that is, he draws down the functioning muscle to the intact, paralyzed muscle. It is best to utilize muscles that have the same function as the defective ones, but this is comparatively unimportant; extensors can be transplanted on flexors and *vice versa*. As a rule, he sutures tendon to tendon, and refrains from periosteal fixation of the transplanted tendon when convinced of the adequate strength of the paralyzed tendon. He avoids the use of artificial silk tendons, as this leaves a foreign body and brings complications. Careful exposure of the tendon to be transplanted, carried up to its insertion, insures ample length even in case of periosteal fixation. The complete cure of the paralysis was obtained only in particularly favorable cases, but great improvement was constantly obtained, and this improvement was permanent in the majority of cases. In conclusion he warns against a blind, one-sided application of tendon grafting, while proclaiming that the treatment of paralysis has become an especially grateful field for orthopedics.

85. **Westphal's Sign in Croupous Pneumonia.**—Kephallinos found the knee jerk abolished in 49.2 per cent. of 65 children with croupous pneumonia. This occurred in some instances at a time when the lung findings were still dubious. In 12 cases in which the date of the return of the reflex was noted it was observed in 6 on the day of the crisis, in 4 on the following, and in 2 on the second day. He thinks that this loss of the knee jerk may be found a valuable diagnostic sign.

92. **Relations Between Cancer and Tuberculosis.**—Weinberg has been able to collect statistics in regard to the prevalence of tuberculosis in the families of persons dying of cancer in Stuttgart and vicinity. The tabulated findings speak decidedly against the assumption that the relatives of cancer patients are affected with tuberculosis more than others. His figures include the years from 1773 to 1902 inclusive.

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

A TEXT-BOOK OF HISTOLOGY. By F. R. Bailey, A.M., M.D., Adjunct Professor of Normal Histology, College of Physicians and Surgeons, Medical Department, Columbia University, New York City. Second and Revised Edition, Profusely Illustrated. Cloth. Pp. 475. Price, $3.50 net. New York: William Wood & Company, 1906.

APPLIED BACTERIOLOGY, An Elementary Handbook for the Use of Students of Hygiene, Medical Officers of Health, and Analysis. Revised and edited by C. G. Moor, M.A., F.I.C., with the Coöperation of R. T. Hewlett, M.D., F.R.C.P., D.P.H. Third edition. Cloth. Pp. 479. Price, $3.00 net. New York: William Wood & Company, 1906.

THE DOCTOR'S RECREATION SERIES. In the Year 1800. By S. W. Kelley, M.D. Being the Relation of Sundry Events Occurring in the Life of Dr. Jonathan Brush during that year. Vol. III. Cloth. Pp. 421. Price, $2.50. Akron, Ohio: The Saalfield Publishing Company.

TOXICOLOGY. The Nature, Effects and Detection of Poisons, with the Diagnosis and Treatment of Poisoning. By C. M. Riley, M.D., Professor of Chemistry and Toxicology in Barnes University, etc. Third Edition, Revised and Enlarged. Cloth. Pp. 215. Price, $1.50 net. Philadelphia: P. Blakiston's Son & Co., 1906.

COMMENTARI DI CLINICA MEDICA Desunti Della Morfolgia del Corpo Umano. Prof. Achille DeGiovanni, Direttore della Clinica Medica Generale Della Regia Universita di Padova Senatore del Regno. Parte Speciale, illustrata da figure E Tavole. Vol. Primo. Paper. Pp. 429. Price, L. 8. Milan: Uirico Hoepli.

THE NERVOUS SYSTEM OF VERTEBRATES. By J. B. Johnston, Ph.D., Professor of Zoology in West Virginia University, with one Hundred and Eighty Illustrations. Cloth. Pp. 370. Price, $3.00 net. Philadelphia: P. Blakiston's Son & Co., 1906.

THE MEDICAL STUDENTS MANUAL OF CHEMISTRY. By R. A. Witthaus, A.M., M.D., Professor of Chemistry, Physics and Toxicology in Cornell University. Sixth Edition. Cloth. Pp. 820. Price, $4.00 net. New York: William Wood & Company, 1906.

AIDS TO GYNECOLOGY. By A. S. Gubb, M.D., M.R.C.S., late Resident Obstetric Physician, Westminster Hospital, Fellow of the Royal Medical and Chirurgical Society, etc. Fourth Edition. Cloth. Pp. 136. Price, $1.00 net. New York: William Wood & Company.

HISTORY OF OSTEOPATHY, and Twentieth-Century Medical Practice, by E. R. Booth, Ph.D., D.O., Cincinnati. Cloth. Pp. 419. Cincinnati: Press of Jennings & Graham.

AIDS TO OBSTETRICS. By S. Nail, B.A., M.B., D.P.H., Cantab., M.R.C.S. Sixth edition. Cloth. Pp. 145. Price. $1.00 net. New York: William Wood & Company.

The Journal of the American Medical Association

Published under the Auspices of the Board of Trustees.

VOL. XLVII. CHICAGO, ILLINOIS, NOVEMBER 3, 1906. No. 18.

Original Articles

THE ATTITUDE OF THE CLINICIAN IN REGARD TO EXPOSING PATIENTS TO THE X-RAY.*

DAVID L. EDSALL, M.D.

Assistant Professor of Medicine, University of Pennsylvania; Woodward Fellowship in Clinical Chemistry, William Pepper Laboratory of Clinical Medicine.

PHILADELPHIA.

In its relation to medical practice, one of the most remarkable things about the *x*-ray is the tardiness with which there was any realization of its power of producing very marked changes in other tissues than those superficially situated. So large a number of persons have for years been exposed to the action of the *x*-ray that it seems strange, indeed, that, while it is now known to have very decided and sometimes profound constitutional effects, the recognition of such effects by clinicians has come only after years of use, and chiefly because of purely empirical and even haphazard clinical observations. In fact, for some time after it became reasonably evident that it influences the general organism, many persons persistently doubted whether the general effects were actually due to the *x*-ray.

X-RAY AND METABOLISM.

At present this doubt is thoroughly dispelled, for more extended trial with patients and with animals of the clinical effects of exposures, histologic studies of the tissues of human beings and of animals that have been exposed, and investigations of the influence of the *x*-ray on metabolism have all shown that it has in some instances, and particularly on some tissues, a most energetic and powerful effect. In spite of the continued and already extremely impressive accumulation of facts relating to this point, there is as yet, it appears to me, an insufficient appreciation of its importance to clinicians. With agents that are introduced nowadays for diagnostic or therapeutic purposes, it is customary, as a rule, to study the manner of action, to reflect carefully on the character of the cases in which the effects are likely to be useful and those in which they may be harmful, and particularly to determine all these points, as far as possible, by purposeful experiments before such agents are used freely with human beings. With the *x*-ray, on the contrary, the method that has been adopted has been to try its effect for both diagnostic and therapeutic purposes on all manner of conditions, and only gradually, largely by painful experience, to learn that it may have dangerous effects, and seems usually to have noteworthy general effects if the organs active in metabolism are exposed to its influence; while, at the same time, in this somewhat hazardous way, it has been empirically or by lucky chance learned that some general affections are benefited, some are not in any noteworthy degree altered, and some perhaps are harmed.

Partial justification for the risks that have been run may be found in the novel power of the *x*-ray to picture many conditions of the internal organs, when this, of course, had previously been wholly impossible. The manifestly great value of this from a diagnostic standpoint, and the fact that profoundly dangerous effects are unusual and other less dangerous but nevertheless deplorable results of its use are often unnoticed for a long time or have but an inconspicuous relation to the exposure to the *x*-ray, led to a rather natural and wholly humane desire to determine as widely as possible its value in diagnosis; and an empirical study of its therapeutic relations somewhat naturally followed this. It is not surprising that some of the evil results, sterility, for example, were long overlooked, for this effect is not one that becomes apparent readily; and it could with difficulty have been decisively attributed to the *x*-ray, were it not that, the possibility having once arisen, experiment readily demonstrated conclusively that exposures may produce it. The same is true to a less marked degree of nephritis, for this affection may run so silent a course as to have little evident relation to its cause; and, likewise, late toxic reactions, as well as mild and rather indefinite early toxic reactions, are difficult to attribute clearly to the *x*-ray unless attention is carefully directed toward proving this point. Nevertheless, it can hardly be said, I think, that, because its manner of action was unknown, the empirical method of determining which cases were suited and which were unsuited to *x*-ray exposures was necessary, if an agent so evidently valuable was to be used at all. We are not, as a rule, in haste to experiment with human beings in regard to the effects of new drugs until we have determined whether or not they have noteworthy constitutional effects, and, if they have such effects, which tissues in particular they influence; but in the case of the *x*-ray no extensive attempt was made to determine that it had general effects until remarkable results of its empirical use, partly favorable and partly disquieting, demonstrated that it actually has.

That the empirical and not the experimental method of study was first used with the *x*-ray is, I believe, much more largely the fault of those of us who are medical and surgical clinicians than of those who are specialists in the use of the *x*-ray; for, in the first place, the latter, in a large proportion of instances, receive their patients from clinicians for the single purpose of having them exposed to the *x*-ray, the clinician being responsible for its use, while the *x*-ray specialist merely carries out the clinician's orders in a skilful manner, and, in the second place, it is essentially the duty of the clinician, before any measures are recommended by him, no matter who conducts them, to determine or to have determined the main features of its good or bad general effects.

* Read in the Section on Practice of Medicine of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

As has already been stated, we now have sufficient evidence of decided general effects, and there is no longer any question that we should, as far as possible, decide on its use in the same manner as we determine with other agents whether they shall or shall not be employed. It appears to me, therefore, to be of much importance to determine, as far as we may, the general nature of its action, in order that an agent that has already become so valuable, especially in diagnosis, may not have further discredit thrown on it through encountering dangers in its use that might have been avoided by proper study, and in order that its usefulness may be rationally extended into proper channels. A somewhat extensive series of studies of the effect of the *x*-ray on metabolism in various medical conditions that I have made in the last eighteen months, part of which I have described, part remaining as yet unreported, together with some investigations of others on the same point, have shown that the influence on metabolism is, in some instances, most violent; that it occurs even in normal persons, and that apparently when a general influence is clinically evident it is always associated with decided changes in metabolism. These changes in metabolism are due largely, if not entirely, to tissue destruction that occurs chiefly in those tissues rich in nucleoprotein, and they are evidenced most particularly by an increase in the total nitrogen output, with ordinarily a relatively large output of uric acid, purin bases and phosphates, the substances that indicate the degree of nucleoprotein destruction. Extensive histologic studies by various authors, among whom Warthin is most conspicuous in this country, show that the special tissues most severely affected are the bone-marrow, spleen and lymphoid tissues; the effect on these tissues being, indeed, so much more marked than on any others as to be almost specific.

My studies in metabolism have further pointed out some facts that were previously less clear or not at all evident and that are of very considerable clinical interest and importance. For example, they have shown that at times a single exposure of ordinary severity may have a most profound influence on metabolism and one that may show itself for many days afterward. The effect of an ordinary dose may, in fact, be more severe than the effect of a similar dose of any other therapeutic agent with which I am acquainted, and may either be extremely useful clinically or so dangerously violent as to hasten death, and perhaps even to cause it when it would otherwise have been avoided. I would note, also, that in one instance an exposure for an *x*-ray picture, only eight seconds in duration, although actually a moderately severe exposure, produced so striking an effect in one patient (a case of unresolved pneumonia) that he excreted more than double the amount of nitrogen and nearly double the amount of chlorids that he had passed in equal periods previously; the effect in this case having been highly beneficial, but so violent that in some disorders it might evidently have been most dangerous. This point is of interest and importance, in that it demonstrates the possibility of occasional dangerous effects from the mere diagnostic use of the *x*-ray.

Further, I would direct especial attention to the suggestiveness of an observation that I made when studying the metabolism of a case in which a severe toxic reaction occurred. I have the records of three cases in which, after one exposure, there was a reaction so severe as to make the patient profoundly ill, and in two of these cases death occurred, while the third patient had a narrow escape. In only one instance was I personally responsible for the use of the *x*-ray. In two of these cases I was studying the condition of metabolism before the reaction occurred, and I continued the observations afterward, and was thereby enabled to determine that with the reaction certain marked changes occur that had not previously been noted and that help, I think, to make clearer the nature of this disturbance. The special features of metabolism in these cases I have described elsewhere and need not repeat, but the point that I wish to emphasize here is that in one of these cases it was clinically not clearly evident that the *x*-ray exposure produced the severe illness that followed it. Indeed, the careful clinician that had charge of the patient had not considered the probability that it was due to that cause; for the man had been more or less ill for some time, and it was rather naturally supposed that the increased illness was merely an accentuation of the previous condition and that it occurred at the time it did through pure coincidence. But the patient's metabolism showed the same peculiar changes as those seen in another case during what was clearly a severe and almost fatal reaction to an *x*-ray exposure, and I think, therefore, that there is little, if any, doubt that the added symptoms in the man under particular discussion were due to the *x*-ray.

I would also particularly note that this man received an intentional and direct exposure only over one arm from the elbow down; though the trunk was not screened, and hence he undoubtedly got a general exposure which, while distant, was nevertheless an exposure to the deeply penetrating rays. It was, however, mild and was of but five minutes' duration, the intensity of the general exposure having certainly been less than is commonly used in their diagnostic or therapeutic exposures. In addition to this, I would draw attention to the fact that the other patient whose metabolism I studied at the time of the toxic reaction, and who showed profound clinical symptoms and violent disturbance of metabolism, received what Dr. Pancoast tells me was the mildest exposure he had ever given.

It seems to me that the moral to be drawn from these cases is that we must be on the watch for mild or moderate symptoms, as well as for severe ones, after *x*-ray exposures; and must be prepared to determine fairly and justly whether unfavorable symptoms of some degree are not much more commonly due to the *x*-ray than we have hitherto believed and whether their relation to the *x*-ray has not been obscured by pre-existing disorders, which, instead of the *x*-ray, have been held responsible for the increased symptoms. I think most conscientious and conservative *x*-ray specialists already believe that, at least to some extent, this is true, and it appears to me to be highly probable, for, as I have said, even extremely mild exposures may produce very great alterations in metabolism, and it is but natural that this might not uncommonly cause unfavorable symptoms in persons that already had serious disease.

CARE NEEDED IN USE OF X-RAY.

In consideration, then, of the various facts that we have learned in recent years I believe that we should recast our attitude in regard to the use of the *x*-ray even more decidedly than we have done. As far as I am able to judge, the great majority of clinicians look on the *x*-ray, first of all, as an agent that makes valuable pictures and that does good in some diseases; and only secondarily and somewhat distinctly as an agent that has powers for harm and has been known to do harm. The

attitude that appeals to me as a suitable one for the careful clinician to assume is that the *x*-ray is, first of all, an agent that has as active an effect on the organism as has a powerful dose of medicine; that it is not to be used at all, therefore, unless there is some reasonably evident useful purpose in view; that with those that are seriously out of health it is to be used at first tentatively and with brief and mild exposures; that in case fairly definite contraindications can be found to exist persons that present such contraindications shall not be exposed at all, unless cogent reasons for doing so seem to outweigh those to the contrary; and, finally, that the clinician should not order a patient to be exposed to the *x*-ray unless he has taken measures of a simple and reasonable character to determine that there are no easily recognizable conditions present that appear to contraindicate its use, or, if such are present and he still desires to use it, he should acquaint the *x*-ray specialist of the fact of their presence, in order that especial caution may be exercised. Furthermore, the clinician should know that the individual *x*-ray specialist to whom he refers patients protects habitually, as far as this can be done, all parts except those that require exposure, by properly screening them.

These rules may appear somewhat severe, in contrast with the easy freedom with which the *x*-ray has long been used, but I am sure that most thoughtful *x*-ray specialists will agree with me that they are, in the main, proper, and I know that a limited number of clinicians do nearly all these things already. I may seem extreme in having purposely constructed my statements so that they mean that a physician or surgeon should not lightly and without considerable knowledge of his patient have him exposed to the *x*-ray for either diagnostic or therapeutic purposes. I believe that this is a proper attitude, but I would hasten to explain that I do not wish to exhibit or to excite in others an hysterical fearfulness of the *x*-ray or the feeling that the dangers are imminent and ever present. I shall perhaps make myself clearer through an analogy with the use of anesthetics: There are dangers associated with their use, and no one thinks of recommending that they be used unless he has a clearly defined purpose in doing so. Even with persons apparently well, it is a general custom to determine first that the patient is not the subject of any disease that renders the use of an anesthetic possibly or certainly dangerous to a degree that makes one question the wisdom of using it at all with him individually, and if such disease be found and it is still decided to be best to proceed both surgeon and anesthetizer do so with particular caution. Such precautions are taken almost automatically nowadays and no one considers them unreasonably burdensome.

What I have said in regard to the use of the *x*-ray amounts to much the same thing, merely modified somewhat to suit the different conditions. I would not urge that the *x*-ray be used, each time that it is employed, with ponderous and fearful thought of its dangers and that it be used only when one unwillingly feels that he can not escape it; but I would urge that its unnecessary use be discarded, and particularly its repeated use, when one exposure has given all the information that is likely to be gained and when further exposures are undertaken largely from restless diagnostic curiosity. With cases in which rapid diagnosis of fractures or the like is desired, or when a small area is to be treated for epithelioma or other superficial disease, I would not advise hesitation in its use or recommend any especial precautions, except the extremely important precaution of limiting the exposure as carefully as possible to the area that is intentionally exposed. It is, I think, part of the clinician's duty to his patient to determine that the *x*-ray specialist that does the work recognizes the necessity for habitually doing this. Even with robust persons it is desirable, simply because it is always unwise to administer to any one an unnecessary dose that has an active and ill-understood effect on metabolism, and this is still more true if repeated exposures are given. With persons that are already seriously out of health it is even more urgently desirable, as is emphatically illustrated by the case that I have noted, in which a severe reaction followed an exposure of the lower part of one arm, and in which this could probably have been largely or entirely avoided had the other portions of his person been protected.

In cases that require extensive exposures, even though these be only over the extremities, and even though the trunk can be protected, we are treading on somewhat more dangerous ground and should go somewhat more cautiously. I have seen one case of pernicious anemia in which an exposure over the thighs produced a reaction that was the cause of a violent access of symptoms soon ending in death. The bone marrow is known to be one of those tissues that exhibit peculiar sensitiveness to the *x*-ray. Hence, when large areas of marrow are exposed, bad results may readily follow. In healthy persons, the possibilities of harm are so distant that they probably do not deserve very serious thought, but it is desirable that before exposure an examination of the patient, which should include an ordinary examination of the urine and some consideration of the general features of his case, should have furnished evidence that he is reasonably healthy. If he is distinctly out of health, I think that the indications for the use of the *x*-ray, even for diagnostic purposes, should be definite and at least moderately forcible before it is used over extensive areas. If he presents certain forms of disease that I shall mention soon, I think the *x*-ray should be avoided, if possible, and, if it is employed at all, it should be used with great caution and under the stress of urgent indications.

In the case of exposures of the trunk, all I have just said may be applied with some added emphasis. Healthy or moderately healthy persons are not at all likely to be harmed by them, but patients should not have them given in the first instance or have them repeated, unless there is good occasion for doing so, and unless it has actually been determined that these persons are not seriously out of health. With persons whose health is decidedly disturbed, there should be serious consideration of the propriety of extensive exposures before they are undertaken; there should be a tendency to avoid them unless they are very distinctly indicated; and one should have as clear a knowledge as possible of the patient's general condition before ordering the exposure. I have some doubt, even, of the propriety and safety of the use of plates and the fluoroscope in the diagnosis of cardiac and pulmonary disease, in case the patient has much circulatory incompetence or a noteworthy degree of infectious toxemia; and in such conditions I especially question the wisdom of the frequent and often rather regardless use of this method that has not uncommonly been adopted in recent times by enthusiasts. Personally, I use the *x*-ray for diagnosis in both cardiac and pulmonary disease, but I use it only when it seems

especially desirable because other methods are insufficient, and in employing it I try to use well-considered caution.

In bringing together the limitations to be placed on the use of any measure, one escapes with difficulty, if at all, the danger of over-emphasizing the evils. I have tried to avoid this, but, lest I have not succeeded in doing so, I would again insist that my purpose has not been to urge a general restriction of the use of the *x*-ray in all sorts of cases, but rather to plead for its use in a manner that guards, as far as possible, against dangers that are, in occasional instances, known to be great and that are probably not uncommonly encountered in milder and less evident forms. I have, further, desired to urge that occasionally, in cases that past or future experience may lead one to think especially unsuitable, its use should be discarded altogether or should be undertaken only with caution and after a just balancing of the good and evil chances has made the latter appear to be the lesser. I have insisted on caution with all those that are seriously out of health, unless the exposure is limited to a narrow area, and I think reasonable conservatism justifies this view. A certain degree of freedom must necessarily be exercised in deciding which cases require especial caution and much more knowledge and experience will be needed before we can be generally accurate in this regard.

DISEASES THAT SUGGEST SPECIAL DANGERS IN USE OF X-RAY.

There are at present, however, certain points in our knowledge that indicate that the most noteworthy dangers are to be expected in those diseases in which there would be particular difficulty in completely disintegrating and in excreting the products of the tissue breakdown that the *x*-ray causes; and two groups of disorders seem to deserve more careful consideration in this respect than any others with which we are as yet familiar.

One of these has become pretty well known. Clinical and pathologic observation has shown that nephritis may follow *x*-ray exposures, and the enormous increase in excretion that sometimes follows exposure makes it evident that the kidneys are likely to suffer. From the occasional occurrence of nephritis, therefore, as well as from observations on metabolism, we must conclude that with those patients who already have nephritis or those whose kidneys are under especial strain *x*-ray exposures should be guardedly used or excluded.

The other group has been suggested to my mind by the fact that all the cases in which I have seen evidently serious results were already subjects of a considerable degree of toxemia. It would seem highly probable that a person already struggling with a toxemia would be more likely than a normal person to suffer ill effects to his organs of metabolism, as well as to his kidneys, if, in addition to his previous burdens, he were suddenly required to complete the disintegration and excretion of a large mass of broken-down tissues. It appears to me, therefore, that those who are to any noteworthy degree toxic from metabolic disorder or infectious disease should not be exposed without great caution and without urgent reasons.

It is probable that a third group with which we should proceed very cautiously is constituted by those cases that are very anemic. The tissue-destroying effect of the *x*-ray is so largely exerted on the blood-building organs that it might readily cause serious embarrassment if these organs are already insufficient, and I have notes of two patients with pernicious anemia who became profoundly, indeed, fatally, ill after one exposure. On the contrary, I know two patients with the same disease that were benefited, one very greatly and rapidly benefited, by *x*-ray treatment, and it is possible that in some circumstances ordinary doses may destroy or at least seriously damage large portions of the blood-building organs, while in other circumstances the same dose may influence them favorably. It is possible, too, that toxemias may at times be favorably influenced, and it must likewise be admitted that the effect is not damaging in every case of nephritis. Nevertheless, in our present limited state of knowledge, it seems wise to be exceedingly cautious with cases of nephritis, of marked toxemia, and of decided anemia, and particularly with those cases in which there is pronounced anemia in association with a distinctly toxic state. I believe that further clinical, metabolic and other accurate studies of the contraindications, as well as of the indications, for the use of the *x*-ray constitute a valuable field of investigation, and it seems to me to be extremely desirable that clinicians make it a general custom to observe patients very carefully after *x*-ray exposures, in order to determine whether noteworthy after-symptoms seem to be common, even though the patients appear to be doing well under the exposures, and particularly to make careful studies of the urine in a large number of cases. The result of such observation would not be to throw further discredit on the *x*-ray, but to make it possible to use it more rationally and with more logical judgment.

I may not improbably be met with the objection from various sources that as yet there are but a limited number of dangers known to be associated with the use of the *x*-ray and that the number of cases known to have been seriously damaged is small. I think this objection may be met with sufficient force by the statement that the dangers of the *x*-ray have been recognized for only a comparatively short time, and that there has consequently been relatively little opportunity to determine how great and how numerous they are; and that, in spite of this, a very considerable number of cases that have been injured have been described. The histologic studies and the studies of metabolism that have thus far been made make it wholly rational to expect that the dangers are more frequent than we yet know, and the standpoint that appears to me to be wise and proper is not to belittle the dangers and attempt blindly to escape them, but to determine in whatever ways are open to use what they are and how they may be avoided.

THERAPEUTIC VALUE OF THE X-RAY.

I have thus far dealt almost entirely with the points that should limit or discourage the use of the *x*-ray and I have done this purposely because, while these points are still hazy, they are, nevertheless, more definite and demand more immediate attention than those that relate to new indications for its use. Still, as I said earlier, one should have in mind not only the determination and restriction of the dangers, but also the discovery of new channels of usefulness. An agent that has a profound effect on metabolism is not likely to exercise this effect solely in an evil way if proper opportunities for doing good with it are sought out. It is evident already that in leukemia and in some other general disorders metabolism may be stirred up by the *x*-ray to the accomplishing of at least transitory good, and it appears to me probable that some other disorders of metabolism not yet known to be benefited by the *x*-ray might be im-

proved through its use. Up to the present my observations in this direction, which have been limited in number and have been undertaken only in cases that seemed to be proper to subject to exposures, have remained of little or no therapeutic value, except in one condition, in which they have been quite encouraging.

I have had the *x*-ray used in two cases of gout, a disease that has repeatedly been treated in this way. The clinical results in other instances, as well as in these two cases, have, I think, been doubtful or discouraging. The studies of metabolism that I made with Dr. Fife in these two cases, during the time that they were under treatment, showed that the exposures had no influence in stopping or warding off the disturbances of metabolism that are associated with the attacks. Likewise, in two cases of diabetes that were subjected to this treatment no changes of consequence could be demonstrated in the clinical condition or in the excretion of sugar and acetone bodies. I tried the effect of the *x*-ray, also, on a case of persistent headache associated with a deposit of oxalates in the urine, and, while the increase in general metabolism that has usually been observed was noted in this case, there was no change in the amount of oxalic acid that was determined to be present and the clinical condition was not altered.

In several cases of unresolved pneumonia I have had promising results. I used the *x*-ray in these cases because I believe that it probably acts chiefly through increasing the velocity of some ferment processes and because in unresolved pneumonia it is probable that the ferment processes that should and ordinarily do dissolve the exudate are ineffectual. In three such cases the clinical effect was a rapid clearing up of most or all the signs, and in two of these cases in which Dr. Pemberton and I studied the metabolism we observed a tremendous influence that was coincident with the improvement in the physical signs, the metabolic alterations having been of much the same quality and degree as those that are seen at the time of an ordinary successful crisis. These latter results are, then, encouraging. While the others mentioned are not so, I believe that there is certainly constructive work to be done in searching out the therapeutic relations of the *x*-ray, and not simply the more destructive type of work that I have chiefly discussed earlier. I think this is particularly true if the work be planned with the view that this agent has a lively influence on metabolic processes, particularly on those that occur in the spleen, the lymphatic tissues, and the bone marrow, and if it be carried out with a calm but definite appreciation of the restrictions that should be placed on any such experiments in therapeutics.

DISCUSSION.

DR. E. J. BROWN, Decatur, Ill., said that the question of deciding which patients are the best subjects for the *x*-ray is one very difficult to answer. He did not know of any criterion by which to decide this except by trial in each individual case. He had given 150 exposures to one patient without any ill-effect. Another patient, who had been in bed for seven years with paralysis agitans, was successfully treated after 30 exposures for epithelioma of the face. A patient with lupus after 200 exposures showed a gain in weight. In another patient a small epithelioma of the ala of the nose, after eight or ten exposures, and without any cutaneous burn, was entirely cured. But inside of a year this patient developed a facial paralysis and general ophthalmoplegia with paralysis of the branches of the fifth nerve and with marked trismus. The *x*-ray experts to whom he had related this case regarded it as simply a coincidence and as being due to an old otitis media, from which the patient suffered.

DR. J. C. PRICE, Scranton, Pa., said that absolute precision is necessary in these matters. In his own experience he had exposed a number of patients with nephritis and with no untoward results. The urine had been watched and studied most carefully. In one case, that of a patient with a chronic interstitial nephritis, there was a wonderful improvement. In another case of a woman with a large carcinoma of the breast, there were exposures for eight months and an apparent recovery followed. At the time of beginning the exposures the urine was loaded with albumin and there were a great many casts, as well as many of the waste products in the urine. A gradual improvement followed the use of the *x*-ray, and after its discontinuance she lived four or five years. He said he would like to know the results of the *x*-ray in leukemia.

DR. D. L. EDSALL, Philadelphia, said that he did not at all mean to indicate that he considered that persons with certain diseases are to be denied the use of the *x*-ray absolutely. He merely meant that cases of nephritis, as well as those with other diseases, should never have the *x*-ray used unless it seems distinctly important that it should be used. If there are indications for its use and, at the same time, contraindications, careful consideration should be given to the patient's condition; and the question should be decided, in accordance with the individual case, whether the advantages of using the *x*-ray are greater than the possible disadvantages. His objection had been raised chiefly against the common attitude of the profession, in which, until very recently, there has been little consideration given to the danger of the *x*-ray producing serious damage besides the possible burns that have long been recognized. Recently it has been clearly shown that dangerous general reactions may occur; but in spite of this, only a few days before, for example, at a meeting of prominent medical men, Dr. Edsall had heard several persons speak in a very easy manner of exposing patients to the *x*-ray daily for various purposes, such as locating the exact position and the progress of foreign bodies in the intestine, when very little was to be accomplished by such repeated exposures except to satisfy diagnostic curiosity. The *x*-ray should be used guardedly, and always with the feeling that one is using a very powerful agent; and one should know as exactly as possible the condition of the patient before resorting to its use. If contraindications are present, avoid its use entirely, if possible; but if it seems important to use it, do it very guardedly.

THE EFFECTS OF PERICARDITIS ON THE HEART.*

N. S. DAVIS, M.D.

CHICAGO.

The few minutes allotted to me make it impossible to do more than point out the most important effects of pericarditis on the heart and their significance. This subject, however, is not unimportant, for the lesions of pericarditis are, much oftener than they should be, undetected by practitioners. Chronic pericarditis or pericardial adhesions rarely can be detected; fibrinous pericarditis should be in a large majority of cases, but I am sure is not, and pericarditis with liquid effusion ought to be recognized always. These lesions are overlooked especially because they are secondary in almost all cases to an infection which produces other symptoms that are the most striking and hold the attention of the patient and physician.

Whenever the visceral pericardium is inflamed deeply, the muscle beneath is involved also. However, it is rare that the myocardium is greatly weakened by an acute pericarditis. Moreover, pericarditis is usually not general and, therefore, comparatively few muscle fibers are

* Read in the Section on Practice of Medicine of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

injured. A quiekened and sometimes irregular pulse is caused by irritation both of the perieardium and myocardium due to such inflammation.

Pain or oftener discomfort or distress in the region of the heart is a common symptom of pericarditis and is due to the eonstant rubbing of a denuded surface with each throb of the heart. Tenderness is more frequently observable than pain and is greatest when the costal pericardium is inflamed, although not always wanting, when the visceral surface is the seat of inflammation.

A friction fremitus is felt and friction sounds are heard both when a rough abraded perieardium is rubbed by the moving heart and when under the same eircumstances the pericardial surfaces are pulled asunder or loosened from one another, though imperfectly glued by a fibrinous or tenacious sero-fibrinous exudate of small amount. It is important to remember that friction sounds are rarely transmitted far and are, therefore, usually heard only over the heart or a portion of it. This faet is an aid to diagnosis and in sharp contrast to the usual distribution of endocardial murmurs. Most frequently they are heard at the base of the heart. Deep inspiration which often makes a pleural rub plainer usually lessens pericardial friction sounds. However, there are numerous exceptions to this general rule. I need not describe to this audience the character or differenees of these sounds and endocardial murmurs.

In a large number of eases of perieardiris, resolution occurs when the inflammation is fibrinous and the pericardium is restored rapidly to a eondition of health or only slight and harmless adhesions or trivial thickening of a surface is left as a mark of the disease.

When a thiek fibrinous exudate is formed and espeeially when a considerable serous one is, the heart sounds are distant and weaker than is normal, but frietion sounds and fremitus are wanting. The apex beat also is usually undiscoverable. If the exudate is a thick fibrinous one, the area of precordial dullness will be increased, but will not change its shape or position materially when the patient changes his position. But this is not true when there is a eonsiderable liquid effusion, for then the shape and size of the large area of precordial dullness will change as the patient shifts his position. It will be relatively small and will approach normal shape if the patient lies on his back, but if the patient sits erect will assume its eharaeteristie triangular shape with the apex of the triangle at the base of the heart. The liver also is usually displaced downward more or less because of the weight of the distended pericardium. In this position the apex beat of the heart may be seen or often vaguely felt, but not at the extreme left and lower angle of the area of dullness. Moreover, the apex beat will shift somewhat from side to side as the patient leans from right to left, for, with the swaying of the patient's body, the heart is capable of some to and fro motion in the distended pericardial sack.

Even more striking than these effects of perieardiris with effusion are dyspnea, cyanosis, an anxious countenanee small, feeble or irregular pulse and distended cervical veins. These symptoms are most marked when the effusion is rapidly developed or is very great. The eause of them is easy to comprehend. Dyspnea and eyanosis are partly due to compression of the lungs by the enlarged pericardium, but much more to the defective action of the heart which its eompression causes; neither of the eavities of this organ can expand fully and they can not contain a normal quantity of blood. Necessarily, therefore, the blood will be propelled with diminished force. Moreover, the auricles and venæ cavæ which are soft and easily compressed are so squeezed as to produce the passive congestion commonly notieed in the distended veins of the neek and sometimes in a distended and pulsating liver. Although the perieardium when enlarged presses on the bronchi, they are rarely compressed enough to cause dyspnea because of their rigid walls. But the weight of the pericardium impedes the diaphragm in its movements and is another factor provocative of dyspnea.

A distended pericardium is said sometimes to compress the esophagus so as to make swallowing uncomfortable. Very rarely, too, pressure on the recurrent laryngeals paralyzes the vocal cords. That these effects are very infrequently observed is, I am sure, true because I have not observed them, although I have seen many cases in which the perieardium was very greatly enlarged by effusions.

When the perieardium is filled with fluid, not only is the area of precordial dullness increased in front, but one may be made in the lower part of the interscapular spaee on the left side, and at the same place tubular breathing can be heard. These latter changes are due to compression of the lung.

The *x*-ray is a help in deteeting perieardial effusions. The shadow viewed from in front cast by them is more globular than the normal heart and the left border does not pulsate as the normal heart does. Viewed from the side, the triangle between the heart, the vertebral column and the diaphragm, whieh normally is a bright space, is obliterated by the shadow of the exudate which fills it. Fluetuation in shape and in position of the shadow cast by the enlarged perieardium is also readily seen when the patient changes his position.

The diagnosis of fibrinous perieardiris is often difficult, for frietion sounds are not constantly produeed; indeed, the commonest symptom is tenderness, and occasionally a diagnosis is justified when there is a good cause for pericarditis and the intercostal spaces over the heart are distinctly tender.

In a small majority of cases in my experience, however, no symptoms can be found to suggest the trouble.

Only when pericarditis eomplicates a disease which already has caused great enfeeblement, such as a caehexia Bright's disease or endocarditis, does the myocardial derangement produced by a fibrinous inflammation endanger life. It may then eause very rapid or irregular pulsation and often progressively feebler beating until the heart stops, exhausted.

On the other hand, if there is mueh serous effusion, a diagnosis is not diffieult. The effects of effusion on the heart make plain the basis of a diagnosis. When an effusion is small or very moderate, the increased area of dullness is often wrongly ascribed to cardiae dilatation. This diagnosis seems more plausible because of the rapidity and feebleness of the heart sounds and feebleness or absence of the apex beat. The shape of the area of dullness and the partial or total obliteration of the normal right angle or comparatively sharp one between the right border of eardiac dullness and upper border of liver dullness which an effusion eauses should help greatly to a correct diagnosis. However, as most patients who suffer from pericarditis are examined in a recumbent posture, these physical changes are not very evident. Under these cireumstances, also, preeordial tenderness is always a great aid to a diagnosis.

In children and in adults when the chest wall is thin the edge of the heart can be felt through the intercostal

spaces and especially when it is dilated and hypertrophied. If a finger is drawn along an intercostal space from the axilla to the sternum and at the same time pressure is made from point to point along this course, it meets with marked resistance at the edge of and over the heart, but when the pericardium is filled with fluid less resistance is felt and sometimes even a sense of elastic resistance is experienced.

Mediastinal tumors are another source of error, for they also often cause enfeeblement or disappearance of the apex beat and an extensive area of dullness in the center of the chest. However, its shape is less regular and not that which I have described as characteristic of pericardial effusion. Moreover, it must not be forgotten that mediastinal tumors sometimes produce a pericardial effusion and then a commingling of symptoms of both will be found, which will make a diagnosis difficult and sometimes a complete one impossible. I have in mind two such cases, in only one of which was a complete diagnosis possible. In the other the heart was encapsuled by a mediastinal tumor and in the pericardial cavity the heart was compressed by an effusion which could not distend the thick rigid capsule about it.

Of the conditions which make difficult the recognition of a pericardial effusion, encysted pleurisies are always mentioned. It is easy to imagine the various symptoms which they might cause, but in my experience they are rarely located where they can be confounded with a pericardial effusion. I do not recall a single instance.

I need not say that the character of the fluid in the pericardium can be determined only by aspirating some of it. While with rare exceptions it is serous, it may be bloody or purulent.

There are another series of effects of pericardial inflammation on the heart which I have not yet mentioned. I refer to the effects of adhesions between the pericardial surfaces. Usually these are slight and about the base of the heart. They rarely interfere with the function of the heart to a serious or even noticeable extent. However, when they are developed in those who are cachectic or enfeebled by some chronic disease, they may cause the usual symptoms of asystole; symptoms which, as a rule, are slowly developed. But no symptoms characteristic of pericardial adhesions are produced.

When adhesions are extensive over the anterior surface of the heart involving the apex or its neighborhood as well as the base, and when the pericardial inflammation which produced them has also caused unusually firm fixation of the costal pericardium to the sternum and adjacent ribs, modifications of the phenomena produced by the heart will be caused which make a diagnosis possible. These phenomena are (1) systolic retraction of the apex and intercostal spaces over the heart and often of the lower end of the sternum and epigastrium; (2) diastolic projection of the chest; (3) diastolic collapse of the cervical veins, and (4) a fixed, unchanging area of cardiac dullness in every phase of respiration.

The first of these symptoms is due to the transverse contraction of the ventricles of the heart. This would be better understood if we were to make a diagram in which the heart is represented as fastened firmly to the chest by its anterior surface and to the diaphragm below, often to the spine behind. If now the transverse diameter is lessened, the precordia must be drawn in, and if the diaphragm is adherent to the heart it will be pulled up and will help to draw in the epigastrium. The lifting apex beat normally is caused by the attempted straightening of the arch of the aorta when the blood is forced into it, and lengthening of the ventricles when their transverse diameter is lessened during systole. But when the pericardium and heart are fastened firmly to the wall of the thorax, straightening of the aorta is impossible and lengthening of the ventricles causes the apex to descend against the diaphragm not to make an outward thrust against the chest wall.

It must be remembered, however, that similar, though usually less pronounced systolic retraction is sometimes caused by adhesions only at the base of the heart, and by atheroma of the aorta and stenosis of the aortic valves.

A diastolic projection of the chest is due to its assuming its normal position after retraction and to the simultaneous distension of the ventricles with blood.

The diastolic collapse of the cervical veins is doubtless due to these same causes, for the sudden production of negative intrathoracic pressure on the great veins in the chest when the thorax expands during diastole and simultaneous emptying of the auricles causes a rapid emptying of the large veins near the heart during diastole.

Of all these symptoms the most trustworthy is the unchanging shape of the area of precordial dullness during inspiration and expiration. That this condition must exist seems self-evident when a pericarditis and an extra pericarditis fasten the anterior surface of the heart to the wall of the chest, for then it is impossible for the left lung to overlap the heart to an appreciable extent.

But cardiac synechia, partial or extensive, is rarely recognized during life, for the conditions which will produce the symptoms just enumerated are not common.

Asystole may be expected to develop sooner or later when there are extensive pericardial adhesions, but if they are formed in early adult life and the heart is not soon after their formation overtaxed, compensation will be affected by cardiac hypertrophy and functional adequacy may be perfect for many years. At autopsy I have seen numerous examples of this. Therefore, except in those who are enfeebled by a chronic disease, or in those who are young and who will tax their heart to keep pace with growth, pericardial adhesions are not very dangerous to life. However, even if the adhesions are well compensated for a severe acute illness may break this compensation and precipitate a condition of asystole. Moreover, when pericardial adhesions complicate chronic valvular disease of the heart, as they often do, both the peri and the endocardial disease arising from the same infection and usually from rheumatism, the adhesions will help to increase dilatation and hypertrophy and to hasten asystole. Under these circumstances a lesion, which from the extent of the involvement of the valve might not be grave, becomes so.

Pericarditis is not generally a fatal lesion. It is variously estimated that from 50 to 75 per cent. of all cases recover. Rheumatic pericarditis, as compared to that caused by other infections, is benign. Hemorrhagic and purulent pericarditis is almost uniformly fatal; always so unless recognized and successfully treated.

About one-third of all cases of pericarditis are serofibrinous; about one-sixth are hemorrhagic or purulent; one-twelfth tubercular; in approximately the same number there is total synechia, but in one-third there are adhesions between part of the pericardial surfaces.

A rapidly developed effusion is dangerous, but recovery can be effected or life prolonged even in a majority of these cases by aspiration and treatment.

A large, slowly-developed effusion is not as threatening or immediately dangerous, and a small effusion is of no greater gravity than fibrinous inflammation.

A prognosis must be influenced largely by the condition of the muscle of the heart at the time of the pericarditis. Chronic alcoholism and the cachexias of cancer, Bright's disease, and tuberculosis, make slight the possibility of prolonging life. Pericarditis in these cachexias is usually due to a terminal infection and is often the immediate cause of death. It is also a much more serious complication of pneumonia than of pulmonary tuberculosis and a very grave complication of sepsis.

As might be expected, it is most dangerous in the earliest and latest years of life.

ANGINA PECTORIS—TRUE AND FALSE.*

JAMES M. ANDERS, M.D., LL.D.
Professor of Medicine and Clinical Medicine in the Medico-Chirurgical College.
PHILADELPHIA.

True angina pectoris is, comparatively speaking, an uncommon condition. The mechanism involved in its pathogenesis is imperfectly understood, and the views found recorded on the subject in medical literature are, for the most part, hypothetieal. Two facts, however, are generally accepted: First, that structural changes of the eardio-vascular system are present in the immense majority of cases, the chief among them being arterial sclerosis, especially of the coronaries, aortie regurgitation, aortitis (syphilitic?), hypertrophy, aortic aneurism, adherent pericardium and myocardial degeneration—fatty and fibroid. These lesions may be variously combined and the instances in which a certain grade of calcification of the coronary arteries and root of the aorta, associated with more or less myocardial degeneration, has not been found in evidence postmortem, are of rare occurrence.

The second fact which passes current is that irritation or disturbance of the cardiac sensory nerves exists. Unfortunately most of the leading theories concerning the nature of angina attempt to explain the cause and seat of the pain, their authors forgetting that this symptom is but one of a group of characteristic features. While, therefore, a universally acceptable theory of the pathogenesis of this syndrome lies before us in the future, yet if the few isolated facts, which appear to be amply attested either by clinical experience or postmortem observations, were to be brought into harmonious union, our conception of the symptom-group under discussion would doubtless become less vague and indefinite than it has been hitherto.

ETIOLOGY.

Multiple views are held regarding the question of the immediate cause or causes of the precordial paroxysms and to refer briefly to the more important ones will serve my purpose. In the first place, the theory that angina vera is a neuralgia either functional or of neuritie origin, is untenable, since it neither accounts for the mental anguish and other associated phenomena (as pointed out by Osler) nor for the cases of *angina sine dolore.*

The somewhat analogous clinical phenomena presented by intermittent claudication, in which the principal pathologic condition is also arteriosclerosis, are believed by some writers to throw a welcome side light on the mode of origination of angina in some cases at least. Neurologists and clinicians concur in the opinion that the pathogenesis of intermittent claudication embraces two leading factors, namely, arteriosclerosis and angiospasm of the affected blood vessels, suddenly induced by the usual exciting factors. Typical cases, which later developed angina pectoris with fatal termination, have been reported by Charcot and others.

In speaking of the relation of angina pectoris to arteriosclerosis, Osler remarks, "the pain in angina pectoris is *sui generis,* unlike in intesity any known variety, and while its association with the coronary artery sclerosis is unquestionable, there is something additional, some other element for which, as yet, we have no explanation."[1]

There are not a few eminent observers who seriously question whether the vasomotor spasm affecting the blood vessels in angina pectoris stands in the relation of a causative factor. Says Allbutt,[2] "Are not secondary vasomotor events translated from cause to effect?" A Morrison[3] from an interesting series of sphygmograms infers that constriction of the peripheral vessels either during the course of or after an attack of angina is often the result of the attack, rather than the cause. Hill and Barnard[2] seem to have shown that intracardiac diastolic pressure is constant during large changes brought about in other pressure areas by vasomotor constriction. To effect a more or less complete relaxation of the vasoconstriction in any case in which it accompanies the seizure, however, serves to ameliorate the attack.

It must be recollected also that the leading exciting causes of angina pectoris—muscular exertion, mental emotion, gastrectasis, exposure to cold—all quickly raise the arterial tension. The occurrence of associated vasomotor spasm is true of most forms belonging to either true or false angina. The theory of intermittent claudication originally advanced by Allen Burns still finds a place in the realm of speculation, since it is impossible to conceive of coronary ischemia in connection with an unimpaired rhythm of the heart as is witnessed in many cases of angina.

The seat of the pain is undoubtedly in the heart in angina pectoris and the paroxysm itself is the result of an extra stress or strain thrown on an organ that fails to respond to a normal environment, or to the usual external stimuli. MacKenzie[4] holds that since angina pectoris arises in connection with a great variety of gross morbid lesions of the heart, there must be an exciting cause common to all cases, and this he believes to be impairment of the muscular contractility of the heart.

As *a priori* evidence, MacKenzie cites the fact that this is the function "directly concerned in furnishing the motive force to the circulation of the blood and that it is the function that will necessarily become exhausted when an excessive resistance is opposed to the contraction of the heart muscle. The opposed arterial pressure may be abnormally high, but as a rule greatly lowered, since angina vera is a late complication, or to speak more accurately, a terminal condition. In either cases the extra stress or strain imposed by the action of one or other of the existing causes will exceed the contractile power of the heart and as a consequence suddenly induce an attack."

---

* Read in the Section on Practice of Medicine of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

1. THE JOURNAL A. M. A., Sept. 17, 1904, page 775.
2. Lancet, July 18, 1903.
3 Lancet, Nov. 1, 1902.
4. "An Inquiry into the Cause of Angina Pectoris," J. MacKenzie, British Medical Journal, Oct. 7, 1905, p. 845.

This theory readily explains the cases of angina that occasionally follow an attack of pneumonia or other severe infection in advanced life in subjects of coronary disease with myocardial degeneration. I have recently seen a case in point (as a sequel of pneumonia) with Dr. Jungman, of Philadelphia. The theory of MacKenzie also elucidates a number of cases, which have been shown by observations carefully analyzed, to be independent of any coronary involvement as well as those of *angina sine dolore.*

A leading view ascribes the attack to a cramp-like contraction of the myocardium and although such a state of things might be excited by coronary infarctions, it would, as previously stated, preclude the possibility of regular and orderly rhythm of the systole.

A. Morrison[3] holds that the paroxysms are due to "the distinctive throb of the blood cast by the dilated yet powerful ventricle into the aorta and coronary system;" also that the condition may be due to the effects of neuritis, to muscular spasm and to hemic conditions, the blood exercising pressure on local diseased areas. Colbeck[5] contends that the cause of the paroxysm is a localized distension and stretching of the diseased areas in the ventricular wall, and Traube has advanced much the same opinion.

It is a common observation that stimulation of the heart in which predisposing conditions exist, more especially by the use of digitalis, which induces more energetic contraction and raises the peripheral tension, may provoke a recurrence or at all events, aggravate existing stenocardial pains. On the contrary, it is an equally familiar fact that the exhibition of arterial relaxants, e. g., nitroglycerin, is often followed by decided relief. Such considerations as the foregoing, however, do not explain why angina is admittedly uncommon among the working classes or hospital patients who present cardiac lesions identical with those met among the better-to-do in whom the syndrome is of far greater frequency of occurrence.

TRUE ANGINA.

Angina vera occurs principally in men engaged in sedentary and, for the most part literary pursuits, as well as those who follow an inordinately strenuous business career; in short, persons whose nervous mechanism is minus as the result of overwork, principally mental, with insufficient rest. An impaired nervous vitality, therefore, is to be looked on as a marked predisposing element. Is not the fact that angina is a neurosis of the heart too constantly overlooked?

This condition of the nervous system may be looked on as being neither less nor more than neurasthenia, but may there not be added some peculiar, nutritional or degenerative change in the nervous system, brought about by high nerve pressure, which finds its expression in a peculiar neurosis that serves as the predisposing element in angina pectoris?

No theory of the genesis of this syndrome is complete that does not account for *angina sine dolore,* in which the main feature is an indescribable almost painless, sensation or precordial oppression. The true essence of the condition may yet be discovered in connection with this minor group of cases. The history of an illustrative case may be briefly narrated, more particularly because of its intrinsic interest and anomalous character.

5. Lancet, March 21, 1903.

History.—M. D., female, married, aged 59 years; height, 5 ft., 2 in., weight 153 lbs. Two paternal uncles died suddenly of "heart failure," after the seventieth year of life, and one brother died at 54 of organic heart disease. The patient had had numerous recurrent attacks of follicular tonsillitis up to four years ago, and rheumatic pains at intervals, more particularly in the shoulders.

The social history embraces nothing worthy of mention save only that the menopause had been passed five years previously. The principal complaint at my first visit was constipation, which dated from the time of change of life. There was, however, slight dyspnea on exertion.

Physical examination revealed a moderate degree of emphysema and mitral incompetency in the stage of compensation.

Treatment.—The treatment during the next four years consisted of a rearrangement of the diet and an occasional laxative pill and a small daily amount of Celestine vichy.

Course.—Oct. 5, 1905, the patient complained of slight pains in both shoulders and the upper half of the precordial region with radiation to the left arm, which was also the seat of numbness. While the pains were never severe, they behaved like those of true angina, being excited by walking, facing the cold winds and mental excitement. Associated with the precordial pains was a sensation of marked cardiac oppression, and there was a moderate degree of anguish detectable. The seizures became recurrent first at intervals of a few days, and towards the close of life of about six hours. With the advance of the case the thoracic oppression was attended with a feeling of smothering or suffocation, and dyspnea also entered into the syndrome. The principal seat of pain, which was at no time severe, shifted later to the epigastrium for a time, to be followed in the course of a couple of weeks by *angina sine dolore*, the starting point of the seizures being in the epigastrium. A well marked restlessness and an almost uncontrollable desire on the part of the patient to leave her bed was present during the last few days of life. A striking feature was the manner in which the oppression recurred during a period of two or three weeks prior to death; it invariably originated in the epigastrium and right hypochondriac region, then traveled wave-like upward over the thorax, becoming most marked in the lower sternal region, and attended with dyspnea and suffocative sensations as already remarked. Neither in the epigastrium nor thorax (the heart apart) could be found evidences of disease to account for these symptoms. Objectively, the usual signs of angina pectoris were noted, especially the anxious facies and the ashy-gray appearance of the countenance.

Finally death came quickly on Jan. 15, 1906, after a pleasant chat with the nurse, without manifesting any distressing symptoms that were observed. There was neither arrhythmia nor evidence of arteriosclerosis present.

This particular form is found engrafted on a variety of structural cardiac diseases and may, therefore, be looked on as a terminal condition. I had never previously observed a case belonging to this category arise in the course of simple mitral incompetency, but one instance in the course of mitral stenosis. G. Steele[6] has reported two cases of angina pectoris occurring in patients with mitral stenosis and he believes that symptoms so similar to angina occur in this disease that there is no reason for giving them another name.

Angina sine dolore is not uncommon, as pointed out by Oliver,[7] in dilatation of the heart, aneurism of the first portion of the arch and adherent pericardium. What exactly is the essential cause of the absence of intense pains in these cases is still an unsettled question. It has been held to be on account of ensuing dilatation as was true of cases reported by Musser,[8] but

6. Lancet, Nov. 23, 1903.
7. "Angina Pectoris and Allied Conditions," Lancet, Sept. 16, 1905.
8. American Journal of the Medical Sciences, vol. cxiv, 1897, pp. 294-302.

apart from a slight increase in weakness of the systole toward the close of life, no change in the physical signs were noted in my case reported above. From the fact, however, that the use of moderate sized doses of digitalis (given as a test) aggravated the precordial pains in the earlier stages of my case, the view that increased endocardial pressure stands casually related to this symptom receives a considerable degree of coloring.

This class of cases reminds us forcibly that a distinction is to be made between intense paroxysmal precordial pains and angina pectoris; that the essence of the essential difference between so-called false and true angina is to be found in some as yet unknown agency or possibly in the different degrees of impairment of the muscular contractility in the two conditions, this being slight in the former while it is carried to a dangerous extent in the latter, principally because of the associated structural lesions.

The claim has been made by some writers that cases in which the pain originates below the diaphragm are less threatening to life, but in this opinion I do not concur. Finally, true angina pectoris may be dependent on a diet containing an excess of proteids. The toxins in the circulating blood in chronic intestinal toxemia or autointoxication may primarily cause the toxic form of false angina; this occurs ofttimes in the young at a period of life when the balance of power is with the organism and gross structural changes do not arise, but at a later period the balance of forces is with the circulating toxins and slowly progressive degenerative changes of the cardiovascular system are the result.

Obese persons who exhibit high arterial tension with arteriosclerosis and left ventricle hypertrophy may, as I have observed, develop angina pectoris as the result of a rearrangement of the dietary, so that proteids in liberal amounts are allowed and the carbohydrates greatly restricted, with a view of overcoming the corpulency. In this class of cases, there is a strong probability of effecting a cure by appropriate measures, which consist principally in rest, arterial relaxants, stimulation of the emunctories, and a return to a mixed dietary.

PSEUDOANGINA.

In 1812, Latham described false angina. The term "false" or "pseudoangina" is applied to a large group of cases in which the predominating feature is precordial pain, sometimes with radiation. This term has been objected to by many eminent authorities, but inasmuch as the condition is allied symptomatically to true angina, rendering a differential diagnosis well-nigh impossible in many instances, I favor the use of the term pseudoangina until additional light shall have been thrown on the whole subject.

At the outset, I insist that many of the slightly painful conditions affecting the precordial region in rheumatic, neurotic and hysterical subjects can not be properly regarded as falling under the head of pseudoangina.

Doubtless, the majority of cases originate in vasomotor instability and irritability, and as would be expected, they are met with in the female, more especially the hysteric type, and about the period of the menopause. Heartstrain occasioned by suddenly-induced vasoconstriction will result in pseudoangina (Nothnagel) characterized by a special set of symptoms—palpitation, a feeling of faintness, precordial pain, perspiration with coldness of the extremities and lividity. Again, the instances of angina directly traceable to autointoxication from errors of diet should be placed in the same category provided that no sub-basis in the nature of an organic lesion of the cardiovascular system is discernible. As previously stated, this variety of angina pectoris may be induced by an excess of proteids in the dietary. The recognition of the special cause and its removal if carried out sufficiently early in the course of the affection will, as a rule, lead to an absolute cure.

It will be seen that true angina and pseudoangina have causative factors and symptoms (as pains and vasomotor disturbance) in common. Spurious angina, however, differs from the true form in three leading particulars—first, gross organic lesions are absent; secondly, it differs symptomatically, and thirdly, it usually yields to appropriate treatment.

The cases of pseudoangina are divisible into three groups, namely, the neurotic, the toxic (two groups suggested by Osler) and reflex pseudoangina. The last-named clinical or etiologic type is rare in the experience of some writers and is usually classified as a subvariety of the neurotic class of cases. In my opinion, these instances are of sufficient importance to demand separate grouping. I do not include here the gastrointestinal phenomena that are found associated with true angina, but those that induce paroxysmal and intense breast-pang in subjects who present no gross cardiovascular lesions.

The fact that certain contributing factors in true angina are present in this variety is of great practical importance and explains why, apparently, typical cases of the spurious form, after the development of some gross cardiac lesion, may merge into true angina.

Cases in which apparent transition from false to true angina occurred, have been reported by Duffield,[9] Allbutt,[10] Morel-Lavallee[11] and others. I have seen two examples; the first occurred in a neurasthenic female who, while under observation for pseudoangina, developed arteriosclerosis, including coronary disease. The intensity of the pains remained uninfluenced, but mental anguish and dyspnea of a pronounced character became superadded features. A fatal attack occurred in the course of five years after the first true attack.

I may be permitted to refer to a second instance which recently fell under my notice.

A woman, aged about 40 years, who was distinctly hysterical, developed well-characterized attacks of pseudoangina at long intervals. A couple of years later indefinite signs of arteriosclerosis about the base of the heart developed, after which the symptom-complex simulated more and more closely true angina pectoris, and finally became typical of the latter condition. When I last saw the patient a slight mitral incompetency was present; this had obviously diminished the severity of the anginal seizures. I have been unable to learn the condition of the patient, who resides at the south, during the last four months.

From personal studies and experience I feel privileged to speak confidently regarding certain cases, which so far as can be determined by known methods of examination at least are non-coronary, but sometimes prove to be fraught with lurking dangers. In many cases of true angina pain alone is experienced (Osler) and this is more especially true of the milder forms. I recall a fatal case of *angina vera,* which I saw with Dr. Shivers, of Haddonfield, New Jersey, in which mental anguish and cardiac oppression were absent and during the par-

9. The Pathology of Angina Pectoris, Proceedings of Mich. State Med. Society, 1901.
10. Philadelphia Med. Jour., June 16-30, 1900.
11. Revue de Médicine, Paris, Nov. 10, 1890.

oxysms the patient exhibited great restlessness and commotion, such as commonly occurs in the false variety.

DIFFERENTIAL DIAGNOSIS.

When angina pectoris is well characterized we can differentiate it in a decisive way from the false variety by the *angor animi* and the strong sense of imminent dissolution. Many additional symptoms may be associated during the paroxysms, but are not necessarily present and only serve to corroborate the diagnosis of true agina. Among these, I would mention more particularly, respiratory disturbances, including asthma, dyspeptic symptoms and vasomotor disturbances, such as pallor of the face (rarely lividity), sweats and coldness of the surface.

On the other hand, pseudoangina of pure form is often associated with the menstrual function and its effect on the vasomotor nervous system. The rôle played by hysteria is also conspicuous as shown by the presence in some cases of globus during the attack. Unlike in true angina we note marked throbbing of the cervical vessels and epigastrium as well as flushing of the countenance during the seizures. There may be a clear history of toxic poisoning (tobacco) or reflex visceral irritation to support the diagnosis of pseudoangina. The paroxysms are not provoked by muscular exertion, mental emotion or worry and feeling cold winds as in real angina, but arise spontaneously as a rule.

It may be argued with considerable force that since real angina pectoris may occur in hysterical and neurasthenic subjects with or without gross cardiac lesions, there must be a contingent of cases in which a diagnosis within the limits of a reasonable probability only is possible.

It is the clinically mild and doubtful cases that come more particularly within the scope of the present discussion, and since it has yet to be shown that these are incapable of developing into typical angina vera, a most exhaustive survey of examples of the sort must be carried out before pronouncing in favor of false angina. It is permissible only as a rule to determine the inherent probabilities of a given case and opinions must be offered with due caution and reserve. It would also be far more helpful to patients suffering from dubious cases if they were treated for true angina until the question of diagnosis were definitely settled.

RELATION OF PSEUDOANGINA TO ANGINA VERA.

The relation of so-called pseudoangina to true angina pectoris is not definitely known at date of writing. The nascent stage of true angina, which may not be well characterized, is sometimes mistaken for the false form.

It is admitted that cases of angina vera ending fatally may fail to show any cardiovascular lesions. In such instances, the severity of the precordial pains during the paroxysms may cause the arterial pressure to fall so low as to be followed by fatal syncope. On the other hand, death from pseudoangina is unknown.

It can be accepted as a fact that the chronic lesions met with in angina pectoris may be excited or initiated by the toxic and other causes of pseudoangina. Admittedly, transition from functional to organic disease of the stomach occurs, e. g., many cases of chronic gastric catarrh result from pure gastric neuroses. Another illustration is furnished by the toxic effects of tobacco, which ordinarily produce pseudoangina, although rarely the paroxysms finally simulate those of the organic form so closely as to be indistinguishable. Whilst the evidence, chiefly clinical, to establish this remote relationship of the two forms of angina, would appear to be clear and convincing, it must be granted that the results of improved methods of investigation more particularly as related to the arterial pressure, may in future enable us to interpret correctly all of the phenomena that enter into their clinical history and thus permit of an essential distinction between them or even to show that each is produced by a special cause.

Although there are apparently etiologic affinities between the two forms of angina—real and unreal—my view accords with that of Huchard, Osler and others, who claim that we should adopt this provisional classification and separate the functional from the organic form, whenever practicable.

Finally, it is commonly held, as before stated, that the false variety is solely of vasomotor origin, a sort of unsteadiness, which has been designated by S. S. Cohen[12] as vasomotor ataxia. True angina is allied to the functional form so far as vasomotor disturbances are concerned; it, however, embraces a variety of pathologic lesions whose relations to the symptomatic indications of the syndrome are truly obscure and complicated.

DISCUSSION

ON PAPERS BY DRS. ERLANGER, THAYER, POTTER, DAVIS AND ANDERS.*

DR. EDMOND GROS, Paris, France, referred to the three instruments which are variously used in different countries for the measurement of blood pressure, viz.: the Potain or modified von Basch, the Gærtner and the Riva Rocci. In France the Potain Sphygmomanometer is used almost exclusively. He was interested to know how this compared with the Gærtner and Riva Rocci measurements and was struck by the difference of pressure obtained with these instruments. The reason for these variations no doubt lies in the fact that each instrument measures the blood pressure in a different manner and in a different region of the body. Furthermore, there is in each case a factor of error which does not seem to be avoidable. The Potain, when properly applied, seems to give a relatively accurate measurement of blood pressure, but the pressure will be found too high if the recurrent circulation be not carefully obliterated. The Gærtner ring is applied in a region so rich in capillary blood vessels that various vasomotor influences such as pain, emotion, fever, etc., cause rapid changes in blood pressure. In fact Tessier has found that the very fact of tightening or loosening the Gærtner ring on the finger in eruptive fevers, raises the pressure in the radial artery from 10 to 30 m.m., evidently acting in the manner of a slight trauma. Gros exhibited an instrument which, he explained, is an ingenious adaptation of the Gærtner ring to the sphygmomanometer devised by Bouloimié of Vittel. It greatly facilitates comparison of the presures obtained by these two methods. He has found that the blood pressure measured in the radial artery with the Potain ranges from 120 to 160 m.m.; the Gærtner indicates a pressure of from 10 to 30 m.m. lower, but the breech gradually widens when the radial pressure runs above 200 or 220 so that a pressure of 260 with the Potain corresponds to about 220 with the Gærtner.

The Riva Rocci, which represents the blood pressure in the whole of the arm, is relatively accurate, but here again the error factor comes into play, the tightening of the cuff first obstructing the venous circulation before obliterating the brachial artery. Therefore, the pressures obtained are higher than either with the Potain or the Gærtner.

Here, then, are three instruments in use in different countries giving markedly different measurements in each case, the figure not ever varying in any direct ratio. Until a standard of blood pressure is determined the figures found by different authors lose much of their value and can hardly bear comparison.

DR. WOODS HUTCHINSON, Redlands, Cal., thought that what stood out in the symposium as of prime importance, is, first

12. Transactions of the Association of American Physicians, 1902.

* The papers by Drs. Erlanger, Thayer and Potter appeared in THE JOURNAL, October 27.

of all, that too exclusive attention had been paid to the condition of the valves in heart disease. We have been too much inclined to regard them from purely a mechanical point of view, and to say that damage to the valvular mechanism was the most important thing. To-day most men go to the opposite extreme. Valvular lesions are relatively harmless so long as the endocardium is intact. The fact should be recognized that the heart is a pulsating mechanism with a sphincter valve action; not only do the valve flaps play a purely mechanical bucket-pump action in checking the regurgitation of the blood, but contraction of the ring of muscles surrounding the valvular orifice occurs and should be considered as well. There are a large number of murmurs, so-called valvular murmurs, which are due to disturbances of the musculature of the heart and not to the valve at all. He referred to one of his first cases, which went to postmortem, in which all the symptoms had pointed to a mitral insufficiency, and no lesions whatever of the valves were found, but the mitral orifice was extremely large, making the valve flaps inadequate to close it. The contraction of this sphincter auriculo-ventricular ring he considered a very important factor in carrying on the circulation. A heart with a perfect musculature can compensate very well even in cases of severe valvular lesions.

Secondly, too much attention should not be paid to the heart itself in cardiac troubles; serious damage of the heart may be compensated perfectly so long as the walls of the blood vessels and the general nutrition of the patient are in perfect trim. No better illustration can be given than to note how often patients with valvular mischief have outlived the men who condemned them to death. Valvular damage must be regarded, much as the gastroenterologists formerly did hyperchlorhydria, but so long as it does not cause the patient any discomfort it is of little consequence. He thinks somewhat the same position might be assumed as taken by an old German colleague on the alcohol question; he said that "alcohol injures no one except those with whom it happens to disagree." Even heart lesions may do little harm unless there is failure in compensation and lack of general recuperative power. With regard to the cause of heart mischief, by searching inquiry he was able to trace 70 per cent. of his cases to some acute infection, not so often to rheumatism as to the minor infections and exanthemata, tonsillitis, influenza, measles, typhoid, even summer diarrheas. If cardiac conditions were treated as sequelæ of infections and toxic conditions, better results would be obtained than by direct treatment of the heart itself. Indeed, the latter is often positively injurious instead of beneficial in the long run.

Dr. Frank Jones, Memphis, Tenn., discussing the paper read by Dr. Davis on "Pericarditis," said he had been struck in studying that disease by the analogy which could be drawn between diseases of the pericardium and diseases of the pleura; the same conditions may produce diseases of the pericardium that produce diseases of the pleura, such as rheumatism, pneumonia, tuberculosis, etc. He has been struck with the coincident pleural and pericardial affections, whether hemorrhagic, sero-fibrinous or purulent. Dr. Jones said that he has frequently observed cases in which the symptoms were held in abeyance, but the physical signs were marked. He has seen patients in the clinic with no dyspnea, no cough, no acceleration of the pulse and no temperature; but in whom physical examination revealed a pericardial sac two-thirds filled with liquid. In one case 16 ounces of pus were removed and this patient walked one-half mile. Dr. Jones believes that in the majority of instances of effusions of fluid in the pericardium the more insidious they are the more often will they be found to be tuberculous in nature. There are more cases of tuberculosis of the pericardium than is generally supposed.

In discussing Dr. Ander's paper on "True and False Angina Pectoris," he said that so far as he is concerned he has little patience with the nomenclature of false angina; there must be some pathologic condition back of it somewhere. In the production of pathologic conditions we hear of cardiac insufficiency, of hepatic insufficiency, of renal insufficiency, etc., but we do not hear enough of gastrointestinal insufficiency, frequently the *alma mater* of all insufficiencies. He said he was struck not long since in reading a paper on so-called pseudoangina pectoris, by the statement that if these cases were examined critically and the patients went on and lived a more vigorous life, the false would be run out and the true run in.

Dr. W. S. Thayer, Baltimore, agreed with Dr. Jones' views as to the frequency of tuberculous pericarditis; he regards insidious sero-fibrinous pericarditis as being, in the majority of cases, tuberculous in nature; this is supported by the results of necropsies. He is inclined to regard the estimate that 12 per cent. of pericarditides are tuberculous as too low. With regard to angina, he agreed that in cases with anginoid symptoms it is sometimes difficult to determine whether or not grave organic cardiac lesions are present. The most important diagnostic sign is the effect of exercise; if the patient is suffering from true angina, the result of severe organic changes, exercise almost invariably brings it on. With regard to the seat of the pain, he has seen several instances in which the pain had been referred primarily to the back. In one case, now under observation, in which the pain follows any severe physical effort or mental excitement, it occurred first between the shoulders, later, accompanied by pain in the precordial region and numbness down the left arm. In discussing Dr. Potter's paper, Dr. Thayer referred to the interesting observations of Pässler and Heinecke, who have succeeded for the first time in producing cardiac hypertrophy in animals by removing first one kidney and later, in successive operations, portions of the remaining organ. After a certain amount of renal substance had been removed, polyuria followed without any increase in the blood pressure. On removing more kidney substance there followed a rise in the blood pressure which was permanent and associated with characteristic cardiac hypertrophy. They noted also that, in these animals, arterial spasm with further rise of blood pressure quickly followed stimuli which in normal animals would produce little effect. These observations would suggest that the heart hypertrophy is due to increased work dependent on the impediment to the circulation resulting from the tendency to arterial spasm due, in its turn, probably, to retained toxic substances.

Dr. James Tyson, Philadelphia, referred to two interesting cases of pleurisy with effusion and pericarditis with effusion. In the first, in a child of 8 years, the removal of a considerable amount of fluid was successfully accomplished by tapping in the seventh interspace midaxillary line and it was supposed to have come from the pleural cavity, but at autopsy the pleural cavity was found empty and it was found that the fluid came from the pericardial sac. The second case was one of supposed pericardial effusion. The fluid was successfully removed with a trocar introduced in the sixth interspace in the millary line, left side; and the vibratory motion conveyed to the distal end of the trocar made it reasonable to believe the instrument was in the pericardial sac. The fluid was also discharged in spurts, corresponding to the cardiac rhythm. Later there appeared signs of pleural effusion. At autopsy a typical tuberculous pericarditis was noted and in addition a tuberculous pleurisy with effusion. The autopsy did not afford evidence as to whether the fluid primarily removed came from the pericardial sac, but there was no reason apparent why it did not. These cases prove the possibility of the two conditions of pericardial and pleuritic effusion being confounded.

Dr. Tyson added that it has long been recognized that large hypertrophies of the various cavities of the heart, especially of the left ventricle, occur in chronic Bright's disease. He is inclined to think that the primary cause of this condition is a toxic condition of the blood, exciting resistance to its movement through the vessels, which in turn excites the primary cardiac hypertrophy. Arteriosclerosis caused by the same agency soon coöperates with this. This arteriosclerosis undoubtedly contributes to the hypertrophy of the left ventricle. Dr. Thayer's remarks as to the effect of experimental removal of portions of the kidney revives the theory of the resistance to the amount of blood passing through the blood vessels of the kidney caused by destruction of the organ and its replacement by fibrous tissue. In the matter of angina and pseudoangina Dr. Tyson said that he is disinclined to acknowledge pseudoangina as an entity; these cases ultimately prove to be either true angina or hysteria. Finally, he directed attention to the analogy between the pain in cramp of the muscles of the leg with the pain in angina

pectoris. Probably the muscular spasm in both is the result of anemia of the muscles and the cramp due to compression of nerves by the cramped muscles.

DR. T. A. CLAYTOR, Washington, considered only the blood pressure in heart conditions. In the first place he said that he has observed in cases of cardiac insufficiency, whether they be from valvular insufficiency or not, that when patients are first seen suffering from dyspnea, edema, and indications of loss of compensation, the blood pressure would be found to be high, even as high as 180 to 190. But after they had been kept in bed and given digitalis, the blood pressure fell. This is very remarkable, but he said he has seen it so often that he believes it to be almost the universal rule. When the blood pressure is high in loss of compensation, after the use of digitalis it falls and becomes almost normal.

He then spoke of a class of cases showing high blood pressure associated with cardiac hypertrophy with probably renal insufficiency. These patients, usually between 40 and 70 years old, give symptoms of slight shortness of breath on exercise and precordial distress. Physical examination reveals a hypertrophied heart, an accentuated second sound, and probably a slight mitral insufficiency murmur. Whether this is due to a real valvular lesion or due to the relative insufficiency it is hard to say. The blood pressure was found to be high. The urine showed the presence of albumin and casts at times. Such cases were probably Bright's disease. The blood pressure varied from 180 to 225 or more. The first idea that comes to all would be that the pressure is too high and should be reduced and the question arises what is the best means to reduce this high blood pressure. The ordinary nitrites are practically useless; nitroglycerin is of little value. Iodid of potassium has more effect. It relieves the headache which is often associated with high pressure and this is the most satisfactory means, aided by rest in bed, purgatives and a milk diet. Since high blood pressure is, in this class of cases, probably a conservative effort on the part of Nature to overcome a pathologic defect, Claytor doubts the advisability of making such strenuous efforts to reduce it in every instance.

DR. C. M. COOPER, San Francisco, said that a young man recently entered the German Hospital in San Francisco in the service of Dr. Jellinik with symptoms of acute gonorrheal septicemia. He developed an acute Adams-Stokes syndrome. The disease ran an acute course and at postmortem an acute lesion was found in the vicinity of His' bundle, thus strongly emphasizing the relationship between a lesion of this bundle and the clinical symtom-complex known as Stokes-Adams disease. Recent work has shown the importance of taking simultaneous tracings of the venous and arterial pulse and of the heart beat in the study of all forms of heart disease. Hitherto, we have had to depend on the cumbersome cylinder drum or the finicky MacKenzie clinical polygraph. Jacquet has lately devised an instrument for this purpose, readily portable, well constructed, and clinically efficient. The practitioner will find it of much service. It must not be forgotten that the *x*-ray is of distinct service in the study of heart affections. Cooper has lately demonstrated at the San Francisco County Society plates showing distinct evidence of adherent pericardium; and of dilatation of the descending aorta behind the heart. The correlation of these plates with the symptoms and physical signs is of distinct aid in the diagnosis. He emphasized the infection theories advanced by Dr. Woods Hutchinson—probably often unrecognized or little-heeded sore throats, nasal catarrhs, alveolar pyorrheas, and urethral inflammations which by their summation of effect impair the cardiovascular system.

DR. G. W. NORRIS, Philadelphia, said that during the past winter he has seen three cases of Stokes-Adams syndrome, one of which he had an opportunity of carefully studying. He has made tracings coincidently of the jugular and the radial pulses, as well as the cardiac apex beat. These tracings show very distinctly an extra number of auricular contractions. The auricular contractions were accelerated by deep inspiration, the ventricular rhythm was unaffected by this or by change of posture. He believes that by using the Jacquet polygraph we would be enabled to learn a good deal about cardiac diseases which has not previously been known, and that the tracings made by this instrument would prove not only of scientific interest but also of practical utility, especially in cases of arrhythmia; perhaps, also, in instances of pericardial adhesion; and possibly in differentiating between true and false angina pectoris. As a clinical procedure this method of studying heart affections is rather new, and probably some time will elapse before all the data thus obtained will be properly interpreted, but he thinks that a new field has been opened which holds forth considerable promise.

DR. BERTRAM W. SIPPY, Chicago, mentioned a sign brought out by Dr. Davis, viz., systolic retraction and adherent pericardium. This traction is caused by the outer pericardium being attached posteriorly; the remaining portion of the pericardium is also attached to the thorax; therefore, when the heart contracts, it pulls in on the surrounding structures, pulling in the intercostal spaces and so producing systolic retraction. This, he said, may, lead to an error in the diagnosis of adherent pericardium. When systolic retraction occurs at the apex, that, in connection with other physical signs, is sufficient for diagnosis. But systolic retraction occurring at the base of the heart occurs not infrequently without adherent pericardium. Systolic retraction he considers as an evidence of adherent pericardium only when it occurs at the apex and not at the base, and in connection with other physical signs. The great increase of the work of the heart caused by this condition practically always is associated with incompetency; it must pull on the surrounding tissues, thus handicapping it. Dyspnea, cyanosis, etc. will be present.

DR. DE LANCEY ROCHESTER, Buffalo, said he wished to speak of symptoms which he has observed in connection with pericarditis and to which Dr. Davis had not referred. First, there is pain in the interscapular region posteriorly between the shoulders, a symptom that he has found in many instances.

In reference to pseudoangina and true angina pectoris he agreed with Dr. Tyson that there is difficulty in distinguishing between them. Dr. Rochester then reported the case of a woman, between 45 and 50 years old, who was visiting in Buffalo and who was seized with pain in the epigastrium. He was called and found that she had been indulging in a promiscuous supper, that there was a considerable amount of pain and that this pain was the only symptom; there was no fear of death, no dyspnea, or other symptom. The pain was relieved after the stomach had been emptied. The next day she did not feel very comfortable; on the next day she again was seized with pain, not only in the epigastric region, but in the chest and left arm, and this pain had to be relieved with morphin. Dr. Stockton was called in consultation and they could not find any evidences of disease of the arteries. There was no nephritis and no evidence of arterial disease. The heart was of normal size and the sounds were good. The next night she was again seized with pain and died before he got there. The autopsy revealed a ruptured heart with pronounced arteriosclerosis, a thrombosis of the left coronary and a marked thinning of the muscle at the apex of the heart where the rupture had occurred. The rest of the heart muscle was in good condition. There was an arteriosclerosis of the coronary arteries.

DR. STEPHEN S. BLACK, Pasadena, Cal., said that Dr. Sippy's remarks regarding the diagnosis of adherent pericardium by systolic retraction are very important, but that this is not the only thing which produces it. The apex beat is caused by a lengthening or straightening out of the aortic arch; also by rotation of the heart and, at the same time, by contraction of the ventricles. This all throws the heart against the chest wall. Any interference with the lengthening of the aortic arch, or contraction of ventricles, or rotation of the heart will cause a depression or retraction of the apex beat. He said he has seen very pronounced cases in which the apex was depressed during systole and there were no pericardial adhesions whatever.

DR. NATHANIEL B. POTTER, New York City, quoted statistics from the City Hospital Autopsy Records, 1906, to show that nutrition has to do with cause of cardiac hypertrophy.

DR. J. M. ANDERS, Philadelphia, remarked that Drs. Jones, Tyson and others objected to the term "pseudoangina," and he did not intend to defend this term. In the portion of his paper, which for lack of time could not be read, he had stated that, in view of the symptomatic relationship existing between true

angina and the false variety, rendering a differential diagnosis well nigh impossible in many instances, he would encourage the use of the term "pseudoangina" until additional light should be thrown on the whole subject. These cases of so-called pseudoangina might be regarded as hysterical in nature, as suggested by Dr. Tyson, but even severe precordial pain due to that cause must be separated from true angina for the sake of appropriate treatment. The case related by Dr. Rochester, which occurred in a neurasthenic person, later developed true angina and was similar to two cases reported in his own paper. His view, as previously stated, was that they hold fast to the provisional classification into pseudoangina and angina vera and separate the functional from the organic form whenever practicable.

OBSTRUCTION AT THE TERMINAL PORTION OF THE COMMON BILE DUCT

DUE TO CANCER OF THE AMPULLA. AN ANOMALY IN THE CYSTIC DUCT. SIMILAR OBSTRUCTION DUE TO PANCREATIC CANCER.

FREDERICK C. HERRICK, A.B., M.D.
CLEVELAND.

Cases of cancer at the terminal portion of the bile duct within the duodenal wall are sufficiently rare and the signs are sufficiently characteristic to warrant the following report.

Jaundice and pain are the most frequent signs of disease of the bile passages, jaundice belonging especially to common duct disease. Musser found it present in 17 of 18 cases of cancer of the ducts and pain in 12 of the 18. In gall-bladder disease jaundice is present in but 20 per cent. of the cases.

In 16 cases of cancer of the ampulla on record, jaundice has occurred in all, while pain is mentioned as present in but three, and then of an aching or general abdominal character.

This may be partly explained by the fact that when the ducts are the seat of cancer I found a history of gallstones in but 18 per cent. of 25 cases, while various authors give from 69 per cent. to 95 per cent. of gallbladder cancers as showing gall stones.

Occasionally the jaundice is due to a lesion, in itself of no consequence, but so placed as to obstruct some important function of the body as, for instance, cancer of the tip of the bile duct or parasites or some kinking at this point. There have been described by a number of authors such primary cancers which originated in the mucous membrane of the ampulla of Vater, the clinical picture of which they claim to be distinctive.

The following case is of interest as one of this class of painless jaundice:

CASE 1.—A male, 66 years of age, a farmer, came in October, 1901, complaining of severe jaundice which had developed rapidly, within four or five days, without pain. This painless jaundice, loss of flesh and frequent bowel movements were the first evidences to him of any illness, but, on further questioning, the following details were obtained:

Two years before, he first noticed a tendency to looseness of the bowels. Four or five months later, the stools became pale-colored, "putty-like," foul-smelling, small in amount and unsatisfactory. By the end of the first year they occurred once or possibly twice during the night, and three or four times during the day. Nine months later he noticed a very slight soreness just below the eighth costal border, which has continued till the present time. Three weeks ago, he first noticed jaundice, severe itching and dryness of the skin. He had lost 40 pounds in weight, his usual weight being 200 pounds. He felt energetic, active, appetite good, and complained of nothing but the jaundice.

His family and past personal history were negative. He had never had a venereal disease, nor had he used alcoholics. He had never been troubled in any way with indigestion; nor had he ever had bilious colic, a previous jaundice, nor any serious pain or discomfort referable to the abdomen.

Physical examination showed temperature normal, pulse 68. The thoracic and abdominal organs showed nothing abnormal except the liver, the upper border of which was in the sixth, eighth and tenth spaces, but the lower edge could be felt rounded, two fingers' breadth below the ribs. The gall bladder was outlinable to percussion and palpable as a pear-shaped, slightly tender body, pointing toward the umbilicus.

The urine was 1,024 acid, dark coffee colored, and contained a trace of albumin, no sugar, a large amount of bile pigments, many large and small hyaline, cellular and pigmented casts, a few renal cells and leucocytes.

A blood count at 10 a. m. showed 6,600 white cells, 5,600,000 reds, and a hemoglobin index of 74 per cent. The normal digestion leucocytosis was present, the count being 10,000 after a meal.

This was the last of November. The patient was not seen again for six weeks, during which time he had a severe tonsillitis with abscess formation. When seen in January, 1902, his urine was scanty and contained a large amount of albumin, bile pigment and casts; no sugar. There was marked edema of the legs and abdominal wall, and a large amount of ascites.

The jaundice persisted until death. There was no pain except that, dull in character, due to the gall bladder distension. Death occurred January 30, thirteen weeks after the first appearance of jaundice; two years and three months after first noticing the frequency and loss of color of the stools.

A summary of his history is:

Two years and 3 months ago frequent putty-like, pale colored stools.

Six months ago soreness at right costal border.

Five months ago sudden painless jaundice, rapidly deepening in 4 to 5 days.

Loss of 40 pounds in weight in one year.

Death 2 years and 3 months after onset.

The diagnosis had been cancer of the head of the pancreas. At the autopsy made by Dr. Parker, formerly assistant in pathology at Western Reserve University, a cancer of the tip of the common bile duct was found within the duodenal wall. The gall bladder was greatly dilated, measuring 12 ×6 cm., and had fallen down till its long diameter was parallel to that of the liver. This explains its not being felt late in the disease. The common, pancreatic and cystic ducts were greatly dilated. The hepatic ducts were dilated up into the liver and were surrounded by a fibrosis.

An anomaly in the ducts was present in that the cystic duct passed alone, parallel to the hepatic duct, entering it just before the latter's entrance into the intestinal wall; also, the hepatic duct united with the duct of Wirsung in the head of the pancreas. The common duct, therefore, extended only from the pancreatic head to the duodenal wall, 1 cm. The bile papilla was very small. Dr. Parker says: "On opening the papilla a mass of dense hard white tissue is found. This tissue occludes all the entering ducts. It is fairly well localized, forming a patch about the size of a quarter." The growth was an adenofibroma. There was no metastases. The pancreas was of increased firmness.

The bit of duct between the junction of the common bile duct and the pancreatic duct and the bile papilla in the duodenum is called the ampulla of Vater. It is contained almost entirely within the duodenal wall as it passes obliquely through it. It is of slightly greater diameter (4 to 5 mm.) than the bile duct above and the orifice below. Its length, as measured by Opie, varies from 0 to 11 mm. In 11 cases in 100 the pancreatic duct opened on the duodenal surface by a separate orifice. This small duct common to the pancreatic juice and bile is the cavity in which gall-stones occasionally lodge and is the second most frequent seat of beginning

cancer of the ducts.[1] Hanot[2] speaks of such an orificial cancer occurring at the point of transit between two types of epithelium. It is also interesting to note that in one other case of such a cancer[3] described, as well as the above, there was an abnormality in the duct formation.

The occurrence in an adult of a painless, rapidly deepening jaundice, without previous attacks of biliary colic and without fever, is the simplest form of duct obstruction with which we have to deal. It leaves no doubt as to the obstruction of one or more of the bile ducts either from disease within them or from pressure or constriction from neighboring organs. Of the former we have catarrhal jaundice, cancer, stricture, parasites and gallstones to consider.

A catarrhal jaundice occurs usually in children and young adults, is generally preceded or accompanied by gastric catarrh and fever and, above all, runs a short course of 3 to 4 weeks. However, Quincke remarks that "in old people an attack of simple catarrhal icterus may end fatally from long-continued stasis of bile." In such a case the diagnosis from a primary duct cancer without exploratory operation might be impossible.

Gallstones have been reported by several authors[4] as slipping into the neck of the gall bladder or even into the common duct and there causing a painless obstruction by pressure. This, occurring without previous attacks of pain referable to gallstones or gall-bladder disease, must be extremely rare.

We can conceive, and have seen instances, of a stone floating about the entrance to the cystic duct, as Fenger[5] describes, acting as a ball-valve, causing more and more dilatation of the duct orifice and finally becoming lodged so as to press against the hepatic duct as it descends to join the cystic, or by prolonged irritation causing an inflammation of the surrounding tissues including the hepatic duct and the lymph glands adjoining it and partially or completely obstructing it. But these must necessarily occur with some pain and characteristic attacks of chilly feelings, fever and other signs of contained fluid.

Fenger[6] and others speak of a parasite, an echinococcus or intestinal worm becoming lodged in the duct. These are rare and but need to be among the old files of our diagnosis scheme. The presence of parasites in the stools or a nationality or mode of life possible to echinococcus infection would be suggestive.

Of cancer of the bile duct Hanot groups the facts most clearly when he says: "Chronic progressive jaundice, apyretic, with decoloration of the fecal matter, no sharp pain, moderately enlarged liver, emaciation till death, five to nine months later, is characteristic of cancer of the tip of the common duct."

The attendant train of impaired digestion and absorption; the cholemia resulting in the nephritis, as well as the specific toxic effects, and the serous membrane inflammations, to which these patients are liable, all contribute to a loss of flesh and a lowered vitality, which in itself may bring the end or pave the way for intercurrent acute disease.

Hence an early diagnosis is essential and where the first sign of a disease is so definite as in this condition we may hope for much by early surgical intervention. I do not mean to say the first signs are diagnostic of anything but common duct obstruction, but, after a reasonable time of from 2 to 4 weeks for a possible catarrhal jaundice to subside, exploratory operation is indicated. This has been done, as will be later cited.

Of painless obstructions from without the duct we may have tumors of the pylorus, duodenum, pancreas, kidney, suprarenals, of the liver, of enlarged glands along the ducts and of echinococcus disease of any of these organs.

Authors mention an icterus gravidarum in which the uterine tumor presses on the colon, causing accumulation of fecal matter and by its pressure an obstruction of the bile duct. Other painless conditions of jaundice, such as that described as following strong emotions, after severe reabsorbed hemorrhage, during starvation, of syphilis, of the newborn, etc., all contain elements clearly distinguishing them from the present.

Of tumors of surrounding organs, if they had not caused sufficient pain to attract attention before causing duct obstruction, they would give signs such as a palpable tumor, gastric dilatation, signs of ulceration, etc., but in the pancreatic head there may occur a painless simple fibrosis, a scirrhus tumor, or a cyst capable of obstructing the choledochus as it passes by or through it.

CASE 2.—Mrs. M., aged 75 years, had always been in good health, except for typhoid as a child, and scarlet fever at 40 years. At 47 years of age, just before and following the birth of her last child, she had a severe painless jaundice which lasted 2 to 3 weeks, and disappeared without further sign. This sounds very much like an icterus gravidarum above mentioned. At 60 years of age she had an attack of severe pain between the shoulders lasting one-half hour and followed by no other signs. I saw her at 75 years of age, complaining of severe sciatica, loss of flesh, gastric distress and eructations, with occasional vomiting one-half to two hours after meals, no abdominal pain. There was diarrhea and pale-colored stools. The urine was negative. The blood count showed 3,093,000 reds, 8,800 whites, and 85 per cent. hemoglobin. She had never had an attack of bilious colic. Four weeks before death a marked painless jaundice developed. The diagnosis of cancer of the pancreas was again hazarded.

Autopsy revealed this condition with compression of the common duct. I am indebted to Dr. Howard for the pathologic diagnosis. In this case the obstruction at the lower end of the ducts was the tumor in the pancreatic head which had caused no pain. There were no gallstones.

The diagnosis of this condition from cancer of the duct which passes over or through the pancreatic head, or especially from a stone lodged at this point, is often of value by favoring timely operation.

Mr. Cammidge,[7] an assistant to Mr. Mayo Robson, has worked out and described a urine reaction which they hold to be of use in such a diagnosis. Of 28 cases of chronic pancreatitis, the reaction was positive in all. Of 6 cases of cancer of the pancreas, it was positive in but one. Of 61 cases in which there was no pancreatitis, it was negative in all. Mr. Mayo Robson[8] has been laying some stress on these results. Further reports are necessary. It is safe to say that pancreatitis, acute or chronic, can be diagnosed by the clinical signs, together with this reaction, if it is reliable.

Opie has clearly shown the relation which may exist between obstruction of the choledochus below the duct of Wirsung and pancreatitis. This pancreatitis frequently persists owing to a chronic inflammatory thick-

1. Rolleston: "Diseases of the Liver, Gall Bladder and Bile Ducts."
2. Hanot: "Arch. gen. de Med., November, 1896.
3. Klotz: Montreal Med. Jour., July, 1904.
4. Nothnagel: "Liver, Pancreas and Suprarenal Glands., p. 481.
5. Fenger: Am. Jour. Med. Sci., 1896.
6. Fenger: Trans. Am. Surg. Assn., 1896.
7. Cammidge: Lancet, March 19, 1904 (Proof, Nov. 21, 1905).
8. Mayo Robson: "Diseases of the Pancreas," Hunterian Lecture, 1905.

ening or an edema of the ducts long after removal of the obstructing cause. From this we have a protracted period of impaired intestinal digestion which, in a patient of low vitality, may end in death. A drainage of the bile passages, not externally, but by anastomosis of the gall-bladder fundus into the duodenum, will improve this intestinal condition and at the same time drain the seat of the disease. The foregoing would have especial weight where a stone was the cause of obstruction.

We may be able by the aid of a better knowledge of the chemistry of digestion and by further analyses of urine and feces to make accurate diagnoses in this group of cases, but until that point is reached early exploratory operation with its practical absence of mortality is justified.

Three of these patients have been operated on, the growths excised and the duct implanted into the duodenum. Mayo[9] accomplished this by the duodenal route. "Recurrence after one and one-half years necessitated cholecyst-duodenostomy."

Halstead[10] excised the growth and implanted the choledochus in the duodenum. The patient died six months later of recurrence. Rixford[11] reports a case of adenocarcinoma at the ampulla, which, having been removed by a transduodenal operation, recurred in one year and caused death in fourteen months from operation. It is unfortunate that all these were of the adenocarcinomatous variety, while several are reported in which the growth was more scirrhus and without metastases.

The cause of death in the majority of cases has been the cholemia. Early operation, after time has been allowed for a possible catarrhal jaundice to subside, is, therefore, justifiable with drainage of the gall bladder into the duodenum or colon. With a better knowledge of the direction of the lymph flow from this region, early and free extirpation of growths, not only of the lower bile duct but of the duodenum, may bring good results, especially since these tumors do not form early metastases. Mr. Mayo Robson has suggested that cancer originating at this point is much more frequent than heretofore considered.

Sixteen cases have been collected by Rolleston[1] (p. 697), fourteen of which, he thinks, were "undoubted examples of cancer arising in the mucous membrane lining the divertieulum Vateri." Some of these I have mentioned, and, in addition, cite a few references[12] not noted by him. Those given contain ample bibliographies.

112 Lennox Building.

9. Mayo: Boston Med. and Surg. Jour., 1903, vol. cxlviii, p. 545.
10. Halstead: Johns Hopkins Hospital Bulletin, No. 103, January, 1900.
11. Rixford: THE JOURNAL A. M. A., vol. xxxvi, p. 1492.
12. Moore, Norman: Bradshaw Lectures, Lancet, 1889, vol. ii, 415; Fereol: Bull. de la soc. med. d'observation, 1859-63, p. 123; Dickinson: N. Y. Med. Jour., 1879, vol. xxx, p. 149; Whittier: Trans. Assn. Am. Phys., 1889, vol. iv, p. 292; Lennois and Courmont: Rev. de Med., 1894, vol xiv, p. 291; Edes: Boston Med. and Surg. Jour., Feb. 28, 1901, p. 223.

The Auto in Winter.—With the addition to the present light car of a still lower gear and the attachment to the wheels of suitable gripping devices there is no reason why the future doctor's car can not wade through snowdrifts quite as deep as his horse could haul him through and in better time. I believe, writes Dr. P. E. Doolittle, in *The Automobile*, that within the next two years the doctors will demand such an all-the-year-round vehicle, and there are no obstacles in the way of the manufacturers meeting such demand.

THE TREATMENT OF TUBERCULOSIS OF THE URINARY TRACT IN WOMEN.*

EDGAR GARCEAU, M.D.
Gynecologist to the Boston Dispensary and to Out-Patients at St. Elizabeth's Hospital.
BOSTON.

TREATMENT OF THE BLADDER.

Within comparatively recent years the disease was thought to be incurable, but the results that have been obtained in the treatment of the disease have disproved this. Two factors have contributed to this end, better means of diagnosis and better means of treatment. At present it is possible to treat a tuberculous bladder ulcer locally, by applications which are made with as much accuracy as though the ulcer were on the surface of the skin. Hygiene has also played an important part in the therapeusis, as it has in tubercular affections of other parts of the body.

The prognosis of tuberculosis of the bladder and of the upper urinary passages is to-day most encouraging, and it has kept pace with the brilliant results that have been obtained in the treatment of the pulmonary affection.

For purposes of convenience we may divide the subject of treatment into three heads: Hygiene and climate, local treatment, and surgery.

Hygiene and Climate.—Early cases of the disease are sometimes best treated by a change of climate. The principal objects to be attained are: "First, avoidance of a new infection; second, putting the patient in the best possible physical state so as to develop his reparative power. In order to accomplish this end the following rules are imperative: First, permanent exposure to fresh air; second, free access to light; third, well regulated rest; fourth, carefully supervisal exercise; fifth, abundant nourishment; sixth, absolute obedience to the rules of hygiene; seventh, constant medical supervision."[1]

If a patient has the means and the time, this treatment will be the best to begin with. Cures have been reported. It is not within the reach of the poor, and it is not to be tried by those patients who are suffering intolerable torments. The latter class demand immediate relief.

A purely hygienic course of treatment is also recommended in those cases of very advanced urinary tuberculosis in which the whole urinary tract has been invaded, and both kidneys are diseased. In such cases, out-of-door life in a well-regulated sanatorium will give the most comfort, and there have been cases reported of unexpected arrests of the disease.

Local Treatment.—Vesical tuberculosis has two stages. The first is the one in which the miliary tubercles have not yet appeared in the bladder, and the only abnormality seen with the cystoscope are collections of bright red patches in which the tubercles are later to appear; the second stage is that of tubercle formation, with attendant caseation and ulcer formation.

In the first stage topical treatment does not do any good; on the contrary, injections of various kinds and local applications are intolerably painful, and can not do any good for the reason that they do not reach the seat of the trouble at all, the germs being imbedded in the tissues of the bladder and therefore beyond the reach of

* Read in the Section on Obstetrics and Diseases of Women of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

1. Burrell, H. L.: Boston Med. and Surg. Jour., vol. cxlviii, No. 26.

antiseptics. It is far better, in this stage, not to attempt local treatment, and the most that can be done is to enjoin rest and administer general sedatives. The urine should be made as bland as possible, and to this end large amounts of water and milk should be taken. Urotropin may be tried, without much hope of success, although it sometimes acts beneficially; as there is usually very little pyuria in this stage it is difficult to see how a great deal could be expected of this much used drug. For sleep, trional (sulphonethyl-methane, U. S. P.) sometimes works exceedingly well; in one of the cases cited it acted admirably and gave much needed sleep to a patient greatly in want of it. In this first stage of the disease a climatic change will sometimes do the greatest amount of good. But if a patient can not go away she should at least try to live a healthy life. Sleeping out of doors is to be advised. Avoidance of all kinds of work should also be insisted on. Rest in the recumbent position should be largely taken. Diet should be regulated, and in every way the patient should try to lead as careful a life as possible.

In the second stage of the disease, that in which the tubercle is breaking down and ulcers are beginning to appear, or have already appeared, a vast amount of good can be accomplished by intelligent treatment. The best of it is that the poor can be cured, for this treatment can be carried out in hospital practice. The treatment of the second stage may be summed up thus: The intelligent use of two drugs, corrosive sublimate and nitrate of silver. These are strong antiseptics, and have a positive curative action on the tubercle and the ulcer. Used in conjunction they sometimes eradicate the disease from an apparently incurable bladder.

The use of corrosive sublimate was first brought forward by Guyon, who wrote a number of articles extolling its value in tuberculosis of the bladder. The treatment consists of instillations of the solution of the drug every day, or if not daily, as often as the patient can support them. A solution of 1:5000 is first tried, thirty or forty drops being instilled drop by drop into the bladder very slowly, by means of a dropper or pipette; if greater amounts are injected severe pain will be produced and the patient will refuse further treatment. As toleration for the drug is attained the strength is increased until a solution of 1:500 is used. It is not well to use stronger solutions. After the first few treatments by the physician the patient may be instructed to make the applications herself. If the pain is intolerable a solution of cocain or eucain may be injected into the bladder before the corrosive is used. Hygienic rules as to mode of life should be followed, rest especially being insisted on. Internally duotal (guaiacolis carbonas, U. S. P.) may be given in the dose of ten grains three times a day. Morphia should be avoided if possible. The treatment has to be kept up for months before any decided improvement is noticed. Patience and perseverance are essential. Of course, if this treatment can be given under climatic conditions so much the better, the cure comes sooner. At the same time with the Guyon treatment the tuberculous ulcers will have to be treated with the nitrate of silver. This is best done by putting the patient in the knee-chest position, and, under cocain anesthesia, applying the silver stick, mounted on the end of a carrier, directly to the diseased surface, through a small cystoscope. It is best to give ether for the first application of the silver, as the whole bladder can then be thoroughly explored and the cauterization be most carefully and thoroughly done. After the first application it is not necessary to etherize again and the silver may be applied to the ulcer under cocain, the application being made as often as once a week or oftener if needed. An ulcer will sometimes heal rapidly under this treatment, even if there is a tuberculous kidney above the bladder discharging germ-laden pus into the latter.

Cases treated by the combined Guyon and nitrate of silver method are Cases 2, 9, 11, 12 and 18; Cases 9 and 18 were cured; the other three were much relieved.

The essentials for the successful carrying out of this method are: Correct mode of living on the part of the patient, and surgical cleanliness and infinite patience on the part of the physician. A simple tuberculous infection must not be complicated with a secondary infection through unclean instrumentation. Attention to routine aseptic precautions will ensure good results. It is needless to insist on proper mode of living. Diet, care of the body as regards sufficient amount of sleep, etc., are to be insisted on. Patience will be taxed. It may be months, perhaps years, before marked improvement occurs, but, when it begins at last, the progress toward recovery is sure and steady.

The more advanced cases of vesical tuberculosis demand constant supervision by the physician. A bladder which has been affected by tuberculosis for a considerable period will possibly have suffered from secondary infection. Here we have two germs to consider. Such cases present a very much inflamed vesical mucous membrane, with numerous granulations and many ulcers. In my experience these bladders are best treated by giving ether and cauterizing the whole mucous membrane with the solid nitrate of silver stick. There need be no fear of too deep cauterization, for the burning with the silver does not penetrate far into the tissues. Some hesitation was felt in applying this apparently rigorous method of treatment in the first case in which it was used, but the result showed that such fear was without foundation. Granulations, especially, are destroyed. Secondary contraction of the bladder has not been observed. The immediate relief given may, perhaps, be explained by the fact that the silver nitrate forms an albuminate coating which covers the whole vesical surface, thus protecting the sensitive membrane from the irritating urine. This coating is cast off very gradually and the last shreds are not expelled for a couple of weeks or more. During this time the silver has been destroying the granulations and has been stimulating healing processes, so that these processes have had a good start when the last shreds are voided.

Cases 6, 13 and 18 are examples of this method of treatment. All were advanced cases, and all were suffering severely at the time the cauterization was done. In Cases 6 and 13 the bladder was filled with granulations, which rapidly disappeared after the application. In Case 18 there were fewer granulations, but there was a large ulcer and numerous tubercles with considerable inflammatory changes in the bladder. All these cases were greatly relieved by the treatment, and they were all immediately relieved. the urinations dropping from thirty or forty a day to four or five a day, within a week; at the same time there was a feeling of comfort in the bladder which had not been felt for months before.

The ultimate result of these cases may be referred to here. Case 6 sustained immediate improvement after the ether cauterization, which lasted six months, during which time the patient urinated only three or four times a day and once at night. She was then treated with local applications of silver for occasional cropping gran-

ulations and finally made a good recovery four years after the general cauterization and six years after the nephroureterectomy. She has been completely well now for three years. In this case the vesical lesions were probably due to a secondary infection because typical tuberculous changes were not numerous.

Case 13 was a very bad one of right renal tuberculosis well advanced and probably left renal as well, besides a very badly inflamed bladder filled with small tuberculous ulcers and with granulations which bled at the slightest touch. Radical measures were not to be thought of. As she was suffering severely and as her physical condition was so far reduced by the loss of sleep in consequence of the half hourly calls to urinate, something had to be done. So her bladder was thoroughly cauterized under ether. The results were good, the urinations dropping to four or five a day and as many times a night. She left the hospital at the end of a few weeks in fairly good condition, comparatively speaking. She died a year later. The intermediate history is not known.

Case 18 presented a bladder different from the two preceding ones. There was a large tubercular ulcer as well as severe inflammatory changes, a large patch of granulations and numerous tubercles. Her bladder was cauterized two weeks after nephrectomy and within a week the urinations had dropped from forty times a day to four or five a day. Relief in her case lasted several months. Then the symptoms returned and the bladder was cauterized with the actual cautery as an experiment, touching only the ulcerated areas and the tubercles. She was made decidedly worse thereby. Finally an artificial vesicovaginal fistula was made and she recovered under the Guyon treatment, eight years after the nephrectomy.

Surgery.—Should the Guyon treatment fail on account of the suffering which it may entail, and this sometimes happens, it is not well to delay in giving the instant relief which an infrapubic cystotomy will afford.

This relief after cystotomy is immediate. Patients resume their occupations, and above all they can sleep at night. A rubber urinal is worn night and day and if it is properly constructed and properly applied it will collect every drop of urine as it drips from the bladder into the vaginal receptacle which is part of the apparatus. This rubber urinal does not cause much if any irritation.

The after-treatment of vaginal cystotomy is simple and efficacious. The patient takes two boric acid douches a day under scrupulous aseptic precautions. She also administers the Guyon treatment herself. She also continues under the care of the physician who makes applications of silver nitrate to ulcerated areas. In the female the vaginal is the only route that need be considered for the cystotomy. The suprapubic operation possesses so many disadvantages that it is not worth considering.

In advanced cases of the disease, cases in which the bladder has not been properly treated from the start and has become thickened and contracted to a small receptacle holding a few cubic centimeters of urine, in other words, in those cases in which the patient is to be made comfortable until death occurs, a cystotomy offers the greatest possible relief. These cases are almost always complicated with renal involvement.

It is my belief that early cystotomy should be urged in a greater number of cases, provided the patient is willing to submit to subsequent careful supervision, and it is in these cases that the Guyon treatment will work well. It is not so painful to administer, for there is free drainage.

Case 9 is illustrative. The patient had to earn her living and it was necessary that she should have a proper amount of sleep to enable her to undergo the labors of the day. A cystotomy was accordingly performed, with immediate relief. She slept well and at once and began to gain in weight. The Guyon and nitrate of silver treatment was then given for two years with the greatest persistency and care. It was thought that a secondary infection at least would occur; but it did not, for the patient was unusually intelligent and followed instructions. At the end of two years, the patient having worked daily at book-keeping meanwhile, she was well, and the fistula was closed. The bladder now holds 190 c.cm. and the patient holds her urine three hours at a time.

Tubercular ulcers may sometimes demand excision. This will rarely be required, for it is only the deep ones that come in this class and deep ulcers are rare. Persistent use of nitrate of silver is to be tried before resorting to excision.

Granulations covering ulcers are sometimes seen. These granulations cover the ulcers with the greatest nicety and at times rise appreciably above the level. They present the appearance of red vascular tufts, bleeding at the slightest touch. The best treatment for them is curetting through a large cystoscope, the base being afterwards cauterized with silver nitrate. It is needless to say that curetting should never be done in an early case of tuberculosis in which the tubercles are just appearing. This opens up fresh areas which may be infected by the germs; besides it does no good.

TREATMENT OF THE KIDNEY AND URETER.

Incipient tuberculosis of the kidney is best treated by a change of climate, but unfortunately incipient renal tuberculosis is rarely diagnosed, and it is only when the disease is well along and has invaded the rest of the urinary tract that the diagnosis is made. If it has not gotten too much of a start, and this may be fairly accurately determined by the amount of pus in the ureteral urine, it is worth while to try the effect of climate. Great benefit may result.

At the same time it should not be forgotten that this treatment may be most disappointing. I have in mind the case of a young man, twenty-one years old, in whom tuberculosis started in the apex of the right lung. The disease was taken at the very onset, at as early a time as it was possible for one to make a diagnosis. He was sent to Egypt under the most favorable auspices, and remained abroad for a year. He then returned home apparently well and with no evidence of active process in the pulmonary tissue. He had hardly arrived home when he began to have pains in the right lumbar region, and there soon succeeded "drop" hematuria.

This brings up another point with reference to the disease, and that is, the frequent association of tuberculosis elsewhere in the body with the urinary tuberculosis. A few years ago I looked up the statistics of autopsies performed at the Boston City Hospital and the Massachusetts General Hospital.[2] Among 3,424 autopsies there were 24 cases of caseous renal tuberculosis. In all the cases, without exception, there was evidence of tuberculosis in some other part of the body, the lungs and

2. "Operations for Tuberculous Kidney," Annals of Surgery, October, 1902, p. 516.

intestines heading the list. This predominance of tuberculous lungs and intestines suggested these organs as primary foci, inasmuch as they are in direct communication with the outside air. Judging from this alone, the urinary tract might have been infected secondarily, and this view of the case seemed to be strengthened by finding old pulmonary foci in two of the cases, while in two others a mediastinal lymph gland and a retroperitoneal gland were presumably the originating sources of infection.

This point has a decided bearing on the question of operation on the kidney, for no one would willingly do a nephrectomy in the presence of tuberculosis elsewhere in the body, if it could be avoided. There can be no question that an advanced tuberculosis of the kidney is best treated by removal of the organ. It can only do harm by being allowed to remain in the body and, as it is sure to cause death in time, it is worth while taking a risk in order to gain the comfort which a successful operation will give. Should there be an active focus elsewhere in the body it devolves on the surgeon to decide whether to operate or not. A moderate degree of pulmonary tuberculosis does not constitute a barrier to the operation, although the prognosis is thereby rendered less favorable as regards immediate recovery and subsequent good health. A patient who is suffering intolerable torments from kidney and bladder may elect to take additional risks.

The mortality attending nephrectomy is still high. I[3] found it to be 17 per cent. in a series of 101 cases collected from various sources. But this percentage is so much less than that in earlier lists (Bangs, 21 per cent., and Facklam, 26 per cent.) that it seems probable it will be still further reduced with improvement in technic and with a better selection of cases.

Nephrotomy as a curative measure need not be discussed. It has been amply proven that this operation is merely palliative and, if not followed by nephrectomy, will generally leave an intractable fistula. When the two operations have been done in succession the results have been brilliant, and in bad purulent cases this should be the rule of procedure. In a list of 47 cases in which this was done the mortality was 11 per cent.[4]

Resection is unjustifiable because one can never know if diseased tissue has been left behind.

The treatment of a tuberculous ureter is important. It should always be removed. As regards the mortality of ureterectomy it may be said that it is not to be greatly feared. Of course, personal equation counts here, and the skilfull operator has fewer deaths. In a list of 16 cases, there was but one death.[5]

Nothing will be said of the technic of the operation of ureterectomy, as that does not come within the scope of this paper. It may be remarked that a tubercular ulcer within the bladder at the site of the ureteral orific may well be removed by excision with the lower end of the ureter. It does not add to the dangers of the operation, and the ulcer is well gotten rid of. It may also be said that if the patient's condition is poor at the time of the nephrectomy the ureter may be removed at a second sitting. If the ureter is abandoned we may expect further trouble. Fistula, secondary abscess, continuance and persistence of urinary symptoms are common, and in a number of cases tuberculosis of other organs has been the cause of death subsequent to the nephrectomy. When the lower part of the ureter is alone diseased, the kidney above being healthy, it is difficult to decide what to do. As extension to the kidney is pretty certain to be the outcome, nephroureterectomy must be thought of, although, in the case of a bladder not badly diseased, it might be well to try the effect of climate.

3. Loc. cit., p. 519.
4. Loc. cit., p. 518.
5. Loc. cit. p. 520

ANALYSIS OF RESULTS.

Of the 18 cases there are but 3 absolute cures, Cases 6, 9 and 18 (16 per cent.). Patient 6 has been well two years; patient 9 has just recovered and patient 18 has been well two years. This is a discouraging result, and shows the serious nature of the disease. It is worth while considering, though, that in both Cases 6 and 18, the kidney was diseased, yet recovery occurred. It is also worthy of note that cures were effected in Cases 9 and 18 by cystotomy combined with the Guyon treatment. Patient 12 has experienced great relief, and has had little vesical trouble for three years; she urinates 4 times a day and not at all at night; but there is still a slight degree of pyuria. She refuses further examination. Patient 11 did well, but still has some vesical irritability associated with pyuria. She lives at a distance and can not be reached. In Cases 1, 3, 4, 5 and 10 there was more or less relief. Six of the patients died (33 per cent.) from the immediate effects of the disease (Nos. 7, 8, 13, 14, 15 and 17). Patient 2 died from an intercurrent affection. Patient 16 is in the advanced stages of the disease and will die soon.

These cases have been exclusively personal and the histories cover a period of about ten years in all, beginning at a time when Kelly's cystoscope opened up the field for vesical diagnosis, and especially treatment of the bladder in the female.

PRIMARY SEAT OF ORIGIN OF THE DISEASE.

The question of primary seat of origin of the tubercular process, kidney or bladder, is an interesting one. This is a difficult problem to solve on account of the many factors which enter into it. In two of the cases the bladder alone was affected, Cases 9 and 17. In these cases it was positive that the bladder alone was the primary seat of origin of the disease, for the ureteral urines were examined and no evidence of renal involvement was discovered.

These two cases of strictly localized vesical tuberculosis have an important pathologic interest, because it has never been definitely ascertained how often the bladder is the primary seat of tuberculosis of the urinary tract. Some authors go so far as to say that the bladder is never the primary seat of origin of a tubercular process, while others are equally certain that it is much more common to find tuberculosis originating here than in the kidney. Assuming that the cases mentioned were, in fact, cases in which the kidneys and ureters were free from tuberculous disease, the bladder alone having been affected, we find that they constitute 11 per cent. of all the cases.

This deduction is not conclusive as to the total number of cases in which the bladder might have been the primary seat of the disease, for it necessarily does not include those cases in which the disease might have started in the bladder and afterwards ascended to the upper passages, along the ureteral canal or through the lymphatic system.

Let us now look at the problem from the point of view of the kidney. In the first place the notes of the cases do not show a single instance in which the kidney was the sole seat of the disease at the time the patient came

under observation. This means that the trouble was not recognized by the patient as a sufficient reason for seeking medical advice in the early stages of the disease. In other words, the process may remain latent in the kidney for months, if not years, without giving any more evidence of the serious nature of the affection than an occasional pain in the lumbar region on violent exertion. It is only when the bladder has been reached that distressing symptoms occur which demand relief. Case 15 is an example of this nature, the renal symptoms having antedated the vesical symptoms by several months. Case 18 is also an admirable example of the same nature. This patient gave the history of pain in the lumbar region on the right side for many years before the first appearance of any vesical disturbance. Case 1 is another example. This woman also had suffered from renal pain for many years. So long had the last two patients suffered in this way as to raise the doubt that the original renal affection was tubercular. Possibly they both had some other disease of the kidney on which the later tubercular affection had become engrafted. This further complicates the problem.

Eleven had positive renal involvement, Cases 1, 2, 3, 6, 7, 10, 13, 14, 15, 16 and 18. In all of them there seemed to be sufficient evidence of a tubercular process in the kidney, as evidenced by physical signs and by a rigid examination. In eight, Cases 1, 3, 6, 7, 10, 13, 15 and 16 the corresponding ureter was simultaneously diseased. In three, Cases 2, 14 and 18, the ureter was apparently free from infection. Of course, it is not always possible to affirm that a ureter is or is not diseased by the means at our present command. In the eight cases, with the exception of Case 3, the ureter was enlarged vaginally; in Case 3 it was the upper part of the ureter that was enlarged, as was discovered at operation. Among the remaining seven cases there was positively no renal disease in Cases 9 and 17; but in the other five it was doubtful, judging from symptoms or from physical signs; these latter were Cases 4, 5, 8, 11 and 12. In Case 4 there was an enlarged ureter vaginally; in Case 5 there had been right renal pain for three years, but the patient could not be catheterized; the patient in Case 8 was lost sight of, but it was learned that she died with "a tumor in the left side under the ribs;" in Cases 11 and 12 there is still pyuria, although the patients are much relieved; they refuse further examination. If we may assume that there is renal involvement in Cases 4, 5 and 8, these added to the eleven in which it was positively ascertained that the kidney was affected, give 14 out of 18 cases, or 77 per cent., with renal involvement.

This analysis does not help us much in solving the question. We can only say that renal involvement appears to be pretty constant, but we are left in the dark as to how often the primary origin is in the kidney.

It would seem that some light might be cast on this subject if physicians would pay more attention to complaints of lumbar pain localized on one side and complained of for some considerable length of time. If, in such cases, a careful examination of the urine were made as a routine practice, and if such examination showed pyuria, a cystoscopic examination should be made at once in order to detect its source. In many such cases the kidney might be found to be the seat of a tubercular change. Such a routine practice would help us to determine in which organ, kidney or bladder, a primary tuberculosis is commoner. It would also result in inestimable advantage to the patient, for it would be made possible by an early diagnosis to give the sufferer the great benefit of early climatic treatment, so important in these cases.

CASE 1.—Mrs. J. H. B., May 19, 1898, age, 36, American.
Family History.—Negative.
Tuberculosis Elsewhere.—None apparent.
Symptoms.—Constant pain in kidney since 1882; vesical irritability since 1895; gradual loss of strength and flesh.
Examination.—Large mass under r. ribs; no cystoscopic exam.; condition of ureters not determined; bladder urine contained pus, blood, casts, epithelia; no t. b. found; guinea-pig test positive.
Parts Involved.—Bladder; r. ureter; r. kidney; probably primary in kidney.
Treatment.—May 19, 1898; r. nephrect. (Dr. F. H. Davenport). R. ureter much enlarged and gristly; l. *in situ;* kidney disorganized and filled with pockets, cheesy pus; tuberculosis.
Remarks.—Bladder symptoms never marked.
Date of Last Note.—Letter received Feb. 27, 1906, states that she urinates 6 t. d., and 6 n't; no dysuria or hematuria; urine fairly clear most of time; no pains anywhere except in back, on exertion only; general health good; sleeps well; works every day.

CASE 2.—Miss E. B., June 14, 1903, age 30, American.
Family History.—Mother d. "meningitis." Otherwise neg.
Tuberculosis Elsewhere.—Tuberc. of l. lung.
Symptoms.—Vesical irritability since June, 1902; painful mict.; "drop" hematuria.
Examination.—Cystoscope: large ulcer next to r. uret. orifice; general injection; bladder urine contained pus, blood, epithelia, casts and t. b. $\Delta = 1.36$; l. uret. urine too small to exam., $\delta = .51$.
Parts Involved.—Bladder, l. kidney.
Treatment.—Nephrot., July, 1903, sudden kidney abscess (Dr. C. L. Scudder); silver nit. for ulcer, duotal; corros. subl. (Guyon), February and March, 1904; grt. relief followed.
Remarks.—Tubercular vesical ulcer on side opposite to that of kidney lesion; grt. relief, Guyon treatment; l. kidney inactive.
Date of Last Note.—April 5, 1906. Sudden anuria ushered in with severe r. kidney pain; nephrot. immediately; decapsulation; urine immediately flowed from bladder and loin; death at end of 18 days.
Autopsy: Small uret. stone impacted at upper third of uret.; l. kidney disorganized.

CASE 3.—Mrs. A. C.,[6] Jan. 19, 1899, age 37, American.
Family History.—Mother d. pul. tuberc.; mother's family all phthisical.
Tubercuiosis Elsewhere.—None apparent.
Symptoms.—Pain in back since 1880; pain in l. lumbar region 3 mos.; pain in bladder when urine is retained; loss of flesh; vesical hemorrhages; severe one in 1880, another in 1881; smaller ones since; many lately; clots.
Examination.—Cystoscope; many small ulcers throughout the bladder; r. uret. urine contains pus, casts and epithelia; no t. b. found; l. uret. urine neg.; guinea-pig test positive.
Parts Involved.—R. kidney; uret.; bladder.
Treatment.—R. nephrec., April 8, 1899 (Dr. Edw. Reynolds); upper part of uret. also removed, tuberc.; kidney adherent to post. abdom. wall by firm adhesions; tuberc. cortex, papillæ and pelvis.
Remarks.—Crossed symptoms. Did adhesions to post. abd. wall have anything to do with peculiarity? Cure of vesical lesions by means of persistent use of silv. nit. before nephrec.; recurrence, same train of symptoms, after interval of 6 years.
Date of Last Note.—Feb. 24, 1906. Complete relief for 6 years after operation. In July, 1905, severe vesical hemorrhage; then incontinence, urine; pyuria; vesical irritability; cystoscope showed numerous ulcers in bladder; condition of l. kidney not ascertained.

6. This patient's case was reported by Dr. Edward Reynolds in Bul. Free Hosp. for Women, vol. i, No. 1. She was first seen by the author and then passed into Dr. Reynolds' care

CASE 4.—Miss J. C., Feb. 14, 1906, age 23, American.
Family History.—Neg.
Tuberculosis Elsewhere.—None apparent.
Symptoms.—Backache, 2 years; pain in lower abdomen; tired; vesical irritability 5 years; no pain, except when urine is retained.
Examination.—Kidneys neg.; r. uret. neg.; tender over l. uret. from its middle down; vaginally, l. uret. much thickened; cystoscope; general injection; many small tubercles in stage of repair; patch of gran. tissue to r. of l. uret. orifice; bladder urine contained pus, t. b., epithelia, small gran. casts, and some blood; r. uret. urine neg.; l. uret. urine contained epithelia, few small gran. casts, some pus cells.; guinea-pig test neg.
Parts Involved.—Bladder; lower part l. uret.; probably primary in bladder.
Treatment.—Patient had been living in open air a year before exam.; much more comfortable since adopting this mode of life; sent back to country; no local treatment.
Remarks.—Guinea-pig test failed; clinical and microscopic exam. unequivocal.
Date of Last Note.—April 5, 1906; doing well.
CASE 5.—Mrs. N. C., March 2, 1905, age 60, Irish.
Family History.—Son d. "pleurisy;" grandchild d. "meningitis."
Tuberculosis Elsewhere.—None apparent.
Symptoms.—Pain in r. kidney region since 1901; pain in bladder since November, 1894, felt after urination; vesical irritability since 1902.
Examination.—Cystoscope; general injection, swelling, several ulcers of moderate size; bladder urine contained pus, epithelia, blood, hyal. and gran. casts, and t. b., free and in clumps.
Parts Involved.—Bladder and probably the r. kidney.
Treatment.—Desultory; silv. nit.
Date of Last Note.—April 4, 1906. Patient still has vesical trouble; frequent mict. attended with pain; periods of remission, during which she is fairly comfortable.
CASE 6.—Miss C. C., Sept. 30, 1897, age 22, Irish.
Family History.—Negative.
Tuberculosis Elsewhere.—None apparent.
Symptoms.—Pain in l. kidney region and vesical irritability since September, 1896; some incontinence; pain in urethra on urinating.
Examination.—L. kidney much enlarged; l. uret. enlarged abdominally and vaginally; resistance over kidney and uret.; cystoscope; general injection, swelling of mucous membrane, which bled easily, scars; bladder urine contained pus, epithelia, casts and blood; no t. b. found; r. uret. urine neg.; l. uret. urine contained pus, epithelia, blood and casts.
Parts Involved.—Bladder; l. uret. and kidney.
Treatment.—Nephroureterect., Oct. 25, 1897; kidney entirely disorganized by tuberc.; uret. much enlarged, removed *in toto;* slow convalescence, fresh air, rapid improvement in bladder symptoms; loin fistula closed Sept. 7, 1898; bladder now showed gran. area over l. uret. orifice; silv. nit.; recurrence, bladder irrit., May, 1899; cystoscope showed bladder filled with gran. tissue; whole surface cauterized with silv. nit. under ether. Oct. 22, 1899, better; urinated 3 to 4 t. d., 0 n't.; bladder clean, except small red area over l. uret. orifice; from this time until May, 1903, patches of redness in bladder; nit. silv. Sept. 14, 1904; well; no bladder trouble; no pyuria.
Remarks.—Rapid improvement of bladder symptoms after thorough cauterization of bladder; persistence of "patchy" cystitis, yielding to silv. nit.
Date of Last Note.—March 1, 1906. General health excellent; gain of weight; bladder does not bother; urinates 2 t. d., 0 n't.; no dysuria; no hematuria; no renal pain; sleeps well; works hard every day and has done so since operation; good health for 2 yrs.; urine, 1,020; no alb.; ac. sed., neg.; no pus.
CASE 7.—Mrs. F. J. T., Sept. 15, 1903, age 22, Irish.
Family History.—Negative.
Tuberculosis Elsewhere—None apparent.
Symptoms.—Vertigo; loss flesh; diarrhea; pains in l. lumbar and hypoch. regions since 1901; vesical irrit, and pain in urethra on urinating, since 1896.
Examination.—L. kidney twice normal size; l. uret. much enlarged vaginally; large r. kidney; cystoscope; two ulcers; general injection; bladder urine contained pus, blood epithelia and t. b., $\Delta = .53$; r. uret. urine, clear, urea. .63 per cent. sediment, neg.; no urine collected on left side; $\delta = .58$; guinea-pig test positive.
Treatment.—Nephrec. l. kidney Sept. 29, 1903; kidney adherent to diaphragm; uret. large throughout; abandoned on account of collapse; complete anuria; nephrot. r. kidney, October 4; cystic kidney found.
Autopsy: Complete cystic right kidney; some cysts filled with grumous matter, pure calcic oxalate, others filled with clear fluid, giving urea, .63 per cent. same as found in r. uret. urine.
Parts Involved.—L. kidney uret. and bladder tuberc; r. cystic kidney.
Remarks.—It was thought that the r. kidney was hypertrophied through compensation and l. enlarged on acct. of secondary changes; instead, l. was hypertrophied and tuberc. while r. was cystic. Low urea on r. should have been heeded, but absence of urine on l. (reflex?) was misleading.
Date of Last Note.—Patient died Oct. 5, 1903.
CASE 8.—Mrs. M. F., Oct. 9, 1901, age 38, Irish.
Family History.—Negative.
Tuberculosis Elsewhere.—None apparent.
Symptoms.—Loss strength; indigestion; pain in l. lumbar and hypoch. regions since October, 1900; vesical irrit, and painful mict. for some time.
Examination.—Tenderness over course of l. uret.; l. uret. enlarged vaginally; l. kidney neg.; cystoscope, general injection, few ulcers, patch of gran. tissue on trigon; bladder urine contained pus, shreds, epithelia, blood, casts and t. b.; l. uret. urine contained casts, blood, epithelia, and very little pus.
Parts Involved.—Bladder; l. uret.; probably primary in bladder.
Treatment.—Curetted, Nov. 14, 1901.
Remarks.—Operative interference steadily refused.
Date of Last Note.—Patient died October, 1904. For many months preceding death there was large tumor in l. kidney region.
CASE 9.—Miss A. F., March 23, 1904, age 28, American.
Family History.—Negative.
Tuberculosis Elsewhere.—None apparent.
Symptoms.—Vesical irritability, 7 yrs.; severe, 5 mos.
Examination.—Kidneys and urets. neg.; cystoscopic; many tuberc. in bladder; one large ulcer near l. uret. orifice; bladder urine contained pus, blood, a few casts, epithelia and t. b.; r. uret. urine neg.; few gtts. urine collected in 5 hrs. from l. uret. urine; contained a little blood and epithelia; guinea-pig test positive with bladder urine.
Parts Involved.—Bladder; primary vesical tuberc.
Treatment.—Vaginal cystot., April 2, 1904; from July, 1904, until February, 1906, constant vesical irrigations with boric acid 2 t. d., daily instillations of corros. subl., occasional applications of silv. nit., occasional dosage with duotal; Feb. '24, 1906, urine free from pus; bladder looked healthy; May 16, 1906, fistula closed.
Remarks.—Perfect comfort after fistula was made; Guyon treatment carried on at home; patient has been earning living since fistula was made. Constant improvement and gain in weight since operation.
Date of Last Note.—Sept. 30, 1906. Patient urinates once in 3 hrs.; bladder is contracted; holds 190 c.cm.; being dilated by hydr. distension; comfortable.
CASE 10.—Miss G., April 12, 1905, American.
Examination.—Kidneys neg.; r. ureter thickened vaginally; base of bladder very much thickened; cavity holds not more than 30 c.cm.; cystoscope; red gran. membrane, ulcerated thoroughout, bleeding easily; bladder urine contains pus, epithelia, blood and t. b.
Parts Involved.—Bladder; r. kidney.

Treatment.—Resection of r. kidney, in 1903, by Dr. C. G. Cumston; relief from kidney pains; cystot.

Remarks.—Bladder was so thoroughly diseased and reduced in size by tuberc. changes it did not seem possible to effect any improvement; incurable.

Date of Last Note.—Lost sight of.

Case 11.—Mrs. C. H., April 21, 1903, age 50, Irish.

Family History.—Negative.

Tuberculosis Elsewhere.—None apparent.

Symptoms.—Headaches; vertigo; loss flesh; indigestion; occasional r.-sided colic and hematuria for 27 yrs.; occasional vesical irrit. for 27 yrs., but constant lately and attended with painful mict.

Examination.—Kidneys and urcts. neg.; cystoscope; general injection; on post. wall of bladder large area calcareous matter; bladder urine contained pus, blood, epithelia and t. b.; impossible to catheterize either ureter.

Parts Involved.—Tuberc., bladder; evidence of old kidney stone.

Treatment.—Supra-pubic cystot., April 28, 1903 (Dr. C. H. Hare); calcareous matter removed; drainage for 6 weeks; closure; Guyon treatment with corros. subl. until March, 1904; at this time well; urination 3 to 4 t. d., 0 n't.; no pyuria.

Remarks.—Kidney has given no further trouble; had period of arrest of disease, lasting many mos.; recurred later.

Date of Last Note.—March 25, 1906, health good; bladder troubles a little at times; urinates 12 t. d., sometimes painful; no hematuria; some sediment in urine at times. Letter says: "Some pains in the region of the kidneys." Still has pyuria. (Probably still has the disease.)

Case 12.—Mrs. A. H., April, 1898, age 39, English.

Family History.—Negative.

Tuberculosis Elsewhere.—None apparent.

Symptoms.—Vesical irrit. and painful mict. since April, 1907; loss flesh.

Examination.—Cystoscope, general injection; several ulcers about r. urct. orifice; bladder urine contained pus, blood, epithelia and t. b.; ureteral urines neg.

Parts Involved.—Bladder.

Treatment.—Silv. nit. for ulcers; corros. subl. (Guyon), begun April 25, 1898, and continued until Sept. 8, 1903, with almost no interruption; all ulcers healed; bladder practically well at the end of that time, a few red patches alone remaining; urination 4 to 5 t. d. and none at night.

Remarks.—This case did very well with Guyon treatment; patient was very faithful in carrying out details.

Date of Last Note.—Letter from patient March 1, 1906, says she has enjoyed good health 3 yrs.; urinates 4 t. d., 0 n't.; no pains; urine still has pus in it, possibly from vagina; declines further examination. This case might be classed as a cure.

Case 13.—Mrs. S. J., March 18, 1905, age 35, Armenian.

Family History.—Negative.

Tuberculosis Elsewhere.—Old Pott's disease of the spine; healed.

Symptoms.—Loss flesh (40 lbs.); fever; headaches; anorexia; pain in both lumbar regions 5 mos.; pain over bladder since March, 1904; vesical irrit. (30 to 40 t. d.) since March, 1904; also painful mict. same time; abundant hematuria 2 wks.

Examination.—R. kidney tender to touch; enlarged; r. uret.. enlarged vaginally; cystoscope; general injection; bladder filled with gran. bleeding at touch; small ulcers everywhere; stricture and pyoureter on r. side; bladder urine contained pus, blood, epithelia, casts and t. b., $\triangle = .97$; r. uret. urine contained pus, blood, casts and epithelia, $\triangle = 1.05$; l. uret. urine, same sediment as above; $\delta = .58$.

Parts Involved.—Bladder; both kidneys; r. uret.

Treatment.—Under ether whole bladder was thoroughly cauterized with pure silv. nit.; immediate relief; April 10, 1905, patient was urinating 4 to 5 t. d., 3 to 4 n't.

Remarks.—No severe operation deemed advisable in view of poor general condition and double renal involvement.

Date of Last Note.—Died Feb. 8, 1906.

Case 14.—Mrs. O., June 7, 1899, age 35, American.

Family History.—Negative.

Tuberculosis Elsewhere.—None apparent.

Symptoms.—Since 1897 pain in both kidney regions, with vesical irrit. and painful mict.

Examination.—Tender over both kidney regions; r. kidney enlarged; cystoscope; general injection; whole bladder gran., red; bleeding easily; numerous ulcers; bladder urine contains pus, blood, epithelia and casts; guinea-pig test positive; r. uret. urine contains pus, blood, epithelia and casts; guinea-pig test positive; l. uret. same characteristics; guinea-pig test positive.

Parts Involved.—Bladder; both kidneys.

Treatment.—No operation advised.

Date of Last Note.—Died November, 1899.

Case 15.—Miss A. P., July 24, 1905, age 22, German.

Family History.—Negative.

Tuberculosis Elsewhere.—None apparent.

Symptoms.—Headaches; pain in back and r. kidney region since September, 1904, date of bad fall; vesical irrit. and painful mict. 3 mos., only; hematuria of severe type, 3 wks.

Examination.—R. kidney region very tender; r. uret. much enlarged vaginally; cystoscope; general injection; ulcers everywhere; swollen mucous membrane; Harris' instrument failed to get urine; temporary anuria; bladder urine contained pus, blood, epithelia, casts, many t. b.

Parts Involved.—R. kidney; r. uret.; bladder.

Treatment.—R. nephrect. (Dr. G. G. Averill), July, 1905; kidney tuberc.

Remarks.—Primary seat of origin was evidently r. kidney, as evidenced by pain in lumbar region, which antedated first appearance of vesical symptoms by several months; history of fall is suggestive.

Date of Last Note.—Died Sept. 9, 1905.

Case 16.—Mrs. M. Q., Jan. 15, 1899, age 32, Irish.

Family History.—Negative.

Tuberculosis Elsewhere.—None apparent.

Symptoms.—Backache; pain in r. kidney region since 1896; vesical irrit. and painful mict. since 1896; several attacks of hematuria lately.

Examination.—R. kidney region tender; r. uret. enlarged vaginally; cystoscope; general injection; numerous ulcers; tuberc.; bladder urine contained pus, blood, epithelia, casts, and t. b.; guinea-pig test positive; r. urct. urine contained pus, blood, casts and epithelia; guinea-pig test positive; l. uret. urine same characteristics.

Parts Involved.—Bladder; r. uret.; both kidneys.

Treatment.—Desultory; disappeared.

Remarks.—Tuberc. just beginning on l. side; disease has existed 10 yrs.; has had periods of remission during which she has been fairly comfortable; operative treatment declined.

Date of Last Note.—Seen April 4, 1906; wasted a good deal; much loss of flesh; has had severe vesical suffering; now urinates 5 to 6 t. d., 4 to 5 n't.; at times painful; suffers much pain in r. kidney at times; none in l.

Case 17.—Miss D. R., Dec. 10, 1898, age 17, American.

Family History.—Sister d. "meningitis," maternal aunt d. phthisis.

Tuberculosis Elsewhere.—None apparent.

Symptoms.—Vesical irrit. and pain in bladder since 1891; pain on urination felt in urethra and transmitted to r. heel.

Examination.—R. kidney region tender; cystoscope; general injection; many tuberc.; bladder urine contains pus, blood, epithelia, casts and many t. b.; guinea-pig test positive; uret. urines neg.; guinea-pig tests neg. in both.

Parts Involved.—Bladder; primary vesical tubere.

Treatment.—Desultory; attempted Guyon treatment.

Remarks.—There seems to be no question about primary vesical tuberculosis in this case.

Date of Last Note.—Died Oct. 12, 1899, by suicide.

Case 18.—Miss K. S., June 5, 1896, age 21, German.

Family History.—Negative.

Tuberculosis Elsewhere.—Tuberc. glands of neck as a child; scars still visible.

Symptoms.—Pain in r. kidney region since a child; vesical irrit. and painful mict. since June, 1905.

Examination.—Large r. kidney; tender over r. kidney region; cystoscope; general injection; several areas gran. tissue, which bled easily; a large ulcer near r. uret. orifice; bladder urine contained pus, blood, epithelia, casts and t. b.; guinea-pig test positive; r. uret. urine contained pus, blood, epithelia, casts and t. b. in large numbers; l. uret. urine neg.

Parts Involved.—Bladder; r. kidney; from history, probably primary in kidney.

Treatment.—R. nephrect. June 20, 1896; cautery of whole bladder under ether, with pure silv. nit., July 10, 1896; grt. relief; urination dropped from 40 t. d. to 4 t. d. in one week; perm. potass. irrigations until May, 1897, not efficacious; in August, 1897, getting irritable again; Oct. 2, 1897, cautery of tuberc. and red patches with galv. cautery; made worse; Guyon treatment, February, 1898, until April, 1899; no improvement; artificial vesico-vaginal fistula, April 25, 1899; cease Guyon treatment; comfort; from now until March, 1904, boric acid irrig.; occasional applications of pure silv. nit. and injections of iethyol and glycerin, March 12, 1904; Guyon treatment resumed and continued until Oct. 24, 1904, when fistula was closed, with success; patient has been completely well ever since; no pyuria; no vesical irritability.

Remarks.—Cure could have been effected sooner had Guyon treatment been instituted at time fistula was made.

Date of Last Note.—Patient has been well 2 years.

URINARY INCONTINENCE.

THE TREATMENT OF CERTAIN FORMS BY THE FORMATION OF A VESICO-VAGINO-RECTAL FISTULA, COMBINED WITH CLOSURE OF THE INTROITUS VAGINÆ.*

REUBEN PETERSON, M.D.
ANN ARBOR, MICH.

Incontinence of urine in the woman is usually due to a vesico-vaginal fistula. The ordinary varieties of such fistulæ are easily cured by plastic surgery if modern methods be employed. Even large fistulæ involving a considerable portion of the vesico-vaginal septum and surrounded by dense scar tissue can be successfully closed by loosening the attachments of the bladder, separating this viscus from the vaginal wall and closing the rent in the bladder wall by a separate suture. But there always will remain cases where the neck of the bladder and portions of the urethra have been so destroyed as to preclude the restoration of the sphincter urinæ muscle, so that continence will be established. Under such circumstances the surgeon must consider the following procedures:

1. He can construct by a plastic operation an urethra which will serve as a channel for the urine, but leaves the patient without control of the stream. This is always an unsatisfactory procedure as far as the patient is concerned. By various devices, such as tamponade of the vagina, the sphincterless urethra may be shut off and the urine controlled to a certain extent. But the patient is never completely satisfied and her dissatisfaction would seem justifiable.

2. He can utilize the rectal sphincter by diverting the urinary stream into the rectum either directly by an anastomosis between the bladder and rectum or indirectly through the formation of a recto-vaginal fistula with a subsequent closure of the introitus vaginæ.

The following case will serve as a text for the discussion of the last-named procedure:

* Read in the Section on Obstetrics and Diseases of Women of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

History.—Mrs. P., aged 60, married, was referred to me by Dr. M. C. Strong, of Jackson. Her present trouble dates back one year, when she began to experience pain, burning and irritation in the neighborhood of the meatus urinarius. The pain was worse when she was on her feet; micturition was quite painful and has become more so recently.

Examination.—On entrance to my private hospital, Oct. 17, 1904, the meatus urinarius was found to be the seat of a growth the size of a cherry. It was dark-red in color and sprang from the upper and lateral walls of the meatus. The growth was somewhat hard and the induration extended up the urethra for about 2 cm. The inguinal glands were not enlarged. A piece of the growth had previously been removed and pronounced malignant by a competent pathologist.

Primary Operation Oct. 17, 1904—*Removal of Growth at Meatus Urinarius.*—A circular incision was made 1½ cm. outside and beyond the growth. The line of demarcation between the upper normal and lower injected mucosa was plainly visible and was situated about 2½ cm. above the meatus. The urethra was dissected out and amputated about 1 cm. above this point. The urethral mucosa was then stitched with interrupted silkworm-gut sutures to the vestibule. So much of the urethra was removed and the integrity of the muscular structures was so impaired that the expected incontinence followed. From the time of the operation the patient practically had no control over the urine. The amputated urethra healed by primary union and the patient was discharged Nov. 9, 1904.

The patient re-entered the hospital March 18, 1905. The incontinence had continued since the first operation and the patient complained of great soreness and irritation about the site of the operation. Examination showed the remnant of the urethral opening, measuring 1½ cm. in diameter. Through this opening protruded the bladder mucosa, forming an external tumor the size of an English walnut. The bladder mucosa was reddened and at one spot was a superficial ulcer 4 mm. in diameter.

Second Operation March 22, 1905.—*Formation of a Vesico-Vaginal Fistula and Closure of the Urethral Opening for the Purpose of Curing a Prolapse of the Bladder.*—A centimeter and a half incision was made in the vesico-vaginal septum 2½ cm. above the cervix. The edges of the vesical and vaginal mucosa were united by interrupted catgut sutures. The prolapsed bladder was replaced and the edges of the opening freshened outward for a distance of 2 cm. The clitoris and upper part of the labia minora were removed during this process. The aperture was closed by a continuous catgut suture, the overlying tissues being drawn together laterally by interrupted silkworm-gut sutures. Both wounds healed by primary union and the patient left the hospital April 12, 1905.

The patient consulted me again June 3, 1905, complaining bitterly of the irritation arising from the continual flow of urine from the vagina. Examination showed perfect closure of the urethral opening, with no bulging. There were great reddening and signs of irritation about the vagina, labia and buttocks, arising from the continuous urinary flow. The patient asked that something be done for her relief and elected the following operation after its disadvantages and advantages had been fully explained to her:

Third Operation, June 4, 1905—*Utilization of Rectal Sphincter by the Formation of a Recto-Vaginal Fistula, with a Subsequent Closure of the Introitus Vaginæ.*—The sphincter muscle was thoroughly stretched and partially paralyzed. A longitudinal opening, 2 cm. in length, was made in the recto-vaginal septum, just above the internal sphincter. The vaginal and rectal mucosal edges were united by interrupted catgut sutures. The remainder of the labia minora were removed, and the surface about the introitus freshened for a distance of 2 cm. The vagina was closed with interrupted silkworm-gut sutures, care being taken to prevent any strain on the stitches. The rectum was drained by means of a large-sized rubber tube. This tube was removed at the end of four days, after which time the patient passed her urine every two or three hours by way of the rectum, having, of course, perfect control over the urine. The vulva stitches were removed at the end of a week, union by first intention resulting. After

the first few days there was one or two partially formed stools daily. The patient was fairly comfortable on leaving the hospital about three weeks after the operation. She experienced some pain just prior to the passage of the urine per rectum. This she attributed to gas passing upward into the vagina, as it was always relieved by the passage of the urine. The patient had to get up once or twice only in the night and was able to retain the urine about three hours in the day time.

Subsequent History.—The patient was very comfortable for a time. Then she found the urine was not passing freely and that straining and pain were of frequent occurrence. August 13, 1905, she was examined under chloroform, and, as suspected, the recto-vaginal opening was found contracted, thus preventing a free passage of the urine. The opening was now made 4 instead of 2 cm. in length, the work being done through the dilated anal opening. The vagina was carefully palpated and inspected and appeared perfectly normal. A catheter was passed into the bladder by way of the recto-vagino-vesical opening and a small amount of urine collected. Careful chemic and microscopic examinations showed this urine to be perfectly normal. For a time the patient was very comfortable. Then she began to have considerable pain in the region of the bladder and the urine seemed to irritate unless large quantities of water were ingested and internal antiseptics were administered.

March 10, 1906, she was again examined under chloroform. The recto-vaginal opening was patulous and admitted the forefinger with ease. The vesico-vaginal opening, however, was greatly contracted. This was dilated and a calculus 1½ cm. in diameter removed from the bladder. The vesico-vaginal opening was made twice its original size and urine withdrawn from the bladder for examination. Again it was found perfectly normal. The patient has been in good health since the removal of the calculus. The rectum apparently serves very well as a substitute for a bladder. She is able to retain the urine three or four hours and has to get up twice only during the night.

The credit of suggesting the utilization of the rectum and the anal sphincter as a substitute for the bladder and urethra is due to E. Rose. He operated on his first patient in 1872. The vesico-vaginal fistula resulting from the extensive destruction of the bladder wall was transformed into a vesico-vagino-rectal fistula with complete success so far as the rectal urethra was concerned. Death followed ten months later from a nephritis brought about by the previous attack of diphtheria. His second patient was operated on for an incontinence following extensive carcinomatous disease. It was a success so far as the function of the rectal urethra was concerned, but death resulted later from extension of the carcinoma. His third patient was operated on nineteen years before his final report.[1] The patient had had various operations for a vesico-vaginal fistula consecutive to a rupture of the bladder and was given up as incurable. A vagino-rectal fistula was made and the introitus closed. The patient had been employed as a maid of all work during the nineteen years and had been in good health. She not only urinated, but also menstruated through the anus, with no resulting infection, as far as could be observed, of either uterus or urinary tract. The autopsies on the first two patients showed no signs of inflammation in rectum or vagina.

INFECTION AS A SEQUEL OF DIVERTING THE URINE INTO THE INTESTINE.

Fortunately, the surgeon can speak more authoritatively on this point to-day than formerly. The results of experimental and clinical work may be summed up briefly as follows: The urinary stream, either from the ureter or bladder, can be safely diverted into the intestine for the purpose of utilizing the anal sphincter, if the vesical ureteral orifices remain intact. On the other hand, pyelonephritis in varying degrees of intensity always follows the anastomosis of the severed ureter with the intestine. I have gone into this subject at some length in a paper dealing with the anastomosis of the ureters with the intestine, which was published in 1901.[2] Hence I had no hesitancy, so far as infection was concerned, in advising my patient to submit to an operation for the formation of a rectal urethra. Infection is not to be feared, because in a vesico-vagino-rectal fistula the ureteral orifices remain intact and act as a safeguard against pyelonephritis. There are many cases in the literature where patients have lived for years without signs of kidney lesions after the formation of a vesico-rectal fistula from the passage of a vesical calculus into the rectum. Keen's case is particularly interesting. The introitus was closed for the relief of a patient suffering from a vesico-vagino-rectal fistula. Twenty-two years subsequent to the operation the patient was in perfect health, with no sign of renal infection. Additional proof is furnished by the present case, where two careful examinations of the urine removed months after the operation failed to show any signs of renal infection.

THE PASSAGE OF FECES INTO THE VAGINA.

I do not believe that this occurs to any great extent. Contrary to expectation, patients with rectal urethras do not suffer from diarrhea. They have one or two well-formed stools daily. Consequently the tendency of the fecal matter is to pass by the recto-vaginal opening. In my experience patients with recto-vaginal fistulæ are not so much annoyed by the passage of feces as of gas by way of the vagina. Any slight amount of fecal matter finding its way into the closed vagina will be washed back again into the rectum by the constantly flowing urine. In the reported cases, my own included, particular mention is made of the freedom from irritation of the vagina.

THE FISTULOUS OPENINGS.

The truth of the above remarks are more or less dependent on the size of the newly-formed recto-vaginal fistula. Obviously, if the entire septum should be removed, the feces of necessity would pass into the vagina. Hence the opening must be neither too large nor, on the other hand, too small. Dread of the passage of the fecal matter into the vagina led me at the primary operation to make the recto-vaginal opening too small, necessitating subsequent enlargement. I believe it can with safety be made four centimeters in length. Its width should be two centimeters or less and the edges of the rectal and vaginal mucosa should be brought together with sutures to prevent subsequent contraction. The vesico fistula should be made a trifle smaller and if the edges of vesical and vaginal mucosa unite by primary union very little contraction will take place. Even in case of subsequent contraction the apertures can be easily dilated from time to time under an anesthetic, a procedure far preferable to enduring the discomforts of incontinence.

THE RECTUM AS A SUBSTITUTE FOR THE URINARY BLADDER.

Experimental work and clinical cases have shown that the rectum tolerates the presence of the urine and acts as a good substitute for the urinary bladder. The pa-

1. Deutsche med. Woch., 1903, No. 24.

2. The Journal A. M. A., Feb. 16, 23; March 2, 9, 16 and 23, 1906.

tient has good control of the anal sphincter, the urine being passed, as a rule, only about once in two or three hours in the daytime and only twice at night. No irritation of the rectum seems to result.

CLOSURE OF THE INTROITUS VAGINÆ.

It must be borne in mind that the operation under discussion is for exceptional cases of such a nature as to preclude the hope of relief by plastic surgery. Hence these women are in a pitiable condition and should not be expected to perform their marital duties, much less expose themselves to the risk of pregnancy. At least in two cases closure of the introitus was made during menstrual life, and the women menstruated through the anus without any resulting ill effects. There is no particular difficulty in securing closure of the introitus at the first operation, provided the stitches are so passed as to preclude urinary contamination. The tendency of gas to pass from the rectum to the vagina can be combated to a great degree by a proper regulation of the diet.

DISCUSSION

ON PAPERS OF DRS. GARCEAU AND PETERSON.

DR. C. P. NOBLE, Philadelphia, said that he thought that Dr. Garceau was very moderate in his statements as to the curability of this condition. In his experience it is far more curable than Dr. Garceau stated. He operated on 16 women, and all of them recovered and are now in sound health. Without any exception they made perfect recoveries. With reference to tuberculosis of the bladder, the question of treatment resolves itself as to whether it is primary or secondary to the kidney, and by doing a nephrectomy or nephroureterectomy it will be followed by a spontaneous cure, if secondary. He has been surprised at the facility with which the women got well. The only man operated on by him, who had tuberculosis of the tract with lung involvement, died at a subsequent date. So far as early diagnosis is concerned, he long ago gave up all methods, with the exception of securing the urine and injecting it into guinea-pigs. This, he said, is the only certain way not to confuse the smegma bacillus with the tubercle bacillus. He is convinced of the curability of this trouble. In one case he was misled. He had a patient with tuberculosis of the kidney and bladder whom he sent home to die, but without any treatment she made a good recovery.

DR. J. WESLEY BOVÉE, Washington, D. C., agreed that the results depend largely on whether or not the disease is localized in those organs. The affections of the bladder disappear if the kidney and ureter are removed, but many cases are found in which not sufficient is done; that is, the kidney is removed and the ureter is left, and the disease tends to get worse. It is necessary to do more than one operation in these cases. Surgeons are not justified in saying that the bacillus is not found, because they are found in urine otherwise normal, so that the presence of the tuberculosis alone is not a positive indication as to the presence of tuberculosis in the kidney.

As to the cases reported by Dr. Peterson, one point is the danger of infection following the operation due to the contamination of the vagina and bladder with rectal contents. If the introitus is closed, the opening into the rectum should be near the sphincter. Make the closure higher in the vagina and get away from the sphincter, as irritation of it means more frequent evacuation. It is interesting to know, he said, whether the vaginal secretion has a bactericidal action on micro-organisms in the presence of urine, as it has in the absence of urine. If he were to do an operation diverting urine from the bladder to the rectum, making use of the rectal sphincter as a sphincter, he would form an artificial bladder from the rectum, bringing down the sigmoid and attaching it also, having the sphincter ani muscle act. In these cases it can be done as a preliminary procedure, and then the opening can be made through into the newly made bladder, and there would then be no risk of future contamination.

DR. EMIL RIES, Chicago, said that in the case reported, undoubtedly various other methods could have been considered, and one was mentioned by Dr. Bovée. He thinks in a similar way the Freund operation could be considered; that of turning down the uterus and utilizing it for plastic purposes. Freund's first case was operated in 1894 and the patient had exceedingly good sphincteric action. In Dr. Peterson's case the woman had passed the menopause. Perhaps, he said, the uterus in his case could have been used for sphincteric purposes. In the same way the Maydl operation can be considered. But the only one who can determine what is the best operation for the case is the one who had to do the work and had the case before him.

DR. R. PETERSON, Ann Arbor, Mich., said that the implantation of the trigonum with the ureteral orifices into the sigmoid or rectum (Maydl's operation) is the ideal method of diverting the urinary stream into the bowel. But it certainly is a more dangerous operation than the one he employed, and his patient was not inclined to take any unnecessary risks. He emphasized the point that when the vesical ureteral orifices are preserved intact, there is very little danger of ascending renal infection, no matter what method of anastomosis is employed. The presence of the calculus in his case should not be counted against the operation. Having nothing to go by, he made the openings between bladder, vagina and rectum too small.

CONSERVATIVE SURGERY OF THE OVARIES.*

EDWARD REYNOLDS, M.D.

BOSTON.

In recent literature it has been usual to speak of the conservative surgery of the uterine adnexa as though it were one subject. In point of fact, the resection of diseased tubes and the conservation of the ovaries belonging to them is usually brought to our attention in inflammatory cases and the question then hinges mainly on the condition of the tube, i. e., on the possibility of its restoration to functional value, as balanced against the possibility of reinfection of the pelvis from the patent stump. In this class of cases the condition of the ovary is usually a subordinate matter. These cases are etiologically in a different class from those which present normal tubes and neoplastic ovaries. They are also distinct clinically since in the latter class the decision rests wholly on the state of the ovary. I believe that confusion has been wrought, that clearness of thought has been lost, by treating the two classes as one. Though both are equally important, in this communication I limit myself to the subject of the surgical treatment of neoplastic ovaries with normal tubes.[1]

The advisability of the conservative surgical treatment of the ovaries must plainly be determined by observation of the ultimate results of such surgery in practice, and this is usually computed by statistical reports of a series of cases, to which is commonly added the judgment of the individual operator.

I think most of us are satisfied that the application of the strictly statistical method to questions of such comparatively vague nature as the ultimate influence of a conservative operation on the nervous system and general health of a patient is not only capable of producing any result to which the general judgment of the reporter

---

* Read in the Section on Obstetrics and Diseases of Women of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

1. From a clinical standpoint there are of course cases in which cystic ovaries are attached to inflamed tubes or in which the tube attached to neoplastic ovaries is slightly inflamed, but even from a clinical standpoint the cases usually arrange themselves clearly into one or the other class and the existence of transitional cases may clearly be disregarded from the academic point of view.

tends, but is practically certain to result in support of the side of the case for which he is arguing. I find myself so little influenced in such matters by the percentages deduced from the tabulation of long lists of hospital or otherwise more or less forgotten cases, that in preparing myself for this paper I determined to limit my review of my own experience to the cases of those patients in my private practice whom I have been able to keep track of for at least a year and a half and who were at the same time recent enough for me to be able to retain some personal recollection of them in addition to my records. This gives me 29 cases operated on between December, 1902, and February, 1905. Most of these patients I have seen from time to time; the remainder I have looked up recently, and I have used the study of these 29 cases as a basis for the modification or confirmation of the general opinions which I have formed in the course of my work. I believe the deductions to be more valuable than they would be if they had been drawn from the much larger number of less closely observed cases of which I have records from my hospital and consultation practice. The cases quoted are briefly reported at the end of the paper.

My subject proper may perhaps be summarized as dividing itself into two questions: What ovaries should be subjected to conservative surgery? By what method or methods of technic should the ovaries so selected be treated? In the attempt to answer these questions I give, then, my own conclusions as deduced from experience, believing that this is the best contribution I can make to this discussion.

WHEN CONSERVATIVE SURGERY IS ADVISABLE.

In any consideration of the conservation of the ovaries it is necessary to remember, first, that there are two ovaries, and, second, that so far as our knowledge goes one ovary is functionally as satisfactory as two. There is a general impression among surgeons, with which I am personally inclined to agree, that the existence of distension from cystic disease in one ovary tends to excite the appearance of similar trouble in the other. It is my rule that if one ovary is extensively cystic, while the other is normal, it is better to remove the cystic ovary completely, even though it contains some ovarian tissue which might be conserved, but at the risk of further cystic disease. If both ovaries are considerably affected the better of the two should be operated on first by conservative methods. If it proves that but a small fragment of ovarian tissue is left, the same conservative efforts should be made on the other side; if, on the contrary, the conservative care of the first ovary leaves a substantially normal organ, and the second is extensively diseased, I think it is better to remove it. If both ovaries are slightly affected, as for instance by only one or two small superficial cysts, I think it is best that both should be subjected to conservative operation. For the rest, in applying the principles of conservative surgery to the ovaries, we must be guided partly by the physical and pathological characteristics of the individual neoplasms, and partly by the age of the patient; and as a matter of convenience in arrangement, I discuss the latter first.

The object for which conservatism is adopted is the preservation of the functions of the ovaries. These organs possess certainly two functions and possibly a third: First, their products are essential to conception; second, they govern or in some way are essential to the menstrual phenomena which are intimately connected with the woman's whole physiology during the central or active period of life; thirdly, they may or may not influence the woman's general constitutional condition through the reabsorption of a so-called internal secretion.

In the majority of cases child-bearing becomes unlikely at or about forty, and in most cases at that age the bare possibility of this which remains has usually become less important; menstruation ceases on an average about forty-five; in women after this age the only value of the ovaries lies in the somewhat hypothetical importance of their so-called internal secretion, and even the strongest advocates of this theory admit its decreasing importance as time goes on after the menopause. The value of conservatism should then be estimated differently for each of these three periods of life, i. e., for young women, for those approaching, and for those who have passed the climacteric.

In weighing the importance of preserving the ovaries in a given case the possibility and desirability of child-bearing stands first. It may be admitted that in young women with the prospect of maternity ahead of them it is always desirable to do the most conservative operation which offers a fair prospect of freedom from further ovarian disease, and if, in these days of the safe and easy performance of the lesser abdominal operations, the case is fully explained to the patient from a fair standpoint there are very few young women who will not cheerfully accept the possibility of a second operation of this nature after the lapse of some years, rather than lose both ovaries at the first operation. In women approaching forty, with whom the probability of child-bearing is decreasing or problematical, its importance will be decided by the social state, the existence of other children, and such considerations, and for women well over forty this consideration fails.

In my experience, however, the age of the patient is of perhaps equal importance as regards the government of menstruation, i. e., the amount of nervous trouble which may be expected after a castration, or avoided by a conservative operation. From puberty to maturity the tide of sexual life is rising and is one of the dominant forces in the woman's whole physiology, health and happiness. To dam it suddenly at this age spells a neurasthenic catastrophe in a very large percentage of cases. In some cases it may be necessary but it is always to be avoided if possible. From twenty-five to thirty-five the tide is full and is of almost equal importance, though I think a larger percentage of women will now avoid an actual nervous breakdown after a castration. From thirty-five on the tide is on an average ebbing. I think it is not generally appreciated that for many years before the actual cessation of the catamenia there is a gradual natural preparation for it. As a rule the intervals between conception lengthen, the sexual impulses slacken, and, with occasional exceptions, as the woman passes into middle age the sexual life becomes progressively of less and less dominant importance.

This point of the effects of castration I have been obliged to study from another set of cases. I have seldom been among the first to adopt new operations. I think I have been too slow in becoming convinced of the importance of the conservation of the ovaries in every young woman where it is possible. It is only within the last five years that I have been pursuing the conservative operations steadily, and with the many cases of destructive inflammatory disease, of malignant disease, and of the other conditions which render the retention of the

uterus inadvisable the list of total ablations in the middle-aged must always remain a large one. My own experience has been far too small. Again confining myself to my private practice and to those patients whose personalities I remember well and who fall within the same period of time I have been able to refer to a quite large list of such cases, and on reading over their records I have been confirmed in my previous impression that in women from 35 years of age and over the percentage of nervous disturbance from the forced menopause is an increasingly small one, until after forty it becomes insignificant.

Of late years in a comparatively small number of cases I have avoided the removal of normal ovaries in hysterectomy for uterine disease, but have seen no difference in the results and have become convinced that in women of middle age at least the importance of the so-called internal secretion is at most but trifling and, I think, non-existent, but on this point my experience is as yet too small to justify a firm conclusion.

My general position as derived from my experience is, that allowing for modifying circumstances the importance of conservatism varies inversely with the age of the patient; that on the average it is not to be advised after the latest thirties, but is to be insisted on in almost every instance in young women; and, again in my opinion, its importance is but little affected by the variations in the pathologic character of ovarian neoplasms, with the single exception of malignancy.

Malignant neoplasms are from their very nature excluded from consideration in conservative surgery, but in the surgery of the ovaries there may be one possible and rather theoretic exception, i. e., the existence of one normal and one malignant ovary in the case of a woman for whom pregnancy is especially desirable. In such a case it might be justifiable to leave the normal ovary undisturbed but under close observation.

CLASSIFICATION OF OVARIAN GROWTHS.

The pathologic classifications of benign enlargements of the ovary are still clinically blind. From the clinical standpoint we are very little, if at all, guided in our treatment by the pathologic question as to the origin of the cystomata from Pflüger's tubules, the Graafian follicles, the Müllerian ducts or the Wolffian body, and are mainly influenced by their physical condition, i. e., the size and number of the cysts and their situation in the ovary. A convenient classification of the benign growths is:

A. Cysts originating from the corpora lutea.
B. Dermoid cysts.
C. So-called simple Graafian cysts:
    1. Single or multiple of size sufficient to form tumors external to the ovary.
    2. Enlargement of the ovary by numerous small cysts within the stroma (Rokitansky's tumor).
D. Enlarged sclerotic ovaries.

TECHNIC.

The conservation of the ovaries seems to me of almost equal importance in all these varieties and even the technic of their treatment is affected more by the size and number of cysts, and by the physical characteristics of uniformly enlarged ovaries, than by their exact pathologic character. These lesions may be treated by:

A. Evacuation, puncture and removal of the lining membrane with or without suture.
B. Resection.
C. Bisection of the ovary and multiple puncture or resection.
D. Scarification or multiple incision of the surface.

Corpora Lutea Cysts.—The smaller cysts from the corpora lutea and those ovaries which contain not more than half a dozen small surface cysts from the Graafian follicles are peculiarly adapted to puncture of the cysts and the removal of the lining membrane.

If an ovary which contains a persistent and abnormally enlarged, and enlarging corpus luteum be seized between the thumb and finger in such a way that moderate pressure is put on the base of the cyst and the distal surface of the enlargement incised by the knife the whole mass may usually be expressed on to a sponge, leaving a clean surface of normal ovarian tissue behind it. The thin edges of the cyst may require trimming by the scissors but it is often surprising how small a surface is left after the removal of a cyst of considerable size, and in cysts of this character up to the size of an English walnut after the trimming of the thin cyst walls the surface left can usually be closed with a few fine sutures, without the loss of any ovarian tissue and leaving a normal organ behind it.

Cysts of the Graafian Follicles.—In similarly small cysts of the Graafian follicles if the ovary be seized in the same way and a pair of snap forceps is forced through the cyst wall while a sponge is held to catch the fluid, the forceps may be made to seize the lining membrane, and it is surprising how often by a movement of torsion of the forceps the whole lining or active portion of the cyst can be twisted out intact, and again without the loss of ovarian tissue. In many of these cases no suture is needed, the cyst wall of cysts as large as a hazel nut often shrinking together in such a way as to leave little or no cavity, and but a small puncture which has ceased to bleed before the operation is completed. The situation of that ovary is but little different from that which follows the normal rupture of the follicle. In instances which do bleed I have never seen trouble follow the insertion of deep sutures of fine silk, whipped over and over in such a way as to compress the whole base of the evacuated cyst. I have been surprised to find that the cases in which I have used fine silk for deep ovarian sutures have shown no more subsequent pain or trouble than when I have used an absorbable suture. After the removal of even four or five cysts by this method no ovarian tissue has been lost, and the organ is in a practically normal condition. The excision of each of numerous cysts would have left a much mutilated organ, but this process must be limited to fairly superficial cysts.

Careful perusal of my records shows that while a few cases treated in this way have temporarily had heavy and distinctly enlarged ovaries for a few months after the operation, the ultimate results have been exceedingly satisfactory. These were probably cases in which I underestimated the importance of oozing within the cyst cavity and neglected to place sutures where they should have been used, and the temporary enlargement in these instances was probably due to the formation and subsequent absorption of a harmless clot within the cavity. Unfortunately my records have seldom been detailed enough to enable me to postulate this, but the results make it tolerably evident. The cases to which I am limiting myself are not sufficiently numerous to warrant any statistical conclusion, but all have been subjected to careful depletion in after treatment whenever there was any reason for it, and so far I have not been obliged to operate a second time for any of these cases.

Large Cysts.—Dermoid cysts, large tumors from the corpora lutea and large single or multiple, so-called Graafian cysts must be treated by excision, and here I have learned of late a fact which I chanced on by accident and which I have reason to believe is known to but

few operators. I have seen several instances of large cysts varying from the size of an orange to that of the adult head which appeared to have destroyed the entire ovary, i. e., in which no trace of ovarian tissue could be seen about the pedicle of the tumor, but in which it was, nevertheless, possible to conserve a normal and practically normal sized ovary. The first of these cases was that of a young girl about to be married in whom both ovaries were much enlarged and for whom I had promised to save any scrap of normal ovary. One ovary was distended to, perhaps, twice the size of a large English walnut by a great number of small cysts. This I felt obliged to remove. The other consisted of a single cyst, evidently of so-called Graafian origin and of about the size of a small orange. Its walls were uniformly thin and translucent, except at the hilum, where they were thick and white over perhaps the basic fourth of the tumor surface. With little hope of finding any ovarian tissue, but in strict pursuit of my promise, I made a careful superficial incision through the edge of the thinner part until I had exposed the thin translucent cyst wall under it. Passing the handle of the scalpel into this and separating the thin internal wall from the thicker external portion by blunt dissection, I found a plane of cleavage and was able to shell out the thin walled cyst entire, hoping against hope that I might find some small portion of ovarian tissue about the hilum. To my surprise, the circle of thicker wall about the hilum so left retracted after the removal of the cyst into the shape and size and to all appearance the substance of a normal ovary. Several subsequent but less marked cases have led me to hope that there are but few cases of large single cysts of a benign nature in which this process may not enable us to preserve some portion of a normal ovary. I have gone into this phenomenon in detail, because, although it may be known to many of you, it is new to me, and, from conversations with a number of experienced surgeons, I am confident that there are some of you to whom it will be as interesting and unexpected as it was to me.

Rokitansky's Tumor.—The condition known as Rokitansky's tumor in which the ovary is distended by very numerous small cysts lying not only on the surface, but throughout the stroma, each being thin walled, simple, and with no noticeable lining membrane, demands a different treatment. Until recently I believed them unfit cases for conservative treatment. I still look on them as the least hopeful and would remove a well-marked ovary of this character if the other were comparatively normal and fitted for conservative treatment. My experience of the conservative treatment of these ovaries is still too limited to enable me to draw safe conclusions, especially as the cases which I have treated by the technic I am about to describe are all among the more recent from which I have dared to draw conclusions, but the few cases which I am able to quote are all improving enough to make me feel that I shall, with some caution, pursue this line in the future. The little knowledge that I have is empirical, but the stroma of these ovaries is always edematous, the ovaries feel uniformly tense and swollen, and, acting on the theory that this abnormal tension probably favored the continued production of the cysts, I have first punctured with a blunt instrument (a fine pointed small artery forceps) all the superficial cysts, then seizing each end of the hilum with compression forceps in order to lessen bleeding, and with the ovary drawn outside the abdomen and surrounded with gauze, I have bisected it from end to end and from the edge almost to the hilum, with the knife, and guided both by sight and by palpation of each half between the finger and thumb, have pushed the closed fine pointed artery forceps into every cyst that could be seen or felt, however numerous or small they might be. These numerous punctures sufficiently drain the ovary which becomes soft and flabby in the process. I have then removed the forceps from one end of the hilum, passed a needle, armed usually with fine silk, through the tissues below the ovary at about one-third distance in from the edge of the hilum and tied the suture tightly, thus cutting off about one-third of the circulation. Passing the needle again through the tissues below the ovary, I have drawn the thread around the whole ovary while the divided halves are held in apposition by the finger and thumb, and again passed the needle through the tissues below the ovary so that the stitch encircles the whole organ, holding one end of the divided halves together. Repeating this stitch again and again, the whole ovary is whipped together by successive encircling loops of silk, the needle being passed entirely beneath the ovary in the tissues of the broad ligament or through the ovarian substance, as from time to time may seem most appropriate and best calculated to hold the bisected halves in apposition. The stitch is then finished by a final knot which compresses the circulation at the other end of the hilum, again for about a third of its length, some two-thirds of the circulation being thus effectually cut off. I have reached this apparently somewhat reckless use of fine silk, or at times catgut, in the ovarian tissues by gradual stages, but have grown to be confident that deep stitches even of silk through the ovarian tissue produce no after pain or ill results. As a whole, the after history of these cases has been that such ovaries have been heavy and again enlarged somewhat after operation, and with some persistence of symptoms, but that both physical conditions and symptomatology have then gradually improved, and so far as I can see have been followed by eventual recovery.

Enlarged Sclerotic Ovaries.—The enlarged sclerotic ovaries I have considered until very recently entirely unfit for conservative operation in cases in which they were causing sufficient symptoms to demand any operation whatsoever, and I believe that substantially enlarged sclerotic ovaries have usually been removed by operators when met with as probably promising future trouble. In some cases in which I have met with them incidentally in the course of operations undertaken for other reasons, as, for instance, in myomectomies, and in which I was unwilling to remove them, I have freely scarified their surface with the knife, making parallel cuts from a sixteenth to an eighth of an inch deep and perhaps a quarter of an inch apart over the whole external surface of each ovary and have been inclined to believe that subsequent examination has shown that they have decreased in size, but the cases are too few and too recent to warrant any conclusions. I can only say that the treatment seems innocuous and promising enough to be worth trying when occasion offers incidentally.

CASE SUMMARIES.

Case 1.—Mrs. C. W. (No. 2277). Referred by Dr. Hodgdon. Operation Nov. 1, 1904. Both ovaries about twice the normal size, and showing numerous small cysts. Right ovary, a corpus luteum, removed by excision, ovary split, and several small oblique cysts punctured with forceps, closed with silk. Left ovary several superficial cysts punctured and lining pulled out.

Sutured with silk. Suspension and appendectomy. Repeatedly and recently examined. Ovaries have remained small. No pregnancy.

CASE 2.—Mrs. W. (No. 1716). Operation Sept. 24, 1902. Right ovary size of lemon, removed. Left ovary, one cyst about size of a grape, punctured and lining pulled out. Numerous small cysts of Morgagni removed. Myomectomy of small fibroid, appendectomy, discission of os uteri. Recently and repeatedly examined. Remaining ovary has never enlarged. No pregnancy. Now under treatment for acid secretion.

CASE 3.—Miss F. (No. 1852). Operation Nov. 12, 1902. Left ovary normal. Right ovary enlarged by single cyst of Graafian follicle, punctured and lining pulled out, sutured with silk. Suspension and appendectomy. Recently and repeatedly examined. Right ovary somewhat large and heavy, not tender thirteen months later. Not seen again for six months, when right ovary was normal, and has so continued. Unmarried.

CASE 4.—Mrs. W. S. P. (No. 2104). Referred by Dr. Lovett. Operation Nov. 4, 1903. Right ovary about three times normal size owing to single cyst of Graafian folliele. Cyst excised and wound closed with silk. Left ovary, three superficial Graafian cysts, punctured and lining membrane pulled out. Not sutured. Appendectomy. Not seen for three years, but repeatedly reported as well in interval. April 26, 1906, both ovaries slightly large, especially the right, not tender, no symptoms. Complained of sterility. Cervical secretion normal, vaginal profuse, turbid, and acid. Under treatment for sterility.

CASE 5.—Mrs. H. P. (No. 2249). Referred by Dr. Benson. Operation June 27, 1904. Left ovary size of a hen's egg, multiple cysts. Removed by excision, leaving small portion of ovary near hilum, sutured with silk. Right ovary the same condition and treatment. Cysts of Morgagni removed from each tube. Suspension, appendectomy, trachelorrhaphy, perineorrhaphy. Not seen since convalescence, but repeatedly examined and reported on by her physician, a good diagnostician. Ovaries have not enlarged. No pregnancy. Operated on for peculiar sexual psychopathia, which has not improved.

CASE 6.—Mrs. W. A. (No. 2201). Referred by Dr. Mason. Operation Feb. 8, 1905. Left ovary, hemorrhagic cyst size of a normal ovary, resected, leaving ovary almost normal size. Right ovary, numerous small superficial Graafian cysts, punctured and lining removed. Neither tube thickened, both constricted and occluded in outer third, both resected. Recently and repeatedly examined. Ovaries have remained normal size. No pregnancy.

CASE 7.—Miss M. T. (No. 2050). Referred by Dr. Knowles. Operation Sept. 30, 1903. Right ovary, one cyst size of English walnut, excised and wound closed with silk. Left ovary normal. Suspension. Examined by Dr. Knowles March 19, 1906, who reports symptoms entirely relieved; no enlargement. Unmarried.

CASE 8.—Mrs. C. S. (No. 2274). Referred by Dr. Knowles. Operation Feb. 27, 1905. Both ovaries contained single, thin-walled cysts of the Graafian follicles of the size of small English walnuts. Both punctured, lining membranes pulled out and sutured with silk. Fixation, trachelorrhaphy, cystocele and perineorrhaphy. March 27, 1906, her physician, a good diagnostician, reports no symptoms, everything normal. No pregnancy, widow.

CASE 9.—Mrs. W. G. S. (No. 2311). Operation Jan. 9, 1905. Right ovary one, left ovary two small superficial follicular cysts, punctured, lining membranes removed, sutured with silk. Two cysts of Morgagni removed, appendectomy, trachelorrhaphy and perineorrhaphy. Recently and repeatedly examined. Ovaries normal. No pregnancy, but preventive measures employed.

CASE 10.—Miss E. L. D. (No. 2365). Referred by Dr. Bush. Operation Jan. 30, 1905. Left ovary, cyst size of normal ovary, excised and sutured with silk. Right ovary, one small superficial follicular cyst punctured, lining removed, not sutured. Cysts of Morgagni removed, appendectomy. March 10, 1906, reported by Dr. Bush cured. No ovarian enlargement. Unmarried.

CASE 11.—Miss A. F. (No. 2385). Operation March 17, 1905. Left ovary, three small follicular cysts punctured. Right ovary, cyst of corpus luteum, excised and sutured. Suspension. Slight thrombosis of left leg in convalescence. Repeatedly and recently examined. Normal. Unmarried.

CASE 12.—Miss E. L. B. (No. 2269). Operation Oct. 22, 1904. Right ovary, several small superficial cysts punctured and lining removed, silk suture. Left ovary, cysts size of English walnut excised, wound sutured, about one-third of ovary left. Appendectomy. Repeatedly and recently examined. Left ovary temporarily enlarged two months after operation, since normal. Unmarried.

CASE 13.—Miss L. J. R. (No. 2017). Referred by Dr. J. G. Clark, of Philadelphia. Operation May 29, 1903. Right ovary, one small deep cyst, ovary bisected, cyst removed with forceps, ovary sutured with silk. Left ovary, cystic throughout, removed. Both tubes occluded at fimbriated extremity, dilated and probed. Appendectomy. Seen one year later. Ovary normal. Has tuberculous sputum. Unmarried.

CASE 14.—Mrs. H. H. B. (No. 2204). Operation March 31, 1904. Right ovary, multilocular cyst size of an orange, excised, ovary saved, wound closed with silk. Smaller cyst of left ovary same treatment. Suspension. Examined about a year later, ovaries normal. No pregnancy. Separated from husband.

CASE 15.—Mrs. H. B. K. (No. 2165). Referred by Dr. Macdonald. Operation Feb. 8, 1904. Right ovary, luteal cyst size of hazelnut, punctured, lining pulled out, silk suture. Follicular cyst size of English walnut excised and sutured. Left ovary, small follicular cyst punctured and lining pulled out, no suture. Myomectomy, suspension. Four months later organs normal, and reported normal and no symptoms by her physician in March, 1906. No pregnancy.

CASE 16.—Miss J. G. (No. 2163). Operated on Feb. 4, 1904. Right ovary, dermoid, size of a lemon, removed. Left ovary, cyst size of a pullet's egg, excised, ovary preserved and sutured with silk. Appendectomy. One year later, ovary normal. Repeatedly and recently examined. Remains normal. Unmarried.

CASE 17.—Miss C. S. (No. 2152). Referred by Dr. Putnam. Operation Jan. 13, 1904. Right ovary normal. Left ovary, two Graafian cysts size of a filbert, excised and sutured. Appendectomy. Repeatedly examined during following year. Ovaries normal. Has married and been pregnant.

CASE 18.—Mrs. G. M. N. (No. 2143). Both ovaries enlarged, edematous, and containing small cystic follicles, punctured, lining pulled out and sutured. Right ovary large and apparently persistent corpus luteum, same treatment. Suspension and appendectomy. Repeatedly and recently examined, ovaries normal. No pregnancy, preventive measures.

CASE 19.—Mrs. F. W. H. (No. 2010). Referred by Dr. Houghton. Operation Sept. 26, 1903. Both ovaries, persistent corpora lutea about doubling size of ovaries, both excised, in both lutcal cells have degenerated but contents have persisted and are probably increasing. Suspension and trachelorrhaphy. Four months later left ovary somewhat enlarged, but gradually decreased again to the normal under depletion. No pregnancy.

CASE 20.—Miss M. L. R. (No. 1999). Referred by Dr. Wormelle. Operation April 27, 1903. Left ovary normal. Right, one cyst, punctured, membrane pulled out, sutured. Division of persistent iliolumbar ligament, suspension, appendectomy. One year later, normal. Recently reported no symptoms. Married one week.

CASE 21.—Mrs. E. M. W. (No. 1983). Referred by Dr. Putnam. Operation April 6, 1903. Right ovary, three enlarged follicles punctured. Left ovary, luteal cyst size of walnut, excised, sutured. Appendectomy and myomectomy. Repeatedly examined during next eighteen months. Ovaries normal. Not since heard from.

CASE 22.—Mrs. F. G. M. (No. 1980). Referred by Dr. Torrey. Operation March 30, 1903. Right ovary normal. Left, one large and several small cysts punctured, membranes extracted and sutured. Suspension and appendectomy. Ovaries recently reported normal. Symptoms relieved. Twins.

CASE 23.—Mrs. O. W. (No. 1955). Referred by Dr. Wadsworth. Operation March 14, 1903. Both ovaries enlarged by numerous small enlarged follieles, multiple punctures. On left ovary one larger Graafian cyst, lining removed and sutured.

Suspension, appendectomy, perineorrhaphy. Thrombosis of left leg in convalescence. Both ovaries somewhat swollen about two months after operation, gradually returned to normal. Seen recently, well. One pregnancy since operation.

CASE 24.—Miss M. (No. 1936). Referred by Dr. Torrey. Operation Feb. 2, 1903. Right ovary, numerous small superficial Graafian cysts, lining membranes pulled out. Cyst of Morgagni removed. Left ovary, luteal cyst, excised, about half an ovary left. Appendectomy. No further symptoms. Seen recently. Well. Unmarried.

CASE 25.—Miss S. M. P. (No. 1933). Referred by Dr. Flanders. Operation March 31, 1903. Both ovaries contained numerous hemorrhagic Graafian follicles, all superficial, all punctured and membranes removed, stitched with deep silk sutures. Appendectomy. Seen recently and repeatedly. At the end of six months both ovaries somewhat enlarged, right sensitive. Under depletion gradual decrease in succeeding six months, now normal. Symptoms much improved. Still slight dysmenorrhea. Unmarried.

CASE 26.—Miss M. K. O. (No. 1806). Patient of Dr. J. K. Mitchell, of Philadelphia. Operation Oct. 31, 1902. Left ovary enlarged to double size by numerous deep small cysts, removed. Right ovary normal size, but contained numerous small deep follicular cysts. Multiple punctures, surface scarified. Seen repeatedly and recently. Ovary has remained normal size. Unmarried.

CASE 27.—Mrs. F. F. H. (No. 1697). Referred by Dr. Sabine. Operation April 15, 1903. Right ovary, cyst size of orange, removed. Left ovary, hemorrhagic cyst size of American walnut, punctured, membrane extracted, not sutured. Radical cure of hernia. Dudley's operation. Repeatedly examined. In succeeding six months ovary enlarged somewhat but again decreased. No pregnancy; 39 years old.

CASE 28.—Mrs. M. N. M. (No. 1677). Referred by Dr. Putnam. Operation June 11, 1903. Left ovary cystic throughout, removed. Right ovary, three cysts punctured and membrane pulled out. Appendectomy and trachelorrhaphy. Suppuration of abdominal wound in convalescence. Repeatedly examined. Ovaries remain normal. No pregnancy; 38 years old.

CASE 29.—Mrs. C. A. H. (No. 992). Operation March 30, 1904. Right ovary, enlarged by several small superficial follicles, punctured. Left ovary, cyst size of an egg, punctured, membrane pulled out, silk suture. Suspension, appendectomy, trachelorrhaphy. Seen recently. Normal, entirely well. No pregnancy. Preventive measures.

THE PRESENT STATUS OF CONSERVATISM IN THE SURGICAL TREATMENT OF TUBES AND OVARIES.*

JOHN EGERTON CANNADAY, M.D.
Surgeon in Charge Sheltering Arms Hospital.
HANSFORD, W. VA.

We all know that even the least of the atoms has its definite value and its purpose to fulfill in the harmonious whole of Nature's plan. We have been long taught when a limb was injured, a hand mangled or an abscess formed to make every effort to save the part. Until rather recent years these saving methods did not seem to apply to the pelvic organs of women at all.

SURGICAL TREATMENT OF OVARIES.

In view of the fact that pelvic lesions constitute a large percentage of every surgeon's cases, their treatment becomes a matter of momentous importance. The recognition of the value of the internal secretions or trophic influences of the ovaries has had a world-wide influence as regards the surgical treatment of these organs.

The elder Emmet expressed the hope that future generations might be allowed to go unastrated. More than twenty years ago Schröder first advocated the preservation of the remnant of normal ovarian tissue that could be left in the removal of cysts. About that time August Martin reported a number of cases in which he had removed degenerated portions of the tube and ovary and saved the normal tissues. A few years later William M. Polk presented to the surgical profession his brilliant results, and then considerable attention was paid to the subject in this country. von Winkel, Hofmeier, Schatz, Zweifel, P. Muller and A. Palmer Dudley were all pioneers in this work. Considerable harm has at times been done by overenthusiastic followers of these men, the student often lacking the judgment of the teacher.

Lawson Tait was a most distinguished exponent of scientific hara-kiri. At present, were he living, he would no doubt be unpopular with most French statesmen and with our own President Roosevelt. Battey in America, Tait in England and Hegar in Germany set the pace for the wholesale removal of ovaries in three of the world's greatest countries.

In an address before the American Medical Association, the late A. Palmer Dudley said: "A quarter of a century ago he who would have advocated conservative surgery on the uterine appendages of woman would have been considered by the surgical profession at large as a fit subject for the asylum." A review of gynecologic events occurring during these last twenty-five years presents a wonderful panorama of wide sweep. We have had many stars in this often tragic drama of the surgical arena. Many of the makers of gynecology could see no avenue to success but that made by the radical removal of all that lay in their path.

It is unusual for the genital organs of the male to be sacrificed for any condition save malignant disease. In inflammatory disease of the testicle or vas deferens removal, as a rule, is about the last thing thought of. The repressed sex are entitled to some privileges as well. It is distinctly of no advantage to the woman to exchange one undesirable condition for another. The belief in the mind of the woman that she has lost the generative function; that she has lost some of the finer sensibilities of the sex; that she is unlike other women, is in itself to most women productive of much mental anguish.

VIEWS OF A NUMBER OF AMERICAN GYNECOLOGISTS.

Believing that a general consensus of opinion is of value in the discussion of mooted questions, I addressed circular letters of inquiry to thirty-five of the leading operators of this country and received extended replies from thirty-three of them. I inquired of each operator as to his favorite and usual method of treating diseased tubes, cystic and prolapsed ovaries, whether or not he had done ovarian transplantation and about what, if any, percentage of pregnancies had followed conservative work in his hands. Replies were received from Drs. H. C. Coe, New York City; Floyd McRae, Atlanta, Ga.; J. Taber Johnson, Washington, D. C.; Edward J. Ill, Newark, N. J.; Charles R. Robins, Richmond, Va.; J. G. Earnest, Atlanta, Ga.; William M. Polk, New York City; Joseph Brettauer, New York City; Edward McGuire, Richmond, Va.; William H. Humiston, Cleveland, Ohio; S. C. Gordon, Portland, Me.; Charles G. Cumston, Boston; A. Brothers, New York City; A. Vanderveer, Albany, N. Y.; Robert T. Morris, New York City; W. H. Baker, Boston; Charles Jewett, Brooklyn, N. Y.; H. J. Boldt, New York City; I. S.

* Read in the Section on Obstetrics and Diseases of Women of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

Stone, Washington, D. C.; Chauncy D. Palmer, Cincinnati, Ohio; S. Marx, New York City; A. Lapthorn Smith, Montreal, Canada; J. H. Carstens, Detroit, Mich.; Joseph Price, Philadelphia; Randolph Winslow, Baltimore; Miles F. Porter, Fort Wayne, Ind.; W. P. Manton, Detroit, Mich.; J. Shelton Horsley, Richmond, Va.; John B. Deaver, Philadelphia, Pa.; H. A. Kelly, Baltimore; E. C. Dudley, Chicago; W. E. Ashton, Philadelphia, and Henry T. Williams, Rochester, N. Y.

Most of the answers were replete with interest and suggestions. Drs. Coe, Williams, Ashton, Manton, Stone, Jewett, Morris, Brothers, Polk, Ill, and McRae slit open occluded tubes, do plastic work and otherwise attempt to restore in a measure normal physiologic conditions. Deaver practices the above methods in a very limited number of cases. Carstens is extremely conservative in dealing with cases under 35 years of age, very radical with those above that age. Boldt rarely resorts to conservative work on the tube. Vanderveer nearly always does radical work. Brettauer does radical work except in a few cases of hydrosalpinx. Gordon nearly always does radical work. Earnest favors conservative operations occasionally. Kelly, under rare condition when the patient is very desirous of having children, resorts to plastic surgery. Robins only does this sort of work when called to operate in cases of sterility. All of the other authorities mentioned expressed themselves as in favor of radical work in all cases of tubal disease. Most of them believe either in nowise disturbing a tube or in removal in its entirety. With the exception of Marx, who thinks entire removal for the prevention of recurrences the best procedure, these men puncture cystic ovaries with knife or thermocautery. Most of them scrape out the lining and close the cyst cavity by sutures if of much size. Several practice resection of portions of the ovary for this condition. Practically all ovaries contain small cysts. Craig and others have called attention to a distinction between true cysts of the ovary and distended Graafian follicles which often attain a diameter of 2 cm. before rupturing. Occasionally a secondary operation will be necessary by reason of the rapid recurrence of cysts.

Deaver considers ovarian prolapse rare except when associated with malpositions of the uterus. He corrected it by securing the uterus in proper position. E. C. Dudley suspends the ovary by doing plastic work on the broad and ovarian ligaments. Most gynecologists who have expressed an opinion on this subject say that the ovaries should be stitched to the broad ligament. Earnest makes a slit through the broad ligament, passes the ovary through this and secures it, as it were, on a shelf by the use of one or two sutures. Marx believes most cases of ovarian prolapse are due to varicocele of the broad ligament. Humiston attaches the ligament higher up on the uterus. Edward McGuire fastens the ovarian ligament to the abdominal wall at times.

But few have had any experience whatever in ovarian transplantation. Boldt and Brothers occasionally transplant the ovary to the uterine cornu after the removal of an impermeable tube. Morris has had an extended and interesting experience both experimental and clinical in this sort of work. By his experiments on rabbits he has shown that after transplantation the host of the borrowed ovary may become pregnant, that the tissues of one animal are not kindly disposed to those of another, that the transplanted ovary in heteroplastic grafting degenerates in a few weeks or months. He has in several cases succeeded in ameliorating or preventing the distressing symptoms of the artificial menopause by this means. Morris, I understand, has been working on a serum with which he hopes to overcome in a given case that destructive tendency for the tissues of another. He has been successful in homoplastic grafting, but not so in heteroplastic proceedures. According to recent reports, a patient of his became pregnant and was delivered of a normal baby after her own ovaries had been removed and one from another woman substituted.

The estimates of the percentages of pregnancy after conservative work on tube and ovary are all small, somewhere in the neighborhood of 1 per cent. Many operators report no cases of pregnancy whatever after plastic work on the tube. A great many pregnancies have followed conservative work on the ovaries. The percentages given by different operators vary from 5 to 10 per cent. Marx has had conception follow the leaving of minute portions of ovarian tissue. McGuire reports pregnancy following the complete removal of one tube and ovary, the removal of three-fourths of the other ovary and the outer third of the remaining tube. Many of these men strongly favor palliative treatment before an operation is ultimately decided on. All, of course, are radical in the removal of pus tubes. There is considerable variance in the minds of operators as regards what constitutes conservatism. Many do without any operation whenever possible, and when they do operate make a clean sweep, holding that to be a truer conservation than an operation which carries with it the possible risk of a second resort to surgical relief.

CONSERVATIVE OR RADICAL WORK?

In the surgical treatment of diseased conditions of tubes I would deem it advisable to do plastic work provided the inflammatory process had been rather remote and the damage done to the tube was comparatively slight, that there were no evidences of tuberculosis or malignant disease, that the woman had at least a few years' grace before the menopause was due, that some healthy ovarian tissue could be left and that there were no positive contraindications to a future pregnancy. There is often in these cases a possibility of the restoration of function, the woman may become pregnant and the possibilities of future trouble from the tube are rather remote in properly selected cases. Conservative operations for the ovary are indicated when the woman has not passed the menopause, when the ovary is neither the seat of malignant disease (including tuberculosis) nor of pus infection, when the ovary is cystic, and when it is intended to free the ovary from adhesions.

The conviction on the part of most physiologists and gynecologists is that the ovary has another function aside from that of ovulation, the production of an internal secretion which passes into the circulation and assists in maintaining the physiologic balance of the body or the distribution of trophic influences having the same effect. The knowledge on the part of the woman that she is forever sterile will in some cases give rise to mental disturbances and even melancholia.

The chief indications for the radical removal of tubes are the presence of tuberculosis, malignant disease, acute inflammations and pus.

The disadvantages of tubal repair work are the unlikelihood of a return of normal function (this takes place occasionally) and the risk after an unilateral operation of a recurrence in the opposite tube. If the interior of the uterus is properly treated, this danger is slight. As to the chances of ectopic gestation, a case has not been

reported. H. A. Kelly states that the cilia are rarely destroyed by acute inflammation and never by catarrhal trouble. The dangers of infection following the opening of a tube which contains no pus are exceedingly slight. The mortality in carefully conducted laparotomies of election is so low that the danger from a secondary operation *per se* may be said to be almost *nil*.

One of the principal reasons urged against conservative methods in dealing with cystic ovaries is the fact that cysts often soon re-form. It is believed by many that a small cystic ovary is much better than no ovary at all. By resection of a large part of the ovary the principal cyst-bearing portion may be removed. The presence of tuberculosis, of malignant disease, or of pus infection is generally considered to be an absolute indication for complete removal. I have removed an ovarian abscess 2 cm. in diameter along with one-half of the ovary containing it and had no bad result.

TECHNIC OF PLASTIC REPAIR WORK.

Perhaps no part of the body has greater powers of regeneration than the tube. Both normal tubes may be ligated near the uterine end with silk, and pregnancy may occur a few months later. In the doing of plastic work on the tube there are opportunities for the exercise of much surgical judgment and common sense. There must be a recognition to a nicety of the tube that must be removed and the one that may be saved. The club-ended tube can be slit open, the agglutinated and adherent fimbriæ teased out to their normal position or the mucosa may be attached to the peritoneal coat by means of fine catgut sutures. All adhesions binding the tube in unnatural positions should be broken up and the denuded surfaces covered with peritoneum. Some suture the amputated or opened end of the tube to the ovary, others fix a portion of the ovary inside the lumen of the tube, spread out the mucosa over as much ovarian tissue as possible and secure it by suturing. In simple stricture or obliteration of the isthmus some one has suggested resection of the affected part, followed by anastomosis of the ampulla to the cornual portion of the canal. The lumen of the tube may be kept open during the healing process by a cord of braided silk passing through it, one end attached to the ovary, the other after passing through uterine cornu and uterus being fastened to a bobbin placed in the vagina.

In opening contracted tubes the use of saline solution and a small syringe is deemed more safe and satisfactory than a probe. It is sometimes even possible for regeneration to take place in a pus tube after it has been drained vaginally.

The hard, cirrhotic and painful ovary having a tough thickened capsule may at times be benefited by the excision of a strip of the dense capsule. These cases are usually unsatisfactory to treat and after entire removal pain often reappears in the region of the cicatrix.

Ovarian adhesions, if present, should be broken up and raw areas given attention. Cysts should be opened and their lining membrane peeled out. This can often be done with tissue forceps and the walls of the sac approximated by fine catgut sutures. A small round needle having no cutting edge should be used in order to prevent unnecessary oozing of blood. When the ovary has the appearance of being badly damaged one can locate and preserve the healthy tissue best by splitting the organ open, opening superficial and deep cysts and removing unsound tissue with scissors. By removing with curved scissors an ellipse from the covering of a superficial cyst the edges can be neatly approximated. In the removal of large ovarian cysts in which pressure effects have destroyed most of the ovary, a small layer of thinned ovarian tissue can often be preserved at the base of the cyst and sutured into a sausage-shaped roll.

I have practiced conservative work in over fifty cases of ovarian or tubal disease, and so far as I have been able to follow my cases symptomatic results have been good. There has been no recurrence of tubal trouble, a very small number of cases of cystic ovaries has come to second operation for the removal of recurring cysts. Several pregnancies have followed resections of portions of the ovaries, but I have no record of a case of pregnancy following plastic work on tubes.

Ovarian prolapse is frequently associated with retroposition or other malpositions of the uterus, and hence can often be corrected by restoring the uterus to its normal position; this I often do by a modification of the Andrews operation. Otherwise I suspend the ovary either by shortening its ligament or by making a slit in the broad ligament near its top, passing the ovary through this and securing it on top of this shelf by a catgut suture on either side. During or after attacks of acute salpingitis the ovaries often become bound down in an unnatural position behind the uterus. On being freed from adhesions they may be saved in part by resections if not entirely disorganized.

The sudden bringing about of the menopause by operations that should be relegated to the back seat of necessity, may bring on a sudden change in the sexual feelings especially distasteful to the woman. The feeling that she may lose some of those delicate essentials of womanhood so peculiarly inherent in the sex often prevents a woman from submitting to much needed surgical treatment. Richter and others have concluded that castration in either the male or female is followed by a marked decrease in the gas interchange. The consumption of oxygen is lessened and the body takes on fat. Halban and many others have observed that the ovaries or testicles, as the case may be, are necessary to the development of the genitalia and that not only is their development arrested by castration, but that atrophy even occurs. This sudden bringing on of the climacteric being so at variance with the natural order of things endows the woman with obesity, hot flashes, chilly sensations, nerve storms, neurasthenia, hysteria, insomnia and other varying manifestations of a disturbed physiologic equilibrium. Often one variety of suffering is but exchanged for another and the last state of the patient is worse than the first. An operation neurasthenia sometimes develops that renders these cases most pitiable to the observer. The victim walks with difficulty from weakness and pain. She may have depression of spirits, vertigo, insomnia, disagreeable dreams, depression of spirits, a feeling of pressure on the head and crying attacks.

CONCLUSION.

I believe that, barring the presence of the menopause, inflammation, pus, tuberculosis and malignant disease, conservative work should be done; that every organ or part of an organ consistent with the health and well-being of the patient should remain undisturbed; that in these cases there is much room for exercise of good judgment and due discrimination; that the risks of infection and of secondary operation from portions left behind are rather remote in properly selected cases.

To summarize, I would say that the majority of the gynecologists interrogated favor a restricted conserva-

tism; that the number of pregnancies occurring after tubal operations is very small; that the results after plastic work on the ovaries is better; that age, the presence of pus, tuberculosis and malignant disease indicate, as a rule, radical work; that prolapsed ovaries, generally speaking, should be elevated in the pelvis by suspension operations on the uterus, by shortening the ovarian ligament or by placing the ovary in front and on top of the broad ligament; that the functions of the tube and ovary should be preserved whenever consistent with health; that the artificial induction of the menopause brings a very serious disturbance into the life of the patient, and that ovarian transplantation experimentally and clinically has, in a limited field, been productive of satisfactory results.

DISCUSSION

ON PAPERS BY DRS. REYNOLDS AND CANNADAY.

DR. W. M. POLK, New York City, said that the situation resolves itself into the question: How far may we go in preserving ovaries which are found to be diseased on being exposed in the course of a laparotomy? This is one of the most difficult questions before the profession to-day. Surgeons have not been able to say at the operating table whether or not an ovary belongs to that class which will reproduce a morbid growth that will embarrass the patient in the future. We must be able to determine this by the gross appearances. The descriptions in text-books of ovaries which are likely to cause pathologic conditions are misleading, he said. All follicular cysts are not apt to produce subsequent trouble, but the larger ones may. The question that faces us in the end is that of a secondary operation. As this is not a matter of life and death, but rather of health, it is our duty to lay the subject before the patient. If she prefers to retain menstrual function we are justified, he said, in ignoring the possibility of a subsequent pathologic condition. This is perfectly safe ground on which to stand. We must turn to pathologists and beg them to devise some method by which we can settle the question definitely at the operating table. The question of conservatism so far as the ovary is concerned, is in a far better way of solution than that which pertains to the oviduct. This is a crucial point. The virulence of an inflammatory process will determine whether there will be resolving salpingitis or one that will leave no hope of the tube ever performing its full function again; for while menstruation may be retained, the woman's reproducing function will be *nil*. When it comes to how much of an operation can be done to restore the Fallopian tubes the question turns on the condition of the operative field. If we can secure freedom from septic infection in this operation and secure a clear field which will leave the tubes in the condition in which they are placed, Dr. Polk believes the operation will be successful, but just as sure as conditions remain which invite an adhesive inflammation and closure of the opening, the work will be for naught. One, two, or a dozen cases do not always make the rule, but Dr. Polk feels that while there is a good deal to be done, the field is still one of the most promising that stands out before us, and he laid especial stress on experimentation with a view of testing the possibility of subsequent pregnancy on these cases.

DR. R. T. MORRIS, New York, said that in pyosalpinx and gonorrheal cases he formerly tried to save little except the patient's reputation, then he began to save a little ovarian tissue to retain the value of internal secretion, and it seems to him now that gynecologists may, with advantage, do some conservative work. When we have malignant disease we must not be guided by the patient's wish. There we must dominate. If there is a question of doubt one can make a spot diagnosis by frozen section. In cases of tuberculosis one can not do much conservative work. In cases of mixed infection we have our greatest field for conservative work. In the degenerative cases there is great opportunity for much conservative surgical work. There is certainly more pleasure in doing good work of this kind than in destroying or removing. Dr. Morris said that he has felt that grafting has but a limited field. He has gradually narrowed the field down to homoplastic grafting. Surgeons did heteroplasty and did not get much result from it, because one woman is intolerant to the tissues of another, but there are degrees of tolerance that may sometimes amount to complete tolerance. He said that he reported one case in which there was subsequent heteroplastic pregnancy and the child is living. Very many interesting questions arise, as for instance, who is the mother? Kelly says the mother is the one who gave the nutrition during the life *in utero*, and Clark says the ovary is the mother. This ought to be decided, as legally important questions may be involved. In conservative surgery, when a woman has lost her ovaries without possible chance of child-bearing, can we graft? There is a possibility, Dr. Morris said, that this one pregnancy can be repeated, but until tolerance can be established between the tissues of individuals heteroplastic ovarian grafting can not be done very successfully.

DR. F. F. LAWRENCE, Columbus, Ohio, declared that his experience in efforts at conservatism has been far from pleasing. One of the most distressing cases was one in which he made a resection of one ovary and one part of one tube. This woman was the mother of a child between 3 and 4 years of age, her husband in broken health. About seven months later he was called to see the woman, and found her dying as the result of a ruptured extrauterine pregnancy. He does not know whether his efforts at conservatism were responsible for that death or not, but, for several hours thereafter, and many times since, he has thought that had he done more radical work the woman would still be living. In three other cases it had been his misfortune to have to operate a second time for extrauterine pregnancy, in cases in which he had left one tube and ovary. We know that Nature will sometimes perform wonders in the way of repair, and yet if an ovary is sufficiently inflamed to become adherent, or if the destruction has been sufficient to produce sclerosis, what, he asked, can be accomplished by a resection. If, as many believe, all these inflammatory conditions are the result of infection, do we remove the cause of the suffering when we remove a part only of the ovary or tube which has been infected? Dr. Lawrence said that he believes in conservatism as much as any one can, but only in that conservatism which serves the future good of the patient—that conservatism which relieves not only the present suffering but subserves the entire interests, comfort, and health of the patient in the future. Another unfortunate sequel was in a case in which he made a resection of part of a small adherent ovary and tube. Some years previously this woman had been operated on by another surgeon who removed an ovarian tumor. She consulted Dr. Lawrence a short time after with the lower abdomen filled with papillomatous matter, for which he could do nothing. The question of separating adherent and infected Fallopian tubes seems to him to be almost, if not quite, parallel with the idea of separating the adhesions about the inflamed appendix, and leaving the appendix. If this be not good surgery in inflammation of the appendix why is it good surgery of the Fallopian tubes?

DR. SETH GORDON, Portland, Me., said that he is glad to know that Dr. Morris feels that he has finally gotten a pregnancy from heteroplastic work. Dr. Gordon has had one case of pregnancy occur two years after he did his best to remove the ovaries and tubes. He supposed that he had removed everything. Another patient was operated on by Dr. Chadwick and Dr. Gordon delivered her a year after she was operated on. There is not so much question as to who is the mother of the child in Dr. Morris' case. Dr. Gordon believes in the conservatism that does good to the patient. A great deal of good has been done in conservative surgery, as well as much harm. There was harm with what was called normal oöphorectomy, and there was a great deal more good in removing ovaries and tubes at that time. Dr. Gordon thinks the question raised by Dr. Morris is pertinent, viz., that the character of the infection is what we are to study most thoroughly. He believes that a man who does a conservative operation on any one with streptococcus or gonorrheal infection is doing criminal surgery unless he does a complete hysterectomy. We must study carefully, and while we have done good with regard to joint tubercular infection and peritonitis, the attempt to do any con-

servative surgery in this class of cases would also be criminal surgery. Palmer Dudley reported 1,200 cases of conservative surgery. Dr. Gordon declared that he knows Dr. Dudley reported them honestly, but before he died Dr. Dudley said he should have done hysterectomy in a great many of them. He said most of his work was experimental. While he had 20 or 30 pregnancies following, he still thought he had made mistakes in not doing hysterectomy more. Spencer Wells said that in a thousand cases he had had to do secondary operation fifty times.

DR. M. O. PANTZER, Indianapolis, called attention to a successful effort at conservatism in a case in which the pathology was of a kind generally conceded to include no promise. The case was reported in detail to this Section in 1903, and appeared in THE JOURNAL of the American Medical Association, Nov. 7, 1903. The heavily sclerotic, though not shrunken nor enlarged ovaries as found at the operation, afforded little incentive to a conservative effort. Rather this was supplied by the ardent desires of the couple to have offspring. One ovary was removed entirely. The other was pared of its thickened covering, leaving behind a small raw pyramidal portion. Menstruation, which had been retarded, now became regular, though still attended with much pain. The patient conceived five months after operation and went to full term. The unbounded happiness produced by the birth of a nine-pound boy came to full expression in a letter written to Dr. Pantzer by the mother.

DR. W. E. DORSETT, St. Louis, said that in retroversion and retroflexion there are cysts and painful ovaries that can be remedied by resection, and for the last four years he has been resecting the ovaries without any bad symptoms. These women go on menstruating without pain. In most of these cases an ovary is found that is not normal because it is cystic, and Dr. Dorsett slits it down to the hilus, scrapes out the cysts, and closes the incision, and the patient goes on menstruating without trouble.

DR. H. J. BOLDT, New York, said that the proper procedure is to exsect the tube and graft the ovary in the cornu of the uterus. Sometimes conditions are present where it is possible for us to preserve parts in young women and we should always do it. Dr. Boldt agreed with those who say that conservative surgery is fraught with danger.

DR. E. REYNOLDS, Boston, said that his experience and judgment in the resection of infected tubes is as much against it as it is in favor of conservative surgery in neoplasms of the ovary or tubes. That is also the consensus of this discussion. He agrees wholly with Dr. Polk that in this question of conservatism of the ovaries or tubes, it is the patient's life and health with which we are dealing, and her decision should be paramount; also, that we should not be opening the abdomen all the time for little cystic conditions in the ovaries. There is a great field for the conservation of tissue in large cysts. He said that Dr. Morris has furnished us with a question rather than a conclusion. Dr. Reynolds thinks that Dr. Gordon's comment that the occurrence of pregnancy after both ovaries had been removed was due to failure to remove the ovaries entire, deserved more weight a few years ago than it does now, but the possibility of leaving a portion of the ovary, the possibility of the existence of third ovaries is certainly still sufficient to require more cases than this of Dr. Morris' before we can assent to his conclusion. In the meantime it should remain an open question.

DR. J. E. CANNADAY, Hansford, W. Va., said that Kelly, after extensive experimentation, has shown conclusively to his own mind at least that inflammation of the tube very seldom destroys the cilia. Dr. Cannaday thinks that most gynecologists will agree that results can be accomplished by other means than hysterectomy in the treatment of endometritis. He also thinks that the woman should always be consulted prior to operation as to what she would prefer.

Institute for Chemical Research.—A scientific institute for the discovery and investigation of new chemical remedies has recently been opened in Frankfurt a. M., owing to the generosity of the late G. Geyer and his widow.

RELATION BETWEEN APPENDICITIS AND GALLSTONES.

JOHN G. SHELDON, M.D.
KANSAS CITY, MO.

Previous to about three years ago I attributed to postoperative and preoperative adhesions the abdominal pains, distension and constipation that sometimes remained after I had removed gallstones from a patient. Since I have been removing the appendix during operations for bile-passage diseases, adhesions have given me little trouble.

During the latter part of June, 1903, three patients from whom others had removed gallstones came to me complaining of pain in the abdomen, abdominal distension and constipation. Two of these patients gave definite histories of acute attacks of appendicitis occurring early in life; the third gave a history of long-standing "stomach trouble" before the biliary colics began; in all of them there was marked tenderness over the appendix areas. These three patients were operated on for appendicitis. Marked changes were found in the removed appendices and the abdominal symptoms disappeared. These cases suggested to me that perhaps I had made mistakes in treating some of my gallstone patients. I, therefore, communicated with all of them whom I could find, and found two were frank enough to admit that, although their gallstones had been removed, they were not well. These patients gave definite histories plainly suggesting the existence of chronic appendicitis long before the biliary colics had occurred. In both cases there was decided tenderness over the appendix. The appendices were removed. They showed marked and long-standing inflammatory changes. The abdominal symptoms disappeared.

From July 15, 1903, to July 1, 1906, I operated on 48 patients with gallstones and 7 patients who had appendicitis and cholecystitis without gallstones. In these 7 cases I was of the opinion that the cholecystitis was secondary to the appendicitis. In 2 of the 48 gallstone operations acute infection was presnt, and the appendices were not examined during the operations. One of these patients completely recovered; the other complains of abdominal symptoms and has tenderness over the appendix. He says that, while he suffers some, he is "not sick enough to have another operation." In the remaining 46 gallstone operations, the appendix was removed in each case. Five patients gave a definite history of having had typhoid fever; 3 of these had normal appendices, 2 had chronic appendicitis with no peri-appendicular changes. Two patients had gastric ulcers associated with gallstones; in one of these chronic appendicitis, with peri-appendicular changes, was present; in the other the appendix was normal. Thirty-nine of the 46 patients had appendicitis with gallstones, but with no history or evidence of typhoid or of gastric or duodenal ulcer. Twelve of the 39 cases of gallstones with appendicitis showed peri-appendicular changes. Pus was found in the appendix in four instances.

In 46 operations, removing gallstones and the appendix, the appendix was found diseased 42 times and normal 4 times. In 3 of the 4 normal cases the patients had had typhoid, and the other gallstone patient with a normal appendix had a gastric ulcer. Thirty-four of these 42 cases of gallstones and appendicitis gave histories plainly suggesting the existence of appendicitis ten or twelve years previous to the occurrence of biliary

colic. In 6 of these 34 cases a definite history of an acute attack of appendicitis was obtained; in 28 no history of an acute attack was given.

If it is true that the common method of infection locating in the bile passages is through the portal vein and that gallstones are only a stage in infection of the bile passages, there would seem to be a very definite etiologic relationship between gallstones and certain infections involving the intestinal tract or any part of the anatomy drained by radicals of the portal vein. We have believed for a long time that typhoid fever is responsible for some of the cases of bile-passage infection gallstones, but we have seemed to ignore the factor of appendicitis in causing bile-passage disease. It seems to me that the appendix and ileum are similar in their relation to the portal system. Both harbor the colon bacillus and both drain into the portal vein. If disease in the ileum-typhoid is associated with the entrance of colon bacilli into the portal vein, and these are excreted, as it were, by the liver into the bile passages, why can not disease of the appendix, which is more common than typhoid, result in bile-passage infection? It seems very probable to me that appendicitis, especially the long-standing varieties, is the cause of many bile-passage infections.

CLINICAL OBSERVATIONS.

Although from personal knowledge of the work of various surgeons, it seems probable that many recognize the association of gallstones with appendicitis, little has been written on this subject. Ochsner[1] reports 18 cases of gallstones in which the appendix was found diseased six times. In these cases the appendix changes were marked. Peri-appendicular changes were present in all these cases and pus was found in some of them. Moynihan states that he has often seen gallstones and appendicitis in the same patient, and suggests that the destructive lesions in the appendix may allow an infection of the portal blood.

Infection the Underlying Cause of Bile-Passage Disease.—It is generally agreed that cholelithiasis is only one manifestation of disease of the biliary passages and that infection is the underlying cause of bile-passage disease. The early work of Mignot and of Gilbert and Fournier has shown this conclusively, while in 1903 C. A. Ewald, before the Congress of American Physicians, showed that gallstones mean infection. It has also been shown experimentally by Mignot[2] that it is the mild and long-standing inflammations of the bile passages that especially predispose to stone formation, and that, experimentally at least, attenuated micro-organisms and mild inflammations are more efficient in producing gallstones than are virulent bacteria and acute inflammatory processes. It is also generally agreed that contamination of the bile is necessary for the occurrence of inflammation of the bile passages, and that the liver, by its bacteria-destroying powers, is a most important factor in preventing serious infections in the biliary apparatus. On account of the bactericidal properties of the liver, a limited number of infective bacteria of a low degree of virulence may be killed (Welch, Adami and others); or virulent infective organisms carried to the liver in large numbers may have their vitality much lowered and in being excreted through the bile passages may produce a mild inflammation instead of an acute and serious one. Knowledge of the condition of the bile in health is not a necessity in arriving at the cause of bile-passage infections. Herter says that during health the bile is sterile. However this may be, there is no question that in certain diseases and under certain conditions the bile is contaminated, and that this infected bile is responsible for bile-passage infections and, therefore, for the occurrence of gallstones.

How Does the Bile Become Infected?—If infected bile is essential to bile-passage infections, the micro-organisms must reach the bile through the blood or by ascending the common duct. So far as I know, there is no good reason to believe that the lymphatic system plays an important part in directly causing bacteria to reach the bile.

From the work of Sherrington, who, in 1898, showed that bacteria do not ascend the common duct unless stagnation of bile is present, and from observing the fact that many times the bacteria causing a cholecystitis are not the same as those found in the duodenum, it seems probable that ascending infection is not common in producing bile-passage infections. At present the trend of opinion favors the hematogenous origin of bile-passage diseases. Experimentally we know that this mode of infection is possible; clinically it seems probable. While it has been shown that bacteria circulating in the general venous and arterial currents are sometimes excreted in the bile, it seems that bacteria in the portal blood are more likely to be found in the bile and, for this reason, infections draining into the portal system may supply all the necessary conditions for bile-passage infections. Lortigan advocated this theory in 1902. In favor of the theory that infection of the biliary apparatus most often takes place by way of the portal vein is the occurrence of infected bile after ligation of the common duct, or even after tying one of the large bile ducts[3] and the common contamination of the bile in typhoid fever.

Diseases that Infect the Portal Blood.—If, as it would seem, it is true that bile-passage infections are caused by bacteria brought to the liver by way of the portal vein, the underlying cause of biliary infections would most probably be inflammatory or ulcerative processes localized in anatomic structures drained by the portal system. While it is claimed by Adami and Ford that during health bacteria are constantly finding their way from the intestines to the liver through the portal blood, it is probable that in most instances a diseased condition draining into the portal system is necessary to result in the production of definite bile-passage inflammation. It is generally admitted that portal blood and bile-passage infection occur very commonly during typhoid fever; and, while typhoid is not a very common disease, it is held responsible for a considerable number of the chronic infections of the biliary passages. If typhoid can be the underlying cause of bile-passage infections, why can not gastrointestinal ulcerations, intestinal tuberculosis, dysentery and chronic appendicitis afford a means for colon bacilli to enter the portal blood and to produce infection of the biliary apparatus? The recent work of Turck on gastric and duodenal ulcerations strengthens rather than contradicts the possible relationship between gastrointestinal ulcerations and gallstones. But of all these inflammatory and ulcerative conditions, chronic appendicitis is by far the most common, and it does not seem unreasonable to hold that a

1. Ochsner: Pennsylvania Med. Jour., Oct. 6, 1900.
2. Mignot: Brit. Med. Jour., 1898.
3. Homer: Centrbl. f. Path., vol. v, p. 825.

long-standing inflammation in the appendix may permit sufficient infection of the portal blood to cause bile-passage inflammation.

Chronic Appendicitis the Cause of Gallstones.—The frequency of the coexistence of chronic appendicitis and gallstones in itself suggests the possibility of a relationship between them. But if chronic appendicitis can cause gallstones, why do some patients who have chronic appendicitis have no gallstones? The power of the liver to destroy bacteria (Welch) would seem to offer the explanation. If the bacteria from an appendicitis brought to the liver by the portal blood were destroyed by the liver, no bile-passage infection would occur from this source; but if the liver, owing to its inefficiency, or on account of the number and virulence of the bacteria brought to it, could not destroy them, but turned them into the bile stream, perhaps with their degree of virulence diminished, bile-passage inflammation might occur. Mechanical conditions favoring the stagnation of bile would also influence the occurrence of bile-passage infection under such circumstances. Acute appendicitis is less likely to cause disease of the biliary apparatus because the patient is apt to die or the appendicitis to be terminated by operation. Furthermore, as stated in the foregoing, it is not the acute and virulent inflammation, but long-standing and mild catarrh of the bile passages that predisposes to stone formation. Chronic appendicitis is a common affection, and by chronic appendicitis it is not necessarily meant that peri-appendicular changes must be present or acute attacks complained of. A chronic inflammation in an appendix with an apparently normal peritoneal covering may be sufficiently severe to be recognized as a definite disease and may produce symptoms sufficiently annoying to warrant removal of the appendix. Deaver's dictum, "The expression, chronic appendicitis, has but little meaning," can no longer be accepted.

It was shown several years ago by Stengel and others that in cases of appendicitis in which the peritoneum of the appendix is normal, bacteria are found in all of the structures of the appendix except its peritoneal covering. It would seem from these observations that in chronic appendicitis bacteria could find their way into the radicals of the portal vein. The anatomy of the appendix is not unfavorable to portal blood infection. The presence of the abundant plexus of veins beneath the epithelium lining of the appendix and the abundant anastomosis between the portal vein radicals that drain the appendix afford all that is necessary for an endo-appendicitis to produce infection of the portal blood. It has been shown that the occurrence of thrombosis is not necessary for germs to pass from the appendix to the liver by way of the portal system. It is probable that the lymphatics do not transmit bacteria from the appendix to the bile passages. Loison makes the statement that the lymphatics of the appendix do not communicate with the liver in any way.

Although it is readily appreciable that the foregoing does not show that appendicitis is or is not definitely associated with bile-passage infections, and while it may be impossible to prove that appendicitis does or does not cause these diseases, it is probable, theoretically and clinically, that appendicitis may at times be the underlying cause of infections of the bile passages and, of course, of one of the manifestations of these diseases—gallstones.

PRACTICAL CONCLUSIONS.

Regardless of the absence of proof of the existence of a definite relationship between appendicitis and infections of the bile passages, disease of the appendix should be kept in mind in performing every gallstone operation. The appendix should be inspected when possible and should by no means be considered normal on account of the absence of peri-appendicular changes. Unless my experience, with the limited number of cases mentioned in this article, has been exceptional, those who operate for the removal of gallstones and, as a rule, remove the appendix in doing these operations will be impressed with the frequency of the coexistence of these diseases, and if the combined operation is more frequently performed the results of surgery for the relief of bile-passage diseases will be more satisfactory.

405 Altman Building.

INFLUENCE OF INTRAPERITONEAL INJECTION OF WARM STERILE NORMAL SALINE SOLUTION IN INTRAPERITONEAL HEMORRHAGE.*

MARK JAMPOLIS, A.M., M.D.

Assistant in Department of Physiology, Northwestern University Medical School.

CHICAGO.

I. HISTORY.

That all cases of intraperitoneal hemorrhage can be positively diagnosticated within a few minutes, in a safe and simple manner, and just as effectively as by an exploratory operation, has been demonstrated by H. S. Hollenbeck.

Working under the direction of Professor Hall in the Department of Physiology of the Northwestern University Medical School, in a series of experiments on dogs, Hollenbeck produced intra-abdominal hemorrhage by various methods, and with a specially constructed trocar determined its presence within two or three minutes, without injury to the intestine or its peritoneal covering. The trocar was passed carefully into the peritoneal cavity, the perforator was withdrawn and a hypodermic syringe was attached to the canula. When the blood was in a fluid condition it was easily aspirated and the diagnosis made, but when clotted a preliminary injection of water was necessary. In the presence of hemorrhage the water become blood tinged, while in the absence of hemorrhage the water remained clear.

Of late years the subject of normal saline injections in cases of hemorrhage and shock has been enthusiastically studied and discussed. That they are of the greatest value is now universally admitted. As a rule the solution is injected either directly into a vein, into the rectum, or subcutaneously into the lymph spaces, especially under the mammary gland. But the peritoneum, especially that covering the diaphragm, has great absorbing power. Allaway[1] reports a case of heart failure following removal of an abdominal tumor in which the injection of normal saline solution into the peritoneum was followed by immediate resuscitation. Hare[2] states that abdominal transfusions have been successfully performed and that such a procedure is a good one on account of the

---

* Read in the Section on Pathology and Physiology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

1. Allaway: Mont. Med. Jour., 1891-92, vol. xx, p. 568.
2. "Text-Book on Therapeutics."

large absorbing surface exposed. Byron Robinson,[3] who has studied the peritoneum extensively, says: "With the recognized rapidity of peritoneal absorption, extensive and dangerous hemorrhage peritoneal injections might save life.

That shock and the depleted circulatory system can be effectually treated by intraperitoneal infusions must be admitted. But the local effect on the peritoneum must be considered as well. With the peritoneal cavity filled with blood, fluid or coagulated, would the effect on the conditions in the cavity be beneficial or detrimental? To determine this question it was decided that not only must the literature be consulted, but experiments performed. Should the procedure prove to be a valuable one in every way, normal saline solution could be easily infused through the diagnostic canula, and in fact, the diagnosis and the treatment, whether curative or merely palliative before a laparotomy, would be embraced by one simple operation.

In 1876 George Wegner[4] showed by animal experiments that the peritoneum absorbs gases, liquids and solids; that gall, muscle infusion, urine, blood and salt solution are absorbed without causing peritonitis and, furthermore, that all of the constituents of blood are absorbed in time without encapsulation. It is surprising that most of the experiments with blood in the peritoneal cavity have been performed with defibrinated blood. The absorption of defibrinated blood is of little clinical significance, but the results obtained by different investigators are interesting. Orlow[5] injected 300 c.c. into the peritoneal cavity; after five hours the amount was unchanged, but after twenty-four hours 160 c.c. were absorbed. Cordua, cited by Robinson,[3] working under Ponfick, found widely different phenomena. After three days half of the defibrinated blood remained, five days elapsing before all was absorbed.

The cause and path of the absorption of peritoneal fluids has been studied extensively by Wegner,[4] Dybkowsky,[6] Southgate,[7] Adler and Meltzer,[8] Orlow,[9] Starling and Tubby,[10] Heidenhain[11] and others, but the subject is as yet unsettled. The fact that absorption occurs even after death, or after the introduction of deadly and irritating solutions, disproves the theory of "vital force." That the stomata play an important rôle was demonstrated experimentally by Ludwig.[6] It is most generally accepted that the process is for the most part due to mechanical and physical forces. Wagner[4] demonstrated that any increase in the intra-abdominal pressure hastens absorption, or in other words, the more fluid the peritoneal cavity contains, the more rapidly is the solution absorbed. Warm saline solution was injected into two rabbits; into one 200 c.c. and into the other 100 c.c. After one hour 134 c.c. were absorbed in the first, and only 50 c.c. in the second. Similarly saline solution was injected into two dogs; into one 870 c.c. and into the other 500 c.c. In the first, after one hour 170 c.c. were absorbed and in the other, after two hours only 100 c.c. Filtration, associated with increased intra-abdominal pressure must therefore be an important factor. Nevertheless, filtration is active only to a certain extent, for in the event of enormous accumulation of fluid in the abdominal cavity, as in ascites, absorption is completely arrested. That osmosis performs an important part must also be admitted,[12] for all agree that intraperitoneal fluids disappear in inverse ratio to their osmotic pressure, or in other words, the lesser the concentration of the fluid in the peritoneal cavity the more rapid is the absorption. Consequently, the addition of normal salt solution, by increasing the intra-abdominal pressure would favor absorption by filtration and, by decreasing the concentration of the peritoneal contents, would favor absorption by osmosis.

Whether absorption takes place by way of the blood vessels directly or indirectly through the lymphatics has little bearing on our subject and suffice it to say that after extensive labor Heidenhain,[11] Starling,[10] Wegner,[4] and others are unable to agree.

A few words are necessary regarding cases of intraperitoneal hemorrhage associated with a possibility of infection. Penetrating wounds of the abdominal wall, such as are caused by bullets and knives, usually prognostieate septic peritonitis. Rupture of a hollow viscus following a non-penetrating injury may also complicate the hemorrhage with infection. But the aspiration of urine, bile or fluid feces from the peritoneal cavity with the diagnostie canula would positively demonstrate the condition to the physician. Many surgeons advocate and practice peritoneal irrigation in septic peritonitis, while on the other hand, as many others are positively opposed to the practice. The arguments advanced by both factions are well known and need not be repeated at this time. It is not my intention to speak for or against normal saline injections into the peritoneal cavity in case of hemorrhage associated with infection, but to confine myself strictly to those cases which are due to trauma not producing infection and after animal experimentation to summarize and draw conclusions relative to the practical value of the procedure at such times.

II. METHODS.

Experiments were performed on fifteen dogs, strict surgical asepsis being practiced in each case. The dog was anesthetized with chloroform, a median incision made, a loop of intestine withdrawn and a branch of the mesenteric vessels, both artery and vein, selected in such a place as to allow free circulation to the intestine without this branch. Ligatures were placed around the vessels in two places and between them the vessels cut. After permitting the vessels to bleed into the peritoneal cavity for a certain length of time, varying in the different experiments, the intestines were replaced. To procure profuse bleeding it was necessary to treat two or more branches in the same manner. In seven of the experiments, the wound was sutured immediately, while in the other eight warm sterile normal sodium chlorid solution (0.6 per cent.), the amount varying in individual cases, was first infused. Exploratory operations were performed under anesthesia on subsequent days to ascertain the presence or absence of clots and adhesions, the condition of the peritoneum and the character and approximate quantity of blood and fluid in the peritoneal cavity. At the same time the rectal temperature was

3. Robinson, Byron: "The Anatomy and Physiology of the Peritoneum." A most extensive bibliography is found in this book.
4. Wegner, George: Arch. f. klin. Chir., 1876, vol. xx.
5. Orlow, W. N.: Arch. f. d. gs. Physiol., Bonn, 1894, vol. lix, pp. 170-200.
6. Dybkowsky: Ludwig's "Arbeiten," 1866.
7. Southgate: Centbl. f. Physiol., Leipsic and Vienna, 1894, vol. viii, p. 449.
8. Adler and Meltzer: Jour. of Exp. Med., July, 1896.
9. Orlow, W. N.: Pflüger's Arch., vol. lix, 1895.
10. Starling and Tubby: Jour. of Physiol., 1894, vol. xvi, p. 140.
11. Heidenhain: Pflüger's Arch., vol. lix, 1895.
12. Leaths, J. B., and Starling, E. H.: Jour. of Physiol., 1895, vol. xviii, p. 106.

taken and general observations as to the dog's condition were recorded. On completion of each experiment the dog was dispatched with chloroform.

III. EXPERIMENTAL CASES.

Case 1.—Dog; temperature, 100.2 F.; pulse regular; general condition good. About 2 ounces of blood were allowed to flow and normal salt solution was poured in from a flask until the cavity was nearly full.

Second Day.—Temperature, 101; pulse regular; general condition good. Peritoneum was normal and the cavity was approximately two-thirds full of bloody serum. No coagula were present.

Third Day.—Temperature, 101.2; pulse regular; general condition good. Peritoneum was normal and the cavity approximately one-third full of serum, only slightly blood tinged. No coagula were present.

Case 2.—Male dog; temperature, 99.8; pulse regular; general condition good. About 2 ounces of blood were allowed to flow as before, but no salt solution was introduced.

Second Day.—Dog was weak; temperature, 103; pulse fast and feeble; respiration fast and choking. Peritoneum appeared normal and the cavity contained a small amount of bloody serum and a few clots in the omentum.

Third Day.—Dog was found dead. Peritoneum appeared dull, and a few adhesions were present between the intestinal loops. Peritoneal cavity contained small amount of clear fluid and a few clots in the omentum.

Case 3.—Male dog; temperature, 100; pulse regular; general condition good. About 2 ounces of blood were allowed to flow and salt solution was added until the cavity was full.

Second Day.—General condition was good; temperature, 100; pulse regular.

Third Day.—Dog was rather weak; temperature, 101.8; pulse regular. Peritoneum was normal, and the cavity was about one-third full of fluid, slightly blood tinged. No clots were present.

Case 4.—Female dog; temperature, 101; pulse regular; general condition good. About 3 ounces of blood were allowed to flow, and no salt solution was introduced.

Second Day.—General condition was fair; temperature, 101.5; pulse regular. Peritoneum normal. Intestinal coils were bathed in a large amount of the bloody serum. No clots were present.

Fourth Day.—Dog was very weak; temperature, 103.8; pulse feeble. Peritoneum normal. Light peritoneal adhesions between intestinal loops, due to small organizing blood clots, were found. A small amount of blood-tinged serum was present.

Case 5.—Female dog; temperature, 102.2; pulse regular; general condition good. About 4 ounces of blood were allowed to flow and no salt solution was introduced.

Second Day.—Dog was in good condition; temperature, 102.2; pulse regular. Peritoneum was normal and cavity contained a small amount of bloody serum. No clots or adhesions were present.

Third Day.—Dog was weak; temperature, 103.5. Peritoneum was normal and cavity contained only a small amount of serum, slightly blood stained. No clots or adhesions were present.

Case 6.—Female dog; temperature, 99.4; lively and in good condition. About 3 ounces of blood were allowed to flow and salt solution was added until the peritoneal cavity was full.

Third Day.—Dog was in good condition. Peritoneum was normal and cavity was about one-third full of blood-tinged serum. No clots were present.

Fourth Day.—General condition was good; temperature, 101.6; pulse regular. Peritoneum was normal and cavity contained only a small amount of clear serum. No clots or adhesions were present.

Case 7.—Male dog; temperature, 101.4; pulse regular; general condition good. Blood was allowed to flow until about 5 ounces were introduced. Normal salt solution was added until the abdomen was full.

Second Day.—General condition was good. Peritoneum was normal and cavity was about one-half full of blood-tinged serum. No coagula or adhesions were present.

Third Day.—General condition was good; temperature, 102; pulse regular. Peritoneum was normal and cavity about one-fourth full of slightly blood-tinged serum. No clots or adhesions were present.

Case 8.—Female dog; temperature, 99.3; pulse regular; general condition fair. Blood was allowed to flow until peritoneal cavity contained about 5 ounces. No salt solution was introduced.

Third Day.—General condition was poor; temperature, 102.6; pulse regular. Peritoneum was normal and cavity contained about 2 ounces of bloody serum. A large clot formed on the mesenteric side of the intestine near the vessels, causing a kink in the intestines. No adhesions between intestinal loop were present.

Case 9.—Male dog; temperature, 101.3; pulse regular; general condition fair. Blood was allowed to flow until the cavity was nearly full, containing 7 to 8 ounces. No salt solution was introduced.

Second Day.—Dog was weak; temperature, 103; pulse fast.

Fourth Day.—Dog was very weak; temperature, 102.2; pulse regular. Peritoneal cavity contained a small amount of bloody serum. Peritoneum was normal, but large coagula formed between the intestinal loops causing adhesions, which were about to organize and become fibrous.

Case 10.—Female dog; temperature, 100.1; pulse regular; general condition good. Blood was allowed to flow until the cavity was nearly full, containing 7 to 8 ounces, and no salt solution was added.

Second Day.—General condition was good; temperature, 101.2; pulse regular. Peritoneal cavity contained a large amount of bloody serum and a small clot around the ligated artery.

Fourth Day.—General condition was poor; temperature, 103.4; pulse feeble and fast. Peritoneum was normal, and cavity still contained about 2 ounces of bloody serum. The clot was larger and the intestine kinked by its beginning contraction.

Case 11.—Female dog; temperature, 102.1; pulse regular; general condition fair. Blood was allowed to flow until the cavity was full, containing 7 to 8 ounces. No salt solution was introduced.

Second Day.—General condition was poor; temperature, 101.8; pulse fast but regular.

Fourth Day.—Dog was so weak she could scarcely walk; temperature, 103.8; pulse weak. Peritoneum was normal and cavity contained a small amount of bloody serum. Large clots in three places caused beginning intestinal adhesions.

Case 12.—Female dog; temperature, 100.8; pulse regular; general condition good. Blood was allowed to flow until the peritoneal cavity was nearly full, containing about 7 or 8 ounces. Salt solution was added until the cavity would hold no more.

Second Day.—Temperature was 101.6; dog in good condition.

Fourth Day.—Temperature, 101.4; dog in good condition. Peritoneum was normal and the cavity contained a small amount of slightly blood-tinged serum. No clots or adhesions were present.

Case 13.—Male dog; temperature, 101.6; pulse regular, but feeble; dog in only fair condition. Blood was allowed to flow until the cavity was full, and the wound was sewed up. The dog became weak and nearly died on the table. The trocar was employed, and about 3 ounces of blood were withdrawn through the canula by a hypodermic syringe attached to the canula. About 3 ounces of warm normal saline solution were then injected. The dog speedily recovered from the anesthetic.

Second Day.—Dog was in poor condition; temperature, 102.2; pulse irregular and weak.

Fourth Day.—Temperature, 102.8; dog was still weak, worse than on first day. Peritoneum was normal and cavity contained a small amount of clear fluid. No coagula or adhesions were present.

CASE 14.—Female dog; temperature, 101.2; pulse regular. Dog was normal but vicious. Blood was allowed to flow until the cavity was nearly filled. About 3 ounces of salt solution were poured into the cavity.

Second Day.—General Condition was good; temperature, 102.2.

Fourth Day.—Dog was in good condition, but vicious. Peritoneum was normal, and the cavity contained a small amount of clear serum. No clots or adhesions were present.

CASE 15.—Female dog; temperature, 101.8; pulse regular; general condition good. The dog was treated as in Case 14.

Second Day.—General condition was good; temperature, 101.8; pulse regular.

Fourth Day.—General condition was good; temperature, 102.4; pulse regular. Peritoneum was normal and the cavity contained a small amount of clear serum. A small clot was found in the omentum, but no clots or adhesions were present around the intestines.

found in the omentum of one which was profusely bled.

5. In six of the seven which were not infused organizing clots were formed destined to become fibrous adhesions. They were most marked in the three that were profusely bled and in these subjects would ultimately have resulted in intestinal strangulation.

6. The blood was absorbed more rapidly in those dogs that received infusions. In four out of five of the injected dogs that were kept until the fourth day, nothing remained but a small amount of clear serum, the serum being slightly blood-tinged in the fifth.

7. In the four non-injected dogs which were kept until the fourth day, the serum which remained was bloody or blood-tinged in each case.

8. The most marked advantages of saline infusion were found in those cases which were bled profusely.

SUMMARY.

Case Number.	Sex.	Temperature Before Operation.	Approximate Amount of Hemorrhage.	Approximate Amount of Saline Solution Injected.	Temperature Subsequent to Operation.			Remarks.			
					Second Day.	Third Day.	Fourth Day.	General Condition.	Peritoneal Contents. Fluids.	Peritoneal Contents. Clots and Adhesions.	Peritoneum.
1	. .	100.2	2 oz.	8 oz.	101	101.2	. . . .	Good throughout.	On third day, about 3 oz. of blood-tinged serum.	None	Normal.
3	M.	100	2 oz.	8 oz.	100	101.8	. . . .	Weak on third day.	On third day, about 3 oz. of blood-tinged serum.	None	Normal.
6	F.	99.4	3 oz.	7 oz.	. . . .	. . . .	101.6	Good throughout.	On fourth day, small am't of clear serum.	None	Normal.
7	M.	101.4	5 oz.	5 oz.	. . . .	102	. . . .	Good throughout.	On third day, small am't of blood tinged serum.	None	Normal.
12	F.	100.8	7 to 8 oz.	3 oz.	101.6	. . . .	101.4	Good throughout.	on fourth day, small am't of slightly blood-tinged serum.	None	Normal.
13	M.	101.	7 to 8 oz.	3 oz. through canula.	102.2	. . . .	102.8	Progressi'ly weaker; nearly died during operati'n	On fourth day, small am't of clear serum.	None	Normal.
14	F.	101.2	7 to 8 oz.	3 oz.	102.2	. . . .	. . . .	Good, but very vicious.	On fourth day, small am't of clear serum.	None	Normal.
15	F.	101.8	7 to 8 oz.	3 oz.	101.8	. . . .	102.4	Good throughout.	On fourth day, small am't of clear serum.	Small clot in omentum. No clots or adhesions among intestines.	Normal.
2	M.	99.8	2 oz.	None.	103	Dead...	. . . .	Good at start. Poor on second. Dead on third.	On second day small am't of blood-tinged serum.	Clot in omentum on second day. Intestinal adhesions after death.	Peritonitis.
4	F.	101	3 oz.	None.	101.5	. . . .	103.8	Good at start. Poor on fourth.	On fourth day, small am't of blood-tinged serum.	On fourth day, small clots causing light peritoneal adhesions.	Normal.
5	F.	102.2	4 oz.	None.	102.2	. . .	103.5	Progressively poorer.	On third day, small am't of serum, slightly blood-tinged.	None	Normal.
8	F.	99.3	5 oz.	None.	. . . .	102.6	. . . .	Fair at start, but progressively poorer.	On third day, about 2 oz. of bloody serum.	Large clot, causing kink in the intestine, but no adhesions to other parts of intestine.	Normal.
9	M.	101.3	7 to 8 oz.	None.	103	. . . .	102.2	Progressively worse.	On fourth day, small am't of serum, very blood-tinged.	Large clots causing intestinal adhesions on fourth day.	Normal.
10	F.	100.1	7 to 8 oz.	None.	101.2	. . . .	103.4	Good at start. Poor fourth day.	On fourth day, about 2 oz. of bloody serum.	On fourth day, clot kinking intestine. No clots or adhesions.	Normal.
11	F.	102.1	7 to 8 oz.	None.	101.8	. . . .	103.8	Fair at start. Became extremely weak.	On fourth day, small am't of bloody serum.	On fourth day, three large clots, causing intestinal adhesions.	Normal.

DISCUSSION.

1. Of the fifteen dogs, eight received infusions.

2. Of these eight dogs, six were in good condition throughout the experiment, the other two becoming progressively weaker. In only four of these dogs was the temperature over 102,* the highest record being 102.8. A glance at the table shows that temperature occurred only in those infused dogs which were bled most profusely.[1]

3. All the dogs which were not injected grew progressively weaker after operation, one dying before the third day, probably of peritonitis. In all of the non-infused dogs fever was present at some time, in only one below 103 degrees.

4. No peritoneal adhesions were present in any of the eight dogs that received saline infusions; a small clot was

* The average rectal temperature of dogs is 101.5 F.

IV. CONCLUSIONS.

1. The infusion of normal saline into the peritoneal cavity should be practiced in every case of hemorrhage not associated with infection, for two general reasons: 1. Its effect on shock. 2. Its beneficial action on the peritoneum and the conditions in the peritoneal cavity. In some cases the procedure would prove palliative, in others curative.

2. In cases of intraperitoneal hemorrhage accompanied by shock so severe that an immediate laparotomy would inevitably prove fatal, the infusion at once of warm sterile normal saline solution into the peritoneal cavity would certainly do no harm, but on the other hand would stimulate the peritoneum and at the same time tend to counteract the existing shock and prepare the system for any which might follow a subsequent laparotomy.

3. In eases in whieh hemorrhage might cease and a laparotomy be not needed, the procedure would be of the greatest value. Apart from combating shoek, the solution would mingle intimately with the blood, hold the partieles in suspension and hasten absorption of the fluids in the peritoneal cavity without allowing coagula to form, to be the foundation of troublesome and perhaps fatal adhesions and strangulations.

4. The procedure would not require great skill, but would be feasible in the hands of any general practitioner. The following is offered as a suggestion: The solution should be kept sterile in a flask, fitted in a portable case, which eould also eontain a compartment for a small bottle of alcohol, in which to keep the trocar sterile and ready for use, and another to accommodate a long sterile rubber tube to serve as a connection between the flask and canula. Then in case of emergeney the solution eould be quickly raised to the required temperature, a small area of skin sterilized, the trocar introdueed and the diagnosis made, the flask and canula eonnected and, by raising and lowering the flask, the flow eould be regulated and the amount noted. After a gentle flushing of the peritoneal eavity, 500 c.c. to 1,000 e.e. might be kept within and the patient sent to the hospital, the better prepared for later developments.

DISCUSSION.

Dr. Winfield S. Hall, Chicago, in reply to questions, said that no leucocyte count was taken during these experiments. The hemorrhages were produced thus: A small incision was made and one of the branches of the mesentery artery cut through this incision and allowed to bleed until the intravisceral spaces were partly or wholly filled, and then the wound was closed. There is no way of determining the exact amount of hemorrhage without drawing it off in some vessel and then putting it back. Dr. Hall said that it was not thought desirable to depart so far from what would be found in ordinary cases. Some observers have withdrawn blood and defibrinated it.

Dr. S. J. Meltzer said that he believed that if the bleeding comes from a small artery the best plan is to leave it alone, since the contraction of the vessel wall in conjunction with the clotting will soon stop the bleeding, aided especially by the intra-abdominal pressure. Bleeding from large vessels can be stopped only by ligature after laparotomy has been made. If, however, the bleeding comes from the parenchyma of a ruptured organ, a transfusion of saline can do only harm, since it would tend to increase the blood pressure and with it the bleeding. Transfusion can be useful only after the bleeding has stopped, to supplant the lost blood, but can hardly be employed for the purpose of stopping the bleeding.

Dr. V. C. Vaughan, Ann Arbor, Mich., said it is the consensus of opinion that it is bad to inject salt solution or anything else when there is a possibility of infection. The abdominal cavity is divided into departments. If solution is used it carries the infection. For this reason surgeons are giving up the washing out of the cavity. It spreads the infection and carries it to every part of the intestine and makes the surface on which the germs grow much larger. Those who do not wash out the cavity certainly have the best of the argument.

Dr. Winfield S. Hall, Chicago, said that an artery was chosen for the experiments because of difficulty in controlling the hemorrhage while getting the amount of blood wanted from the spleen or liver. There were fifteen dogs; eight had saline solution and seven did not. Those that did not have the saline solution had a considerable rise in temperature. In the case of the dogs that had it there was no evidence of temperature. The wounds were opened up to see the progress of recovery. In several cases in which no saline solution was used clots formed which made it very evident that the course of recovery would yield to adhesion that might cause strangulation. In no case in which saline solution was introduced was anything of that kind shown. So far as appearance goes, the experiments left no doubt but that saline solution was of great value. As Professor Vaughan pointed out when there was a rupture of the intestine with danger of spreading the infection, this would be bad procedure.

Dr. S. J. Meltzer, New York, asked what was the cause of the difference when no saline solution was used.

Dr. Winfield S. Hall said that there was one case in which asepsis had miscarried and in that case there was some temperature. In other cases he could account for the increase of temperature only as due to the action of the peritoneum. There was no infection. It may have been due to absorption of the clot. He usually associates it with infection, but there did not seem to be any infection.

OBSERVATIONS ON THE FUNCTIONS OF THE ASSOCIATION AREAS (CEREBRUM) IN MONKEYS.*

SHEPHERD IVORY FRANZ, PH.D.
Pathological Pathologist, McLean Hospital.
WAVERLEY, MASS.

Our knowledge of the funetions of the cerebrum has been obtained from studies of the effeets of stimulation and destruction of the various parts of the organ. In this study both physiologists and clinicians have been engaged. Physiologists have spent most time in determining the effects of lesions, experimentally produced, and the motor accompaniments of stimuli of different kinds. The clinicians, including surgeons, neurologists and pathologists, have been able to observe in man the effects of destructions from accidents, disturbances of functions from emboli, thrombi and hemorrhages, and in some eases it has been found practieable to stimulate the cerebral eortex in man after the fashion of the physiologic experiments and thus to map out the muscular reactions represented in the cortex.

PHYSIOLOGIC AND CLINICAL METHODS.

Both the physiologie and the elinieal methods have advantages and disadvantages. On animals the physiologist is enabled to limit the lesion, to repeat his experiments often and to make detailed observations on individual points, to use any or all the apparatus of a laboratory and to observe his "patients" before and after an experimental aecident. The elinician, who is dependent on "Nature's experiments," is limited in some of these directions, but on the other hand he has a great advantage in that he deals with men. From the responses of a patient one ean learn more of his feelings, of his sensations and of his other mental states than is possible with animals, and the lack or disturbances of speech ability which are found in some individuals are of more value for the understanding of eertain cortical funetions than hundreds of experiments on dogs or cats or monkeys. The two methods, it is well understood, supplement each other, and the student of brain funetions must eonsider and weigh the results of both.

Both methods have been most successful in the determination of the motor and of the sensory functions of the eerebrum. The physiologists have been unable to advanee our knowledge of the workings of the so-called association areas represented by over one-half of the

---

* Read in the Section on Pathology and Physiology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

*The present paper is in the nature of a preliminary communication. A full account of the experiments which were made will be published soon. The work on monkeys was made possible by a grant from the Carnegie Institution of Washington to the author.

cerebral cortex. These portions of the brain do not produce a motor response on stimulation, and the effects of destructions or extirpations are not worked out. On the other hand, in only one particular have the clinicians been able to demonstrate clearly the functions of any of these parts, viz., in the localization of the functions of speech. The relative importance of the frontal or the parieto-occipital association areas in mental states has been often considered and the conclusions have been totally different. The more recent attempts have been to locate "mind," or the "higher intellectual faculties" in the frontal region, more especially in the prefrontal lobes.

In this country Phelps[1] and Mills[2] have championed the cause of the frontal lobes, particularly the left, as the seat of "thought." This has been done, it seems to me, without a sufficient analysis of the mental symptoms associated with cerebral injuries and without careful studies of the brains of individuals with high and low mental development. On this latter point it may be mentioned that the brains of Gauss and Helmholtz, which have been considered by Mills to indicate the predominant importance of the frontal lobes in intellectual states, are described by Clapham[3] as examples of great complexity of convolution in the zone between the Rolandic and the visual areas. Clapham, consequently, considers this region to be particularly associated with high mental development. The cases cited by Mills and those given in Schuster's admirable book,[4] which bear on the subject of the functions of the associational areas, I shall consider in detail in another article.

PHELPS' WORK.

There is time now to take up only very briefly some of Phelps' cases and conclusions. This I shall do in support of my previous statement that the conclusions regarding the functions of the frontal lobes have been drawn without a sufficiently careful analysis of the mental conditions in the cases of cerebral injury. "Loss of consciousness, the event of stupor or the access of delirium have been found to be dependent on the nature of the lesion, apparently uninfluenced by its situation," is a general justifiable deduction made by Phelps from all his cases.[5] From the results of his frontal-lobe cases the following conclusions are drawn:[6]

1. Mental decadence always attends conjoint lesions of both prefrontal regions. 2. Mental decadence always attends lesion of the left prefrontal region alone. 3. Mental decadence never attends lesion of the right prefrontal region alone.

The cases of frontal laceration cited in his book and the sixteen cases in his article do not admit such broad inferences. Of the eleven cases of laceration of the left frontal lobe only Cases 6 and 9 were undoubtedly conscious and without stupor or delirium, but with a mental change. Ten cases of laceration of both frontals (pp. 130-131) include four patients in whom the mental condition was 'normal" on days following the injury, and Case 300 (p. 580) is probably an example of mental impairment with lesion of the right frontal lobe. It is unfortunate that all of the individuals with lesions in the left frontal alone, or in both frontals, whose cases are given in Phelps' recent article, died soon after the accidents. We can see, however, that not all individuals had their mental faculties located in the left frontal lobe. The patient in Case 2 with a left frontal lesion comprehended up to the morning of his death. The patient in Case 3, although there was a certain amount of stupor and fever coincident with the left frontal injury, could be roused sufficiently to answer questions, and when the fever had only partially subsided the "comprehension was less delayed." In Case B, a fall on the right side, the patient showed a mental defect for at least two weeks. In Case C patient was discharged on the twenty-second day with delusion persisting after injury to the right side of the head. In Case D, a fracture on the left side, patient was entirely rational at the end of the fourth week. I am well aware that the cerebral lesions in the last three cases were not determined, but we are as certain that the brain injury in Cases B and C was on the right side as that it was on the left in Case D.

From a psychologic standpoint, what is lacking in all the accounts is a careful analysis of the mental condition. Apathetic, dull, stolid, irritable, restless, nervous, deficient memory, slow comprehension, are general terms for conditions which, for scientific purposes and in the present stage of psychology, the observer could and should try to describe more carefully. Any one of these terms may be descriptive of states of deficient or wandering attention, some are indicative of a mild degree of delirium. It is of prime importance that every case should be examined from a psychologic standpoint, if psychologic inferences are to be drawn.

A similar criticism must be made regarding the conclusions of most physiologists in regard to the functions of the association areas. The observations which they have made are even more "casual" than the clinical ones. Loeb[7] says that it is "impossible to notice the slightest difference in the mental functions of the dog" if both frontal lobes are removed, although he does note that if the anterior halves of both hemispheres be removed an animal becomes "idiotic." Such a careful observer as Schäfer[8] uses the term "semi-idiocy" to describe the mental condition in monkeys following the removal of the temporal lobes. Idiocy in children is difficult to diagnose from simple observation and the term "semi-idiocy" has no meaning in psychologic practice.

For the reason that the description of results of previous physiologic work on the association areas was lacking in exactness and definiteness, about six years ago I devised a method to determine more accurately the functions of these parts in animals. The mental life of animals, and even of man, is made up very largely of series of association, which in general terms are of a simple sensory-motor character.[9] Any definite sensory-motor association may be produced in an animal in a very few days, and it is possible to discover whether or not the association persists after removal of parts of the cerebrum.

AUTHOR'S EXPERIMENTS ON CATS.

The results of an investigation of this character, viz., on the relation of the frontal lobes to the production and retention of simple sensory-motor habits in cats, have

1. "Traumatic Injuries of the Brain," second edition, 1900; also articles in the New York Med. Jour., 1894-5, and Jour. Med. Sci., 1902, 1906.
2. Mills and Welsenburg: "Localization of the Higher Psychic Functions," THE JOURNAL A. M. A., 1906, vol. xlvi, p. 337.
3. Jour. Ment. Sci., 1898, vol. xliv, p. 290.
4. "Psychische Störungen bei Hirntumoren," 1902.
5. "Traumatic Injuries to the Brain," p. 127.
6. Am. Jour. Med. Sci., vol. cxxxl, p. 457.
7. "Comparative Physiology of the Brain," p. 275.
8. "Text-book of Physiology."
9. For an account of animal psychology and the mental life of animals the reader is referred to the works of Thorndike, Lloyd Morgan and Hobhouse.

already been published.[10] In that article the method is described in full. I may paraphrase briefly:

An animal is placed in a certain environment, usually unpleasant or indifferent to the animal. By a simple motor adjustment the cat or the dog or the monkey gets a subsequent pleasure (for example, some food). At first the motor response is neither accurate nor speedy, but soon the animal learns—i. e., forms the association of a definite movement or set of movements with a given situation. When the association or habit is "set," it is possible to discover that portions of the cerebrum are concerned in its production or retention by the extirpation of definite regions and the determination of the presence or absence of the association. If, after the destruction of a part of an animal's brain, there is no alteration in its mental condition, the time for the production of a movement or set of movements, when the animal is placed in a situation calling for such motor response, should remain the same. It was found, however, that after a bilateral lesion in the frontal lobes certain habits were lost. This result, it was shown, could not be due to "shock," for other brain lesions were not followed by loss of such associations. Unilateral lesions in the frontal areas were followed by a slowing of the motor response.

AUTHOR'S EXPERIMENTS ON MONKEYS.

Some similar and some totally negative results from similar experiments have been obtained with monkeys by me since the publication of the experiments on cats. These I wish to report at this time. The simple associations which I produced in the monkeys are what may be called "food box" and "hurdles."

The Food-Box Experiment.—In the food-box experiment the animal was placed in a small cage, about eighteen inches cube, which was covered with wire netting and to which was attached at the back, in the upper right-hand corner, a smaller "food box" about seven inches cube. The door of the food box was fastened by an old-fashioned turn-button, which had to be turned through an angle of 90 degrees before the door of the box could be opened. A greater or less turn would keep the door of the box closed. The button of the food box was placed sufficiently high, so that the animal had to stand and reach for it. A hungry animal was placed in the small cage, food was put in the box and the animal attempted to get at the food. When the animal was first placed in the peculiar situation it made many random movements, trying to squeeze through the wire netting, shaking the door and putting its hands all over the box and the cage. In its random movements the button may be turned and the door of the box come open. The animal sees the food, takes it and eats. After a very few trials the attention of the animal is almost exclusively centered on the food box and its door, and so soon as the food is placed in a box it will immediately turn the button. The association has been formed. This association will persist for a long period, two to three months, without materially altering the average time for the performance of the complex act.

The Hurdle Experiment.—The "hurdle" gave a situation a little more complicated. The animal was placed on a box ten inches high, from which it jumped or walked to a bar fifteen inches high, thence to another bar ten inches high, through a hole six inches in diameter, in a box six inches deep, then up and down two short ladders placed together, and finally it lifted the lid of the middle one of three boxes in which it found some food. The "hurdle" or obstacle race is much simpler than the description would indicate; its complexity is rather at the end in the choice of the proper (i. e., the center) box for food.

When an animal had learned the "hurdle" or "food box," of both, it was put aside for a week or ten days, with no practice, and then its memory was tested. A few extra trials to get the habit well learned were given and then the frontal lobes were cut away from the rest of the cerebrum. The surgical procedure was the same as I had previously used with cats.[11] Nine monkeys learned one or both of the associations and survived the operation for a sufficient length of time to have their memories tested. Some lived over nine months. Seven of the animals were of the macacque family, two were ringtails.

RESULTS.

The final results of the experiments I may group in three general divisions:

A. This class consists of two monkeys; both lost their newly-formed habits after the removal of the frontal lobes. The tests of retentiveness in these cases were made, respectively, about 24 and 40 hours after the operations. The results were very decided. Neither of the animals moved toward the door of the food box, but made random movements about the cage. One of the animals was restless, the other was stolid and indifferent. Each lived only a very few days (three and five, respectively). The autopsies showed that the frontal portions had been cut away from the rest of the cerebrum, but there was in one case an increase in intracranial pressure which was evidenced by a bulging of the brain substance when the bandage and trephine buttons were taken off. The results in these cases are in themselves of little value for the drawing of conclusions, it seems to me, because the animals survived the brain lesions for only a short time. It should be remarked, however, that the interval between the operation and death in both cases is as long as between accident and death in man in many cases which the clinicians report and which are highly rated.

B. The second class consists of three animals, a rhesus monkey and two ringtails, who lost their newly-formed associations after the removal of the frontals. All these animals lived a sufficiently long time to determine that the loss of habits was not due to the primary shock effects of the operation on the brain, but was a loss of the sensory-motor associations. The rhesus monkey died from hemorrhages subsequent to a second operation three months after the first operation. During the interval between the first and second operations the animal seemed perfectly normal (with the exception that the "food-box" and "hurdle" habits were lost), and when with other animals in a large cage it was impossible to note any difference in its behavior. This animal in the months following the first operation relearned the "food-box" association and the second operation was performed to determine what portion of the brain was concerned in the production of the habit after the prefrontals were excised. In cats I found that it was possible to teach an animal a trick, to remove the prefrontals and find the habit lost; then to have the animal relearn the same trick and to have it lost after removal of more of the frontals; and in the same manner for a third time to have an association formed and to have it lost subsequent to a third operation. It is possible, therefore, to have a mental defect, but to have a recovery in animals within a very short time, by a proc-

10. Am. Jour. Physiology, 1902, vol. viii, p. 1.

11. Am. Jour. Physiology, 1902, vol. viii, p. 5.

ess of relearning. A similar recovery has been obtained in the event of disturbance, or even of destruction, of the speech centers in man.

The other two animals that showed a loss of associations after the removal of the frontals lived, respectively, six and two months. Both of these ringtails had learned to jump from a shelf to my shoulder when I snapped my fingers, and this habit was lost as well as the "hurdle" and "food-box." Subsequent to the operation both of these animals seemed less friendly, they chattered more and screamed and showed their teeth when another monkey or a person approached them. In other respects their behavior was normal.

C. In my article on the effects following lesions of the frontal lobes in cats[12] I pointed out that habits, i. e., associations, of long standing were not lost after destruction of the prefrontal regions. A similar result was found with four monkeys in the present research. The associations which were investigated were mainly those of the "food-box." The most important of these cases is that of a female rhesus, living at the present time, two months after the operation, which was practiced on the "food-box" for 27 days, 5 times a day, over a period of 234 days. This animal learned to open the door of the "food-box" in an average time of 1.1 sec. before the operation, and two days after the operation the average time of 10 experiments was found to be 1.8 sec. At the middle of the tests with this monkey a period of 160 days was left free from any practice on the "food-box," and after this long interval the memory for the performance of the appropriate movements was perfect; average time before interval, 3.8 sec.; average time after interval, 4.4 sec. In this monkey the motor response partook of the nature of a reflex, and it is possible that the cerebral cortex was no longer used for the sensory and motor association, but that the adjustment was made in the basal ganglia. Probably a similar process in man of the assumption by lower centers of activities which at first are carried on by the higher is to be found in the learning of games, etc.

A male rhesus who was practiced 18 days over a total period of 43 days showed, so far as the ability to perform his "tricks" was concerned, no effect after the removal of both frontals. Another animal, a macaeque, was trained for 15 days, and after operation his ability measured by the average time to perform tricks was lessened. Before the destruction of the frontal lobes he averaged 1.8 sec. for opening the "food box;" after the operation and for a few days his time was greatly lengthened, e. g., on the second day it averaged 23 sec. The fourth monkey which did not lose its habits after the removal of the frontal lobes also showed a retardation. In this animal the slowing was, however, not so marked as in the previous case.

CONCLUSIONS.

Conclusions to be drawn from the experiments may be summed up as follows:

1. In monkeys, as well as in cats, the frontal lobes are normally employed in the formation of simple sensory associations.

2. When the frontal lobes are destroyed, recently formed habits are lost. It has been found possible, however, for the animal to form new associations or to relearn old tricks.

3. When the associations are firmly established, destruction of the frontals is not always followed by a loss. There are all degrees of "memory" for any such particular habit, from perfect to a very decided hesitancy and slowing.

4. In this latter event the cerebral path is probably shortened, and the nervous connection of the sensory and the motor elements of the association takes place through tracts at the brain stem. The association has, therefore, more of the character of a reflex.

In addition to their value in indicating the functions of part of the associational areas in monkeys the results, I think, have a suggestive import for workers on the pathology of the brain of man. The experiments show not only that there are mental changes coincident with disturbances of the frontal lobes, but that the mental change which is described is one that could not be determined by simple observational methods, and they suggest, furthermore, that, for the determination of corresponding changes in man, accurate psychologic or psychophysical methods should be employed. The clinical, as well as the physiologic, evidence points to a dependence of certain mental processes on the integrity of the frontal lobes, and I am much inclined to believe that the frontal or prefrontal areas are of great value in our mental life. I feel, however, that the reported clinical observations do not prove this and that there is great need for more careful psychologic examination and experiment in the hospitals. The weakness of the clinical work is that so much is claimed without an adequate analysis of the mental conditions of the patients.

Much more and better information could be gathered if the patients were tested along the lines which are followed in psychologic laboratories and psychiatric hospitals. In any scientific work there can not be too great accuracy either in methods or in results. This is particularly true when the subject of research is so elusive a thing as is "mind." Careful dissection, sectioning and the use of good microscopes are deemed necessary in other fields of medical work, and psychologic scalpels, microtomes and high power lenses are indispensable to one who would attempt to solve the problem of the relation of the brain to mental processes.

12. Am. Jour. Physiology, 1902, vol. viii, p. 22.

FURTHER OBSERVATIONS ON THE INFLUENCE OF ALCOHOL ON THE METABOLISM OF HEPATIC GLYCOGEN.*

WILLIAM SALANT, M.D.
NEW YORK CITY.

The present report gives the results of a further study of the possible influence of alcohol on the metabolism of glycogen in the liver. It has recently been shown that, to a certain extent, alcohol can replace the carbohydrates of our daily diet. Consequently it would seem *a priori* that it might indirectly be a glycogen former, by sparing the carbohydrate radical of the tissue proteins, which may serve as a source of glycogen. The results of Nebelthau's[1] investigations, indeed, lend some support to this view. He found considerable quantities of glycogen in the liver of the hens to which large amounts of alcohol were fed after they had been starved for six days. In one of his experiments he found as

* Read in the Section on Pathology and Physiology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

* From the Department of Physiological Chemistry of Columbia University, at the College of Physicians and Surgeons, New York.

1. Nebelthau: Ztschr. f. Biol., 1891, vol. xxviii, p. 138.

much as 3.5 per cent. of glycogen in the liver after feeding 10 c.c. of 96 per cent. alcohol per kilo in twenty-four hours.

To test the hypothesis suggested, I carried out a number of experiments[2] on apparently normal rabbits kept on an exclusive diet of alcohol for from four to six days. Normal rabbits were used as controls. They fasted from four to six days and did not receive alcohol. During the period of fasting, water was given to them by means of a stomach tube. This precaution was taken in order to control the possible loss of glycogen due to occasional struggling of the rabbits during the administration of alcohol.

The results of a number of observations have shown that alcohol given in moderate quantities (10 c.c. of 30 per cent. alcohol per kilo of rabbit daily) does not cause the accumulation of glycogen in the liver. The results were likewise negative when a somewhat larger quantity of alcohol (15 c.c. of 60 per cent. alcohol per kilo of rabbit daily) was used.

Attention was then directed to the effect of alcohol on the hepatic glycogen after it has accumulated in the liver. This problem presented itself under two aspects: (A) Does alcohol, on account of its high calorific value, spare the glycogen of the liver and thus retard its disappearance; or (B) if it fails to do so, does alcohol behave like various other toxic substances in this regard and accelerate the disappearance of glycogen from the liver?

A. In order to answer the first question, rabbits were fed on carrots from three to four days when they contained approximately the maximum accumulation of hepatic glycogen. All food was then withheld from four to six days. Alcohol (10 c.c. of 30 per cent. alcohol per kilo daily) was given daily by mouth by means of a stomach tube during the period of experimentation.

The results of a number of experiments have shown that the glycogen content of the liver in some alcohol-fed rabbits (at the end of the period indicated) was very small; in others the liver contained only a trace of glycogen. Only in the liver of one alcohol rabbit was the amount of glycogen appreciable—.8 per cent. In two experiments with larger quantities of alcohol (12 c.c. and 15 c.c. of 60 per cent. alcohol per kilo given for four days), there was not even a trace of glycogen. The control rabbits, which fasted from four to six days and were given water in the way indicated, proved to be as poor in hepatic glycogen as the alcohol rabbits. The conclusion is, therefore, justified that 30 per cent. alcohol when given in the amounts stated does not spare the glycogen of the liver, while the two experiments with larger quantities of alcohol suggest that a more rapid transformation of glycogen has taken place.

That various poisons cause rapid disappearance of glycogen from the liver was shown by several investigators. Thus Drummond and Paton[3] have shown that in acute adrenalin poisoning in rabbits the glycogen of the liver is markedly diminished. Doyon and Kareff[4] caused rapid disappearance of hepatic glycogen by injecting adrenalin chlorid into a branch of the portal vein, The same authors[5] obtained similar results with pilocarpin. Kaufholz[6] has shown that phosphorus poisoning in rabbits is followed by a rapid disappearance of liver glycogen. Kriukoff,[7] who studied the effect of a large number of poisons on hepatic glycogen, reported that, after the subcutaneous injection of arsenic, phosphorus, pulegnon, corrosive sublimate, anilin, phenylhydrazin, pyrogallol, sulphuric acid, sodium hydroxid and carbolic acid, the glycogen disappears from the liver in twenty-four hours, while alcohol has the same effect on hepatic glycogen when it has been injected subcutaneously for a long time. Garnier and Lambert[8] state that, after the intravenous injection of a solution of sodium chlorid, glycogen disappears from the liver. Mohr,[9] who experimented with various gastrointestinal irritants, found the liver free from glycogen after the administration of aloin, croton oil and arsenious acid. Koch,[10] in his studies of corrosive sublimate poisoning, found the same effect on glycogen. Kissel,[11] working in the same laboratory, corroborated the findings of Koch and also made the interesting observation that the disappearance of glycogen in corrosive sublimate poisoning is inhibited by alcohol and glycerol. Bacterial toxins seem to hasten the disappearance of liver glycogen much more than the other poisons mentioned. Thus Luschi[12] found that the glycogen of the liver of animals brought to a maximum of glycogen accumulation is already diminished six hours after infection. Colla,[13] who studied the effect of infectious diseases on glycogen, found that it disappears after tetanus, diphtheria, anthrax, pneumonia. He also studied livers of a number of children who died of diphtheria. Four, ten, twelve hours after death the livers were free from glycogen.

B. In order to answer our second question, rabbits were used as in all the preceding experiments and were fed by mouth through a stomach tube. Various amounts of glucose dissolved in water were given for a period not exceeding twenty-four hours. Alcohol was administered either immediately after the glucose or in some experiments a few hours were allowed to elapse between the last feeding of glucose and the first dose of alcohol. In some experiments two doses of alcohol were administered at intervals of from eighteen to twenty-four hours. In one experiment (No. 28) only one dose was given, while one rabbit (No. 29, a) received three doses of alcohol. As controls, I used rabbits treated in all respects the same as the alcohol rabbits, except that alcohol was withheld. From sixteen to fifty-four hours after the last feeding of glucose the rabbits were killed, the livers rapidly removed and subjected to analysis for glycogen by the shorter method of Pflüger.[14]

The analytic results given in the table show with one exception (No. 26, a) a marked diminution in the glycogen of the livers of the alcohol rabbits as compared with the controls. Thus, sixteen hours after the last feeding of glucose the total amount of glycogen obtained was 3.7 per cent. in the control, while in the alcohol rabbit which received the same amount of glucose (20 gm. in twenty-four hours) the quantity of glycogen found in the liver was 1.76 per cent., less than half that found in the control.

In the next series the rabbits were given a single dose of 5 gm. of glucose per kilo. They were killed twenty-

2. Salant: Am. Medicine, new series, vol. i, No. 1, p. 41.
3. Drummond and Paton: Jour. Physiol., 1904, vol. xxxi, p. 92.
4. Doyon and Kareff: Compt. Rend. Soc. de Biol., 1904, vol. lvi, p. 66.
5. Doyon and Kareff: Ibid., p. 111.
6. Kaufholz: Dissertation, Würzburg, 1904.
7. Kriukoff: Dissertation, Moskan, 1902.
8. Garnier and Lambert: Compt. Rend. Soc. de Biol., 1897, vol. xlix, p. 716.
9. Mohr: Dissertation, Würzburg, 1894.
10. Koch: Dissertation, Würzburg, 1894.
11. Kissel: Centrbl. f. inn Med., 1895, vol. xvi, p. 613.
12. Luschi: Jahresb. ü. d. Fortschr. d. Thierlschen, 1906, vol. xxx, p. 349.
13. Colla: Arch. Ital. de Biologie, vol. xxvl
14. Pflüger: Arch. f. d. Gesell. Physiol., 1902, vol. xciii, p. 163.

eight hours later. Excepting No. 26A, this series showed in a striking manner the action of alcohol in hastening the transformation of hepatic glycogen, for, whereas the amount of glycogen in the controls was 1.14 per cent. and 2.3 per cent., the livers of the two alcohol-fed rabbits were free from glycogen. The administration of alcohol after feeding much larger quantities of glucose (20 gm. per kilo in twenty-four hours) was accompanied by similar results when the rabbits were killed in from fifty-two to fifty-four hours after they received the final dose of glucose. In the two controls of this series the amount of glycogen obtained was .11 per cent. in one, 1.14 per cent. in the other, whereas the livers of the two alcohol rabbits were free from glycogen. In another experiment of this series (No. 28, a) the rabbit received the same amount of glucose per kilo in twenty-four hours, but, as he was in a dying condition, apparently from the effects of alcohol, he was killed thirty hours after he had received the final dose of glucose. The liver of this rabbit contained only 1.33 per cent. of glycogen, which is only .2 per cent. more than was found in the control rabbit (No. 25) and about 1 per cent. less than in rabbit No. 26, which received one-quarter the amount of glucose per kilo fed to rabbit No. 28, a.

The discrepancy between the results obtained in No. 26, a, and in the other alcohol experiments of the same series may be explained by the following observations: It was noted that in this rabbit symptoms of severe alcohol intoxication (which set in soon after the second and final dose of alcohol was given) persisted eight hours, while the other rabbits of this group similarly treated behaved at the end of this time as if they had recovered completely from the effects of alcohol intoxication. This difference in the reaction to alcohol is suggestive of the possibility that during the stage of profound alcohol narcosis glycogen metabolism is not affected. Perhaps it is only when recovery from narcosis is practically complete that metabolism of glycogen is resumed.

In the two alcohol rabbits (Nos. 29, a, and 30, a), each of which was killed in a state of deep intoxication, this supposition apparently was not borne out by the results of the analysis. As shown in the table, their livers did not contain any glycogen. The protocols show that the intervals between two successive doses of alcohol were eighteen and twenty-four hours, thus giving sufficient time for recovery from its intoxicating effect. In No. 26, a, the interval was only twelve hours, which may account for the different results obtained.

The suggestion that alcohol does not hasten the transformation of glycogen of the liver during the stage of profound narcosis gains further support from experiments Nos. 21, a, and 23, a, in which large quantities of glucose were followed by alcohol (shortly after in one experiment or three hours later in another). The amount of glycogen found six to twelve hours after the final dose of glucose had been fed was 9.17 per cent. and 8.65 per cent.

It is to be noted that in both of these experiments the rabbits were killed from six to eight hours after receiving large amounts of alcohol in proportion to body weight, that is, at a time before the stage of intoxication passed off. The conclusion seems to be justified, therefore, that large quantities of alcohol may hasten the process by which glycerin is made to disappear from the liver and that it apparently exerts this action only after the stage of intoxication has been passed. This mode of action of alcohol might explain the conflicting results of Nebelthan's[1] experiments, some of which showed disappearance of hepatic glycogen, while in some the presence of considerable amounts were reported after administration of alcohol. It may in the same way also account for the different results obtained by Nebelthan and Kriukoff,[7] whose work was referred to above.

Objection to this conclusion may be raised on the ground that there is a wide range of variation in the amount of glycogen found in the livers of the control rabbits. Thus in experiment No. 28, a, only .11 was obtained, while in No. 31, a, shows the presence of 1.14 of glycogen. This difference may be accounted for by the violent muscular activity when rabbit No. 28 was tied on the holder before he was killed, which did not occur in the other rabbits under the same conditions. Again, in experiments Nos. 25 and 26 (two control rabbits) there was a difference of 50 per cent. in the liver glycogen found, as great a difference as there was between the alcohol rabbit in experiment No. 24, a, and the control. The wide variation in the amount of hepatic glycogen of these two normal rabbits does not invalidate the above conclusions, since in the alcohol rabbits of the same series, Nos. 25, a, and 27, a, which received as much glucose per kilo, and were killed at the same time after feeding glucose as the controls, the livers were free from glycogen. Moreover, the difference in the amounts obtained in the two normal rabbits may possibly be accounted for by a difference in muscular activity. It is of importance to note, in this connection that in the alcohol rabbits intoxication and consequent loss of muscular activity set in about 15 minutes or sometimes even earlier after alcohol was administered, which would tend to inhibit rather than hasten the amylolysis.

TABLE SHOWING THE EFFECT OF STRONG ALCOHOL ON THE METABOLISM OF HEPATIC GLYCOGEN.

Experiment Number.	Weight rabbit in gms.	Weight liver in gms.	Gms. dextrose fed per kilo in 24 hours.	No CC of 60% alcohol fed per kilo.	No. hours between last feeding of dextrose and killing.	Per cent. of dextrose found in liver.	Per cent. of glycogen.
24	1,850	51	20	0	16	4	3.70
24a	1,800	52	20	25	16	1.9	1.76
25	1,850	33	9	0	28	1.23	1.14
25a	1,550	48	8	30	28	0	....
26a	1,450	58	7	28	28	3.33	3.08
26	1,120	41	5.5	0	28	2.5	2.3
27a	1,200	36	6	26	28	0	....
28	1,450	30	29	0	54	0.12	0.11
29a	1,450	44	29	35	52	0	....
30a	1,270	41	26	27	52	0	....
31a	1,800	28	36	0	52	1.24	1.14
28a	1,230	45	25	13	30	1.44	1.33
21a	1,050	41	32	20	12	9.34	8.65
23a	815	35	25	11.7	6.11	9.97	9.17

That other toxic substances may exert a similar action on hepatic glycogen in a manner comparable to that of alcohol was shown by Roger.[13] He was the first to find that anthrax has no effect on glycogen during the first stage of infection, but later accelerates its disappearance from the liver.

The present study suggests certain considerations concerning the use of alcohol in infectious diseases. Colla,[13] who studied the influence of glycogen on resistance in infectious diseases, made the very interesting observation that increasing the glycogen of the liver and muscles in rabbits by adding glucose for fifteen days to their daily diet improved their ability to combat bacterial invasion. Although his findings were later disputed by Luschi,[12] which leaves the matter an open question for the present, nevertheless the possibility that such may be the case is of considerable importance, for if resistance to infection is increased by increasing the glycogen

content of the body the administration of large quantities of alcohol in infectious diseases practiced by clinicians is not an unmixed blessing, since, as is shown by my experiments, it tends to diminish the glycogen of the liver, thus possibly robbing the body of a very effective weapon to combat infection.

I am very much indebted to Prof. William J. Gies for valuable suggestions received in the course of this investigation.

IMPORTANCE OF EARLY RECOGNITION AND OPERATIVE TREATMENT OF MALIGNANT TUMORS.

VARIATION OF THE EXTENT OF THE OPERATIVE REMOVAL ACCORDING TO THE RELATIVE MALIGNANCY OF THE TUMOR.*

JOSEPH C. BLOODGOOD, M.D.
BALTIMORE.

Accumulated experience has demonstrated that patients from whom carcinoma and sarcoma have been removed with the knife have remained well sufficiently long to show that cures have been accomplished.

There are two forms of malignant tumors, the epithelial, for which the general term carcinoma is used, and the connective-tissue tumor included under the term sarcoma.

In the onset of their growth, carcinoma and sarcoma are both essentially local diseases. If the neoplasms are removed in this stage cures are accomplished. Carcinoma metastasizes through the lymphatic channels to the neighboring lymphatic glands. Permanent cures are recorded in a certain number of cases when the primary and metastatic areas were properly and completely removed. Sarcoma, as a rule, gives dissemination later than carcinoma, and generally through the blood vessels. After this has taken place the prognosis is hopeless.

Some forms of sarcoma disseminate through the lymphatic vessels and are associated with metastatic tumors in the neighboring lymphatic glands, like carcinoma. It is a question whether cures have been accomplished in this group of tumors.

The etiology of malignant tumors is not established.

At the present time the only accepted treatment of neoplasms is their removal by an operative procedure. Until the etiology of carcinoma and sarcoma has been determined and a new method of treatment based on this etiology elaborated, surgeons must continue to investigate the subject on the principles of early recognition and complete excision of these new growths. The problems involved are: 1. The early recognition. 2. The method of operation.

PROBLEMS IN DIAGNOSIS.

In the problem of diagnosis every lesion simulating a tumor should be considered malignant until every means has been exhausted to demonstrate that it is innocent.

Schönholzer divides the life of a malignant tumor before operating into three periods: The first is the time during which the presence and growth of the tumor do not attract the attention of its host. The second is the time which the patient waits before seeking the advice of a physician. The third, the time which the physician consumes in making a diagnosis. The period of life of the tumor has been recorded with great accuracy in the various large surgical clinics of the world. Nothing can be done to shorten the first, or latent, period. As a matter of fact the relative number of cases in which the neoplasm becomes incurable or inoperable during this stage is small.

To shorten the second period the public must be educated to the fact that malignant tumors are curable and that the probabilities of a cure are increased in almost direct proportion to the promptness with which they are treated. In the last few years there has been a crusade against tuberculosis along these lines. The knowledge of the curability of tuberculosis, its prevention and treatment has been propagated directly to the public. The time is ripe for a similar educational movement on tumors. For example, every woman should be instructed to seek the advice of her physician the moment her attention is called to a mass in her breast, or to any unusual change or sensation in this gland. Every man should be impressed with the danger of delay in the treatment of a small ulcer, or area of hardness in the lower lip, or tongue. All the people should be impressed that the moment they notice any tumor formation, no matter how small or insignificant, they should seek medical advice. If the people can be instructed that the earlier treatment of all tumors is the most important factor in their curability, and that in this earlier stage the operation will also be less mutilating, I am confident that the percentage of cures will be tremendously increased. This is clearly demonstrable in recent years in a number of surgical lesions; for example, appendicitis and strangulated hernia. The public now know that the fatality of these two diseases is due chiefly to delay. In some instances, greatly to the discredit of the general profession, the family or the patient have carried this acute abdominal lesion to the surgeon without delay and over the advice of their family physician.

To shorten the third period, the general profession must be impressed by accurate and conscientious statistical studies from surgical clinics that the truth of the statements made in this paper is unquestionable. It is an improper method for the specialist, for example, the surgeon, to appeal to the public over the head of the general practitioner. Future progress in surgery, in the great majority of diseases, is in the hands of the general practitioner. He sees the patient first. The education of the public belongs to him. The general practitioner or family physician is in much closer contact with the people. The specialist, the surgeon, has more than enough to train himself for the new requirements in the diagnosis and operative treatment of surgical lesions when they are brought to him in this much earlier stage.

Accumulated experience in surgical lesions, especially neoplasms, demonstrates that the easier the clinical diagnosis the worse the prognosis. By clinical diagnosis I mean the differential recognition of the surgical lesion from the data of the history and examination. The earlier surgical lesions come to the surgeon for treatment the more difficult the diagnosis. This fact brings up another problem in diagnosis which belongs strictly to the domain of surgery when a positive clinical diagnosis cannot be made as to the nature of the trouble, the question to be answered is: Does the clinical history and findings at the examination justify an operation which exposes the seat of the trouble to the eye? In such cases the surgeon must have sufficient pathologic knowledge to enable him to differentiate the various pathologic possibilities by their naked-eye appearances.

In this effort to improve the results of surgery the general practitioner and surgeon work together. The

---

* Read by invitation at the meeting of the Buffalo (N. Y.) Academy of Medicine, May 1, 1906.

province of the general practitioner embraces the education of the public and of himself. Among a large group of patients daily seeking his advice he must be keen in the recognition of those few in whom there should be no delay in surgical consultation. It appeals to me that the general practitioner should consider this separation the most important feature of his day's work, and an intellectual achievement which gives him the greatest enjoyment. His responsibility is even greater than the surgeon's.

On the other hand, the surgeon must feel the responsibility of the new requirements of diagnosis, and fit himself for this task. The surgeon of the future must be his own pathologist, and this transformation does not trespass on the field of the general pathologist. The two should work together. The surgeon brings to the pathologist his greater experience with the clinical aspects and the ultimate results of disease, and the fresh appearance of the living tissue. The pathologist contributes his greater and more expert knowledge of the cellular picture. In this coöperative study the surgeon improves his art of clinical diagnosis and makes more scientifically correct and acute his optical recognition of the gross differences of the various surgical lesions. I am sure that the pathologist will also reap the benefit of a closer and more practical relation of his department to surgery.

In regard to tumor formation, the earlier they come to the attention of the surgeon the more frequently is an exploratory incision absolutely necessary. At this exploratory incision with the exposure of the diseased tissue it is essential, for the benefit of the patient, that a correct diagnosis be made at once, to be followed by an operative procedure, the extent of which is based on this diagnosis. At this exploratory incision it is unjustifiable to cut out a piece of tissue for examination, to close the wound and to wait for a microscopic diagnosis.

There are two methods of making the diagnosis at the exploratory incision; one, the recognition by the gross appearances; the other by the examination of a frozen section which can be made in five or ten minutes. It has been my experience that when it was difficult or impossible to differentiate with the naked eye, the rapid frozen section offered no better clue. With the proper training it is not difficult for a surgeon to make a gross diagnosis in the majority of cases.

I can illustrate the necessity of the exploratory incision and the importance of an ability to make a naked-eye diagnosis by a consideration of breast tumors and lesions of bone. In a woman with a tumor of the breast in which a clinical diagnosis of carcinoma can be made the surgeon proceeds with the complete operation without cutting into the tumor. In many tumors of the breast a clinical diagnosis of carcinoma can not be made. What shall be done? Shall we delay, or is the complete operation for carcinoma to be done? If one delays and the tumor is cancer precious time is lost. If one proceeds with the complete operation for carcinoma and the tumor proves benign, the patient is unnecessarily mutilated. If the surgeon, however, cuts down on the tumor and has the ability to recognize its nature from the naked-eye appearances, he is prepared to follow the indications immediately. If the tumor be malignant, he immediately proceeds with the complete operation; if the tumor be benign the nature of the operation differs with the character of the benign tumor, as will be discussed again under breast tumors; in some cases the tumor only is removed, in others the entire breast should be excised, in a few cases recent investigation has demonstrated that both breasts should be amputated.

In lesions of the bone, even with the aid of the tuberculin test and the *x*-ray, a positive differential clinical diagnosis can not be made in many cases. The earlier the patient seeks advice after the first symptom the more difficult the diagnosis. One must always bear in mind the possibility of a malignant bone tumor. The age of the patient, of value in excluding a malignant tumor of the breast, is of no aid in a bone lesion. Malignant tumors of bone have been observed at all ages. Extensive operations, even amputations, are indicated in some malignant bone tumors. This operation is a mutilating one. The same questions arise as in a doubtful tumor of the breast. One is not justified in mutilating the limb of an individual unless the positive diagnosis of the disease justifies it. For this reason, in these doubtful cases, one must expose the lesion for a naked-eye diagnosis. It may be syphilis, in which case nothing is done; in tuberculous and pyogenic osteomyelitis very conservative operations are sufficient; in a benign bone cyst and in some forms of giant-cell sarcoma curetting is sufficient; in other bone tumors local resection with the preservation of the continuity of the limb and its function give the patient just as much assurance of a permanent cure as an amputation; in other more malignant bone tumors amputation is justifiable.

Considering only tumors of the breast and lesions of bone as examples, the new problems of diagnosis and operative treatment are all involved. If the public is educated to consult the general practitioner at once, and the general practitioner fulfills his obligation to the patient by immediate consultation with the surgeon, the surgeon must be prepared to meet these new requirements of diagnosis. Otherwise the continuity of the scheme is broken at the most important point. If the surgeon has not developed the ability to make a diagnosis in this early stage, the patient had better be left alone; those suffering with benign lesions will not be unnecessarily mutilated, and those with malignant tumors will not have the disease disseminated by an operation which consists of the cutting out of a piece of tissue and closure of the wound. A delay until a positive clinical diagnosis can be made is less dangerous than treatment in this earlier stage which is based on incorrect conclusions.

THE SURGEONS AND DIAGNOSIS.

How can surgeons acquire this ability to recognize the various surgical lesions by their naked-eye appearances? I have ventured the statement on a number of occasions that surgical technic is in advance of surgical diagnosis. One learns the technic of a modern surgical operation in the majority of cases much more quickly than one does the early diagnosis of the disease for which the operation is indicated. The medical student should be instructed chiefly in diagnosis. In the surgical department there should be systematic teaching on the pathologic anatomy, gross and microscopic, of all surgical lesions. Every surgical clinic should have its own pathologic laboratory. Cases admitted to the surgical clinic should be subjected to the most searching inquiry as to the history and the findings at the physical examination. Instruments of precision and new methods of diagnosis should be employed. All of these data should be carefully recorded. At the present time, with these methods, in a large number of cases, probably the majority, a clinical diagnosis can be made. For this

reason the surgeon proceeds to the indicated operation without an exploratory incision.

After the tumor has been removed the surgeon and his associates in the clinic should make a careful inspection of the naked-eye appearance of the diseased tissue, and a clear description should be recorded; if possible, the tissue should be painted by an artist or photographed in the fresh. A frozen section should be immediately made, so that while the gross appearance is still fresh, the surgeon can quickly associate with it the microscopic pictures. A piece of the tumor should be preserved for future inspection as a museum specimen, in alcohol, or better in Kaiserling's fluid, which preserves to a certain extent the color. A block of tissue should be hardened in Zenker's fluid and as quickly as possible a permanent microscopic section should be made and examined. The daily repetition of this routine procedure establishes the continuity of the clinical picture, the gross appearance and the microscopic histology. It not only improves the surgeon's ability to make a more accurate clinical diagnosis, but he soon learns to interpret properly the gross appearances and make a naked-eye diagnosis. In this way he prepares himself and his students for those doubtful cases in which the diagnosis must be made at the exploratory incision.

For example, take a carcinoma of the breast. If the surgeon has carefully studied the gross and microscopic appearances of all the malignant tumors of the breast which have come under his observation, in which a clinical diagnosis could be made and in which the operation has been performed without an exploratory incision, he will have no difficulty in recognizing this tumor when he cuts into it, if the tumor had a clinical picture in which a diagnosis could not be made. A small scirrhus carcinoma so deep in a large fatty breast does not differ in its naked-eye appearances from the older and larger tumor in which a clinical diagnosis can be made without difficulty.

I find frequent statements in the literature that an exploratory incision into a malignant tumor is a dangerous procedure, but practically, what is to be done if the diagnosis can not be made from the history and examination? My own experience demonstrates that the danger of delay is far greater than the danger of an exploratory incision. No one is justified in mutilating an individual by an extensive operation, unless a correct diagnosis of the nature of the disease can be made which justifies this proceedure. As a matter of fact, I have been unable to demonstrate any cases of dissemination when the exploratory incision has been properly made into a doubtful malignant tumor, provided an immediate operation followed.

In malignant tumors of the breast, considering all cases, 47 per cent. of the patients have remained well and free from recurrence three years after operation. When we consider the malignant tumors of the breast in which a clinical diagnosis could not be made in the surgical clinic of the Johns Hopkins Hospital and in which an exploratory incision was performed, there has been but one death in 25 cases. That is, 96 per cent. of the patients have remained apparently well 3 years; some, 14 years. In this one patient who died of internal metastasis the tumor was a small scirrhus carcinoma, and the glands in the axilla showed metastasis. The latter finding can explain the internal dissemination better than the dissemination by the exploratory incision. In the majority of bone tumors which have been cured, exploratory incisions were made. Exploratory incisions were necessary in only a very few of the cases of bone tumors in which the patients died later of internal metastasis.

I believe I am justified by the facts in the statement that the earlier surgical lesions, especially tumors, come to the surgeon for treatment, the more frequently will an exploratory incision be necessary, and that this exploratory incision is less dangerous than delay or an operative procedure without it; further, that surgeons must acquire the ability to recognize surgical diseases by their naked-eye appearances. Undoubtedly, the investigation of surgical lesions along these new lines will develop in the surgeon an increasing power in correct clinical diagnosis, and decrease the number of exploratory incisions into malignant tumors.

WORK IN THE SURGICAL PATHOLOGIC LABORATORY OF JOHNS HOPKINS HOSPITAL.

More recent clinical and pathologic study of tumors has demonstrated that malignant tumors, both sarcoma and carcinoma, vary in the relative degree of their malignancy. This knowledge allows in some cases a less radical, local operation, and in all cases is of great interest in prognosis. The results of the clinical and pathologic study of tumors in the pathologic laboratory connected with Professor Halsted's clinic of the Johns Hopkins Hospital can be expressed in the following paragraphs:

First, I wish to record my obligation to Dr. Halsted for the opportunities, the introduction to which I owe to his suggestion and association. The laboratory connected with his surgical clinic was started by me in May, 1892, nearly fourteen years ago, and at the present time we have records of almost 8,000 cases. It has been the rule of the laboratory to associate with every specimen received its clinical history, and as far as possible to record from year to year the ultimate condition of the patient from whom the specimen was removed.

At the present time the clinical and pathologic investigations have been published in a series of pamphlets which are now used for teaching purposes. In *Progressive Medicine* for December of each year from 1899 to 1905, material from the laboratory has been used and illustrated for the discussion of the more recent literature. During the past year I have begun a publication of short monographs. Papers on "Thyroid Cysts" and "Thyroid Adenoma" have so far appeared in the *Journal of Surgery, Gynecology and Obstetrics*. I trust to be able to continue this from time to time.

Epithelial Tumors: In an investigation of some 900 cases of epithelial tumors of the skin and mucous membrane I found that Krompecher's classification into two great groups, the epithelioma basocellulare and the epithelioma spinocellulare is of great practical importance. The epithelioma basocellulare is of a relatively low grade of malignancy. It occurs most frequently on the skin of the face, nose, forehead and upper lip. It has little or no tendency to metastasis. Local excision is sufficient. When the tumor is small and situated on the alæ of the nose or an eyelid, positions where complete excision would produce some mutilation, an *x*-ray treatment is justifiable, as there is no harm in this delay, and in some cases it has been successful, while so far in my experience complete local excision of the tumors which have not disappeared under the *x*-ray treatment has also been invariably successful. The epithelioma spinocellulare is a much more malignant tumor. Its most common situation is on the lower lip. In these cases not only should the tumor be removed by a wide

local excision, but the entire lymphatic glands beneath the jaw, from parotid to parotid, should be exeised.

Space forbids further details, but it is of the utmost importance for the publie to be edueated and the general practitioner to be keen in their attitude to small and apparently innocent warts, nodules, scabs, ulcers and little areas of induration on the mucous membrane of the lower lip, tongue and mouth, skin of face, in an individual over thirty. Many of these represent the early stage of the malignant epithelial tumors and when completely removed in this early period, permanent cures are aecomplished in the majority of cases. Permanent cures are recorded in epithelioma of the tongue and lower lip when the glands removed have shown areas of metastasis.

But the relative number of such eures is small. I have two eases in which seeond operations were performed for the removal of metastatic glands lower down in the neek. These patients are well three and seven years since the first operation. Future progress, however, in these tumors depends more on early treatment than an extension of the radical neek operation. Ability to recognize the different forms of epithelial tumors allows the surgeon to restrict or extend the operative procedure aecording to the malignancy of the primary growth. I have a record of a few cases in whieh the penis has been amputated for a benign epithelial wart, cases in which a local resection with the preservation of the organ would have aceomplished a cure just as well. In many epithelial tumors of the penis the glands in both groins should be removed, and permanent eures have followed even though the glands showed metastasis.

Sarcoma of the Skin and Soft Parts : In the records of the pathologic laboratory and in the literature I have been unable to find a permanent cure in the pigmented alveolar sarcoma arising in a congenital pigmented mole. The time to remove this mole is in its benign state. Practitioners should be on the lookout for eongenital moles and advise their immediate excision. I believe it would well repay if a hundred such moles were removed in order to save one patient from death due to malignant degeneration. The congenital nevus is less likely to be the seat of a sareoma later in life. The resultant tumor, however, the perithelial angiosarcoma has a high grade of malignancy and cures are rarely accomplished. The benign single fibroma of the skin or one of the tumors in fibroma molluscum may later in life beeome a sarcoma. In view of these faets the general profession should change their attitude toward the so-called eongenital and acquired, small and innocent tumors of the skin. The time for their removal is in their benign state.

Sareoma may be divided into two great groups, the angiosareoma and the simple sarcoma. Angiosarcoma arises from the endothelium of the blood or lymph vessels (endothelioma), or from the eells in the outer walls of these vessels (perithelioma). These tumors are very malignant. Cures are seldom accomplished. Now and then we observe endothelioma of a relatively low grade of malignancy and a few cures have been recorded. Simple sareoma arises from the fixed connective-tissue eells. It varies in its cellular pieture from a fibro-spindle-cell fibrosarcoma to a pure round-eell sarcoma. The greater the number of round cells the greater the malignaney of the tumor. Simple sarcoma showing myxomatous degeneration or eontaining numerous giant cells has a relatively low malignancy.

When we have a tumor situated in the soft parts beneath the skin it is impossible, in the majority of cases, to make a correct diagnosis in the early stage. The possibilities are too numerous to mention. It may be one of the various benign connective-tissue tumors, fibroma, myxoma, angioma, lipoma, a rare lymphatic cyst, or some inflammatory lesion of the muscle. The correct diagnosis as a rule ean be made at the exploratory incision. This pathologic knowledge allows an operative procedure according to the nature of the tumor, patients are not unnecessarily mutilated, and are given the best assurance of a permanent cure. I am confident that amputation is often unneeessarily performed for many of these lesions.

Bone Tumors: There is no more interesting field than this subject, and perhaps in no other plaee is the correct diagnosis of the lesion of more importance to the patient. In recording the ultimate results of all the bone tumors studied in the pathologic laboratory I was struek with a very important faet. In certain varieties of sarcoma not a single eure had been observed. These tumors were spindle and round-cell, periosteal or medullary sarcoma —tumors which produee rapid bone destruction and are associated early in their growth with pathologic fracture. In spite of amputations at the highest point these patients died of metastasis. The duration of life was seldom longer than two years from the onset of the first symptom. In the other varieties of sarcoma and bone tumors permanent cures were almost invariably accomplished. For example, the benign bone cyst, the periosteal and medullary giant-cell sareoma, the periosteal ossifying sarcoma, the periosteal fibrosarcoma, and the medullary myxosarcoma. In the benign bone cyst and in the medullary giant-cell sarcoma in which there is still a thick shell of bone, curetting is sufficient. In the other forms local resection will accomplish a eure, apparently just as certainly as amputation at the highest point. One amputates the limb only when the local growth has been so extensive that its removal would leave an extremity without function.

When these various tumors ean not be recognized from the clinical picture or the x-ray it is not difficult to make a correct diagnosis at the exploratory incision. This should be done under an Esmarch bandage. As a matter of fact the gross appearance of the different bone lesions is distinct. These various tumors, solid and cystie, syphilitic, tuberculous and pyogenic osteomyelitis, all have a gross pathologic anatomy not at all difficult to interpret when exposed to view. The x-ray is the most important aid in the elinical diagnosis. It is of the greatest importance, not only for the life of the individual, but for the saving and function of his limb, that these bone lesions be recognized early. Local pain referred to a bone should always be regarded as suspicious and an x-ray negative immediately made. Too often such cases are ealled rheumatic and treated with drugs and massage, until the definite swelling or pathologic fraeture forees the reeognition of a serious lesion which should and could have been recognized before.

In tumors involving the upper and lower jaw the same principles apply as to early diagnosis and operative treatment. The epulis is a relatively benign lesion and can be treated by a local excision. In very early eases I believe it is justifiable to attempt to save the teeth. The adamantine epithelioma arising from the epithelial enamel plate is a tumor observed only in the jaws. I was surprised at the permanent cures, and in the future, I am convinced that less radical procedures ean be em-

ployed in their removal. In the benign dentigerous cyst excision is never necessary. In the more malignant sarcomas involving the upper and lower jaw, the spindle and round-cell sarcoma, mentioned before, cures have not been accomplished by the most radical and mutilating operation. In the other varieties, if the patients come for operation in the early stage, local resection is sufficient. In many cases the continuity of the lower jaw can be preserved. In tumors of the upper jaw the hard and soft palate need not always be removed. Time forbids further detail. If the surgeon familiarizes himself with this pathologic knowledge, he will be able to give his patients with jaw tumors just as much assurance of a permanent cure, and in the majority of cases accomplished with very little mutilation.

The most distressing results are those in the so-called carcinoma of the upper jaw. These tumors may arise from the mucous membrane of the antrum or nose, or from benign polypoid growths in the nares. I was unable to find a permanent cure in any case recorded in the laboratory. The majority of these give a history of nasal polypi of many years' duration, and usually a history of one or more operations through the nose. I am impressed that future progress in the treatment of these jaw tumors rests with the rhinologist. He should train himself to recognize that form of nasal polypus which has a tendency to become a carcinoma, and institute at once more radical measures for its removal in the early stage.

Thyroid Tumors: Thyroidectomy in exophthalmic goiter is performed for the alleviation of the general symptoms due to the excessive or pathologic secretion of the thyroid gland. In simple goiter the tumor is removed to relieve the patient from the discomfort of its size or from pressure symptoms. The asymmetrical tumors of the thyroid are cysts and adenomas. In the experience of the laboratory and in surgical literature very few permanent cures are recorded after the removal of malignant tumors of the thyroid. When these cures have been accomplished the primary tumor could not be differentiated clinically from a benign cyst or an adenoma. For this reason, in an individual over thirty every asymmetrical tumor or nodule in or near the thyroid gland should be regarded as suspicious and immediately removed. If it prove to be a benign adenoma or cyst, the patient is relieved of a tumor which later would probably have to be excised on account of increasing growth. On the other hand, if it prove to be a carcinoma the patient is given the best chance of a permanent cure.

Parotid Tumors: The so-called mixed tumor in, or in the neighborhood of, the parotid or salivary glands, is a benign tumor, encapsulated and of slow growth. It should always be removed, but it is unnecessary to sacrifice the facial nerve. This nerve can usually be dislocated from a groove in the tumor. In the malignant tumor of the parotid gland I have never observed a permanent cure. Unfortunately, all of these cases came to the surgical clinic late.

Breast Tumors: I believe the facts justify the statement that every single tumor in the breast of a woman over twenty-six should be immediately subjected to operation. If a clinical diagnosis of a carcinoma can be made, the breast, an area of skin, both pectoral muscles, and the axilla should be removed in one piece. If the higher axillary glands are involved a complete dissection of the fat and glands in the supraclavicular fossa should be done. If a clinical diagnosis of a malignant tumor can not be made, the tumor should be exposed at once by an exploratory incision. If the tumor proves malignant, the wound should be burnt with the actual cautery or pure carbolic acid, and the complete operation immediately performed. It is not difficult to recognize the encapsulated benign tumors: the intracanalicular myxoma, the less frequent adenofibroma, and the rare cystic adenoma. In these cases one removes the tumor with a small zone of surrounding breast.

If the exposed tumor proves to be a cyst a differential diagnosis is of the greatest importance. If the cyst has a thin wall, a smooth surface, and non-hemorrhagic contents, and the surrounding breast is normal, excision of the cyst with a small zone of breast tissue is sufficient. If the cyst contains a papilloma, the entire breast should be removed. It is important to remember that the papillomatous cyst may contain blood. This is not an indication that the papilloma is malignant. About 50 per cent. of these cysts with intracystic papillomatous growths are malignant, however. The malignant infiltration takes place at the base of the papilloma. This area should be exposed. If there be any doubt as to the benignity, I should advise the complete operation for carcinoma. Every smooth-walled cyst containing blood has proved to be a cancer cyst. For this reason, if the explored cyst contains blood and no papilloma, immediately perform the complete operation for carcinoma. Thick walls, smooth cysts, with cheesy or very granular, non-hemorrhagic contents, are usually cancer cysts, and should be subjected to the complete operation.

The most difficult problem in breast surgery is the recognition of senile parenchymatous hypertrophy, known under the names of Reclus' or Schimmelbusch's disease, adenocystoma, cystic disease of the breast, abnormal involution. This lesion presents itself as an area of induration. At the exploratory incision one finds in the indurated quadrant of the breast areas of increased parenchyma, numerous minute cysts, and little cavities filled with a granular material. It is my opinion that the entire breast should always be removed; as the disease is very likely to be bilateral, recently I have removed both breasts. The lesion has a strong tendency to become a carcinoma. If the surgeon has any doubt as to the stage, I believe it would be better for the patient that the complete operation for carcinoma be performed. The larger and the more numerous the cysts in this disease, the less the probability of a malignant infiltration. In some cases in which there are multiple simple cysts, I believe the plastic resection of two or more cysts, as advocated recently by Warren of Boston, is justifiable. It saves the patient the mutilation of the removal of the breast.

The general practitioner has the new responsibility of bringing patients to the surgeon with tumors of the breast the moment they are observed; and the surgeon must prepare himself with this pathologic knowledge which will allow him to treat the non-malignant tumors of the breast without mutilation, and to give the malignant tumors of the breast the most extensive operative removal.

The relative degree of increasing malignancy is well illustrated in carcinoma of the breast. As stated before, in all tumors 47 per cent. remained well three years. In the comedo-adenocarcinoma, a basal-cell duct cancer, the probability of a cure is 97 per cent., while in the cancer cyst and in the large infiltrating scirrhus it is only 20 per cent. In the less malignant cancer of the breast there is frequently no metastasis to the axillary glands. At the present time I can see no justification for re-

stricting the operation for carcinoma of the breast. The same extensive excision should be performed in all cases. The time, however, may come when our knowledge will allow us to perform a less radical operation in the early stage of the less malignant tumors of the breast.

Carcinoma of Stomach and Uterus: There is one other problem in the operative treatment of tumors, exemplified in the present-day attitude toward carcinoma of the stomach and the uterus. I believe it has been established that an exploratory laparotomy is justifiable on any patient in whom there is the slightest suspicion pointing to a carcinoma. When the stomach is exposed pylorectomy should be performed for every definite malignant tumor, if it is possible, and this should also be done for every doubtful indurated mass in the stomach wall. This pylorectomy consists of the removal of a small portion of the duodenum and a portion of the stomach including the entire lesser curvature with its glands, and a certain portion of the larger curvature with its glands. The more radical removal of the stomach and especially the more radical dissection of the glands which may be possibly infected in carcinoma, although theoretically correct, has been abandoned by the majority of the surgeons because the mortality of this more extensive operative removal is so great and the possibility of a cure, if metastasis has taken place to such a wide extent, is too small.

The presence of hemorrhage from the uterus, which can not be explained by the menses, is now considered by gynecologists an indication for curetting and the microscopic examination of the material removed. In the operative treatment of carcinoma of the uterus the more extensive dissection of the broad ligament and the removal of the various lymphatic glands from the pelvis, has such an increased mortality, and the probabilities of a cure when these glands are involved are so slight, that the majority of gynecologists of to-day do not believe that this more radical operation is justifiable. That is, in some forms of tumors, if the lymphatic glands are involved, the more radical removal of the possible lymphatic involvement should be restricted, if the mortality of the operation is greater than the possibility of a permanent cure.

THE THERAPEUTIC USES OF THYROID PREPARATIONS.*

OLIVER T. OSBORNE, M.A., M.D.
Professor of Materia Medica, Therapeutics and Clinical Medicine at Yale University.
NEW HAVEN, CONN.

Unfortunately, we are not much farther advanced in the chemistry of the thyroid gland than we were two years ago when I wrote the section on organotherapy for Cohen's "System of Physiologic Therapeutics." In other words, we can not give any one portion of this gland activity to a patient without giving the whole of it. We know that the active principles are absorbed from the gastrointestinal canal, but whether any particular activity is lost in this chemistry we do not know.

The physiologic symptoms developed by feeding thyroid are well known, viz., thyroid extract will increase the rapidity of the heart; increase perspiration; cause warming of the surface of the body, in other words increase the peripheral circulation; lower the blood pressure; stimulate mental activity even to sleeplessness; cause increased nitrogenous metabolism, and if in considerable amount or given for a time, cause loss of weight. The physiologic actions of the gland we know. We know the counterpart of feeding this gland, namely, the symptoms of Graves' thyroid disease. We are perfectly familiar with the symptoms of absence of function of this gland as seen in myxedema and cretinism.

I have said so many times during the last five or six years that we must take into account the varying degrees of the activities and functions of this gland as almost to feel ashamed to repeat it, viz., that all varying increased secretions of this gland will give symptoms, and all varying decreased secretions will give symptoms. With a fully developed exophthalmic goiter with all the attending symptoms at the top of the line, and with normal secretion and function in the center of the line, there may be all variations of tachycardia, hot flashes, profuse sweatings, nervous irritability, restlessness, loss of weight, profuse menstruation, neurotic tendencies, and hysterical phenomena of all kinds. While at the bottom of the line, at equal distance from the center as is the exophthalmic goiter above, is myxedema, and between the center of equilibrium and myxedema are such conditions as connective tissue formations, arteriosclerosis, slow heart, high blood tension, obesity, diminished menstruation, toxemias as seen in uremia, and probably some blood disturbances.

The thyroid gland is easily excited temporarily to increased secretion by emotion, grief, sexual excitement, and for a more prolonged period during menstruation and pregnancy. It is thus seen that the thyroid is a much more active and necessary gland in women than in men, and in fact nearly three-fourths of all cases of disturbed thyroid secretion, either more or less than normal, occur in women. The nervous, excitable, irritable girl at puberty is so because this gland is in an unstable condition. It is often either over-doing or under-doing its normal functions. The profuse menstruation of young girls is largely due to excessive activity of this gland, whereas under-activity of it gives amenorrhea and often chlorosis; and many times chlorosis is as successfully treated with small doses of thyroid as with iron and in amenorrhea nothing in the whole Pharmacopeia is, in my opinion, at all comparable to the action of thyroid. On the other hand, in girls with profuse menstruation I have often found mammary extract very efficient in combating the flow, and physiologically when the mammary gland is functionally active menstruation is generally in abeyance.

Again, this emotional gland is over-secreting in various hysterical manifestations of women, and this is largely the cause of the nervous wrecks we see from excessive venery in young women, and its enlargement may have something to do with the typical hoarse voice. Later, this gland, if over-worked, like any other overworked gland of the body, is likely to cease its function and to become atrophied, largely due to connective tissue formation; the symptoms of under-secretion develop, more evident in women than in men, as evidenced by almost always the laying on of fat after the menopause. The thyroid has been found degenerated in adiposis dolorosa, and I have benefited such cases by feeding thyroid.

As age advances, from fifty on, the thyroid normally begins to secrete less than at earlier ages. Vasomotor tension therefore increases, arteriosclerosis develops, and we have normal old age, viz., arterial disease, and with

* Read in the Section on Pharmacology and Therapeutics of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

it all the phenomena of connective tissue deposits. Finally, as the gland more and more diminishes its secretion, senility develops, the skin becomes dry, and eczemas may occur, and these eczemas are improved by the administration of thyroid. The nervous exitability of our present lives leads to the over-stimulation of the thyroid, and with nervous tension, strain and alertness, causes men to have arterioselerosis and its phenomena earlier than formerly.

One more fact must be taken into consideration, viz., that any gland may have its chemistry so disturbed as to offer a *perverted* secretion, perhaps neither too much nor too little as a whole, but with its various elements in an abnormal relation to each other. This is doubtless the reason that in some cases of hemophilia thyroid feeding has been successful, while in other cases it has made the condition worse.

The thyroid, I believe, has something to do with the production or destruction of the red blood corpuscles. I have seen patients with chlorotic anemia have their blood counts improved under thyroid. I have seen cases of epistaxis and uterine hemorrhages in stout, overweight women, with slow pulse, in which this bleeding was stopped by thyroid. On the other hand, thyroid, as above stated, will make stout, over-weight women who have amenorrhea menstruate, and thyroid will make normal women menstruate more profusely.

The thyroid also has something to do with sugar metabolism. Glucose has many times appeared in the urine when thyroid treatment has been pushed, and I have seen cases of diabetes in which the sugar output greatly increased under thyroid treatment. Myxedema has often been complicated with diabetes, and diabetes has often been an accompaniment of acromegaly, in which disease the thyroid is always diseased. Cretins have developed diabetes under thyroid treatment.

Besides the physiologic and psychic stimulations of the thyroid gland, certain drugs affect it. Alcohol excites it, and iodin, in any form, is a stimulant to it. Arsenic, I believe to be a stimulant to it, and this is doubtless the reason that arsenic does good in chlorosis. Phosphorus is probably a stimulant to it. Prolonged actions of such metals as lead and mercury, I think, inhibit the action of the thyroid. This is doubtless one of the causes of the connective tissue formations which can occur (due to diminished thyroid secretion) as the sequelæ of a long, previous mercury-treated syphilis. Possibly, some of the efficiency of the iodid in syphilis is due not only to the liberation of mercury from the tissues and perhaps thus to remercurialize the patient, but also to the stimulant action of iodin on the thyroid gland. Other drugs which I believe diminish the secretion of the thyroid are strophanthus, bromids, atropin and lime, as perhaps best administered in the glycerophosphates.

It is interesting to note that Lanz[1] reports that he has found that dogs, cats, goats and hens are usually unable to procreate after thyroidectomy. He has also observed the same effect in two human subjects. One was a man, who was apparently deprived of all sexual functions by complete removal of the thyroid gland. Thyroid administration, however, was followed by the gradual restoration of the function. The other was a woman. The menses reappeared under thyroid treatment after they had been entirely suspended by thyroidectomy.

There is more iodin in the thyroids of people living at the seashore and in people living in the goiter regions than elsewhere. There is more at maturity than in youth or old age. In cancer the iodin is increased, but it is found decreased in infectious diseases and tuberculosis.[2]

An excessive meat diet modifies the structure and hence the secretion of the thyroid. This has been noted by Watson,[3] and I believe is a fact. Certainly, when there is much hypersecretion in exophthalmic goiter the patient is much better on a diet without meat.

PARATHYROID GLANDS.

A discussion of thyroid physiology is not complete without reference to the parathyroids. Doubtless some of the symptoms of thyroid extirpation are due to concomitant extirpation of the parathyroids. Also it is possible that some of the preparations of thyroid are contaminated with extracts from parathyroid. Even in pathologic conditions it is quite possible that diseases which we have considered due to decreased or increased secretion of the thyroid, may really be due to disturbances of the parathyroid secretion. Careful investigation of the pathology of these glands as a routine procedure in every case of autopsy in which their removal can be accomplished, is the only way to enlarge our knowledge of their functions.

The number of parathyroids in animals varies considerably; if all are removed the animals die in convulsions, and MacCallum states that removal of the parathyroids alone will cause, in a few days, twitching of the muscles, sometimes spasms, incoördination and partial paralysis of the legs, dyspnea, and finally death from exhaustion. He thinks that the cause of these symptoms are toxins circulating in the blood due to the absence of parathyroid secretion. Tetany may be due to a disturbance of the parathyroids. Exophthalmic goiter, myxedema, and cretinism are probably not caused by disturbances of the parathyroid.

Parathyroid extracts have been used with success in eclampsia, and Berkeley[4] has used it with considerable success in paralysis agitans.

THERAPEUTIC USES.

It is unnecessary to discuss the successful use of thyroid preparations in cretinism and myxedema. In ordinary goiter I believe thyroid extract will often do harm by stimulating the gland to increased secretion and perhaps causing the exophthalmic form to develop from a simple goiter. If the goiter consists largely of cystic degeneration, small doses of thyroid may be physiologic, while large doses have seemed in some instances to cause goiters to decrease in size. However, I believe an iodid will do as well and much more safely. In other words, I do not believe that it is good treatment to give large doses of thyroid in goiter.

In exophthalmic goiter thyroid is positively contraindicated. It will always aggravate the symptoms. In cases in which the disease is not typically developed, some symptoms present and some not, with certain kinds of symptoms absent, thyroid might be given, as there is probably in these cases a perverted thyroid secretion. Cases of exophthalmic goiter reported to have been improved by thyroid were probably at a period when the thyroid began to diminish its secretion and the case was naturally curing itself. And we know that under many treatments exophthalmic goiter often tends to recovery.

In doubtful cases of nervous phenomena where the question is whether thyroid will help the case or make it

1. Arch. f. Chir. Langenbeck's, Berlin, 1904, vol. lxxiv, No. 4.

2. Mitteilungen a. d. Grenzgebeiten d. Med. u. Chir., Jena, vol. xv, Nos. 3-4.

3. New York and Phila. Med. Jour., May 6, 1905.

4. New York and Phila. Med. Jour., Dec. 19, 1905.

worse, I believe the following symptoms are against the use of thyroid: Cerebral excitement, palpitation, progressive loss of weight, sweatings, and flushings. If, on the other hand, the patient is drowsy, apathetic, gaining weight, and the pulse is rather slow, thyroid may be of benefit. If a case is doubtful, a few days of thyroid feeding may aggravate unpleasant symptoms so much as to contraindicate its further use. There can be no doubt that the proper treatment of exophthalmic goiter is one of the antithyroid preparations or serums. These preparations certainly antagonize the thyroid hyperactivity. I am not yet sure of the dose, or whether such treatment can be pushed or prolonged with safety.

In severe exophthalmic goiter we should consider the removal of a portion of the thyroid gland. The danger from this operation is much less than was supposed.

Obesity is well treated by small doses of thyroid long continued. Large doses, I believe, are dangerous, and should not be used. Small doses, from twenty to thirty centigrams of the dried gland, two or three times a day, are generally sufficient. This treatment is especially valuable in obesity in young people, and especially in young women under forty, who have scanty menstruation and at the same time are growing obese. After the cessation of menstruation, when all menopause symptoms have disappeared and the weight is increased more than seems normal, thyroid will often be of value. This is no myth. I have seen case after case in young women with scanty menstruation, or amenorrhea, becoming obese, especially on the abdomen and around the breasts, and oppressed for breath, in which this feeling of fullness was rapidly ameliorated, some of this extra weight removed, and menstruation began after several weeks of thyroid treatment. If, at any time, during the administration of thyroid, palpitation or muscular weakness occurs, too much is being given.

When perspiration is nearly absent and the skin dry and scaly, whether occurring in infancy or in old age, small doses of thyroid are valuable.

In high blood tension after fifty I have seen marked benefit from the prolonged administration of small doses of thyroid, and the same is true in the asthma of old age.

I have now on my records a number of cases of epilepsy treated successfully with thyroid. My attention was first drawn to the use of this preparation in epilepsy by several cases occurring in women at the time of the menopause, the attacks showing a suggestive periodicity. In several other cases in young girls at the time of puberty the attacks showed a periodicity. There being no assignable lesions or injuries in these cases to account for the epileptic attacks, I reasoned that they must be purely toxic, and that this toxemia was in excess periodically when the patient should have menstruated.

Many of these patients had received bromids, and while this postponed or controlled the epileptic attacks, general debility and bromism were appearing. In the young girls I used thyroid as an emmenagogue with the belief that normal menstruation would prevent the attack of epilepsy. I found that it did. I then used the thyroid in the menopause cases, in some continuously in small doses, and in others a few days a month at a possible menstrual epoch. I found that I could control and prevent the epileptic attacks as well with thyroid as could be done with bromids and with much better results to the system.

I have also used thyroid with success in major epilepsy and in petit mal in women who menstruated apparently normally, and in one or two young boys. One boy I am now treating was almost mentally ruined with bromids. He is now apparently well, having had but one major attack in several months, and the attacks of petit mal, of which he had numbers a day in spite of enormous doses of bromid, have but rarely occurred. This boy is mentally in perfect condition. Certainly any treatment that does not necessitate the use of pernicious drugs of the bromid type is a success.

One especially interesting case of toxemia is the following:

A young girl, 16 years of age, who lived about 50 miles from New Haven, and for whom physicians in all the neighboring cities had been consulted, had menstruated reguarly for a time and then ceased, and periodically once a month had an attack, starting with a severe headache, of coma or profound sleep. This had been known to last as many as five days, during which time she could hardly be aroused, though she could be made to drink water and to pass urine occasionally. After gradually coming out of this profound stupor, which lasted from three to five days, for a while she could not see, and for several days could not hear; when she began to see she did not recognize her own clothing and trinkets, and could not talk well for days. In a week she would recover and be pretty well until the next cycle. This had been going on for about eight months, the duration of the stupor and subsequent prostration gradually increasing and the amenorrhea continuing. She had never had a convulsive attack. She was then brought to me. The problem seemed to be one of periodic intoxication, and I consequently gave her thyroid. She never had another sleeping turn, but the next two months had typical convulsive epileptic attacks. From that time to this, three years, she has never had another attack, and has menstruated regularly, although after having stopped the thyroid for some weeks she was frightened by having rather severe headaches again at the menstrual period and came to me to see if she must still take the thyroid. She is now 19 years of age, and has been married a year, and seems to be perfectly well, although I believe of her own initiative she occasionally takes the thyroid.

Her mother, who was a very well woman, 42 years of age, strong and robust, had an attack of some kind of rheumatism, in which I did not see her and for which I did not treat her. At the end of this attack she had an eruption of petechiæ and hemorrhagic spots all over her lower extremities, with excruciating lumbar backache, and some blood in the urine. Knowing the daughter's history, knowing that these thyroid disturbances are hereditary, and noticing that the mother was growing stout, I gave her thyroid. The eruption rapidly disappeared, although it had been treated with many other drugs for several weeks without success. She has been well ever since.

Reasoning from this analogy of toxemia irritating the brain, and knowing of the successful use of thyroid in puerperal eclampsia, I have used it a number of times with success in uremic convulsions. One patient with acute nephritis with uremia I have seen recover and have no further convulsions after the thyroid was begun. Of course, the patient might have recovered without thyroid. In several cases of chronic nephritis with uremic convulsions I have seen the convulsions cease and remain absent until the patient finally died, after some days, the thyroid having apparently prolonged life. In these cases there were no more convulsions.

Owing to the frequent number of deaths from uremia that I have lately seen without albumin or but little albumin in the urine, some without any casts whatever at the time of the uremia, I think we are compelled to believe that there is internal secretion of the kidney which, being absent, allows uremia to take place. Whether or not water or solids in sufficient amounts are passed, whether albumin is present or absent, and whether casts are present or absent, in these cases of toxemia or uremia I am sure that thyroid does good. Of course, it can not

cure the condition, but it seems to prevent the toxemia that causes convulsions, and even wards off, for a time, the coma. I have also seen thyroid apparently aid in saving a week-old babe that had very frequent convulsions, the symptom record showing that he had had 178 in a week. The child recovered.

I think we need no better proof of the antitoxin or opponent to toxins that the thyroid secretion furnishes. We believe that nitrogen intoxication or ammonia formation has something to do with the production of uremia, and therefore thyroid must have some beneficent action in nitrogen metabolism.

It has also been found that in disturbances of thyroid in exophthalmic goiter, a vegetable diet and the withdrawal of meat are advantageous. I believe that whenever there are many nervous symptoms, headaches, vomitings, and especially if the kidneys do not do perfect work during pregnancy, that thyroid should be given in small doses as a preventive of eclampsia. If the thyroid is not furnishing increased secretion as it should during pregnancy, the mother's blood may be unable to neutralize the toxins of the double metabolism.

I believe that it would be advisable to feed thyroid in puerperal insanity, and in the insanity occurring at the menopause. Whether it would be beneficial or not, I have no data to decide.

I realize that a paper limited to twenty minutes on a subject that is so largely argumentative is hardly sufficient to bring the subject before you for discussion, but I trust I may have created at least some interest.

DISCUSSION.

DR. S. SOLIS COHEN, Philadelphia, said that he wished that he could think with Dr. Osborne that uremia is due to a failure of internal secretion on the part of the kidney. Its pathology, he feared, is much more complex. The value of thyroid substance in preventing uremia is apparently due to two factors, its destructive influence, probably indirectly exercised on nitrogenous products of a toxic nature, and its directly stimulating influence on the functionating cells, the excretory cells of the kidney. He had published some observations showing that thyroid gland administered to a normal man will increase the output both of urinary water and urinary solids, and especially of urea. Chemists declare that clinical methods can not be depended on, but they are sufficient to indicate relative values, and Dr. Cohen is satisfied that thyroid increases the output of nitrogenous substances in the urine by stimulating the essential kidney cells and by increasing nitrogenous katabolism in general. In this manner it probably destroys toxins; hence its value in uremia and epilepsy. Another therapeutic virtue of the thyroid gland which is not very well known is its value in arteriosclerosis. The cretin, the child with deficient thyroid secretion, is born an old man; the changes of myxedema are in large measure those of old age, exaggerated and caricatures; associate with these facts the diminished activity of the thyroid gland at the time that the arteries begin to degenerate, thus realizing that normal old age is concomitant with the loss of thyroid function; further, recall the antagonism between thyroid and adrenal substance and the arterial degeneration produced by adrenal poisoning and we find an exact, scientific, physiologic and evolutionary basis for the use of thyroid substance to retard the changes of premature, pathologic old age. How much of the arteriosclerosis seen is pathologic and how much physiologic is, of course, a difficult question to determine, but in many cases of arteriosclerosis coming on prematurely and even in cases in which fibroid change in the vessels comes on in the normal course of events without any special toxic factor such as syphilis, or gout, or lead, or alcohol, the use of thyroid substance will hold the process in abeyance and relieve many of the severe symptoms. Thyroid gland acts very much like an iodid combined with a nitrite. Sodium nitrite with sodium iodid will give the same pharmacologic effects, not in all respects, but in very many respects, as is obtained from the thyroid gland and, if this be remembered, he thought that very many of the uses of thyroid would be, at least empirically, accounted for. The fundamental physiologic explanation remains and depends on the work of physiologists and physiologic chemists in revealing the rôle of this very important function in the human economy.

DR. W. J. ROBINSON, New York City, said that when thyroid was first brought to the notice of the profession it was lauded extravagantly. It was to revolutionize medicine. That is a misfortune. Often when a new therapeutic measure is launched the profession think because it is good for one disease it must be good in everything. He remembered distinctly when thyroid extract was first brought into notice on account of its beneficent action in cretinism, it was claimed to have an extraordinary effect in dermatology. Some very enthusiastic physicians claimed it to be a specific in psoriasis. At present its use is very limited in dermatology. It is not used in any disease except psoriasis and in that disease it has been found no more useful than arsenic in small doses. It seems to aid in removing patches of psoriasis but does not prevent recurrences as it was believed at one time to do. There is one disease in which it has a special effect, senile eczema, probably because it improves in general the circulation and not because of any specific action on the eczema.

DR. A. C. CROFTAN, Chicago, approved of Dr. Osborne's conservative position. Aside from its wonderful effect in myxedema the action of thyroid gland is uncertain in any other disorder. The use of thyroid gland in uremia is not altogether irrational, although in a disease, or better, a syndrome of manifold origin, like uremia, with spontaneous intermissions and remissions, it is difficult to estimate the value of any therapeutic method. Uremia is more a metabolic disorder than an intoxication due to retention of urinary bodies; thyroid given by the mouth must act, if at all, through some influence it exercises on the metabolism. As it is a dead product, the administration of thyroid can only be considered a substitution therapy and its action must of necessity be transitory in character and must disappear as soon as the supply of thyroid is eliminated from the body; in any case, therefore, thyroid could only be imagined to be a palliative but not a curative agent in uremia.

Provided it is given in sufficiently large doses, thyroid extract can cause a reduction of flesh. But he believes its use to be always dangerous and generally superfluous in the reduction of obesity if the quantitative method of treating this disorder be adopted, viz., reduce the caloric intake of the patient so as to produce a caloric deficit, restrict liquids, promote free catharsis and advise abundant exercise. Thyroid extract in the beginning of a reduction cure is often of value because most obese people desire to lose flesh rapidly. If this can be accomplished, i. e., if they can lose 5 to 6 pounds during the first week, they are generally willing to follow dietetic and other restrictions for a considerable time thereafter because they have acquired confidence in the ability of the physician to really reduce flesh. This initial loss of flesh can very well be produced by thyroid, but equally as well by drink restriction. The indiscriminate use of thyroid by the laity is to be condemned as dangerous, especially in young individuals. Dr. Croftan has seen two cases of obesity in young girls who took thyroid extract to reduce flesh; they succeeded only too well in doing this and have never regained the freshness of complexion nor the youthful spirits and vigor they exhibited before. That dangerous heart seizures follow over-use of thyroid is, of course, well known.

DR. JOHN ROGERS, New York City, said that he has been surprised to find patients turn up with simple goiter who had been given thyroid tablets to do away with goiter, and who later developed exophthalmic goiter. In some cases exophthalmic goiter has been superimposed on a simple goiter and it has not disappeared with thyroid feeding. Very seldom did he see the danger of exophthalmic goiter following thyroid administration mentioned and he called attention to this danger, which he thought a real one. He had seen several cases that had a pretty straight origin in that way.

DR. A. W. BAER, Chicago, said that thyroid is too dangerous a medicament to be used indiscriminately and Dr. Osborne's

paper would occasion a little more use of thyroid than there has been in some cases in the past. Dr. Baer said that the patient who is taking thyroid extract should not know what the remedy is, so as not to have it used indiscriminately by the laity.

DR. H. P. HYNSON, Baltimore, asked a question of practical importance to the pharmacist, who is not able to standardize these products, whether Dr. Osborne observed any great difference in the products of various manufacturers of thyroid extracts, and if so, which he considers the best.

DR. WILLIAM R. WHITE, Providence, R. I., asked Dr. Osborne to give in detail the treatment, that is, in relation to food and how many times a day the thyroid extract should be administered, etc.

DR. O. T. OSBORNE, New Haven, Conn., thought the indiscriminate use of thyroid reprehensible, and large dosage dangerous. If a small dose does not do good large doses should rarely be administered. It is preferable to give the dose on an empty stomach, and have the patient chew the tablets or take an uncapped capsule between meals, with a drink of water. It is often a good plan to tell a patient to take the cap off a capsule and then take it with hot water, as the solution and absorption of any drug is more rapid so. He believes that all drugs which are being experimented with should be kept from the knowledge of the patient who is taking them. Physicians should keep a few tablets in their medicine closets and administer them—not give a prescription for thyroid to the patient to take to the pharmacist to have filled. This, he said, with all due respect to the pharmacist. In this way the effect of the remedy may be watched unbiased by the psychic effect on the patient, so that she will not say: "Oh, you are reducing my weight." As soon as it is decided that thyroid is the treatment for a given case it can be ordered. He has used the best product that he could obtain in his cases. As to specifying the particular manufacturer of thyroid, if he knows that his patients will go to the druggists who are absolutely upright, he feels that such druggists will give him the best that money will buy and he writes the Pharmacopeial title of thyroid. The more pharmacists can be depended on to buy the best and the more patients are ready to pay for the best the more satisfactory will be the result. He did not care to answer in detail the question of Dr. Hynson, but he said that he is likely to send his patients where he believed they would get the best.

SOLANIN.*

WILLIAM F. WAUGH, A.M., M.D.
CHICAGO.

Solanin is an alkaloid found in several species of *Solanaceæ,* such as *Dulcamara ferox, lycopersicum, nigrum* and *carolinense;* and especially in the young shoots of the potato and tubers that have grown while exposed to direct sunlight, and those that have sprouted. Traces have also been detected in *Scopola.* At some period in the growth of the potato the deep layers of the skin contain enough solanin to cause toxic symptoms. It is extracted by boiling water, and that in which potatoes are boiled may prove toxic. Rotting potatoes contain large quantities of solanin, and the young buds, enormous amounts.

Most instances of poisoning follow the use of the small, green, unripe tubers that have been exposed to the sun at the surface of the ground. In an epidemic described by Schmiedeburg the symptoms were headache, colic, vomiting, diarrhea, depression, mental confusion and in severe cases pallor or cyanosis, dilated pupils, short periods of unconsciousness with rapid pulse, slowing later, and in many instances a rise of temperature. All the patients recovered within ten days.

Pfuhl also witnessed many cases in soldiers who had eaten poisonous potatoes. The symptoms in 56 cases were similar, consisting of chills, fever up to 103 F., headache, violent colic, diarrhea, severe muscular prostration, sometimes nausea or vomiting and syncope, with slight jaundice. The fever subsided within three days, and all recovered. The treatment consisted of rest in bed, cold to the head and heat to the abdomen, calomel, mint and opiates. The potatoes contained six times the usual quantity of solanin. It is not stated whether they were sprouted, green or rotten. In the latter case, part of the symptoms should be attributed to ptomaines.

In fatal poisoning by the plants containing solanin, the first symptom attracting attention has been an acrid, burning sensation in the throat, followed by great restlessness, gastrointestinal irritation, muscular and fibrillary tremors, labored respiration, dryness and hyperesthesia of the skin, rapid pulse, collapse and coma, the temperature falling markedly shortly before death. The pupils are generally dilated. Albuminuria is usually present. Some of these symptoms are probably due to an accompanying principle of the atropin group.

Solanin may be prepared by expressing the juice of etiolated potato germs, adding an excess of lime-milk or of ammonia, by which solanin is precipitated. This is then separated by filtration, the insoluble part dried and exhausted by boiling alcohol, which deposits crystallized solanin on cooling (Desfosses).

DESCRIPTION.

Solanin occurs in fine silky needles, colorless, insoluble in water, slightly soluble in ether and in cold alcohol. It is a glucosid in that it splits up into glucose bodies, an alkaloid as to its basic properties, having a feeble alkaline reaction and forming salts with acids. Submitted to the action of boiling dilute mineral acids, it splits into three equivalents of glucose and an alkaloid, solanidin, whose formula is $C_{50}H_{41}NO_2$. Treated by an amalgam of sodium and water, it gives nicotine, $C_{20}H_{14}N_2$, and butyric acid, $C_8H_6O_4$. Solanin also possesses the property of forming a gelatinous mass with cold amylic alcohol, even in the proportion of 1 part to 2000. Cool amylic alcohol is its best solvent.

Spiegel gives the formula of solanin as $C_{52}H_{93}NO_{18}$ plus 4.5 H_2O. The salts are mostly amorphous, and freely soluble in water or in alcohol. They are decomposed by an excess of water, setting solanin free.

Solanin belongs to the saponine group, and hence is an energetic protoplasmic poison. A 1 per cent. watery solution prevents the development of bacteria and the coagulation of the blood, dissolving the blood elements (Perles). The lethal dose *per os* is 0.3 per kilo of body weight and about 0.1 per kilo when administered subcutaneously.

EFFECTS.

In rabbits Husemann noted from solanin a reduction of temperature of over 5 degrees Fahrenheit, with muscular tremors, spasm of the muscles of the jaw, the respiration at first rapid, later slowing, with dyspnea and a fall in cardiac energy. Tonic and clonic convulsions followed, with mydriasis and death from suffocation. The heart continued to beat after the cessation of respiration, finally stopping in diastole. He affirmed that solanin does not irritate the stomach, bowels or the subcutaneous tissues, but Perles noted after intravenous injections severe enteritis, which he attributed to the excretion of the poison into the bowels. He also found

---

* Read in the Section on Pharmacology and Therapeutics of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

evidences of recent parenchymatous nephritis, the urine containing hemoglobin, methemoglobin, albumin, casts and a few red blood corpuscles. In his experiments on animals he found the same appearances postmortem as after sapotoxin poisoning. The alkaloid solanin did not give rise to diarrhea, as the plants from which it is derived do, possibly because the naked alkaloid is absorbed from the stomach while the crude plant tissues pass along into the intestines. But solanin affected the kidneys more decidedly. This is confirmed by Caylus, who calls attention to the diuretic action of the alkaloid, the tetanic spasms of the thoracic muscles it sometimes causes, and the hyperesthesia of the skin. He locates its action in the cord and medulla and denies any direct influence on the brain, the stomach or the bowels.

But Brunton says that solanin in warm-blooded animals paralyses the central nervous system, without affecting the peripheral nerves or the voluntary muscles. It slows the heart and the rate of respiration, lessens sensibility, and causes death with convulsions. The temperature constantly falls. The pupil is unaffected. It produces weakness, labored breathing, nausea, vomiting, and drowsiness, but not true sleep. It does not increase the action of the bowels, skin or kidneys. Nothnagel agrees with Brunton as to the production of central paralysis, depression of heart and lungs, death from asphyxial spasm, and causing nausea and vomiting in man.

Von Schroff found doses of three grains caused yawning, dizziness, stupor, somnolence, but not sleep, tonic spasm, rapid pulse, but weak, embarrassed respiration, nausea, salivation, and extreme weakness. Solanidin differed in causing mydriasis and elevation of temperature, and this was probably present in preparations causing these symptoms.

Solanin appears to be broken up in the body, as very little is excreted in the feces or the urine (Perles).

Bocquillon-Limousin says that solanin lessens the sensibility of the respiratory mucosa, slowing respiration, and that it possesses mild narcotic properties.

BROMIDS AND SOLANIN COMPARED.

Bromid.	*Solanin.*
Motor centers depressed in brain.	Much less.
Cerebration depressed in brain.	Unaffected.
Reflex irritability depressed in cord.	Depressed more.
Sensory centers depressed in cord.	Depressed.
Respiratory centers depressed.	Depressed.
Sexual centers depressed.	No data.
Peripheral nerves unaffected.	Small doses excite; large depress.
Muscles weakened or unaffected.	Same.
Heart unaffected.	Depressed by large doses.
Skin irritated by excretion; acne.	No effect.
Temperature lowered.	Much more.
Stomach irritated.	By large doses only.
Anorexia.	By large doses only.
Salivation.	By large doses only.
Thirst.	By large doses only.
Nausea, vomiting.	By large doses only.
Fetid breath.	By large doses only.
Some diarrhea or constipation.	By large doses only.
Somnolence, no true sleep.	Same.
Cutaneous anesthesia.	Sensation raised (Caylus).
Mucous anesthesia.	None.
Impotence.	None.
Pulse slow and weak.	Less marked.
Respiration weak.	Motion and sensation lower.
Urine increased.	Same.
Respiratory secretions increased.	More; edema sometimes.
Muscular tremor.	Same.
Vitality depressed.	Not so.
Metabolism lessened.	Same.
Vascular tension relaxed.	Small doses raise, large lower.
Gastric juice decreased.	Unaffected.
Menstrual flow decreased.	No data.

While the data are incomplete and to some extent contradictory, we may see the close similarity between the effects of solanin and the bromids, as to their general depressive powers. The chief differences are that the bromids act specifically on the cerebral centers, cause acne, interfere markedly with the digestion as shown by the anorexia from all doses and fetid breath from large ones, depress the vitality, rendering the taker more liable to intercurrent infections and lowering his power of sustaining such attacks, and in all doses depress the sexual function, completely inhibiting it in full doses, reduce the sensibility of the skin and mucosa, and even in small doses relax vascular tension. Solanin acts more on the cord, less on the brain, has no action on the skin, interferes very little, if at all, with digestion, does not depress vitality or the sexual function, increases cutaneous sensibility, and increases vascular tension slightly in small doses, lowering it in large doses. Solanin depresses both motion and sensation in the respiratory area more decidedly, acting less markedly on the heart, lowers temperature far more, tends to produce respiratory and renal edema in very large doses, like rhus and cantharidin, and in small doses causes slight diuresis. It will thus be seen that in the desirable range of effect solanin admirably replaces the bromids without their most marked undesirable action. We may, therefore, look for the therapeutic field of the alkaloid to that wide one so generally occupied by the bromids.

WIDE APPLICABILITY.

Of the plants containing solanin as their active principle, dulcamara is the best known. It evidently contains others, as the effects are not identical with those of the alkaloid. Dulcamara has been recommended for scaly skin diseases, rheumatism and acute respiratory ailments, and as an aphrodisiac; for nervous erethism, hyperesthesic states and pudendal pruritus, chronic bronchitis, asthma and whooping cough; cachexias, lymphatic stases, jaundice and other cases in which the excretory passages are obstructed by débris, menstrual suppression from taking cold, cystitis, feeble capillary circulation with cold extremities, and delayed or retrocedent eruptions. *Solanus carolinense,* the horse or bull nettle, has been recommended for various nervous maladies, and has acquired a reputation as a remedy for epilepsy. Hare gave it a brief trial and reported some success. Thrush found it best suited to cases of *grand mal,* beginning subsequent to childhood, and not hereditary. Lloyd advises it, especially in cases in which the paroxysms are worst about the menstrual periods. Maxwell and Potts reported favorably on this plant as a remedy for epilepsy.

Solanin has received some attention in France and Italy. Firope recommended it for all maladies characterized by excitement, spasm or pain; while Geneuil urged it as a substitute for morphin in neuralgia, gastralgia and rheumatism, in which, however, he did not find it as reliable as morphin, which is comprehensible. It will be long before the physician will attain such proficiency in the use of any substitute for that all-powerful medicament, let alone the difficulty of obtaining a rare alkaloid in uniformly good quality. Sarda applied solanin in all diseases of the central nervous system, and Fronmueller in agrypnia, with irregular benefit. But in symptomatic and hysteric asthma and in whooping cough Clarus and Capparoni found solanin a reliable remedy, the action being direct and by reflex sedation. Capparoni found it of value in reducing morbid excitability of the spinal cord, in peripheric muscular spasms and difficulty in walking, and in tremors. De Montguyon also advised it as a substitute for morphin, having no cumulative action or congestive effect on the brain. Hughes urges solanin in the threatening pulmo-

nary paralysis of elderly and infantile cases of capillary bronchitis, with retention of secretion, Bocquillon-Limousin employed it for cardiac asthma, whooping cough, bronchitis, all spasmodic affections, sciatica, rheumatism, gout, neuralgia, cystitis, gastric pains, dyspepsia and prurigo. Caylus advised it in respiratory spasm or irritability. Desnos employed solanin in gastralgia, painful dyspepsias and in alcoholic gastritis, with or without dilatation of the stomach; in a case of ulcerative gastritis with hematemesis, in an old gastric ulcer and in one of pyloric cancer the pains quickly disappeared under solanin. Shoemaker mentions the use of this remedy in locomotor ataxia, myalgia and the vomiting of pregnancy. Hare found it beneficial in spasmodic torticollis.

These citations suffice to show the wide applicability of solanin as an anesthetic sedative and antispasmodic; and as the dependence of pain on spasmodic conditions becomes more generally recognized the superiority of the antispasmodics to morphin will be also better comprehended and the heedless use of that dangerous resource beneficially curtailed. We would, however, call in question one of the indications for solanin given by Hughes. In large doses this alkaloid tends to produce pulmonary edema, and it lessens the sensibility of the respiratory mucosa, and hence can scarcely be indicated in a condition in which the danger lies in the low degree of sensibility that permits the collection of mucus until aëration is impaired and cyanosis results. Besides, in sanguinarin we have a remedy so admirably suited to this condition that no doubtful one is admissible.

Of great interest is solanin as a remedy for epilepsy. Employed empirically in crude preparations, it has won considerable popular and some professional favor. The comparison made between its physiologic action and that of bromids shows that solanin may be legitimately exhibited for the same purposes as the salts of bromin, while certain advantages are thereby obtained in the way of eliminating undesirable bromid effects, as well as the smaller and more easily administered doses. If we can get from a few little granules all the benefits accruing to doses of a dram or more of bromids, and escape the destruction of the functions of the stomach, the disfiguring acne, and even more serious disorders of cutaneous nutrition, a decided advance in therapeutic application will be made. Furthermore, we can not look on the grave depression of the sexual function caused by full doses of the bromids as of minor importance. Desirable as the inhibition of the sexual function may be in many cases, we must confess to a feeling that in so doing we are tampering with the essential vital principle, and striking closer to the roots of a patient's life than is warranted except when such interference is manifestly indicated. Such an indication is presented in some, possibly many, cases of epilepsy, and then it should receive due attention; but since this is not an invariable or essential feature of this malady, it is certainly an objection to the bromids that sexual depression from their use is unavoidable. It is possible, however, that some sexual depression ensues from solanin, but it can not be marked or some of the numerous observers quoted would have alluded to it; and while dulcamara alone of the solanin containing plants is accredited with sexual sedation its effects vary too widely from those of pure solanin to be ascribed to the latter alone.

As a remedy for epilepsy solanin was presented to the readers of the *Alkaloidal Clinic* in March of last year. Since that time we have received 23 reports on it. All have been favorable, excepting one, in which the alkaloid was alternated weekly with bromids, and hence can not be accepted. In children the paroxysms without exception have ceased within three weeks. The accessory treatment has been dietetic and hygienic in general, with special care in regulating the elimination; useful, but not by any means calculated to exert over epilepsy the immediate and decided control secured by the use of solanin.

DOSAGE.

The dosage of the older observers we are compelled to cast aside, as the variable quality of their solanin caused an inextricable confusion. With a chemically pure alkaloid we have found that the average adult dose is 1/12 grain, and as yet we have not found it necessary to exceed one grain *per diem*. No undesirable effects have been observed from these doses. Should an overdose be taken, the first toxic manifestation would be an acrid burning sensation in the throat, followed by oppression of respiration. The probably fatal dose is placed by Riley at six grains. Poisoning should be met by washing out the stomach, the use of strong tea or coffee, sustaining the temperature and strength by heat externally, with strychnin hypodermically in sufficient doses. The effects are quickly manifested and not very enduring, but the exact duration has not been determined. Merck suggests tannic acid as an antidote. For children the doses may be regulated in the usual manner. In all cases it is necessary to push the remedy until unmistakable constitutional effects are secured, the remedial action lying close to the limit of beginning toxic action.

CONCLUSION.

Should this remedy prove of the value indicated, the profession will owe it to Dr. M. Clayton Thrush, Philadelphia, who found the plant enjoying a popular reputation as a remedy for epilepsy among the people of West Virginia, investigated it, extracted its active principles, showed that on them the virtues of the plant depended, and applied the preparations he had made in the treatment of epileptics with success. Thus we have another evidence of the wealth of therapeutic resources yet awaiting the investigator of native American plants.

DISCUSSION.

DR. GEORGE F. BUTLER, Chicago, said that recently the superintendent of an insane asylum told him that no case of epilepsy was ever cured. As epilepsy is seen in the insane asylum, Dr. Butler considered this statement absolutely correct, but to make a broad assertion that no case of epilepsy is cured he considered a mistake. From his own experience and from information furnished by others, he is satisfied that many cases of epilepsy are cured, not only recent cases, but those which persisted for a long time as well. Much depends on the attitude of the physician who takes hold of the case. He must be an optimist, not a pessimist. If he believes that epilepsy is incurable he treats the disease according to the rules laid down in the average text-books, that is, he fills his patients full of bromids. The dulness of mentality is attributed to epilepsy when in fact it is attributable to the bromids. Dr. Butler thought that there is no more disastrous or wrong treatment than the administration of bromids for epilepsy. The untoward effects of the bromids do more harm than the epilepsy. Bromids destroy the mentality, weaken the heart, impoverish the blood, impair the sexual function and altogether make the patient very miserable and despondent. In his opinion it is time for the bromid treatment of epilepsy to be discontinued. The untoward effects of bromids will more than double the disastrous effects of epilepsy. If there is a drug that will take the place of the bromids without producing the untoward effects of the bromids he wanted it. Personally,

he had no experience with solanin, but he knew a physician in Chicago who has tried this remedy with remarkable results. Any addition to the materia medica should always be welcomed when presented by a reputable physician and it should not be belittled by any who have had no experience with it. If anything is found to be good, all right; if it is found to be not valuable, discard it. He would not give bromids. An optimistic view of epilepsy should be taken; the patient's hygiene, activity, diet, should be regulated, and an endeavor should be made to get him out of the epileptic habit. If there is any drug which will lessen the reflex irritability it should be tried. It would seem that solanin is a medicine which may take the place of the bromids with great advantage. The next case of epilepsy he has he will try solanin. From the physiologic action he anticipates some very good effects.

DR. M. CLAYTON THRUSH, Philadelphia, said he had been interested in this drug for a number of years. His attention was first called to the *Solanum carolinense* in West Virginia. He noticed that many colored people gathered berries of a certain plant and steeped them in whisky and took the decoction, receiving wonderful results in epilepsy. He investigated the drug and found it to be the *Solanum carolinense*, or horse nettle, and decided to make a complete investigation of the drug. As to its chemical composition, quantitative analyses were made of all the various parts of the plant in order to determine which part of the plant was most active therapeutically. It was found that the fruit contained the largest amount of solanin, the root was next in amount, then the leaves, and finally the stem. The alkaloids solanidin and solanin were combined in this drug by solanic acid. The solanidin was found to be present in about 7.6 per cent. the amount of the solanin, and the solanin was found to be converted by heating with a dilute acid into solanidin. Solanum contains solanidin, which is soluble in ether, and is readily detected by the proper chemical reagents. Solanin is extracted by chloroform from the alcoholic extract. It is very sparingly soluble in ether and water, freely soluble in chloroform and amylic alcohol, and also soluble in cold alcohol; more so in boiling alcohol. By heating in the presence of a diluted acid solanin is converted into solanidin and another substance capable of reducing Fehling's solution which is probably a form of glucose. Water will extract the solanin due to the presence of solanic acid. Solanin is present also in the berries of *Solanum nigrum*, in potato sprouts (*Solanum tuberosum*), in the common tomato leaves (*Solanum lycopersicum*), and in the formerly official *Solanum dulcamara;* the fluid and the solid extracts are made with a menstruum of two parts of alcohol and one part of water by the usual percolation method. This will apply to all parts except the fruit, which must be macerated. The remainder can be dried and made up as a fluid extract. The objection to the tincture is the large amount of alcohol present. As a result of pharmaceutical investigation it has been found that the fluid extract and solid extract are the best preparation of the drug. The alkaloid solanin itself can be used, with practically the same effect. Microscopic examination showed starch, tannin (calcium oxalate crystals), mucilaginous matter, resin and fixed oil in addition to the usual structural constituents. The medical properties had been well covered by Dr. Waugh. As solanin is a poison to the terminal motor plates, paralysis may be sensory and motor. By reason of this solanin is to be classed among the best analgesics. There is no danger of an accumulative action. It does not cause congestion of the brain, even in the aged. In all cases in which it is necessary to calm excitement, relieve pain or overcome spasms, it promises excellent results. It may be given with advantage in place of morphin. Dr. E. Q. Thornton has investigated the physiologic action of solanum on frogs by injecting the solid extract hypodermically into the posterior lymph spaces in doses of about 3 mg. to the gram weight of the frog. He found that the drug depresses the respiration, has little or no effect on the circulation, depresses the cerebrum and stimulates the cord. The reaction to acids is lost before tactile sense, and the same may be said of heat. In a series of investigations to ascertain its clinical value the drug has been employed in four Philadelphia hospitals, in about 25 cases of epilepsy in its various forms. In order to show the efficacy of this drug he related one instance. This girl is entirely cured, there being no symptoms since four years ago. She had the disease since 7 years of age and had been using bromids, and every time developed a profuse acne. As a result of his own experience he had reached the following conclusions: 1. That *Solanum carolinense* is of the greatest value in *grand mal* of idiopathic type without hereditary taint, when the disease has begun beyond the age of childhood. 2. It is perhaps next of greatest value in hystero-epilepsy with marked convulsive seizures. In cases of *petit mal* the drug does not seem to do the great good that has been noted in the major type of the disease. 3. In cases of well advanced epilepsy of any type in which there is degeneration of the cerebral neuron, the drug will act specifically for a time even better than the bromids, but it will finally be determined that the bromid salts will ultimately control the attacks better in these cases. 4. The foregoing clinical study has brought out sufficient evidence to warrant the statement that the inherent advantage of vegetable depresso-motors is great as compared with any mineral salt given with the same intent, since destruction of the blood corpuscles by the latter is a most detrimental feature toward lessening the resistance of the individual in a disease, in which, above all, the constitutional tonicity should be favored as ideal treatment. 5. A thorough impregnation of the nerve cells can alone be had and, therefore, cure hoped for in epilepsy in proportion as solanum is pushed to the fullest physiologic dosage and maintained through periods of months, a year not being too short a time to warrant its discontinuance. 6. The fluid extract of the drug made freshly is the ideal form of pharmaceutical preparation given in ascending doses commencing with one fluid dram and increasing to the full constitutional effect. 7. It is to be decidedly preferred to the bromids in those cases in which it can be used advantageously, because no toxic symptoms follow its free administration, and the mental faculties are not impaired by its use.

DR. WILLIAM F. WAUGH, Chicago, said that 30 years ago one of his brother officers in the navy said he thought it was a great mistake that steam had displaced the sail, that the American clipper ship was the highest type of the ship builder's art, that the world should have been contented with it and not gone further. It is perfectly natural for conservatism to hold back, but the world never stands still, and is constantly asking for something better. It is his firm conviction that if the faith of the world in drugs, which it seems to have lost so completely, is to be renewed, something better must be given than it has had. With this feeling he presented his paper on solanin, which gives certain advantages that justify the physician in giving it a trial, at least.

Clinical Notes

DIRECT TRANSFUSION OF BLOOD IN THE TREATMENT OF HEMORRHAGE.

PRELIMINARY CLINICAL NOTE.

GEORGE CRILE, M.D.
CLEVELAND, OHIO.

During the past year a series of seventy-four carefully conducted experiments on the direct transfusion of blood in the treatment of hemorrhage in animals was made by Dr. Dolley and myself, and from these experiments the following conclusions were drawn:

Arteries and veins of varying sizes may be readily anastomosed by Carrel's method so as to be impervious to blood and free from clotting; the transference of blood from one animal to another is most definitely accomplished by anastomosing the proximal end of an artery of the donor into the proximal end of the vein of the donee; convenience need be the only consideration in the selection of the vessels to be anastomosed; the

blood of one animal may be rapidly transfused to another; the blood of one dog is isontonic with that of another dog; if a dog be bled to the last drop of blood that will flow, and then an equal amount of blood be transferred from another, the transfused blood suffers no impairment by the blood or tissue of its new host, and, in turn, it causes no impairment; no hemolysins are produced; and, finally, the transfused blood becomes a perfect substitute for the lost blood, and the factor of hemorrhage may be eliminated.

After having covered by experiments every conceivable phase that would have a clinical bearing, I concluded to make a clinical test in the first case that baffled all other forms of treatment, and in which the patient apparently must otherwise inevitably die. The opportunity was presented in a case of secondary hemorrhage following nephrolithiasis, the history of which is as follows:

CASE 1.—Male, 23 years old. Diagnosis, nephrolithiasis.

Operation.—Four large stones were removed from the pelvis of the kidney, where they had caused local infection and the formation of a vascular membrane about them. The wound formed in bisecting the kidney was packed with gauze. On opening the kidney there was considerable hemorrhage, but it was readily controlled then and after the operation.

Subsequent History.—On the fourth day oozing began to appear on the dressings, and there was also hematuria. This continued until the morning of the fifth day in spite of all the measures that could be employed against it, including packing, pressure, etc. By evening the condition of the patient had become alarming. The hemoglobin was reduced to 25, the red cells to 1,800,000, the pulse was 160 beats per minute and barely perceptible, the respirations 48 per minute and gasping, and the patient was unconscious. Treatment by posture, bandaging, saline infusions, stimulants, repacking, adrenalin chlorid solution, etc., was of no avail. It was clear that the terminal stage was at hand with all the resources at command exhausted. It seemed, therefore, a suitable case for transfusion, and one which would afford a crucial test of its value. A willing donor in the person of the patient's brother was at hand.

First Transfusion.—Under local anesthesia an anastomosis between the proximal end of the radial artery of the donor and the proximal end of the basilic vein of the donee was made, and the blood was allowed to flow steadily for 30 minutes. As a result the patient promptly came out of his unconscious state, the pulse and respiration fell, the blood pressure rose from 63 to 94 millimeters of mercury, the hemoglobin from 28 to 50 per cent., and the red cells from 1,800,000 to 2,900,000. In the donor the hemoglobin fell from 100 to 70 per cent. and the red cells from 5,500,000 to 4,600,000 per cubic millimeter.

The patient was then in such good condition that the original plan of doing a nephrectomy was followed, using ether as the anesthetic. The operation was well borne in spite of difficulties in removing the kidney, which will not be here mentioned.

The following morning the condition of the patient was unsatisfactory on account of decomposing blood clots filling the bladder. Under cocain I then made a suprapubic cystotomy, washing out a large quantity of foul smelling urine, and removing quantities of infected blood clots. During the day following this there was total suppression of urine and marked uremia. This was overcome during the following night, and the next day he was better. Improvement continued for two weeks, when the larger part of the lumbar wound was healed. A severe cystitis continued. Then, without warning, a profuse hemorrhage set in from the bladder and continued for two days in spite of all treatment. The red cells again fell to 1,900,000 and the hemoglobin to 25 per cent. The pulse rose to 130, and his condition was critical.

Second Transfusion.—This time another brother served as donor. The patient's condition immediately improved again, the red count reaching 3,000,000, and the hemoglobin 54 per cent. The granulations in the remainder of the lumbar wound had been pale and inactive, but the next day they were red and healthy. No further hemorrhage occurred, and from this time on the red count rose until it reached 4,800,000. He was discharged from the hospital as cured on the twenty-fifth day after the second transfusion. He has now resumed his work and shows 6,400,000 red cells.

Two patients with typhoid hemorrhages received transfusion, one was in extremis and the other one very low. Both were wonderfully revived by the transfusion. One was dying at the time, but became entirely conscious and rational and held his improvement until further hemorrhage proved fatal on the following day. The other patient survived further hemorrhages, but died later with a double parotitis and typhoid. Under similar circumstances I should suture the typhoid ulcers, as the patients after the transfusion were good surgical typhoid risks.

The fifth transfusion was for a secondary renal hemorrhage following nephrolithotomy. The patient was very poorly nourished and a poor risk. The hematuria continued for thirteen days, and finally his red count was reduced to 1,800,000, hemoglobin to 28 per cent., and he had been delirious for two days. We then performed transfusion in a similar manner to the preceding. As the fresh blood flowed into his vessels his delirium gradually lessened, and while on the table and during the transfusion entirely disappeared. The lumbar wounds healed, but an abdominal wound made for exploratory purposes, although resutured twice, never showed a sign of repair, finally ending in peritonitis and death. The blood count, without any further treatment, however, was maintained to the end.

The last case was that of a woman who had been bleeding from the bowels for four months, and during that time had been under medical treatment. Her secondary anemia was extreme; the hemoglobin was approximately 12 per cent., red cells 1,200,000. She was in such a low state that it was not safe even to anesthetize, and was brought in for the purpose of making a transfusion. The transformation in this case was extraordinary. The lemon-yellow color was replaced by white, then by pink, the lips became red, the blood count was more than doubled and the hemoglobin trebled. She felt invigorated and stimulated. All other treatment was withdrawn and her hemorrhage ceased. Three weeks later a little blood was noticed at stool. She was then anesthetized and thoroughly examined, when it was found there was marked varicosity in the rectum with some small ulcers. These were sutured over and the patient left the hospital at the end of six weeks with a red blood count of 4,000,000 and hemoglobin of 70. Before the transfusion she had no appetite and could scarcely be made to take nourishment. Directly after the transfusion she had a very vigorous appetite and gained rapidly in health and strength. Her red cells rose to 2,500,000 (more than doubled) and hemoglobin to 40.

We have complete tables of observations in each case on the red blood count, the hemoglobin, and the blood pressure of both the donor and donee, and records of urinary examinations in the donee, extending over a period of time. These tables will be included in the complete publication. Six clinical transfusions have been done. The donors in each instance regained the blood lost in from five to seven days. They had been

kept from their work only the day of the transfusion. All showed the usual temporary effect of the bleeding, no agglutinins, no hemolysins.

The donee showed neither nephritis nor hemoglobinuria, no laking of blood, and no evidence that the new blood had in any way unfavorably affected the donee, nor that the donee had unfavorably affected the newly transfused blood. In other words, the conclusions reached in the laboratory were wholly realized in the clinic.

The occurrence of spontaneous cessation of hemorrhage in two of the cases—each of which was pathologic—suggests strongly this method of treatment for cholemic, hemophillic and other forms of pathologic hemorrhage.

Since the healthy blood of one individual is apparently physiologically interchangeable with that of another, if the blood lost by one is replaced by an equal quantity from another, the factor of hemorrhage may by direct transfusion be eliminated.

The transformation in these cases has been unequaled in my surgical experience, except in the relief from asphyxia by intubation.

TWO ATYPICAL CASES OF SMALLPOX.

SAMUEL E. EARP, M.S., M.D.
Professor of Practice of Medicine, State College of Physicians and Surgeons; Consultant in Practice of Medicine, St. Vincent's Hospital and Protestant Deaconess' Hospital; Lecturer on Medicine and Dietetics, St. Vincent's Training School for Nurses, and Visiting Physician in Practice of Medicine, Indianapolis City Hospital.
INDIANAPOLIS.

CASE 1.—*History.*—On April 1, 1905, I saw J. H. at the Indianapolis City Hospital, who had been sent there on the previous day with (alleged) typhoid fever. There was no history of syphilis and the patient had had the infectious diseases of childhood. He had been vaccinated six years ago. The patient had been a moderate drinker of alcoholic stimulants. His present sickness commenced with a general malaise and occasional chilly sensations. There was no pain, appetite was good, bowels were constipated, and there was some slight fever.

Examination.—I found the skin dry, face slightly flushed, and a few papules which, in their incipiency, a few days previous to admission to the hospital, had been designated as the rose-colored spots of typhoid fever. There was a slight elevation of temperature. Tongue was heavily coated, abdomen slightly tender, and palpation of the chest gave negative results. This was true in percussion also, except a dulness over the left lobe. Heart was regular and sounds were clear. On the second day, which was the first day I saw him, there were a few fine papules on the face which some had suggested might be acne vulgaris, since the patient had had this disease since childhood. There was an occasional papule on the chest and abdomen, but no indication of induration, unless it was an isolated one on the chest, which possibly gave the appearance of an incipient umbilication.

Diagnosis.—Dr. J. M. Wallace, the interne, and myself, made a provisional diagnosis of smallpox, although the evidence was not strong. The patient was quarantined. On the second day the spots on the chest, face and abdomen were more numerous, but with little induration. The temperature was normal. On the fourth day vesicles were well formed on the face and an occasional pustule. On the fifth day the disease was well developed, but very mild indeed, and one in which mistaken diagnosis could easily have been made.

Patient was discharged from the smallpox hospital April 21.

CASE 2.—*History.*—J. R., colored, aged 60 years, was admitted to the Indianapolis City Hospital, March 30, 1905, with ascites, pulmonary edema and dyspnea as a result of myocarditis and chronic nephritis. The legs were edematous. The patient responded promptly to treatment and gave every evidence of having recovered April 1, with the exception of an occasional attack of dyspnea when doing chores at the hospital. These, however, were infrequent, and did not interfere with his duties as assistant. April 3, together with all patients, he was vaccinated on account of appearance of Case 1 in the ward, but it was unsuccessful.

Course of Disease.—April 17 he complained of not feeling well, seemed to talk irrationally, and had a subnormal temperature. April 18 I found the patient had left his bed and was sitting in a chair at a remote portion of the ward, with signs of collapse, pulse imperceptible. Following the hypodermic injection of digitalin and strychnia, his condition slightly improved. On the following day there was no change. April 20 my attention was called to a roughness on his forehead, and on close examination the same condition was present on the back, chest and abdomen. On the following day, on some portions of the body there were papules, others felt like bird-shot, and several pustules were on the abdomen and chest. In two locations on the abdomen several of the pustules seemed to coalesce and form a large one. At no time did the patient's temperature reach normal. The different stages were present on the same person and at the same time.

Diagnosis.—Diagnosis of smallpox was made, and although there was some little doubt in the case he was removed to the contagious pavilion. Three days the development of the eruption was sufficiently pathognomonic to confirm the provisional diagnosis. The case was seen by Drs. C. E. Fergerson, A. W. Brayton, Paul Martin and J. M. Wallace.

Some of the irregularities of the case will be recognized as follows: Pre-eruptive stage imperfect, absence of the gradual appearance of eruption, various stages of eruption at the same time, resembling varicella somewhat, the eruptions in some localities possessing the characteristic histologic formation, while in others the vesicles were inclined to be unilocular rather than multilocular, and the variation of temperature in the one case and subnormal in the other. The unusual features in these cases, especially in the last one, will be easily recognized, and, therefore, comment is unnecessary.

FATAL POISONING BY THE EXTERNAL APPLICATION OF BICHLORID OF MERCURY.

G. G. CRAIG, M.D.
ROCK ISLAND, ILL.

Patient.—I was called July 11, 1906, to see a young woman, aged 25, who had applied wood alcohol to her neck, back and left arm for rheumatism.

Examination.—She was hysterical, and said that the burning from the application was intolerable. The parts were very much reddened and inflamed, presenting the appearance of an ordinary scald or burn. I gave her a hypodermic injection of morphin and prescribed a local application of saturated solution of bicarbonate of soda. The next morning I was informed that the wood alcohol contained a large quantity of bichlorid of mercury.

Course of Treatment.—The patient passed an uncomfortable night. She complained of a burning sensation in her mouth, some vomiting, and a slight diarrhea. The back of the neck, the whole back down to the waist, and the left arm were thoroughly burned, and had become largely covered with blisters during the night. I treated the local injury as an ordinary burn, with a solution of bicarbonate of soda, punctured the edges of the blisters, preserved as much as possible the blistered skin for a dressing, and applied stearate of zinc. The burn improved nicely. She was nourished by white of egg and milk exclusively. The inflammation of the mouth, throat, stomach and bowels steadily increased and she died on the morning of July

17, a little over five and one-half days after the accident. At death the tongue was nearly double its normal size, and of a brownish color. It looked like cooked beef, and during the night before death the bowels were moving constantly.

Remarks.—The application used was what is commonly known as "dead-shot;" the wood alcohol and the bichlorid of mercury had been purchased separately, and the mercury had been added by the purchaser, hence the label on the bottle was simply wood alcohol, although it also had a skull and cross bones, and a "poison" label on it. The preparation was in a little medicine case in the toilet room and was supposed to have been locked up, but evidently was not. The young woman saw it, thought it would be good for her rheumatism, and had a friend apply it.

Some years ago I had a case of poisoning by arsenic, which presented almost the same symptoms. It was taken by the mouth by a very dissipated middle-aged woman, with suicidal intent. She survived the first shock, but died five or six days later from exhaustion caused by inflammation of the alimentary canal.

I know of no physiologic antidote for poisoning by corrosive sublimate. I relied wholly on giving the patient all the albumin she could take, hoping each day that the poison would become neutralized, and that the patient would recover. In that, however, I was doomed to disappointment. There was not the slightest indication that the poison was losing its power.

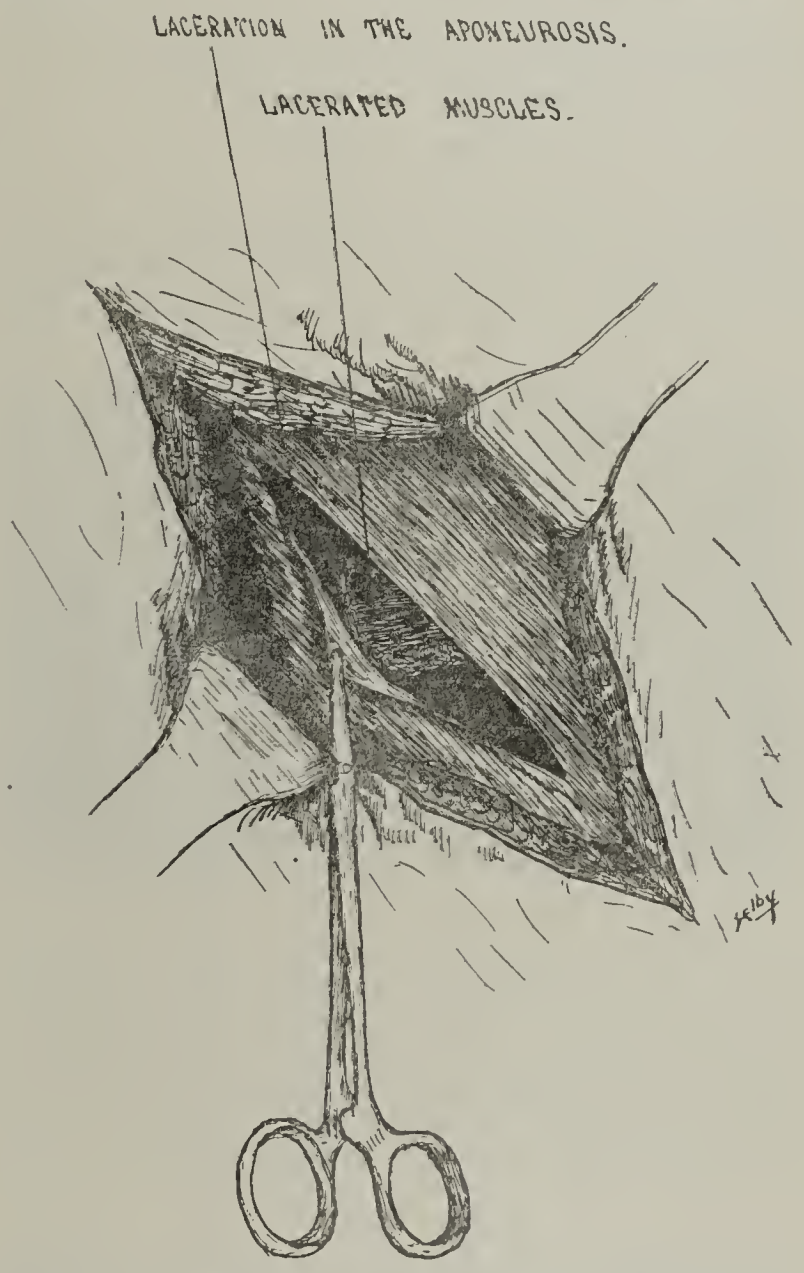
[EDITOR'S NOTE.—There are numerous cases[1] of poisoning from the external application of mercurial compounds. Generally the poison has been corrosive sublimate and has been applied in the form of ointment or as an alcoholic solution. Watery solutions, however, may be absorbed. Even black wash externally applied has produced salivation. The symptoms of mercurial poisoning after absorption through the skin are almost identical with those produced by the poison when swallowed. The irritation, inflammation and ulceration of the stomach and intestines are very prominent. There is good reason to believe that the stomach and intestines act as eliminating organs in these cases as in poisoning by other substances. No clear plan of treatment has been laid down by authors on toxicology for cases of poisoning by external application. The usual antidote for corrosive sublimate is albumin in some form which unites with the mercury to produce an insoluble albuminate. This albuminate, however, is soluble in an excess of albumin and hence the administration of albumin as an antidote should be followed by an emetic or by lavage of the stomach to get rid of the mercury which has been rendered insoluble before it can be reabsorbed in consequence of becoming soluble in an excess of the antidote. In case of absorption from an external surface, it is possible that the mercury escapes from the system in the gastric and intestinal mucus, in which case probably the use of albumin would be superfluous, if not contraindicated. Whether or not another antidote might be used is uncertain; it would seem as if a trial of some sulphid might be desirable. In regard to the external wound, probably nothing better could have been one than was done by Dr. Craig, as the bicarbonate of sodium tends to produce an insoluble basic carbonate of mercury which would not so readily penetrate the skin. But it is probable that in this case the poison had been absorbed before any application was made. Aside from the attempt to produce an insoluble compound of mercury in the intestinal canal, there is no special treatment for poisoning by mercury. Elimination should be encouraged by copious introduction of liquids, possibly better by enteroclysis or hypodermic injection of saline solutions; proper stimulants should be given, and the particular symptoms treated as they arise.]

1. See Taylor's Medical Jurisprudence"; also Blyth, A. W.: "Poisns, Effects and Detection"; Sachur: Berlin. Wochchr., 1892; and Meeres: Lancet, Sept. 16, 1871.

DIRECT ABDOMINAL HERNIA OF TRAUMATIC ORIGIN.

CLARENCE D. SELBY, M.D.
TOLEDO, OHIO.

This case is interesting, perhaps more in its origin than in the lesion produced, though none the less instructive.



Patient.—A man, aged 32, laborer, was employed with a wheelbarrow on a scaffolding six feet from the ground, when a misstep caused him to fall, the wheelbarrow following and the handle striking him in the right iliac region.

Examination.—When first seen, a short time later, there was a soft hemispherical mass, 6 cm. in elevation and 8 cm. in diameter, in the region of the injury, with but slight abrasion and no discoloration of the overlying skin. Extreme pain prohibited manipulation, but as the diagnosis was apparent the man was sent to the hospital. There, when placed in a recumbent posture, the mass receded, and a hiatus could be felt in the supporting structures of the abdominal wall. In fact, the margin of the lacerated aponeurosis was plainly palpable.

Operation.—Under ether anesthesia an incision was made parallel to Poupart's ligament over the break in the wall, which was 4 cm. above the ligament. The ruptured aponeurosis was evident. The break was clean cut as though produced by a knife, following, of course, the fiber of the tissue. The internal oblique and the transversalis beneath were torn away

from their points of origin on the iliac crest and crural arch, producing a triangular laceration with the apex toward the anterior superior spinous process. The peritoneum was intact. Thus, in the words of the text-book, the coverings of this hernia were integument and peritoneum.

Recovery was perfectly satisfactory and the man returned to work in three weeks.

This man at first refused operation. Of course it is apparent what the result would have been had he not consented.

Perhaps the most instructive feature of this case is the fact that the muscles and fascia, the most rigid structures in the wall, gave way, while the integument and peritoneum, the elastic tissues, were unharmed.

502 Main Street.

SUBSTITUTE FOR DARK ROOM DURING FLUOROSCOPIC EXAMINATIONS.

GEORGE W. KING, M.D.
HELENA, MONT.

Physicians who use the fluoroscope only occasionally do not find it convenient to equip a dark room for the purpose and are consequently at a disadvantage when working by daylight. To obviate the necessity of heavily screening windows and

other avenues of light, a hood can be easily improvised which serves the purpose admirably. A sheet of rubber lead composition is chosen by preference, for it serves also as a protection to the operator. If the latter is not at hand, several layers of newspapers enfolded in a suitable piece of black muslin and fastened to the fluoroscope will effectually shut out the light. So arranged, the observer is in absolute darkness and can see only the image reflected on the fluoroscopic screen.

DIPHTHERIA ANTITOXIN IN THE TREATMENT OF EXOPHTHALMIC GOITER.

ADRIAN F. BURKARD, M.D.
OMAHA.

The symposium on "Exophthalmic Goiter"[1] reminds me of a short report[2] under the same heading as my note, written by Dr. Robert T. Legge, of McCloud, Cal. The doctor reported several cases of the above disease, in which he had used diphtheria antitoxin with curative results.

Prompted by his report, I lately used the same antitoxin for the same disease, and also with very satisfactory results. For, though only about five weeks have elapsed since the injection (of 3,000 units), already the tumor has almost disappeared, the circumference of the neck having diminished almost one and one-half inches. The pulse rate has fallen from 135 to 80; the tremor, before injection very marked, is now almost imperceptible; the exophthalmos can no longer be detected; the nervousness and weakness have almost disappeared. There have been no untoward effects whatever. No other treatment has been used except local inunction with ointment of red oxid of mercury, which before injection had no effect. When I reported this case to our local medical society lately four other cases of the same treatment were reported. In three of these the results were good or excellent; in one no marked results were reported after several injections.

Of course, one case, or a dozen cases, are of very little value. But I make this report principally in the hope that other physicians, who may have used the same treatment, may be prompted to report. Thus the collective testimony of many may be of value. Or probably Dr. Legge may have used the antitoxin since, in which case a word from him would surely be of interest.

1902 South Seventeenth Street.

1. The Journal A. M. A., Sept. 1, 1906.
2. The Journal A. M. A., April 22, 1905.

STRIKING IDIOSYNCRASY TO THE USE OF COCAIN IN THE EYE.

T. W. MOORE, M.D.
HUNTINGTON, W. VA.

The patient here referred to has an idiosyncrasy for two drugs, quinin and cocain. Such susceptibility to quinin has been frequently reported, and I have seen several cases so afflicted, but I am not aware of any one being affected by cocain in this manner, and a cursory examination of the literature fails to reveal a similar case.

During January, in testing the refraction of L. L., a bank clerk, aged 25, I had a nurse in the office instil a solution of homatropin, gr. ½, in ½ dram of 4 per cent. solution of cocain, one drop in each eye, repeated every five minutes until six drops were used. Just before using the last drop the nurse called my attention to the fact that the patient's eyes had become very much swollen. To my astonishment I found the lids so swollen that it was only after the greatest effort that the patient could separate them at all. There was considerable chemosis and redness, the cornea appearing sunken. Hot fomentations, continued for half an hour, reduced the swelling enough for the patient to go home on a car, but it had not disappeared sufficiently for him to resume his duties the next morning, fifteen hours after the first instillation.

I was extremely puzzled as to the cause of this until about six months afterward when this patient came to me with a foreign body in one eye. I used one drop of 4 per cent. solution of cocain and the patient exclaimed immediately: "That is the medicine that swelled my eyes," and in five minutes the swelling of lids and conjunctiva was very apparent and in half an hour (nothing being used to counteract the action of the cocain), the palpebral fissure had become a narrow slit. This subsided almost entirely before morning, the patient having applied hot fomentations for half an hour that evening.

This young man has considerable nasal obstruction, both the inferior and middle turbinates being almost in contact with the septum when he is free from a cold (which he rarely is) and when suffering from an acute exacerbation of his rhinitis his eyes are red. He tells me that he is very susceptible to the influence of quinin, his body becoming nearly covered in a very short time with giant hives with great swelling, from so small a dose as 2 grains.

New and Non-Official Remedies

THE FOLLOWING ARTICLES HAVE BEEN TENTATIVELY ACCEPTED BY THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR INCLUSION IN THE PROPOSED ANNUAL, "NEW AND NON-OFFICIAL REMEDIES." THEIR ACCEPTANCE HAS BEEN BASED LARGELY ON EVIDENCE SUPPLIED BY THE MANUFACTURER OR HIS AGENT, BUT TO SOME EXTENT ON INVESTIGATION MADE BY OR UNDER THE DIRECTION OF THE COUNCIL. CRITICISMS AND CORRECTIONS ARE ASKED FOR TO AID IN THE REVISION OF THE MATTER BEFORE FINAL ACCEPTANCE AND PUBLICATION IN BOOK FORM.

THE COUNCIL DESIRES PHYSICIANS TO UNDERSTAND THAT THE ACCEPTANCE OF AN ARTICLE DOES NOT NECESSARILY MEAN A RECOMMENDATION, BUT THAT SO FAR AS KNOWN IT COMPLIES WITH THE RULES ADOPTED BY THE COUNCIL.

W. A. PUCKNER, SECRETARY.

(*Continued from page 1379.*)

IODIPIN 25 PER CENT.

IODIZED SESAME OIL, TWENTY-FIVE PER CENT. IODINE.

A preparation similar to the preceding, but intended for hypodermic administration.

Dosage.—2 to 6 Cc. (30 to 90 minims) by hypodermic injection. This article is also marketed in the form of capsules, each containing 2 Gm. of iodipin 25 per cent.

Prepared by E. Merck, Darmstadt. (E. Merck & Co., New York).

IODOFORMOGEN.

IODOFORMALBUMIN. IODOFORM ALBUMINATE.

A nearly odorless mixture of iodoform and albumin.

It is prepared by precipitating a solution of albumin with alcoholic solution of iodoform and heating the precipitate at 120° C. (248° F.).

It is a very fine, voluminous, light-yellow, nearly odorless powder, non-hygroscopic and non-conglutinating. It is insoluble in water, and sterilizable at 100° Co. (212° F.) without decomposition or change.

Actions and Uses.—Its action is that of iodoform, which is slowly liberated in connection with wound surfaces, making the action more peristent. It limits secretion, favors granulation and promotes drying.

Iodoformogen is recommended as a dusting powder for ulcerated surfaces.

Dosage.—Being about three times as voluminous as iodoform, it is usually applied undiluted to the affected parts. It may be used as a snuff in ozena, mixed with an equal amount of boric acid.

Manufactured by Knoll & Co., Ludwighafen a. R. and New York. German patent No. 95,580. U. S. trademark No. 31,186.

IODOTHYRINE.

THYROIODINE.

Iodothyrine is a milk sugar trituration of the active principle of thyroid gland, 1 Gm. representing 1 Gm. of fresh gland and containing 0.0003 Gm. of iodine.

According to the patent specifications iodothyrine may be obtained by boiling the fresh thyroid glands, freed from fat, with dilute sulphuric acid, cooling the liquid and collecting the body which separates, dissolving the active portion in alcohol and evaporating to dryness. The product is further purified by washing with ether which dissolves impurities. One part of the active ingredient is mixed with 309 parts of sugar of milk.

It is a white or yellowish white powder, having the sweet taste of milk sugar.

Actions and Uses.—It is similar in action to Glandulæ Thyroideæ Siccæ, U. S. P., but it is claimed to possess the advantage of more definite strength and absence of decomposable extraneous matter.

Dosage.—Adults, 0.6 to 2 Gm. (10 to 30 grains); children, 0.3 to 1 Gm. (5 to 15 grains) per day.

Manufactured by Farbenfabriken, vorm. Friedr. Bayer & Co., Elberfeld, Germany (Continental Color & Chemical Co., New York). E. Merck, Darmstadt (Merck & Co., New York). U. S. patent No. 686,648. U. S. trademark No. 29,406.

ISOFORM POWDER.

Isoform powder is a mixture of para-iodoxy-anisol, $C_6H_4(OCH_3)(IO_2)1:4 = C_7H_7O_3I$, an iodoxy-derivative of anisol, with an equal weight of calcium phosphate.

Para-iodoxy-anisol is prepared by the oxidation of iodo-anisol. $C_6H_4(OCH_3)(I)1:4$, with chlorine or hypochlorites.

Para iodoxy-anisol is a colorless powder, having a slight anise-like odor. It is difficultly soluble in water, and practically insoluble in alcohol and ether. It may be heated in a dry state to about 200° C. (392° F.) without decomposition. It contains 47.74 per cent. of iodine. It liberates iodine from a solution of potassium iodide and acetic acid. It is liable to explode if heated or when triturated. Hence it is marketed in a mixture with an equal weight of calcium phosphate which is designated "isoform powder."

It is incompatible with acids and with reducing agents such as iodides and with the substances generally which are incompatible with iodides.

Actions and Uses.—It is a germicide and antiseptic in consequence of its oxidizing power and, in contradistinction to iodoform, it acts not only in a medium free from oxygen, but in conjunction with free access of air. It is claimed to be non-toxic in comparatively large doses and to be absolutely non-irritant to the unbroken skin. It is recommended as a substitute for iodoform.

Dosage.—Internally, 0.65 to 2 Gm. (10 to 30 grains) per day. It is used externally as a dusting powder, as a paste with glycerin, as ointments, suspensions in glycerin, gauzes, etc., in strength varying up to 10 per cent. of pure isoform.

Manufactured by Farbwerke, vorm. Meister, Lucius & Bruening, Hoechst a. M. (Victor Koechl & Co., New York). U. S. patent No. 777,962.

ISOPRAL.

TRICHLOR-ISOPROPYL ALCOHOL.

Isopral, $CCl_3.CHOH.CH_3 = C_3H_5OCl_3$, is 1,1,1-trichlor-2-propanol.

It is obtained by reaction of chloral with magnesium-methyl iodide and decomposition of the compound formed.

It forms handsome prismatic crystals, having a camphoraceous odor and an aromatic, somewhat pungent taste, producing a burning sensation on the tongue, followed by decided anesthesia. It melts at 49° C. (120.2° F.), but volatilizes very readily at the ordinary temperature, forming sublimates similar to camphor. It is soluble in 35 parts of water, but more readily soluble in alcohol and ether.

It is distinguished from chloral hydrate by not developing the odor of chloroform when its aqueous solution is warmed with alkali hydroxides.

It should not be exposed to heat and air.

Actions and Uses.—Isopral resembles chloral in its action, but is effective in smaller dose. It is prompt in effect and apparently devoid of cumulative action. It has some degree of local anesthetic power. It may be used as a substitute for chloral hydrate and is serviceable as an alternative in cases in which it is necessary to give hypnotics for a long time.

Dosage.—0.3, 0.6 to 1 Gm. (5, 10 to 15 grains) in capsules or wafers which should be dispensed in a well-stoppered glass vial.

Manufactured by Farbenfabriken, vorm. Friedr. Bayer & Co., Elberfeld, Germany (Continental Color & Chemical Co., New York). U. S. patent No. 742,430. German patent No. 151,545. U. S. trademark No. 41,157.

KASAGRA.

FLUIDEXTRACTUM CASCARA SAGRADA AROMATICUM, STEARNS.

A fluidextract said to conform in drug strength to the requirements of the U. S. Pharmacopeia for fluidextracts. It is prepared with especial care, the drug being extracted with a menstruum containing no alcohol. The preparation is said to contain 0.05 per cent. of alcohol.

Actions and Uses.—Kasagra is recommended as an especially palatable preparation of cascara, owing its laxative effects to this drug alone.

Dosage.—1 to 2 Cc. (15 to 30 minims) four times a day, half an hour before meals and at bedtime.

Prepared by F. Stearns & Co., Detroit, Mich. U. S. trademark No. 53,076.

KOLA, Stearns.

FLUIDEXTRACTUM KOLÆ, STEARNS.

Each 30 Cc. (1 fluidounce) is said to represent 31 Gm. (480 grains) of fresh kola nut. It contains 23.5 per cent. of alcohol.

Action and Uses.—Kola seeds contain from 1.5 to 3.6 per cent. of total alkaloids of which from 1/100 to 1/40 is theobromine and the rest is caffeine. About one-half of the caffeine is combined as kolatannate of caffeine. The actions and uses of the remedy are essentially the same as those of caffeine. It is probable that the kolatannate is not so active as free caffeine.

Dosage.—2 to 4 Cc. (½ to 1 fluidram) three times a day.

Prepared by Frederick Stearns & Co., Detroit, Mich.

KRESAMINE.

ETHYLENE-DIAMINE TRICRESOL.

A clear watery solution of 25 per cent. of trikresol (which see) and 25 per cent. of ethylene-diamine.

It is a clear, colorless liquid, miscible in all proportions with glycerin, and solubie to the extent of 33 per cent. in water, but insolubie in petroiatum.

Actions and Uses.—Kresamine is a powerful bactericide, with a claimed minimum of toxicity. It is said that the bactericidal effect of the cresol and its power of penetrating the animal tissues are greatly enhanced by the presence of ethylene-diamine and it is claimed to be far less irritating when used as a wet dressing than other antiseptics. It is useful in all cases where an active bactericide is required and particularly when the microbes are in an albuminous menstruum. The preparation is not so dangerous as carbolic acid. It has been recommended for the treatment of ulcers, eczema, lupus and other skin affections.

Dosage.—It is used only in dilutions (2 to 25) containing 2 per cent. or less of each of its active constituents.

Kresamine may be applied in the form of ointment.

A dilution containing 2 per cent. of each ingredient was formerly marketed under the name "Ethylene-diamine Trikresol Solution." This was used without dilution.

Prepared by Chemische Fabrik auf Actien, vorm. E. Schering, Berlin (Schering & Glatz, New York). German patent No. 74,634. 74,634,

LAC BISMO.

MISTURA BISMUTHI, HART.

A mixture said to consist of bismuth hydroxide and bismuth subcarbonate, suspended in water, in a finely divided state, and containing 0.16 Gm. (2½ grains) of the salts in 4 C.c. (1 fluidram.

Dosage.—4 to 16 Cc. (1 to 4 fluidrams) as directed.

Prepared by E. J. Hart & Co., Ltd., New Orleans, La. U. S. trademark.

LACTOPHENIN.

LACTYL-P-PHENETIDINE. LACTPHENETIDINE, PARA-LACTYL-PHENETIDINE.

Lactophenin, $C_6H_4(OC_2H_5)(NH.CH_3.CHOH.CO)=C_{11}H_{15}NO_3$, is a compound differing from acetphenetidin (phenacetin) in that the acetic acid group, is replaced by the lactic acid group, $(CH_3.CHOH.CO)$.

It is prepared by heating lactic acid and p-phenetidin, in molecular proportions, at 180° C. (356° F.), until all the iiberated water is expeiied, and crystallizing the product from hot water.

It occurs in smaii, colorless crystals or as a white powder, melting at 117° to 118° C. (242.6° to 244.4° F.), odorless and slightly bitter. It is soluble in 330 parts of cold water, in 55 parts of boiling water and in 8.5 parts of alcohol, producing neutral solutions.

If 0.1 Gm. is boiled for a minute with 1 Cc. of concentrated hydrochloric acid, then diluted with 10 Cc. of water and filtered, the addition of 3 drops of a 3 per cent. soiution of chromic acid to the cooled filtrate graduaily develops a ruby-red coior. If 0.1 Gm. of lactophenin is boiled with 10 Cc. of water and the solution filtered after cooling, the filtrate turns turbid on the addition of bromine water. After hydrolysis with concentrated hydrochloric acid, lactophenin gives the indophenol reaction with phenol and chlorinated lime. Any slight residue which may be obtained by incinerating lactophenin should not, after solution in dilute hydrochloric acid, give a reaction with hydrogen sulphate.

Its incompatibilities are the same as those of acetphenetidin (phenacetin).

Actions and Uses.—The effects of lactophenin are similar to those of acetphenetidin (phenacetin), over which is possesses the advantage of greater solubility in water.

Dosage.—0.5 to 1 Gm. (8 to 15 grains), in wafers or capsules.

Manufactured by Chem. Fabrik, vorm. Goldenberg, Geromont & Co. German patents Nos. 70,250 and 90,595.

LAMINOIDS FERRUGINOUS (NASCENT).

Each tablet contains iron sulphate and sodium bicarbonate iu quantities equivalent to those of pilulæ ferri carbonatis (Blaud's pills), but the two salts are separated into two layers so that the formation of ferrous carbonate will occur only when the tablets are moistened. An excess of bicarbonate is present to neutralize the acid in the stomach.

Dosage.—The same as Blaud's pills.

Prepared by Schieffelin & Co., New York. U. S. trademark No. 38,384.

LENNIGALLOL.

PYROGALLOL TRIACETATE. TRIACETYLPYROGALLOL.

Lennigallol, $C_6H_3(CH_3CO_2)_3=C_{12}H_{12}O_6$, is triacetylpyrogallol obtained by replacing the hydroxyl groups of pyrogallol with acetyl groups.

It is prepared by boiling 10 parts of pyrogallol, 1 part of sodium acctate, and 25 parts of acetic anhydride for 2 hours, and washing the crystaline product on a fiter with water.

It is a white, crystalline powder, melting at 165° C. (329° F.). It is insoluble in water, but soluble with decomposition in warm aqueous alkalies.

It is incompatible with alkalies, strong acids and oxidizing agents.

Actions and Uses.—Lennigallol is said to be non-poisonous and non-irritating, but a mild and painless corrosive.

It is introduced as a substitute for pyrogallol in psoriasis, lupus, acute and subacute eczema of children and other skin diseases.

Dosage.—In 5 to 10 per cent. ointment with zinc oxide.

Manufactured by Knoll & Co., Ludwigshafen a. Rh. German pat-No. 105,240.

LIQUOR TRITICI.

LIQUOR TRITICI CONCENTRATUS.

A solution of which each Cc. (15 minims) is said to represent 1.75 Gm. (27 grains) of triticum repens in a menstruum containing 23.5 per cent. of alcohol.

It is made by exhausting the drug with water, concentrating the percolate *in vacuo*, and preserving the product by the addition of 23.5 per cent. of alcohol.

Dosage.—4 Cc. to 16 Cc. (1 to 4 fluidrams) at intervals of from two to four hours.

Prepared by Parke, Davis & Co., Detroit, Mich.

LITHIUM ICHTHYOL.

A lithium derivative of ichthyol.

It is a dark brown mass, somewhat more consistent, but otherwise resembiing ammonium ichthyol in appearance.

Actions and Uses.—It is an antiseptic and bactericide. It is recommended as a wound antiseptic and in syphilis.

Manufactured by the Ichthyol Co., Hamburg (Merck & Co., New York).

LYCETOL.

Lycetol, $NH\begin{matrix}\swarrow CH(CH_3).CH_2\searrow \\ \searrow CH_2.CH(CH_3)\swarrow\end{matrix}NH.COOH.CHOH.CHOH.COOH = C_{10}H_{20}O_6N_2$, is a tartrate of a methyl derivative of diethylenediamine (piperazine).

It is prepared by the distillation of glycerin with ammonium chloride or bromide, reduction of the dimethyipyrazine (isolated from the distillation products) with metallic sodium and converting the base so obtained, after purification, into the tartrate.

It is a white, odorless powder, melting at 250° C. (482° F.). anhydrous, but siightly hygroscopic. It is easily soluble in water, forming agreeabiy acidulous solutions.

It is incompatible with alkalies which liberate the insoluble free base.

Actions and Uses.—Lycetol is claimed to be a serviceable diuretic and uric acid solvent. It is said to be free from disturbing effects on the stomach and to be well tolerated for long periods.

Dosage.—1 to 2 Gm. (15 to 30 grains), well diluted, and preferably in carbonated water, sweetened with sugar if desired.

Manufactured by Farbenfabriken, vorm. Friedr. Bayer & Co., Elberfeld, Germany (Continental Color & Chemical Co., New York). U. S. patent No. 523,018. U. S. trademark No. 24,722.

LYSIDIN.

ETHYLENE-ETHENYLAMIDINE. METHYLGLYOXALIDIN. AETHYLENETHENYLDIAMIN.

Lysidin, $\begin{matrix} CH_2. & N: \\ | & \quad C.CH_3 \\ CH_2.NH. & \end{matrix} = C_4H_8N_2$, is a monatomic base derived from ethylene diamine.

It is prepared by subjecting ethylenediamine hydrochloride and sodium acetate to dry distillation, decomposing the hydrochloride of the new base with concentrated potassium hydroxide and crystallizing.

It forms small, colorless, very hygroscopic needles, melting at 105° to 106° C. (221° to 222.8° F.). It is very soluble in water and in alcohol forming alkaline solutions; it is also soluble in chloroform, but insoluble in ether. It forms a very soluble salt with uric acid.

It should form a clear and colorless solution and give the usual alkaloidal reactions.

Being a strong base it is incompatible with acids and with the salts of many metals and of the alkaloids, which it decomposes.

Actions and Uses.—Lysidin is said to be a diuretic and is recommended as a uric acid solvent on the theory that, because it forms a very soluble salt with uric acid, it will facilitate the elimination of that substance. It is claimed that it is superior to piperazine.

It is recommended in gout, lithiasis and the various forms of the so-called uric acid diathesis.

Manufactured by Farbwerke, vorm. Meister Lucius & Bruening, Hoechst a. M. (Victor Koechi & Co., New York).

MERCUROL.

MERCURY NUCLEINATE.

Mercurol is an organic compound of mercury with nucleinic acid from yeast, containing 10 per cent. of metallic mercury.

It is prepared by adding a solution of mercuric chloride to an alkaline solution of nuclein, containing an excess of alkali, precipitating the resulting nucleinate of mercury by the addition of alcohol and a concentrated solution of a neutral salt (sodium chloride), separating the precipitate, washing and drying it.

It is a brownish-white powder, soluble in water, especially in warm water, insoluble in alcohol. Its watery solution has a distinct metallic taste, a weak alkaline reaction, and is not precipitated by alkalies, nor by albuminous liquids.

The mercury in this preparation resists the action of hydrogen sulphide to a marked degree

Actions and Uses.—Mercurol does not coagulate albumin; it has marked bactericidal power and possesses the pharmacologic action of soluble mercury compounds.

It is recommended as a local antiseptic application and as an antisyphilitic remedy.

Dosage.—0.03 to 0.12 Gm. (½ to 2 grains).

Manufactured by Parke, Davis & Co., Detroit, Mich. U. S. patent No. 637,355.

MESOTAN.

ERICIN.

Mesotan, $C_6H_4.OH.COO(CH_2.O.CH_3) = C_9H_{10}O_4$, is the methyl-oxymethyl ester of salicylic acid, analogous to wintergreen oil.

It is prepared by the action of chlormethyl ether on salicylates thus: $C_6H_4.OH.COONa + CH_2Cl.O.CH_3 = NaCl + C_6H_4.OH.COO(CH_2.O.CH_3)$.

It is a clear, yellowish, faintly aromatic, oily fluid, sp. gr. 1.2 at 15° C. (60° F.) and boiling at about 162° C. (323.6° F.). It is difficultly soluble in water, but readily soluble in the usual organic solvents and miscible with oils in all proportions. Above 100° C. (212° F.) it is decomposed yielding salicylic acid, formaldehyde and methyl alcohol and it is likewise decomposed to a certain extent by moisture in the air.

Its watery solution gives a violet color with ferric chloride and after heating or exposure to moisture it responds to the usual tests for formaldehyde. Concentrated sulphuric acid colors it red.

It should be kept in a cool place and preserved dry in well-stoppered bottles.

Actions and Uses.—The action of mesotan is similar to that of oil of wintergreen, but it is more irritating to the skin.

Dosage.—Being quite irritating when applied pure to the sensitive skin, it is employed diluted with an equal volume of olive oil, and without friction. Simple application to the affected part, which need not be covered, or, if so, only slightly, suffices to give prompt relief.

Manufactured by Farbenfabriken, vorm. Friedr. Bayer & Co., Elberfeld, Germany (Continental Color & Chemical Co., New York). U. S. patent No. 706,018.

METHAFORM.

A name applied to chlorbutanol (which see).

Manufactured by F. Stearns & Co., Detroit, Mich. U. S. trademark.

MIGRAININ.

A mixture of antipyrine 85 parts, caffeine 9 parts and citric 6 parts.

It is a white powder soluble in 2 parts of water.

It is incompatible with acids, alkalies and metallic salts.

Actions and Uses.—It is antipyretic and analgesic, combining the actions of its components.

Dosage.—0.4 to 1 Gm. (6 to 15 grains) in powder, cachets or tablets, the dose being repeated once or twice during the day.

Manufactured by Farbwerke, vorm. Meister Lucius & Bruening, Hoechst a. M. (Victor Koechi & Co., New York). German patent No. 26,429.

NEUROCAINE.

BILLETS OF COCAINE, SCHIEFFELIN.

Each billet contains cocaine hydrochloride 0.05 Gm. (1/12 grain), without excipient. The billets are ⅛ inch long, 1/20 inch in diameter and very soluble.

Neurocaine is used for pressure anesthesia or as a local anesthetic in dental practice.

Prepared by Schieffelin & Co., New York. U. S. trademark, No. 43,837.

NEURONIDIA.

Elixir Diethylmalonylurea, Schieffelin.

An elixir said to contain in each 8 Cc. (2 fluidrams) 0.26 Gm. (4 grains) of veronal (diethylmalonylurea in a menstruum containing 35 per cent. of alcohol, with aromatics.

Dosage.—(8 to 16 Cc.) (2 to 4 fluidrams).

Prepared by Schieffelin & Co., New York. U. S. trademark No. 44,141.

NUTROSE.

CASEIN-SODIUM. SODIUM CASEINATE.

Nutrose is a sodium salt of milk casein, containing 65 per cent. of proteids.

It is prepared by dissolving moist casein, freshly precipitated from skimmed milk and washed with water, in solution of sodium hydroxide, evaporating the solution to dryness *in vacuo*, powdering the residue, washing it successively with alcohol and ether, and drying.

It is a coarse, white, odorless and tasteless powder, forming a turbid, adhesive solution with water, having an alkaline reaction toward litmus, but being acid toward phenolphthalein.

Incinerated on platinum foil, it evolves vapors similar in odor to burning horn and leaves at least 3 per cent. of a white, nonvolatile residue, which has an alkaline reaction and colors the Bunsen flame yellow. Casein can be detected by the biuret reaction.

It is incompatible with acids.

Actions and Uses.—Nutrose is recommended as a nonirritant nutrient in wasting diseases, such as the cachexias in carcinoma, anemia, diabetes, etc., and in acute and chronic febrile ailments, such as pneumonia, typhoid fever and tuberculosis.

Manufactured by Farbwerke, vorm. Meister, Lucius & Bruening, Hoechst a. M. (Victor Koechi & Co., New York). German patent No. 85,057.

(*To be continued.*)

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

103 DEARBORN AVENUE . . . . CHICAGO, ILL.

Cable Address . . . "Medic, Chicago"

Subscription price.....Five dollars per annum in advance

[*For other information see second page following reading matter.*]

SATURDAY, NOVEMBER 3, 1906.

THERAPEUTIC INOCULATION OF BACTERIAL VACCINES.

The third course of lectures on the Herter foundation at the Johns Hopkins Medical School, given by Sir Almroth E. Wright, has evoked unusual interest among those who heard the lectures. The subject of the lectures was "The Therapeutic Inoculation of Bacterial Vaccines and Its Application in Connection with Bacterial Disease." The lectures were profusely illustrated with charts and diagrams, but were delivered without notes.

Dr. Wright's visit to this country was a notable event. As he lectured not only in Baltimore, but also in Toronto, Washington, Boston, New York and Philadelphia, many of the profession fortunately heard him expound with great simplicity, vigor and clearness the results of his remarkable studies of immunity and their practical application.

It is less than four years since the phenomena of opsonic immunity were first clearly revealed by the work of Wright and his assistants, but it is already apparent that the new fields thus opened to investigation are of the highest scientific and practical importance,[1] and it is incumbent on the physician and surgeon to acquaint himself with the principles and methods of the new treatment by bacterial vaccines, although the application of the treatment should be entrusted only to those especially trained as immunisators.

It is possible here to indicate only briefly the general scope of the lectures delivered in Baltimore and to touch on a few special points. In the first lecture Dr. Wright subjected to a rapid critical review various existing methods of treating bacterial infections, as the expectant treatment, the use of antiseptics, the attempt to extirpate infected foci, efforts to increase the supply of lymph to areas of infection, antitoxic and antibacterial sera, etc., and he then considered the protective substances in the blood, dwelling mainly on those called "opsonins" which, by combining with bacteria, make them an easy prey to leucocytes. Skepticism was expressed concerning the therapeutic value of antibacterial, as distinguished from antitoxic sera, such benefit as the former may occasionally exhibit being attributed to their action as vaccines through the undesigned and uncontrollable presence of bacterial poisons, as is illustrated by Chantemesse's antityphoid serum.[2]

It was pointed out that the therapeutic efficacy of measures to increase the flow of lymph to infected areas, as by fomentations, the Finsen light treatment, Bier's hyperemia, etc., depends largely on the opsonic content of the blood, which varies much in different cases, which can be accurately measured, and which, in suitable cases, may be increased by bacterial vaccination.

In the first and second lectures Dr. Wright discussed such topics as the negative and the positive phases of immunity supervening on the inoculation of bacterial vaccines, the conditions under which pathogenic bacteria multiply in the infected organism, the activities and the inactivities of the machinery of immunization in different classes of bacterial infection, discriminating on this basis the strictly localized and the systemic infections, the methods of bacterial inoculation and the principles which should determine the administration of a vaccine and the propriety of intervention in aid of Nature's method of cure. An imposing body of verifiable facts, illustrated by curves plotted from actual cases, was presented which made it clear that the quantitative determination of the protective substances, particularly the opsonins, of the blood and of infected areas in the course of infectious diseases affords information of the greatest value for diagnosis, prognosis and treatment. Especially instructive were opsonic curves illustrating negative and positive phases resulting from autoinoculation in tuberculosis and other infections in consequence of physical and mental exertion, massage, surgical operation, menstruation and other circumstances, the relationship of such phases to the constitutional symptoms, and the diagnostic and therapeutic inferences to be drawn from these events.

In the third lecture were presented the results which have been achieved in the treatment of bacterial diseases by means of bacterial vaccines, and in general the field of application of this therapeutic procedure. The most numerous and the best curative results are obtained in localized chronic infections, such as many staphylococcus infections (furunculosis, sycosis, acne) and certains forms of tuberculosis, also in certain localized infections with the pneumococcus, the gonococcus, the streptococcus, the colon bacillus and other bacteria. Even in certain systemic infections where the machinery of immunization makes default, there is opportunity to intervene successfully by subcutaneous injection of bacterial vaccines, as was exemplified strikingly by a case of infectious endocarditis and several cases of Malta fever.

Of fascinating interest was the fourth lecture devoted to a full demonstration of the technical procedures which have been developed with such wonderful ingenu-

1. The admirable Middleton-Goldsmith lecture on "Phagocytosis and Opsonins" by Professor Hektoen, one of the leading and most productive workers in this field, gives an excellent summary of existing knowledge, with the addition of new facts relating to this subject. THE JOURNAL A. M. A., May 12, 1906.

2. A. E. Wright: The foundations of Serum Therapy, Clinical Journal, May 12, 1906.

ity by Dr. Wright for the estimation of phagocytosis, opsonins and other antibodies and for the preparation of bacterial vaccines. To those desiring to acquire the technic great assistance was afforded by the daily laboratory demonstrations by Dr. G. W. Ross, a co-worker who accompanied Dr. Wright. A fifth lecture full of practical interest was on studies of coagulation of the blood and their application.

Although a vast amount of work remains to be done before we can grasp its full import, it is already apparent that the message which Dr. Wright brings to the medical profession is comparable in its practical importance to that of Pasteur, of Koch, and of Behring. The lectures will surely stimulate laboratory work in this country in the field which he has opened. For those thoroughly trained in the new methods there is a career of great service to physicians and surgeons, and it is most desirable that our larger hospitals should make provision for such experts in immunization.

THE NATIONAL CONTROL OF LEPROSY.

Reference was made a few weeks ago[1] to the care and ultimate disposition of foreign-born lepers. The suggestion was then made that the Federal Government should make some additional provision for their deportation. The unfortunate circumstances surrounding the death of the Syrian leper at Pickens, West Virginia, and the dilemma in which he and the authorities of two states had been placed prior to his death, again recalls the great need of adequate means of dealing with the disease in this country.

The question is also of moment because more than one-half of the lepers in the United States are native born. According to the report[2] of the Commission authorized by Congress in 1899 to investigate the origin and prevalence of the disease in the United States, there were 278 cases residing in the various states in 1902, the time of this report, and, of this number, 145 were native born. Of the total number reported, only 72 were isolated at that time, being cared for in local institutions or isolated in their own homes under great disadvantages. There was at that time only one state institution for the exclusive care of lepers. Since then a colony has been established at Penikese Island, Massachusetts, where five lepers are segregated at great expense to the state.

The problem is already of interest to 21 states of the Union, and, in view of the rapid growth of our heterogeneous population, the other states may be confronted with it at any time. There can be no doubt that leprosy is a communicable disease, although slow in manifesting itself in the individual. Facts also seem to show that in countries where the disease is neglected it has a tendency to increase, while the opposite is the case where measures of prevention are practiced, as in Norway. An increase has been observed in certain South American and other countries—to such an extent in the Argentine Republic that the president of that republic recently convoked a conference to study the development of leprosy and to adopt measures to combat it.

The prevention of leprosy should also receive the serious consideration of our national government, the preservation of the public health and the dictates of humanity and science demanding the national care and control of the leprous under ideal hygienic surroundings. The necessity for immediate action is apparent to health authorities throughout the country, the Conference of State and Territorial Health Officers with the Public Health and Marine-Hospital Service having presented resolutions to that effect.[3] A bill for the segregation of lepers was also introduced in the Fifty-eighth Congress. It was passed by the Senate and favorably reported by the house committee on interstate and foreign commerce, but on the last day of the session, though brought up, it failed, through some misapprehension, to pass the House. The government has already made provision for a thorough investigation of the disease, Congress having provided for the establishment of a leprosy investigation station within the leper colony on the Island of Molokai. While an investigation of this character presents problems of unusual difficulty, yet it may be hoped that definite knowledge will in time be gained regarding the method of transmission, and it may be confidently predicted that an improved method of treatment will eventually be evolved. Meanwhile, it is urged that lepers in the United States be placed under national supervision and that a national home be established for their care. Such action would insure the speedy return of many of the alien cases to their native land, as they would be discovered in time to come within the provisions of the immigration law.

Under the present system of care, involving isolation of small groups or single cases, the expense is out of all proportion to the care of other indigents of the state. The opportunity for systematic study of the various types of the disease is lost, and the lack of facilities and the utter loneliness of the patients cared for in isolated prison-like leprosaria, defeats the end for which segregation is practiced.

A national leper home, located in a salubrious climate and provided with adequate facilities, would obviate these difficulties. Experience in the past has taught that such an institution would in no way be a menace to the health of the community, no case having been contracted by an attendant of the Louisiana leper colony nor by any inhabitant of the neighborhood during the past ten years. Life in such an institution, in addition to decreasing the danger of spread, would

1. Jour. A. M. A., Aug. 11, 1906.
2. Senate Document No. 269.
3. Transactions of the Third Annual Conference of State and Territorial Health Officers.

offer a larger field for study, and by providing sources of occupation and amusement would in a great measure relieve the absolute hopelessness of this otherwise hopeless class.

CAISSON DISEASE AND MEDICAL CERTIFICATES.

The series of tunnel operations that are now being carried on in the neighborhood of New York City have furnished abundant opportunities for the study of that curious affection of the nervous system called by the workmen the "bends," but known in medicine as caisson disease, and which we recently discussed from another viewpoint.[1] In addition to the necessity of gradual decompression, emphasized in our previous article, experience shows that a certain number of persons seem to have an idiosyncrasy for the disease and suffer from it under circumstances in which others have worked for long periods without any serious effects or even any signs of the pathologic conditions that prove so injurious and even fatal to their fellow-workmen.

The underlying lesions of the disease consist of small lacerated areas in the central nervous system consequent on the expansion of gas at certain points. Owing to the high pressure at which air is inspired, it exists within the body in a considerable degree of compression. If this be suddenly relieved, as happens when a workman —without the precautions of the interlocking system— passes from the caisson to the outer air, then minute ruptures of the tissues of the central nervous system take place and small hemorrhages ensue, because the free air present is usually contained within small blood vessels, and if these lesions occur at important points lasting injury or death is the result. In order to avoid such unfortunate consequences, strict medical examinations of the men to be employed have been required and a medical certificate demanded before the workmen are allowed to enter the caissons. As the result of careful investigation in certain recent cases, it would seem that some workmen have succeeded in evading these regulations, though at awful cost to themselves. Some of the strong, healthy men have been selling their medical certificates to other less robust individuals who either had actually been refused employment on the work or felt sure that they would be, and the consequences have been, as might be expected, very serious for the substitutes.

The whole affair has furnished a striking reminder of the fact that medical certificates generally will probably have to be accompanied by photographs, as they are required to be by law in certain of the European countries, if they are to be of any value. If workmen will risk their lives in order to secure work in so dangerous a trade, in spite of the precautions that are taken to save those who are almost sure to succumb, it can be readily understood that medical certificates will be passed on much more freely when issued under other circumstances. We are coming to a point where medical certificates are to be required of workmen much more frequently, both for their own protection and that of others entrusted to their care, than has been the case in the past. Proper regulations, therefore, will have to be maintained to guard against this abuse of certificates or they may become the source of more harm than good.

1. The Journal A. M. A., Sept. 1, 1906.

THE REQUIREMENTS FOR THE PRACTICE OF SURGERY IN HOSPITALS.

In his presidential address before the Colorado State Medical Society,[1] Dr. H. G. Wetherell discusses the so-called open hospital and certain abuses connected therewith. He points out that "throughout the west the hospitals are open to all reputable practitioners of medicine, and any of them may send a patient to a hospital and undertake any surgical operation he chooses, regardless of his lack of skill or experience in performing such operation." That the privilege of the open hospital is subjected to great abuse and that surgery is practiced both in and out of hospitals by incompetent and inexperienced men are, of course, matters of common knowledge among physicians. Dr. Wetherell's frank discussion of the situation is additional evidence of the existence of a feeling that the time has come when steps must be taken toward regulation and reform.

In view of the fact that under our present conditions any licensed physician may practice surgery if he so chooses, no matter whether or not he is in possession of the necessary training and ability, the question as to who is to be allowed to operate in a hospital must be decided by the hospital itself. Of course, the practice in some places, now long continued, of unrestricted hospital privileges can not be abolished or reformed at once. The reform must be brought about gradually, and Dr. Wetherell suggests that the hospitals in a city might unite in referring questions of this kind to a general board of hospital councilors for discussion, advice and even final action. Such boards might result in much good if placed on a firm basis. We can see, for instance, that a careful statistical study on a uniform basis of the surgical operations and their results in the various hospitals in a city would afford much valuable information as to what steps ought to be taken in order to secure the best results. Publicity would be a powerful factor in directing the attention of those most interested to the need for stricter regulation of surgery in the open hospitals.

As pointed out by Wetherell, we have in Maurice H. Richardson's address at the Portland session of the American Medical Association an excellent discussion of the great question as to who should practice surgery.[2] This address should be studied by all who desire to

1. Colorado Medicine, October, 1906; abstract in The Journal, October 27, p. 1403.
2. The Journal A. M, A., Oct. 7, 1905.

learn the requirements necessary for a reasonably successful surgical practice as conceived by those best fitted to know. We hope that the important practical problems discussed by Richardson and by Wetherell may continue to receive increasing thought and consideration, so that before long more definite and exacting requirements for entrance on surgical practice may become established than is the case now. In this phase of the evolution of American surgery our hospitals play a rôle of great responsibility which our hospital authorities must be brought to realize more keenly than is now the case in many parts of the country.

X-RAY DANGERS.

Up to the present time the dangers of the *x*-ray have been largely believed to be confined to the accidental burns, at least in the ordinary therapeutic use of the agent. Of course, with long-continued and frequent exposures more serious results are admitted as possible, as in the well-known cases of certain operators and experimenters, such as those of Edison's assistant and the English expert, noticed in our London correspondence this week.[1] Dr. Edsall's paper, in the present issue of THE JOURNAL,[2] however, points out some perils that, even in the ordinary brief exposures, had not been generally anticipated. It may be that among the almost innumerable cases thus treated up to the present time there have been some serious accidents that should have been, but were not, credited to the ray, and Dr. Edsall's observations would certainly indicate such a possibility. Indeed, he gives testimony as to their actual occurrence. His experimental results, moreover, show a far more serious constitutional effect of this agent than had been generally suspected. It may be that we have sometimes been playing with fire in the use of this agent and have unconsciously caused pathologic conflagrations, so to speak. It is highly probable that in the vast majority of cases no harm can result, but the parallel with anesthetics is an apt one and seems to fit the case thoroughly. The recent death of a Pennsylvania capitalist while undergoing an application of the *x*-ray, whatever may have been the actual cause of death, is at least suggestive of caution in its use. There is also to be considered the question of the effect of the *x*-ray on the reproductive organs in causing sterility, as well as the possibility of psychic effect in some nervous cases, which may be even dangerous in rare instances. The beneficial effect of the ray in certain diseases is unquestionable and their value for surgical diagnosis is even better established. There is a great deal yet to be learned, however, as regards both its physiologic and its pathologic effects.

THE DEAD LINE IN SPORTS.

Certain periodicals and magazines in Great Britain and in this country have been discussing the "dead line" in sports, i. e., the age limit beyond which certain sports must not be indulged in or serious consequences may result. It has been claimed, for instance, that football should not be played after 30 because of the danger of injury to the gradually hardening tissues of the adult after full growth has once been reached. The age limit for cricket in England and for baseball in this country was set down as 40, though it is confessed that some men can indulge in these sports with impunity after this age. It seems impossible, however, to determine any absolute limitation for individuals in this matter since all depends on the condition of heart and arteries, as well as the facility with which the necessary movements are accomplished. It is well-known, for instance, that England's greatest living cricket player continued to indulge in the game until after sixty, without either injuring himself or losing any of his skill. Not a few of our baseball players in this country have been fifty years of age before they gave it up, and yet maintained their reputations for skilful playing until the end of their baseball career. The "dead line" in sports, however, is an individual proposition, and does not depend on set rules or supposed age limitation. Provided the indulgence in sport is kept up more or less continuously, a man's own feelings in the matter are likely to provide better data as to when such exertion must be given up than any hard and fast rules. On the other hand, there is distinct danger for a man who has been a good player at a particular sport in his younger years if he should attempt to indulge in it after a long interval during which he has given no time to it. This is where the most serious danger lies. Such a man knows nothing of his limitations, and in attempting to accomplish as much as when he was younger, very easily overdoes the exertion that his present condition of lungs and heart and arteries will permit. Instead of discouraging indulgence in out-door sports after middle life by the setting of artificial limitations, we should rather encourage them, and especially emphasize the advisability of maintaining unimpaired to a rational degree the capacity for exercise acquired by the individual as a young man.

CHINA AND THE OPIUM TRAFFIC.

Hard on the condemnation of the opium traffic by the British parliament, noted in THE JOURNAL, Aug. 22, 1906, comes the announcement that the Chinese government has issued an edict making provisions for the suppression of the use of opium in its dominions. In this it follows the example given by Japan, which, both in its own territory and in its outlying dependencies, has made the use of opium a matter of strict legal restriction for a long time past, and of Australia which has had a rigid law since the beginning of the present year. England will, therefore, be helped in the right way toward abolishing the opium business, so profitable in the Indian revenue, by the loss of its principal market—that is, if the Chinese government is honest and can enforce its laws. It has been hinted by correspondents in the public press that it only intends to establish a profitable monopoly for itself, but this, perhaps, may be doubted. The evil of opium using is probably greater in China than anywhere else in the world and it follows the Chinese wherever they go and contaminates other races. It is really a world question and one in which

1. See page 1498.
2. See page 1425.

every step of progress should be welcomed by every well wisher of humanity. Opium as a medicine is invaluable, but its non-medicinal use is a curse wherever it exists.

THE INDEX MEDICUS.

It is reported that the Carnegie Institution is considering the discontinuance of the *Index Medicus* on account of lack of financial support from the medical profession. It is to be regretted that such a reason exists; there should be sufficient support for the *Index,* now the price has been made moderate. The *Index Medicus* holds a place by itself among periodicals. It is the one accurate and complete bibliography of current medical literature, and its discontinuance would be a world-wide misfortune.

Medical News

ALABAMA.

College Opens.—The Birmingham Medical College opened for its thirteenth annual session, October 3, with addresses by the dean, Dr. Benjamin L. Wyman, Dr. E. D. School and Dr. E. P. Hogan, secretary of the college. The only faculty change noted is the appointment of Dr. E. P. Hogan, who succeeds Dr. John C. La Grande, deceased, as secretary of the faculty.

Personal.—Dr. Rhett Goode has been elected dean of the Medical College of Alabama, Mobile, vice the late Dr. George A. Ketchum.——Dr. Henry A. Moody and wife, Mobile, had a narrow escape from death in the recent storm and flood which devastated the Gulf Coast.——Dr. T. L. Colwell has been appointed physician at the furnaces of the Tennessee Coal, Iron and Railway Co., Bessemer, vice Dr. George A. Hogan.

ARKANSAS.

Diphtheria.—On account of an epidemic of diphtheria, the public school of Harrisburg has been ordered closed temporarily, and children have been forbidden to attend public gatherings.

Runyan Resigns Secretaryship.—At the meeting of the State Board of Medical Examiners, held October 9, the resignation of Dr. Joseph P. Runyan, secretary of the board, was received, and Dr. Fred T. Murphy, Brinkley, was elected in his stead. As a mark of the esteem in which he is held by the members of the board, Dr. Runyan was presented with a gold-headed cane, which was inscribed, "Arkansas State Board of Medical Examiners to Dr. J. P. Runyan, an Exemplary Secretary, 1906."

Medical Colleges Open.—The Medical Department of the University of Arkansas, Little Rock, opened for its regular term October 1. The opening address was made by Dr. Edwin Bentley, dean of the faculty.——The formal opening of the College of Physicians and Surgeons, Little Rock, and the Little Rock Sanitarium was held October 1, and the college opened for its regular work October 3. The opening addresses were made on that day by Dr. William C. Dunaway and Dr. Joseph P. Runyan, dean of the faculty, presided.

CALIFORNIA.

Hospital Burns.—The Military Hospital at the Presidio of Monterey, a large two-story frame building, was totally destroyed by fire October 13. Although the building was full of patients, some of whom were critically ill, all were removed in safety. The loss will probably amount to $50,000.

Faculty Changes.—At the annual meeting of the faculty of the University of Southern California, College of Medicine, Los Angeles, the resignations of the dean, Dr. Walter Lindley, and of the secretary, Dr. William D. Babcock, were received and accepted. The vacancies were filled by the election of Dr. William D. Babcock as dean, and Dr. George H. Cress as secretary. The resignation of Dr. Lindley was due to the pressure of other duties, and a vote of thanks was tendered him for his efficient services during his term of office.

Personal.—Dr. Jonas J. Moyer has been elected health officer of Mayfield.——Dr. Herbert F. True, Los Angeles, has returned after a year abroad.——Dr. Edwin Bunnell, San Francisco, was recently operated on for appendicitis at the Scobie Sanatorium.——Dr. Henry E. Sanderson has been elected a member of the Stockton board of education.——Dr. Charles G. Stivers, Los Angeles, has gone to the Atlantic seaboard.——Dr. and Mrs. William E. Hopkins, San Francisco, left for Europe, October 15.——Dr. Joseph A. Champion, Colton, who suffered severe injuries in a bicycle accident recently, is now convalescent.——Dr. and Mrs. Emmet Rixford, San Francisco, are taking a trip to the Atlantic coast.

COLORADO.

Typhoid Fever.—At the meeting of the Denver County Medical Society, October 2, the general opinion prevailed that the alarming number of typhoid-fever cases in the city was directly due to contaminated water, and that unless some effective work is done by the city health department and the water supply companies before next summer, a still greater number of cases may be expected.——It is reported that Leadville is on the verge of an epidemic of typhoid fever.

The Colorado Medical Legislative League.—The physicians of Colorado have an organization for political purposes with the above name. The league is non-partisan, and has considerable influence which is used openly but effectively when necessary. A circular has just been sent to the physicians of the state which reads as follows:

Dear Doctor:—While it would be folly for the medical profession to enter partisan politics as an organization, our sense of professional duty to the public obligates us to support candidates, irrespective of party affiliation, who favor the protection of the public health through the enactment of wholesome medical legislation.

The political influence of the doctor has been overlooked by the managers of partisan politics, but there is now a general awakening to our power as a political factor at the polls.

Our support, and the election, of men of different party affiliations, who favor enlightened legislation on the subject of public health, will present to them the most potent of object lessons.

We should strongly support those candidates who will labor for such legislation.

We enclose a list of candidates who have, in the past, demonstrated that they are worthy of our support. We urge on you the necessity of exerting your strongest efforts actively in their behalf.

Do not be satisfied merely with casting your own vote; but in your daily rounds do active campaign work, and secure the support of as many voters as possible.

Every doctor should be able to secure at least a half-dozen votes in behalf of the candidates whom we find worthy of support. In this sort of work it is necessary to favor men, as such, irrespective of party affiliations.

The time for action is short. Your efforts should be quick and vigorous.

CONNECTICUT.

Infectious Diseases.—During September there were reported to the State Board of Health 14 cases of measles in seven towns; 49 cases of scarlet fever in 17 towns; one case of cerebrospinal fever; 173 cases of diphtheria in 29 towns; 23 cases of whooping cough in 12 towns; 201 cases of typhoid fever in 54 towns, and 23 cases of consumption in 10 towns.

Personal.—Dr. James M. Keniston has resigned as superintendent of the Hartford Hospital and has been appointed to a position on the staff of the Connecticut Hospital for the Insane, Middletown.——Dr. and Mrs. Frank H. Whittemore, New Haven, have returned from Scotland.——Dr. Steven J. Maher, New Haven, has returned from attendance at the International Convention on Tuberculosis, The Hague.——Dr. Timothy T. Cohane, New Haven, has returned from Germany.

GEORGIA.

Personal.—Dr. Marion A. Born, Lawrenceville, is reported to be seriously ill with septicemia, contracted during a surgical operation.——Dr. Hansell Crenshaw, Atlanta, suffered a concussion of the brain by being thrown from a street car in Atlanta, September 26.

Election of Officers.—The Fifth District Medical Society met in Atlanta, October 16, and after an address by Dr. Henry H. Martin, Savannah, president of the Medical Association of Georgia, the following officers were elected: Dr. John C. Olmsted, Atlanta, president; Dr. E. Bates Block, Atlanta, vice-president, and Dr. Elias W. Ragsdale, Covington, secretary.

College Opens.—The seventy-fifth annual session of the Medical Department of the University of Georgia, Augusta, opened October 2. Dr. William R. Houston was appointed lecturer on diseases of the nervous system and Eugene L. Johnson lecturer on medical jurisprudence. The opening address was delivered by Dr. Joseph E. Allen on "The Twentieth Century Doctor in the Making," in which he divided the making of the

doctor into three periods: First, that of primray education; second, that spent in medical college, and third, that devoted to active practice.

ILLINOIS.

Typhoid Fever.—Typhoid fever is reported to the State Board of Health to be prevalent in 34 localities in the state in a more or less epidemic form.

District Society Meeting.—Dr. F. Whitfield Smith, Bloomington, councilor of the fifth district, has arranged for a meeting of the Tazewell County Medical Socicty for reorganization, at Pekin, November 8.

Commends Supervisors.—The Illinois State Board of Health has commended the action of the board of supervisors of Sangamon County in providing for the isolation of tuberculous patients in hospitals by the purchase of $200 worth of tents.

Military Tract Meeting.—The Military Tract Medical Association held its sixty-seventh annual session at Macomb, October 18. The following officers were elected: Dr. John P. Roark, Bushnell, president; Drs. Samuel Stremmell, Macomb, and Ernest E. Davis, Avon, vice-presidents, and Dr. Franklin E. Wallace, Monmouth, secretary and treasurer (re-elected).

Smallpox.—The smallpox situation at Wyoming is becoming serious. On October 25, 21 cases were reported to be present. ——Moline reports 3 cases of smallpox and the health commissioner has instructed the superintendent of schools to notify school children in the infected district that they must be vaccinated or remain away from school.——Smallpox is reported from Chillicothe.

State Charities Conference.—The eleventh annual session of the Illinois State Conference of Charities was held in Chicago, October 24, 25 and 26. The more important subjects discussed were the same as those at the Springfield meeting of the week before (see page 1384). The plan of converting all public asylums in the state into state institutions was approved by the speakers and by the conference. The establishment of a village for epileptics and a sanatorium for consumptives was also advocated. The conference authorized the appointment of five commissioners to act in conjunction with the State Board of Charities during the coming session of the legislature in procuring legislation favorable to the program outlined by the board.

Chicago.

Policeman Sells Rheumatism Cure.—B. H. Reed, a policeman, is said to have been fined $100 and costs, October 26, for practicing medicine without a license. The prosecution was instituted by the attorney for the State Board of Health, who claimed that Reed sold a medicine known as "Reed's Peerless Rheumatism Cure."

Deaths of the Week.—During the week ended October 27, 505 deaths were reported from all causes, 25 more than for the previous week and 35 more than for the corresponding week of 1905, equivalent to an annual death rate per 1,000 of 12.85. Pneumonia led the death causes with 69, followed by consumption and violence (including suicide), each with 49, and acute intestinal diseases with 43, heart diseases with 41, nephritis with 35, and cancer and nervous diseases with 24 each. Diphtheria caused 12 deaths and scarlet fever and typhoid fever each 8.

Pasteur Institute Report.—The Chicago Pasteur Institute announces a summary of the results of the preventive inoculation against hydrophobia attained since its inauguration in 1890. A total of 2,775 patients have received the anti-rabic treatment; of these, 2,474 were bitten by dogs, 100 by horses, 84 by cats, 29 by cows, 23 by skunks, 9 by calves, 9 by wolves, 5 by pigs, 4 by coyotes, 4 by mules, 2 by burros, and one each by a rat and a sheep. Hydrophobic human beings infected 31 patients. Of the patients, 1,406 had received severe and multiple bites on the hands and wrists, 584 on the leg and thigh, 388 on the face and head, 559 on the arms and 42 on the trunk. Only 7 deaths were reported, giving a mortality rate of 0.25 per cent. For reasons unknown seven individuals abandoned treatment, two of whom subsequently died from hydrophobia.

INDIANA.

Ground Broken for Hospital.—On October 15 Governor Hanley turned the first shovelful of earth in the excavation for the foundation of the new State Hospital for the Insane, Madison.

Physicians' Club Meets.—The Elwood Physicians' Club held its annual meeting October 9. The following officers were elected: President, Dr. Jabez H. Millikan; vice-president, Dr. Robert E. Marshall, and secretary-treasurer, Dr. Frank F. Mendenhall.

Burning Leaves a Cause of Illness.—The Indiana State Board of Health has decided that the smoke from burning leaves is a cause of eye and throat diseases among children, as well as a nuisance and an annoyance. The local health officers have been instructed to give notice to the people not to burn leaves.

Work in the Epileptic Village.—At the state epileptic village, Newcastle, two new buildings are being erected, the railroad has completed the siding to the site, and work has begun in earnest. The buildings under erection are to be used, one for the superintendent and the other for a dormitory to accommodate about 50 patients.

Physician Loses License.—The State Board of Medical Registration on October 12 revoked the license of George L. Dickerson, Terre Haute, convicted of having allowed Robert J. Dickerson, his brother, to use his diploma and certificate for practice in Logansport. Dr. Dickerson will, it is reported, appeal the case to the Superior Court of Vigo County.

Communicable Diseases.—Smallpox, diagnosed as "Cuban rash," has made its appearance in Richmond.——Diphtheria is said to be prevalent in Van Buren Township, Brown County, where 40 cases and 4 deaths have been reported.——The epidemic of diphtheria, which has been raging in Delaware County for three months, is reported to be abating.

Personal.—Dr. James M. Larimore, Greenfield, was assaulted in his office October 11, by Samuel Seward, who was angry because the physician had not responded to a call at his house.——Dr. Harvey Voyles, Bedford, fell from a ladder from the second story of his house, October 18, breaking both of his legs at the ankle.——Dr. F. Will Krueger has been appointed city physician of Richmond to succeed Dr. Allen L. Bramkamp. ——Dr. Joseph F. Gillespie has been appointed local surgeon of the Vandalia Railroad, at Greencastle, vice Dr. Ezra B. Evans, resigned.——Dr. Walter N. Fowler, Bluffton, who was a member of the Wellman polar expedition, arrived at his home from the Arctic regions, October 18.

KENTUCKY.

Must Report Tuberculosis.—The Board of Public Safety, Louisville, on October 18, issued an order requiring physicians of the city to report all cases of tuberculosis to the health office.

Correction in State Meeting Report.—In the report of the meeting of the Kentucky State Medical Association, page 1402, Dr. Arch Dixon is reported to have said: "An early resort to external urethrotomy will greatly *hasten* the number of cases, etc." He asks us to announce that this should read "will greatly *lessen*, etc."

Tuberculosis Hospital for Louisville.—By the will of the late Dr. John A. Ouchterlony, his estate, valued at $100,000, was devised to the Rev. Charles P. Raffo and two other residuary legatees that a tuberculosis hospital for Louisville might be founded. The will was contested, but has now been compromised, and the bequest thus made available for the original purpose.

Personal.—Dr. Mandeville Thum, Louisville, in reported to have been adjudged insane by the criminal court, October 15. ——Dr. Benjamin Letcher, Henderson, who was stricken with paralysis, October 15, is reported to be in a critical condition. ——Dr. Walter R. Francis, Bowling Green, was seriously bruised about the head and face in a runaway accident, October 11.

MARYLAND.

Baltimore.

Added to Medical Staff.—The following have been added to the staff of the Church Home and Infirmary: Drs. W. S. Thayer, Lewellys F. Barker, Julius Friedenwald, Josiah M. Slemons, Richard H. Follis and John Ruhräh. During the summer the hospital averaged 50 patients daily, and it was impossible to accommodate all applicants. Early next year an addition will be made to the building.

Personal.—During the absence of Dr. Henry Hurd in Europe Dr. Herbert Norton will fill his place as superintendent of the Johns Hopkins Hospital.——Dr. Howard A. Kelly has returned from his summer vacation in the Canadian woods and abroad. ——Dr. Hodge A. Newell has resigned from the house staff of the City Hospital to commence practice in Maplesville, N. C., his native town.——Dr. Edward Grempler has been elected president of the Southwest Baltimore Improvement Association.——Prof. D. M. R. Culbreth has resigned the chair of materia medica at the University of Maryland School of Medicine and Prof. J. E. Gichner will deliver the lectures on that branch.

NEBRASKA.

Fire in Medical School.—Fire broke out in the basement of Creighton Medical School, October 10, and for a time threatened the entire building, but by strenuous efforts the fire department managed to confine it to the basement and first floor. The damage is estimated at about $1,000, fully covered by insurance.

Diphtheria.—Diphtheria has broken out in the Walnut Hill district, Omaha, and the Health Commissioner has warned the citizens of that district regarding the disease. On October 20 the commissioner sent a circular to every physician in Omaha requesting coöperation with the health department in stamping out the disease.

Personal.—Dr. J. M. Alden has retired from the superintendency of the Norfolk Hospital for Insane, and Dr. George A. Young, Lincoln, has assumed charge of the institution.——Dr. Harrison A. Wigton, Omaha, has been appointed assistant superintendent of the Nebraska Hospital for the Insane, Lincoln, vice Dr. George A. Young.——Dr. Claude W. Mason, Omaha, has gone to Siam as a medical missionary, under the Presbyterian Board of Foreign Missions.

NEW YORK.

Wertheim in Buffalo.—Prof. Ernst Wertheim of Vienna spent October 7 and 8 in Buffalo, the guest of Drs Joseph P. F. Burke and Max Keiser.

Medical Library Association Election.—At the annual meeting of the Utica Medical Library Association, October, Dr. Frederick J. Douglas was elected president, Dr. Conway A. Frost, vice-president, Dr. Fred W. Smith, secretary, Dr. James E. Gage, treasurer, and Dr. Smith Baker, librarian.

Buffalo Deaths.—For the nine months ended September 30, 276 more deaths were reported in Buffalo than for the corresponding period of 1905. The increase in deaths is apparently due in a great measure to summer diseases, 301 more deaths having occurred in the summer months than in the corresponding months of 1905. There has been a slight falling off in the deaths from smallpox, scarlet fever and diphtheria, and a marked decrease in the deaths of children under 5 years of age.

Personal.—Dr. Roswell Park, Buffalo, has been elected a member of the Association of French Surgeons. He is said to be the fourth surgeon in the United States to become a member of this society.——Dr. A. Wilson Dods, Fredonia, and Dr. C. H. Richards, Dunkirk, sailed October 7 for Europe.——Dr. Cornelius W. De Baun, Fonda, was thrown from his carriage in a runaway accident, October 1, and sustained a compound fracture of the right leg above the ankle.——Dr. William M. Gibson has been elected president, Dr. Earl D. Fuller, vice-president, and Dr. Andreid Sloan, secretary-treasurer of the Medical Society of the Staff of St. Luke's Hospital, Utica.——Dr. Theodore I. Townsend, for several years assistant physician at the Utica State Hospital, has resigned to accept a position as first assistant of the Dannemora State Hospital.——Dr. Leonard Saxer, Syracuse, has been appointed a member of the Board of Managers of the St. Lawrence State Hospital, Ogdensburg, to fill an unexpired term.——Dr. Charles C. Duryee has been elected president, Dr. Edward J. Wiencke, vice-president, and Dr. Walter W. Goddard, secretary of the medical staff of the Ellis Hospital, Schenectady.

New York City.

The Harvey Society Lecture.—The second lecture in the Harvey Society course will be delivered at the New York Academy of Medicine, Saturday evening, November 3, at 8:30, by Prof. C. A. Herter, on "The Common Bacterial Infections of the Digestive Tract and the Intoxications Arising from Them."

Library Presented.—The library of the late Dr. Willard Parker, containing 4,000 volumes, was formally presented to the Medical Society of the County of Kings, October 16. The presentation was made by Dr. Willard Parker, his son, who will be made an honorary member of the association.

The Bulkley Lectures.—Dr. L. Duncan Bulkley will give his eighth annual series of clinical lectures on diseases of the skin in the out-patient hall of the New York Skin and Cancer Hospital on Second Avenue and Nineteenth Street, on Wednesday afternoons at 4:15, beginning November 7. The course will be free to the medical profession.

Friction at Bellevue.—A full meeting of the board of trustees of Bellevue and the Allied Hospitals was held October 25, when the difficulties were discussed that have arisen between the superintendent, Dr. Armstrong, and the members of the staff, who allege that the reform measures introduced by Dr. Armstrong are in some instances too severe.

New Home for Hospital.—Invitations are out for the formal opening of the new building of the Manhattan Eye, Ear and Throat Hospital, October 30. The new building is seven stories in height and will have 141 beds. On the fourth floor are 27 private rooms, where surgeons may treat their own patients. At the old hospital 30,000 new patients were treated during the past year, and 120,000 visits of patients were registered.

Contagious Diseases.—There were reported to the sanitary bureau for the week ended October 20, 359 cases of tuberculosis, with 174 deaths; 194 cases of diphtheria, with 22 deaths; 121 cases of typhoid fever, with 25 deaths; 89 cases of scarlet fever, with 3 deaths; 61 cases of measles, with 4 deaths; 24 cases of whooping-cough, with 13 deaths; 11 cases of cerebrospinal meningitis, with 13 deaths; 20 cases of varicella, and 2 cases of smallpox—a total of 881 cases and 254 deaths.

Personal.—Dr. Timothy D. Lehane, coroner's physician, is suffering from septicemia, due to an autopsy wound.——Drs. Earl W. Phillips and Harry W. Satchwell, internes at Bellevue Hospital, are ill with typhoid fever.——Dr. James E. Kelly, who was severely scalded on his yacht several weeks ago, has been removed to his summer home at Bayville, L. I.——Dr. William S. Bainbridge was chosen honorary secretary of the First International Conference on Cancer, held in Heidelberg last month.——Dr. F. G. Emerson, Brooklyn, has returned from Europe.

Hospital News.—The Margaret J. Plant pavilion for private patients, connected with St. Luke's Hospital, was opened to receive patients October 18. The building, which has been completed at a cost of about $500,000, is eight stories in height, nearly a block in extent and contains private rooms for 65 patients.——Stock aggregating $90,000 is to be issued for hospital purposes by the Board of Estimate. Of this the new Fordham Hospital will receive $40,000 for furnishings, the Gouverneur Hospital, $20,000 for a new wing, and the new Harlem Hospital, $30,000.——Dr. George H. F. Schrader has proposed to give an addition to the Cancer Hospital at Hawthorne, known as Rosary Hill Home. The building is intended to be an entertainment hall for the patients and visitors.

NORTH CAROLINA.

Diphtheria Decreases.—The city health officer of Kinston reports that the diphtheria situation is very much improved and hopes very shortly to be able to release all patients at present under quarantine.

Personal.—Dr. William C. Mebane, Mount Airy, is recovering from an attack of typhoid fever.——Dr. P. L. Murphy, superintendent of the State Hospital at Morganton, underwent operation at the Second Protestant Infirmary, Baltimore, October 18.

Annex to State Hospital.—The new annex to the North Carolina State Hospital for the Insane, Raleigh, will soon be ready for occupancy. The building will have accommodations for 102 additional patients and will in a measure relieve the overcrowding of the institution, but it will be impossible to provide for several hundred outside the institution until after the meeting of the legislature in January next. when it is hoped that provision for additional buildings will be made.

OKLAHOMA.

Insane Asylum Report.—The quarterly report of the Oklahoma State Insane Asylum, Norman, made October 2, shows that there were 523 patients in the asylum. During the three months just past 68 patients were received, 30 discharged and 24 paroled.

Would Prohibit Sale of Cocain and Morphin.—A bill will be asked to be enacted by the first state legislature prohibiting the sale of cocain and morphin without a physician's prescription. The bill is modeled on the statutes now in force in Missouri and Illinois.

Hospital Items.—It has been suggested that Oklahoma City make an arrangement with the management of St. Anthony's Hospital, whereby the facilities of that institution may be at the service of the city when required.——Dr. W. A. Fullington has been chosen president of the staff of Bethany Hospital, Oklahoma City; Dr. Claudius B. Bradford, secretary, and Drs. John A. Reck and Alexander B. Baird, members of the executive committee.——The Methodist Episcopal Church of Oklahoma and Indian Territory is about to take charge of Guthrie Hospital.——Drs. W. M. Turner, James L. Lewis and David A. Myers are erecting a modern hospital at Lawton to cost $8,000.

OREGON.

Infectious Diseases.—An epidemic of typhoid fever is said to be raging in the southern part of Wasco County.——Diphtheria has appeared among the school children of Portsmouth, where four cases are reported.

Must Report Tuberculosis.—At a meeting of the Portland board of health, October 1, a resolution was adopted to make it compulsory on all physicians to make a report of patients afflicted with tuberculosis, in accordance with the requirements of the city ordinances.

Eastern Oregon Physicians Meet.—The Eastern Oregon District Medical Society met in Pendleton, September 26, and elected the following officers: President, Dr. Jacob Prinzing, Ontario; vice-presidents, Drs. J. A. Geisendorffer, The Dalles, and A. E. King, Antelope; secretary-treasurer, Dr. Clark E. Saunders, Union; Dr. Grant W. Gregg, Wallowa, member of the board of censors; Drs. Charles J. Smith, Pendleton, and John A. Reuter, The Dalles, delegates to the state society, and Drs. Lazier, Weston, and Charles W. Thomas, Milton, alternates. The next session will be held at Radium Springs, Baker County.

PENNSYLVANIA.

Diphtheria.—Diphtheria is said to be specially prevalent in the Second ward of Allegheny, in which 9 cases have recently appeared, with 2 deaths. In other sections of the city 11 cases developed during the same period of time. On account of the number of cases the department of health has closed the Sherman school.

Hospital Items.—The annex to the Oil City Hospital, erected at a cost of $25,000, has been completed. The amount necessary for its erection was donated by an anonymous benefactor. ——A mass-meeting was held recently at Lansford to encourage the movement for the establishment of a hospital in Panther Creek Valley.——The Presbyterian Hospital in Allegheny will be partly under roof before cold weather sets in. The building will cost $250,000.

Alienists Meet.—The semi-annual meeting of the Association of Trustees and Physicians of State and Incorporated Hospitals for the Insane of Pennsylvania was held at the State Asylum, Philadelphia, and Thomas C. Zimmerman, trustee of The following officers were elected: Dr. Hugh B. Meredith, superintendent of the State Hospital for the Insane, Danville, president; Dr. Robert H. Chase, superintendent of Friends' Asylum, Phnladelphia, and Thomas C. Zimmerman, trustee of the State Insane Asylum for the Chronic Insane, South Mountain, vice-presidents, and Dr. Morris S. Guth, superintendent of the State Hospital for the Insane, Warren, secretary. The next meeting will be held at the State Asylum for the Insane, Norristown.

Personal.—Dr. Samuel C. Seigle, Center Square, after practicing for 33 years, has retired.——Dr. Simon P. Earnest, Delmont, who underwent an operation for appendicitis several weeks ago, has recovered.——Dr. Andrew B. Gloninger, Lebanon, returned from Europe October 7.——Dr. J. Harvey Fronfield, Media, entertained the Delaware County Medical Society at the Rose Tree Inn, Chester, October 11.——Dr. William C. Meanor, Beaver, has been appointed oculist for the Pennsylvania Lines West.——Dr. and Mrs. William H. Taylor, Irwin, have returned from Europe.——Dr. Samuel M. Todd, Boyerton, who has been seriously ill, is reported to be convalescent. ——Dr. Thomas C. Stellwagen, Media, fractured his right forearm recently while on his power boat.——Dr. Frederick S. Kaufman, Lebanon, who has been seriously ill, is reported to be much improved.

Philadelphia.

Typhoid Cases.—During the week ended October 19, 93 new cases of typhoid fever were reported, an increase of 6 over the number reported for the previous week. Cases are reported from every ward in the city.

Course in Internal Medicine.—Drs. William E. Hughes and Robert N. Willson will conduct a series of postgraduate courses in internal medicine during the fall and winter in the wards of the Philadelphia Hospital. Each course will comprise six weeks of bedside teaching.

Personal.—Dr. William N. Angney, chief police surgeon, is reported to be critically ill with malignant disease of the stomach at the Pennsylvania Hospital.——Dr. S. Lewis Zeigler has been elected executive medical officer of the Wills Eye Hospital, and Dr. John H. Trinder, resident physician at Girard College.——Dr. David B. Birney was thrown from his carriage in collision with a trolley car, October 14, and badly bruised.

WISCONSIN.

Diphtheria Closes School.—The high school of Black River Falls was closed October 23 on account of diphtheria.

Wertheim in Milwaukee.—Dr. Ernst Wertheim, Vienna, has been the guest of Dr. Gustav A. Kletsch, Milwaukee.

College Opens.—The Wisconsin College of Physicians and Surgeons opened for its fourteenth annual session September 25. Dr. A. Hamilton Levings, president of the faculty, presided.

Should City Pay for Care of Consumptives?—The State Tuberculosis Commission has under consideration the advisability of commencing a friendly suit against the city of Milwaukee to determine whether or not that city can be compelled to segregate and care for its tuberculosis patients.

Illegal Practitioner Fined.—Robert E. Harter, claiming to be a "skin doctor," was arraigned in the district court of Milwaukee, October 8, charged with practicing medicine without a license, and is reported to have been fined $20 and costs. The attorney for the State Medical Board prosecuted the case.

Smallpox.—Five cases of smallpox were discovered in Two Rivers, October 18.——The local health authorities of Manitowoc report the appearance of seven cases of smallpox in the northern section of Manitowoc County.——A case of smallpox has appeared in the Mendota State Hospital for the Insane.

Do Not Wish Names Mentioned.—At a meeting of the Calumet County Medical Society, held in Chilton, it was resolved that the society should request the editors of all local papers circulating in Calumet County to refrain from mentioning the names of physicians in attendance in cases of illness or accident, and that members of the society discontinue their cards of announcement in the public press.

Personal.—Dr. Mark A. Bailey, Fennimore, has been appointed a member of the State Board of Medical Examiners, to fill out the unexpired term of Dr. Frank P. Klahr, Horicon, resigned.——Dr. August Sauthoff, Madison, has been elected assistant physician to the State Hospital for the Insane, Mendota.——Dr. James S. O'Brien has been elected president, Dr. George D. Ladd, vice-president, and Dr. George W. Fox, secretary-treasurer of the St. Mary's Hospital Board, Milwaukee.

GENERAL.

Convention on Epilepsy.—The National Association for the Study of Epilepsy and the Care and Treatment of Epileptics will hold its annual meeting in New Haven, Conn., November 8, under the presidency of Dr. Max Mailhouse of New Haven.

New England Railway Surgeons to Meet.—The New York and New England Association of Railway Surgeons will hold its sixteenth annual meeting at the New York Academy of Medicine, November 14 and 15, under the presidency of Dr. Joseph P. Creveling, Auburn, N. Y. On Wednesday morning there will be a symposium on shock, including papers on "Shock from Anesthesia," "Shock from Traumatism," "Psychic Shock" and "Postoperative Shock." The secretary is Dr. George Chaffee, 338 Forty-seventh Street, Brooklyn.

Light on Tuberculosis Congresses.—We are requested by the National Association for the Study and Prevention of Tuberculosis to publish the following note: Notices have been sent to many physicians throughout the United States and are appearing in the medical and public press regarding an "American International Tuberculosis Congress," to be held in New York City, November 14 to 16 next, and an association known as "The American Anti-Tuberculosis League," which is to meet in Atlantic City next June at the time of the meeting of the American Medical Association. It should be stated that the gathering in New York next November and the one in Atlantic City next June have no connection whatever with the International Congress on Tuberculosis authorized at the last session in Paris in 1905, which will hold its next meeting in Washington in 1908 under the auspices of the National Association for the Study and Prevention of Tuberculosis.

Health of Colon.—According to Dr. Mohr, in *Public Health Reports*, the health conditions of Colon and vicinity show a decided improvement during the past three weeks. The number of cases of malarial fever presented for treatment is considerably less, and fewer cases of pneumonia are being found. This improvement may be attributed to the prevailing good weather and the fresh winds, which have had the effect of drying up pools and collections of water, thus notably diminishing the number of mosquitoes. The work of permanently improving Colon is being rapidly pushed forward. The principal streets are being paved with vitrified brick and others are being macadamized. Before the advent of the next rainy season

all the houses in Colon will be connected with the water and sewerage systems. The reclaiming of large tracts of ground by drainage on the island now permits of extensive building which will relieve the overcrowding of houses, a feature which has greatly retarded the sanitary work in Colon.

FOREIGN.

Osler Gives Harveian Oration.—The Harveian Oration before the Royal College of Physicians, London, was delivered by Dr. William Osler, Oct. 18, 1906, on "The Growth of Truth, as Illustrated in the Discovery of the Circulation of the Blood."

Prevalent Diseases in Japan.—Passed Assistant Surgeon Cumming reports a widespread epidemic of what appears to be cerebrospinal meningitis in Tokio, and that plague seems to be rather serious in Waykayama ken, a prefecture not far from Kobe.

Advertising Write-ups Presented as Papers at Society Meetings.—An editorial in the *Deutsche med. Wochschr.*, October 11, comments caustically on the lack of oversight of communications accepted by scientific congresses. The text on which the editorial is based is an article on "The Chemistry and Technology of Malt Coffee," read at the last Naturforscher Congress. A hectographed summary of the article has just been received by the editor, arriving in an envelope stamped "Stuttgart" and with the printed heading, "Seventy-eighth Congress of German Physicians and Naturalists," thus suggesting that it was an official communication from the congress. Accompanying the abstract was a hectographed letter from the author, privat-docent Junghahn, of the Charlottenburg College of Technology, commending the article to the good graces of the editor and expressing the hope that he would publish the abstract. The editor comments that this "scientific communication" is being utilized in a not very nice way for advertising purposes, and evidently with the concurrence of privat-docent Junghahn. He exclaims further: "How many really good communications in the section may have had their time unnecessarily shortened to make way for this Junghahn article! The officers of a congress have the power, and it is their duty to see that these conditions are improved."

LONDON LETTER.

(From Our Regular Correspondent.)

London, Oct. 6, 1906.

A Physician a Victim to the X-Rays.

One of the principal *x*-ray specialists in the country, Mr. Hall-Edwards of Birmingham, president of the British Electrotherapeutic Society, has fallen a victim to his work. He was always greatly interested in photography, for which he gained medals all over the world. When the *x*-rays were introduced he was one of the pioneer workers and devoted himself to their study with enthusiasm. He worked at them unconscious of peril and neglected his general practice as a physician until he became one of the foremost experts in the country. In 1900 he went out as a radiographer in the Boer War, and afterward published the result of his experience on the battlefield. On his return he began to feel the ill effects of his work. Warts appeared on his fingers. He has excruciating pain, as if a red-hot needle were run into the hand and up the arm. He still continues his work, but he uses gloves. In a letter to the *British Medical Journal* he asks for some suggestions as to treatment. Despite all methods of protection his hands are steadily growing worse. He has not experienced a moment's freedom from pain for more than two years, and at times the pain is so severe that he is rendered absolutely incapable of work, mental or otherwise. In cold weather he is unable to dress himself and the pain experienced can not be expressed in words. On the back of each hand are from 50 to 60 warts, many of them confluent. Drugs have so far failed to give him the slightest relief. Ointments he finds as a rule to be injurious. The warts are so sensitive and painful that it is impossible to remove them with sandpaper. He therefore uses a treble-strength lotion of lead and opium in the form of a poultice. This softens the warts so that they can be removed by scraping with a knife. For two or three days after this application the pain is increased, but the fingers are rendered more pliable and mobile. The increased pain experienced after this treatment is due to the fact that in removing the warts small sores are left. The excruciating ever-present pain appears to be due to permanent irritation of the cutaneous nerves which nothing relieves and which is intensified by holding the hands in a dependent position and by cold. The pain is of a neuralgic character and is intensified from time to time by sudden stabs and jumps of such severity as to make him cry out. He has so far received so little relief from any method of treatment that he has given up all hope. Specialists all over the world—in France, Germany and America—have given him advice without effect. One suggestion was to use a preparation of pitch, it being thought that the darkness induced would have a healing influence. Cocain painted on, however strong, gives no relief. He does not take morphin because he can not endure the smallest dose. Hard lumps may be removed with emery paper, but they recur and develop into ulcers which take years to heal. He attributes his condition to the absence of precautions to protect himself, and warns other workers to be more careful.

Correspondence

Insurance Examination Fees.

————, Oct. 10, 1906.

To the Editor:—One would infer from recent protests on the subject of fees for life-insurance examinations that the *casus belli* is of recent origin, and yet with a few notable exceptions the companies that now pay less than a minimum fee of $5 have had a graded fee bill for many years. The only companies which I now recall that have recently adopted a graded fee bill are the Equitable, Mutual Life, Home Life, Germania, Security Mutual and Phoenix Mutual.

In my opinion, a graded fee bill is wholly wrong, unequitable and untenable, both in principle and practice, and if you will allow me space I will endeavor to show the logic of my position.

We are told that the medical fee should be in reasonable proportion to the premium received, and again that the policy holder can afford to pay but a small medical fee when the application is for a small amount, while on larger policies a larger fee can be allowed.

Such a position is untenable, because it implies that the medical fee bears a fixed relation to the face of the policy, whereas the muchly quoted "Section 97" of the new legislation specifically states that certain (4) expense items (among them medical examinations) incurred in securing new business shall not exceed in the aggregate the total loadings and mortality gains.

The law does not require or assume, as a graded fee bill would imply, that a company's policy shall be kept in classes according to their respective sizes, together with an expense account for each class. On the contrary, the law clearly contemplates that the tabulated amount of all premiums received on new business in any given calendar year shall be used as a basis for reckoning the aggregate amount of available for the (4) expense items named in "Section 97."

The loading and mortality gains as provided for in the new legislation are substantially the same on each $1,000 of insurance, and are just fifty times as much on an insurance of $50,000 as on an insurance of $1,000. Moreover, it matters not whether the insurance of $50,000 is on one life or on fifty lives, or on any number of lives between one and fifty.

Now, then, if it be true that the medical fee should be in reasonable proportion to the premium received, and if the policy holder can afford to pay but a small fee on small applications and a larger fee on larger applications, we can not escape the logical conclusion that the medical fee should be ten times as much on a policy for $30,000, for example, as on a policy for only $3,000. While the premises wholly justify the foregoing conclusion and no other, such a system would be manifestly unequitable to every interest involved.

Every premium is made up of three elements, viz., mortality fund, reserve fund and the expense fund, which is called loading. The first two are fixed by law and are the same for all companies operating on the same per cent. basis. Each company fixes its own loading, but it is approximately the same with all companies. The mortality gains are regulated by statistics and are substantially the same with all companies. On the standard forms of policies provided for in the new legislation, the "total loadings and mortality gains" equal from 65 to 75 per cent. of one annual premium.

From the foregoing facts we find that, in securing new business, any company may legally pay to its soliciting

agents, its inspectors of proposed risks and its medical examiners a sum of money equal in the aggregate to about 75 per cent. of the tabulated amount of all its first-year premiums. Moreover, while the companies may arbitrarily pay less than the amount named for the items mentioned, they can not pay more, and in fixing the amounts apportioned to agents, inspectors and examiners, respectively, they are bound by no law. It is unquestionably true, as shown above, that the medical fee bears no relation whatever either to the premium or to the face of the policy, but that the total amount paid to examiners is charged to a general expense fund.

The service required is, and very properly should be, equally thorough and uniform in all cases irrespective of the amount of the application. An examination made by any physician worthy of the trust and confidence placed in him by the company he represents will be just as complete and dependable in $1,000 cases as in cases of any other larger amounts.

I maintain that every feature of the entire subject warrants a uniform fee for a uniform service, the one commensurate with the other. If a uniform fee of $5 would amount in the aggregate to a sum out of proportion to the aggregate amount of premiums received, then it should be placed at a lower figure, provided always that it should be uniform just so long as the service is uniform.

In cases where large amounts are applied for, the interest of the company would be better subserved by having the opinion of two examiners, paying each the original uniform fee, instead of paying one physician $7.50 or $10 for the same service and the identical opinion which, in smaller cases, would be rendered for a smaller fee.

In other instances where additional urinalyses are required, or a microscopic analysis of the urine or sputum is desired, reasonable extra compensation should be allowed.

In the foregoing remarks it has not been my intention to say or imply that the aggregate amount paid by companies having a graded fee bill is less than it should be, but it has been my purpose to criticise any sort of a graded medical fee bill as being a wholly unequitable method of distributing this compensation.

Having clearly shown, it seems to me, that all the essential conditions connected with the subject warrant a uniform fee for a uniform service, let us see if a uniform medical fee of $5 is excessive. We have shown that the new legislation will allow the companies in securing new business to pay to their agents, inspectors and examiners a sum of money equal in the aggregate to about 75 per cent. of the aggregate amount of the first annual premiums.

Policies vary in amount from $1,000 to $1,000,000, but the amount of the average policy is not less than $2,000, being at the end of the year 1905 for the Equitable $2,605, for the Mutual Benefit, $2,301; for the Mutual Life, $2,306; for the Massachusetts Mutual, $2,241; for the Manhattan, $2,144; for the Penn Mutual, $2,354, and for the Provident Savings, $2,230; but for illustration we will place the amount of the average policy at only $2,000. The average premium for each $1,000 of insurance on the standard forms of policies provided for in the new legislation is not less than $30. Now, then, we have found that the average premium on the average policy is not less than $60. We have shown that the "loading and mortality gains" equal about 75 per cent. of the premium, which on the average policy is $45. On each (average) policy written the company will have not less than $45 to be paid to the agent, the inspector and the examiner.

Now, deduct $1 for the inspector, $5 for the examiner and $1 to help create a fund to pay the inspector and examiner in cases of rejected applications. The net result will be $38 for the agent's commission, which is equal to more than 60 per cent. of the premium. Moreover, the new law allows from three to nine agency renewals aggregating 65 per cent. of one annual premium.

The above figures may not be technically accurate in every particular, but they are substantially correct. They clearly demonstrate that a uniform fee for a uniform service may be reasonably and justly placed at $5.

Before closing, let me call attention to one illustration. The Equitable and the Mutual Benefit operate on the same per cent. basis, hence the mortality and reserve funds are the same (made so by law) for each company Each company arbitrarily fixes its own loading.

On a twenty-payment life policy at age of 35, the Equitable charges a premium of $38.34, while the Mutual Benefit charges only $36.22. On each $1,000 of insurance, then, the Equitable collects from the policy holder $2.12 for expenses more than does the Mutual Benefit on the same policy at the same age. But the Mutual Benefit pays a uniform medical fee of $5, while the Equitable allows a fee of only $3 on applications of $3,000 and less. Consequently, on each $1,000 policy as illustrated, the Equitable has of the premium, after paying the medical fee, $4.12 more than does the Mutual Benefit. While this difference alone is equal to 11 per cent. of the premium, the Mutual Benefit has an enviable reputation for paying large annual dividends to its policy holders.

A. SQUARE DEAL, M.D.

Medical Fees in Country Practice.

PHILLIPSBURG, KAN., Oct. 15, 1906.

To the Editor:—I was very much interested in the article under the above caption which appeared in THE JOURNAL, Oct. 6, 1906, by Dr. W. O. Bridges.

Having been a country practitioner for almost 14 years, I can verify his statements regarding the small fees of country physicians. The charges in western Kansas do not differ materially from those in Nebraska or Iowa. Why the fees are so inadequate can be explained by cut prices and superficial medical training.

The question that interests most of us, however, is how to raise our fees sufficiently to inspire respect and confidence on the part of the laity. Dr. Bridges suggests that this can be attained by organization and a fee schedule. I do not believe that it can be accomplished in that way. In the first place all physicians do not have so keen a moral sense as they ought to have, and many will violate the fee agreement and make low fees. It is fact and not a theory that confronts us. In the second place, the same fee ought not to be charged by two physicians, one of whom has a very meager education, poor equipment and a "stand-pat" policy, while the other has up-to-date text-books, modern equipment, and makes a careful, conscientious study of every case entrusted to him. If these two physicians were called to treat a serious case in the country, would it be fair or just to hold them down to a charge of 50 cents a mile, because perchance the schedule said to do so? Is their skill the same? Would their advice be worth the same?

The fees charged should be based on merit. Every case should stand alone, and the charge should be made according to the seriousness of the condition, the responsibility assumed, the time consumed in its treatment, and the skill displayed. Why should a physician charge less for his advice, when human life is in the scale, than a lawyer for his, where the latter's advice involves a question of property worth from $300 to $500?

To illustrate: A farmer has trouble with a neighbor over the ownership of a calf or shoat. One or both consult a lawyer; he listens, collects a retainer fee of $10 or $15, and tells him he will take the case under advisement. The same farmer is taken ill, a physician is called and responds, plods through six or seven miles of mud, and the farmer makes a roar because the physician makes a charge of $5. Why? Because the schedule says 50 cents a mile one way.

The lawyer has the farmer educated on the fee question; the physician has not. The condition will never become better until our patrons are taught that the charge is not for prescription, medicine or livery, but for knowledge and skill. Let us charge fair fees and, having charged, let us deliver the goods.

D. D. HAGGARD, M.D.

Report of Relief Committee of Physicians of San Francisco.

SAN FRANCISCO, Oct. 25, 1906.

To the Editor:—I regret to notice that in its report, published in THE JOURNAL, Oct. 20, 1906, page 1311, the relief committee of physicians of San Francisco has omitted numer-

ous contributions of books and surgical instruments made by physicians in various parts of the United States. I would mention also that the firm of Saunders & Co., of Philadelphia, donated books to the value of about $1,200. The instrument dealers and book dealers of San Francisco made liberal discounts, practically to the value of their own commissions, for the benefit of physicians accredited by the physicians' committee. The above gifts were appreciated by the physicians quite as much as contributions in money.

Emmet Rixford,
Treasurer, Physicians' Relief Fund.

Pharmacology

URON AND THIALION.

Report of the Council on Pharmacy and Chemistry, A. M. A.

The following reports were submitted to the Council by subcommittees which examined Uron (Uron Chemical Company) and Thialion (Vass Chemical Company):

To the Council on Pharmacy and Chemistry:

The following report on Uron is herewith submitted.

Uron is sold by the "Uron Chemical Co., Box A, St. Louis, Mo." In the literature distributed to physicians and in advertisements appearing in current medical journals $LiC_{13}H_7N_4O_2$ is given as the chemical formula of Uron.

According to analyses, this article is not a chemical compound, but is a mixture of lithium benzoate and hexamethylenamin[1] in approximately the following proportions:

Lithium benzoate	58 per cent.
Hexamethylenamin	42 per cent.

It is recommended that Uron be refused recognition and that this report be published.

To the Council on Pharmacy and Chemistry:

We beg leave to report on Thialion as follows:

Thialion is sold by the Vass Chemical Co., Danbury, Conn. In the literature supplied to physicians and in the advertisements in medical journals. Thialion is stated to be "a laxative salt of lithia" with the chemical formula "$3Li_2O.NaO.SO_3.7HO$." "Sodio-trilithic anhydrosulphate" is given as a synonym. An elaborate graphic or structural formula is also given.

According to analyses, this preparation is a mixture consisting chiefly of sodium sulphate and sodium citrate with very small amounts of lithium, the average of several estimations indicating the following composition:

Sodium citrate	58.6
Sodium sulphate, anhydrous	26.6
Sodium chlorid	3.3
Lithium citrate, anhydrous	1.8
Water	9.7

Thus, the advertising literature is a deliberate misrepresentation of the facts. It is, therefore, recommended that the preparation be refused recognition, and that this report be published.

The recommendations of the subcommittees were adopted by the Council and in accordance therewith the above reports are published. W. A. Puckner, Secretary.

In publishing the above report, the Council is presenting to the medical profession another object lesson, and one that illustrates how easily our profession is being humbugged. There are several things that we may learn from the report on these two nostrums, but at this time we will take up only one phase of the lesson. Many of the scientific chemical compounds and derivatives given us by the German chemists have been distinct advancements and have proved to be valuable additions to our therapeutic agents; further, they were received with so much favor by physicians that they have been profitable for those who made them. It is not strange, therefore, that imitators should appear. One of the first was our old friend, Antikamnia (which was introduced as a "new synthetical" compound). This was followed by Ammonol, Phenalgin, Salacetin, and a host of others having acetanilid as their principal ingredient.

But there are hundreds of other so-called "new chemical" compounds among the "ethical" proprietaries on the market aside from the acetanilid mixtures. These wonderful compounds, by the mysterious union of their ingredients, possess therapeutic properties different from, or more powerful for good than, the drugs from which they are made. At least, this is what we are told, and this is what many believe or they would not sell so well.

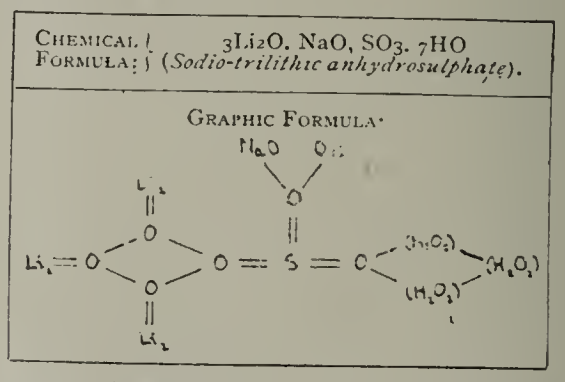
There is another factor worth noting connected with this subject: When to the claim that the mixture is a "chemical compound" is added a complex chemical formula, it prevents the impertient question, "What is it?" For isn't the "formula" there, and is not the information given without the asking? Most of us have been so overcome by the display of the chemical knowledge of the nostrum maker that we have been afraid to expose our ignorance by asking for information or explanation. And thus the promoter avoids perplexing questions, which, if answered truthfully, would spell bankruptcy.

URON.

The Uron Chemical Company informs us, concerning Uron, that it has the chemical formula of $Li\,C_{13}\,H_7\,N_4\,O_2$. Now this formula looks very dignified and scientific to those who are not up in chemistry. To the chemist, however, the formula signifies nothing. A few simple tests reveal the composition of the mixture, and it is surmised that the "formula" is the result of an attempt to combine the formulas of the two ingredients i. e., $LiC_7H_5O_2$ and $C_6H_{12}N_4$, the addition being faulty.

THIALION.

In regard to Thialion, the formula furnished by the Vass Chemical Company is even worse. To a physician who possesses but little knowledge of chemistry it will seem impressive, and he may absorb the idea that it stands for a preparation that is the result of exhaustive scientific research. To the chemist, this formula will appear as a jumble of symbols and numbers that mean nothing.



This picturesque "graphic formula" for Thialion appears with many of the advertisements. To most of us it looks formidable, wonderfully and deeply scientific and non-understandable; to a chemist it looks absurd.

It is not worth while to call attention to the simplicity of this simple mixture of ordinary salts, for it is too self-evident. As to the remarkable therapeutic qualities of Thialion, the reader is referred to that ably edited "scientific" periodical, the *Uric Acid Monthly*, and to the mass of "literature" relating to this wonderful remedy.

While there is a ridiculous side to this business, there is also a serious one. Those who have been making money out of us undoubtedly laugh in their sleeves at our gullibility, but to us as members of a presumably learned and intelligent profession, it is not a laughing matter. The whole nostrum business is a shame and a disgrace.

Ministers and "Patent Medciines."

Ministers of the gospel are much to blame for the use of "patent medicines," for they have been as liberal as any class of people in giving testimonials. Once in a while, however, the minister sees the matter in a true light, and is not afraid to preach on the subject.

1. We once more remind our readers that hexamethylenamine is the absurdly long but official name for the article that is sold under the proprietary names: Urotropin, Formin, Cystogen, Aminoform, Hexamin, Urltone, etc.

Rev. J. W. Perry, a Methodist minister of Knoxville, Tenn., is one of these. He recently preached a sermon, which in part is published in the Knoxville (Tenn.) *Journal and Tribune*, September 11, and from this we quote:

"It has been shown that many leading and popular brands often advertised as non-alcoholic were many of them stronger than 'good Scotch rye,' some of them having only some coloring, some deodorizing or other substance to change appearance, smell or taste. Others contain opiates and other poisons which cultivate the drug habit and which doubtless are responsible for multitudes of the so-called 'dope fiends.'

"The methods of some of these people who make 'patent medicines,' in securing testimonials, amounts in many instances to pure fraud. I saw a letter to one of our leading physicians illustrating their methods. A gentleman was made to declare himself to be past 100 years of age and in good health, due to the taking of a certain brand of patent stuff. Inquiry revealed the man in question was an ignorant negro, possibly 55 or 60 years of age, who had been given a bottle and supposed to have signed a receipt for it.

"The 'patent-medicine' habit is one that grows because of the whisky and 'dope' in the popular varieties. Many ministers have been deceived. The makers tell you the dose and when written to usually say 'increase the dose.' I have heard physicians of honor, Christian men, who would not cast a reflection on the clergy, declare that they had found ministers in whom they had all confidence, suffering from acute alcoholism due to the use of 'patent medicine.' I have known a minister to fall and become a drunkard, as he declared, through the use of 'patent medicine.' He stayed drunk on the stuff whole days at a time.

"Let the states follow up the pure-food legislation so that we may know what we get. If you need whisky as a medicine, get it and take it as you would strychnin, arsenic, belladonna, opium or morphin. But let some physician tell you you need it."

The Debasing Influence of Proprietary Medicines.

We quote the following from the presidential address of Dr. D. C. Gore, of Marshall, Mo., before the Missouri State Medical Association, as published in the *Journal of the Missouri State Medical Association*, July. The whole address is worth quoting, but we have space for the following only:

"That man who waits for the representative of some proprietary medicine to come in and tell him what to give his patients possibly may escape being classified as a charlatan, but he certainly has very little respect for his own professional attainments and voluntarily surrenders his learning, his privileges and his duties to some one else who knows absolutely nothing of his case. With the subletly of an Iago, the proprietary medicine man steals the wealth, position and reputation of an unsuspecting profession and supplants professionalism with a damning commercialism, all because physicians allow it and are controlled by a habit which they 'disdain to control'; he comes with a pleasing smile and presents you with a bottle of Gastritico, Hepatica or Duodenatica with his positive opinion that it will cure your patient, and you are assured it will because it bears the name of the organ affected; and, of course, it works, it just can't help it, and there you are, your individuality gone, your attainments sacrificed, your professional acumen handed over to organized greed.

"'Eternal vigilance' is not only 'the price of liberty' in affairs of state, but in the medical profession as well. It is high time that we should shake off the lethargy which this practice begets, and assert our privilege to practice our noble profession in our own way and give to our patients the benefit of our own knowledge and not turn them over to the greedy maw of a soulless corporation which makes stuff to sell.

"It is my honest belief that proprietary medicine is doing more to undermine professionalism to-day than all other influences combined; it lulls the doctor to sleep with the insidious proposition that will do his thinking for him, and eases his conscience with the unction that he has done the best possible thing for his patients because he has medicated them with a nostrum which is backed up by a corporation with lots of money behind it, and it would not, of course, spend its money on the remedy unless it was a good thing—for the corporation. Either this nefarious business must be stopped or professionalism is dead, and the erection of high standards of culture of medical men worse than a useless waste of time and money. The remedy lies at our own door and only requires a negative action on our part to effect a perfect cure. Stop prescribing them; your patients will stop taking them and their manufacture will suddenly cease. Their proprietors rely on us as their active agents for the sale of their products, and if we cease our participation in the spread of the business the only possible middle man between the manufacturer and the people has been removed and there is no longer possibility of contact."

Book Notices

IN THE YEAR 1800. By S. W. Kelley, M.D. Being the Relation of Sundry Events Occurring in the Life of Dr. Jonathan Brush During that Year. Vol. III of The Doctor's Recreation Series. Cloth. Pp. 421. Price, $2.50. Akron, Ohio: The Saalfield Publishing Company.

The Doctor's Recreation Series, as the name indicates, is a series of books for doctors, and is to consist of facts and fiction, as well as of medical history. This book, by Dr. S. W. Kelley, is one of the fiction volumes and, in a sense, is a historical novel. The history is a brief one as far as the time covered is concerned, only one year, 1800, being included in all that appeared in the over 400 large pages of the book. The scenes are laid in a small country town in Maine and in Philadelphia. In the former the writer (the story being in the form of an autobiography) is a country doctor, and one of his patients—a beautiful woman, of course—is murdered. Around this patient and her murder is woven the plot of the story. The doctor goes to Philadelphia later to get his degree and to practice. Several well-known medical men of a century ago, such as Drs. Shippen and Rush, are brought in. There is just enough history, just enough medicine and just enough plot to make the story instructive, interesting and readable, especially to physicians.

DIET AND DIETETICS. By A. Gautier. Edited and Translated by A. J. Rice-Oxley, M.A., M.D. Cloth. Pp. 552. Price, $3.50. Philadelphia: J. B. Lippincott Company, 1906.

This translation appears to have been made from the second edition of the original (Paris, 1904). The book consists of three parts: Principles and Methods, Aliments, Regimens. Many questions of importance to health and to medical and sociologic problems are discussed in an interesting and instructive manner, and physicians may look with confidence to this book for much valuable information in regard to diet and dietetics, the general interest in which appears to be increasing. Atwater's researches in regard to the requirements in energy by man at rest and at work are drawn on freely, but Chittenden's recent studies on the physiology of nutrition do not appear to have been utilized, presumably because they were not available for this edition. The translation reads smoothly.

HEALTH-CARE OF THE BABY. A Hand-book for Mothers and Nurses. By L. Fischer, M.D., Author of "Infant Feeding in Health and Disease"; "A Text-book on Diseases of Infancy and Childhood." etc. Cloth. Pp. 144. Price, 75c net. New York: Funk & Wagnalls Company, 1906.

This book is intended, as the title states, for the use of mothers and nurses, but it contains many points of interest to the physician. The details of ventilation of the baby's room, its clothing, bathing and feeding are considered. In regard to artificial feeding Fischer states that each child is a law unto itself, a fact that many physicians are inclined to overlook. The chapters on the care of infants and young children in disease, accidents and poisonings, and on correction of bad habits are commendable.

THE EXTRA PHARMACOPEIA OF MARTINDALE AND WESTCOTT. Revised by W. H. Martindale, Ph.D., F.C.S., and W. W. Westcott, M.B., D.P.H. Twelfth Edition. Flexible Leather. Pp. 1045. Price, $4.20. London: H. K. Lewis, 1906.

This book seems to contain a great deal of valuable information and might well be called a pocket dispensatory. Unfortunately, however, it relates chiefly to British preparations

and, therefore, is of more interest to British than to American physicians. The chapter on organotherapy takes up preparations of the duodenal mucous membrane, and of the suprarenal and thyroid glands, and the method of treatment by the inspissated milk and blood of thyroidectomized animals.

Notes on Surgery for Nurses. By J. Bell, M.D., F.R.C.S., Edin., Consulting Surgeon to the Royal Infirmary, and to the Royal Edinburgh Hospital for Sick Children. Sixth Edition, thoroughly revised. Cloth. Pp. 187. Price, $1.50 net. New York: William Wood & Co.

This book has been revised to date and an appendix added concerning "The Relations of the Nurse to the Profession and to the Public." The book relates to conditions in Great Britain which are slightly different from those on this side of the Atlantic. The remarks concerning the nurse's deportment in hospitals and in private practice, however, might be read with advantage by nurses everywhere.

Marriages

Herbert W. Knapp, M.D., to Miss Mae Powers, both of St. Louis, Mo., October 16.

Henry Flannery, M.D., to Miss Mary Donahue, both of Philadelphia, October 17.

Frederick T. Fahlen, M.D., to Miss Olive M. Cuthbert, both of St. Louis, October 10.

Lois Worthington, M.D., and Frank Davis, both of Bakersfield, Cal., October 15.

Rufus T. Dorsey, Jr., M.D., to Miss Laura Witham, both of Atlanta, Ga., October 16.

James Irvin, M.D., to Miss Kathryn Rose Patton, both of Danville, Va., October 17.

Charles Wert, M.D., Wallace, Ind., to Miss Ethel McCann of Indianapolis, October 24.

Frank E. Brown, M.D., to Miss Bessie Humphreys Sherk, both of Baltimore, October 18.

Ira C. Harris, M.D., Braddock, Pa., to Miss Emma Snowden of Duquesne, Pa., October 23.

George A. Seybold, M.D., Jackson, Mich., to Miss Gertrude M. Vliit of Detroit, October 25.

Norman L. McDiarmid, M.D., to Miss Mary Alice Root, both of Dayton, Ohio, October 17.

Hartwell A. Sibley, Jr., M.D., to Miss Margaret A. White, both of Stoughton, Mass., recently.

Robert Roy Hopkins, M.D., Mathews, Va., to Miss Bessie Dale Miller, at Baltimore, October 17.

William C. Mebane, M.D., Mount Airy, N. C., to Miss Susan Mott of Charlotte, October 11.

J. Cajetan Flynn, M.D., Philadelphia, to Miss Florence Mahoney of New York City, October 11.

C. Allan Porter, M.D., Rockland, Mass., to Miss Isabelle M. Thomas of Middleboro, Mass., October 24.

Richard F. Shahan, M.D., Eddyville, Iowa, to Miss Gertie B. McCombs of Agency, Iowa, October 17.

Fletcher W. Galloway, M.D., Cottonwood, Ala., to Miss Annie Thrasher of Dothan, Ala., October 17.

Harry L. Pollack, M.D., Chicago, to Miss Mabel Hirsch of Burlington, Iowa, at Chicago, October 14.

Leopold Bauer, M.D., Syracuse, N. Y., to Miss Marie Rebecca Jurgens of Brooklyn, N. Y., October 9.

Robert James Curdy, M.D., Kansas City, Mo., to Miss Annie Richardson Hall of Lawrence, Kan., November 3.

Albert Keidel, M.D., Baltimore, to Miss Janet Gordon Van Smith of New York City, at Baltimore, October 15.

Arthur H. Buck, M.D., Delaware, Ohio, to Miss Jennie Lind Hartje of McComb, Ohio, in Findlay, Ohio, October 16.

Theodore Maddox, M.D., Union, S. C., to Miss Mary Murphy of Pinckney Township, Union County, S. C., October 10.

Theodore B. Bliss, M.D., Schenectady, N. Y., to Miss Helen Cory of Swampscott, Mass., in Cleveland, Ohio, October 17.

William H. Moore, M.D., Viola, Tenn., to Mrs. Lyda W. Hearn of Woodbury, Tenn., in Nashville, Tenn., October 17.

William A. Fisher, Jr., M.D., Baltimore, to Miss Annie Courtney Baylor, at Staunton Hill, Charlotte County, Va., October 17.

Deaths

John Harrison Blanks, M.D. Medical College of Alabama, Mobile, 1874; College of Physicians and Surgeons in the City of New York, 1876; of Meridian, Miss.; one of the most eminent physicians of Mississippi; president of the Meridian board of health in 1899, and a year later president of the Nashville (Tenn.) Medical College; a member of the faculty of the Mississippi Medical College, Meridian, and of the Lauderdale County Medical Association, died in the Touro Infirmary, New Orleans, October 19, after an operation, aged 52.

Alphonso Bickford Brown, M.D. Harvard University Medical School, Boston, 1898; of Newburyport, Mass.; a member of the Peary relief expedition to the Arctic; a member of the Massachusetts Medical Association and of the attending staff of the Anna Jaques Hospital, died suddenly from heart disease at the Anna Jaques Hospital, Newburyport, October 17, two weeks after an operation for appendicitis, from which he was apparently recovering, aged 34.

Malvern N. Due, M.D. College of Physicians and Surgeons in the City of New York, 1888; a member of the American Medical Association, Medical Association of the State of Alabama and Jefferson County Medical Society; a member of the United States pension board; for some time city physician, and one of the most prominent physicians of Birmingham, Ala., died in Mobile, October 20, after a long illness, aged 39.

James E. Stewart, M.D. Hospital College of Medicine, Louisville, 1883; one of the founders of Stewart Hospital, Hutchinson, Kan.; a member of the Reno County Medical Society, died at his home in Hutchinson, October 14, from pneumonia, after an illness of six days, aged 48. At a meeting of the medical profession of Hutchinson a committee was appointed to draft resolutions in memory of Dr. Stewart.

William Walton Fuqua, M.D. Medical College of Virginia, Richmond, 1859; surgeon in the Confederate service during the Civil War, and at one time on duty at Libby prison, Richmond; formerly a practitioner of Hopkinsville, Ky.; from 1884 to 1887 professor of anatomy in the Hospital Medical College, Memphis, Tenn., died at his home in Jonesboro, Tenn., October 18, aged 68.

Charles P. Russell, M.D. Bellevue Hospital Medical College, New York City, 1874; a member of the Oneida County Medical Society; consulting dermatologist to Faxton and St. Elizabeth's hospitals, Utica, and visiting dermatologist to the Utica General Hospital, died at his home in Utica, from pneumonia, October 26, aged 58.

Charles Samuel Williamson, M.D. College of Physicians and Surgeons in the City of New York, 1891; of Brooklyn; a member of the American Medical Association and of the Kings County Medical Society, died at Rainbow Lake, in the Adirondacks, October 21, after a short illness, aged 37.

Herbert S. Jones, M.D. New York Homeopathic Medical College and Hospital, 1888; physician to the Bergen County Almshouse, died at his home in Oradell, N. J., October 18, as the result of injuries received in a fall several weeks before, in which he sustained a fracture of the skull, aged 54.

Arnon Lyon Comstock, M.D. New York University, New York City, 1904; a member of the Medical Society of the State of New York, and of the Herkimer County Medical Society, died at his home in Ilion, N. Y., October 17, from tuberculosis after an illness of more than a year, aged 26.

Algernon Sydney Epes, M.D. Jefferson Medical College, Philadelphia, 1858; surgeon in the Confederate service during the Civil War; poor physician of Nottoway County, Va., died at his home in Nottoway Court House, October 19, after an illness of several weeks, aged 70.

Reuben T. Laycock, M.D. Eclectic Medical Institute, Cincinnati, 1874; for 10 years professor of diseases of women and children at the Indianapolis Eclectic Medical College, died at his home in that city, October 22, from valvular heart disease, after a long illness, aged 56.

Alva L. Hudders, M.D. Jefferson Medical College, Philadelphia, 1886; of Philadelphia, was killed October 28, in an accident on the electric line between Philadelphia and Atlantic City, when a train was thrown from the drawbridge into the waterway at Atlantic City.

Paul F. Felsberg, M.D. Hahnemann Medical College, Philadelphia, 1901; of Philadelphia, was killed October 28, in an accident on the electric line between Philadelphia and Atlantic City, when a train was thrown from the drawbridge into the waterway at Atlantic City.

Russell G. Andrew, Jr., M.D. Medico-Chirurgical College of Philadelphia, 1898; coroner of Monmouth County, New Jersey, for three years, died at his home in Highlands, October 19, from pneumonia, after an illness of two weeks, aged 30.

J. S. Grubbs, M.D. University of Louisville, Medical Department, 1866; a surgeon in the Confederate service during the Civil War, and one of the oldest practitioners of Hopkinsville, Ky., died at his home, October 20, aged 74.

Robert Coulter Banks, M.D. Rush Medical College; a veteran of the Civil War; for many years a practitioner of Owatonna, Minn., died at his old home in Pine Island, Minn., September 1, after an illness of three days, aged 69.

Harrison H. Power, M.D. Geneva (N. Y.) Medical College, 1850; one of the oldest practitioners of Ionia County, Michigan; a veteran of the Civil War, died at his home in Saranac, Mich., October 20, aged 79.

William Alfred Cassidy, M.D. University of Vermont, Medical Department, Burlington, 1905; of Russell, Mass., died at the home of his father in Rutland, Vt., October 10, from tuberculosis, aged 28.

Gustave Vetter, M.D. St. Louis College of Physicians and Surgeons, 1884; health officer and member of the board of education of Belleville, Ill., died suddenly in that city, October 25, aged 53.

W. Updyke Selover, M.D. New York University, New York City, 1874; mayor of Rahway, N. J., for two years, and water commissioner, died at his home in Newark, N. J., October 16, aged 63.

Joseph C. Mull, M.D. Atlanta (Ga.) Medical College, 1893; vice-president of Floyd County Medical Society, died at his home in Rome, Ga., from typhoid fever, October 24, aged 39.

John W. Stockton, M.D. Eclectic College of Medicine, Cincinnati, 1877; of Washington, Pa., died in the Washington Hospital, October 19, after an illness of two years, aged 58.

Walter L. Hall, M.D. Bellevue Hospital Medical College, New York City, 1868; of Medford, Mass., died recently at a hospital in Medford, after an operation for appendicitis, aged 60.

Virgil Weir, M.D. University of Michigan Homeopathic Medical College, Ann Arbor, 1904; of Toledo, died at his home in Warren, Ohio, October 18, from tuberculosis, aged 27.

P. Alvin Dix, M.D. Fort Wayne (Ind.) College of Medicine, 1880; for many years a practitioner of Paulding, Ohio, died at the Ohio State Hospital, Toledo, October 13, aged 56.

David M. Claitor, M.D. Memphis Hospital Medical College, Memphis, Tenn., 1900; of Kosciusko, Miss., was shot and killed by Dr. John H. Love, August 27, at Kosciusko.

Edward R. McMullin, M.D. Vanderbilt University, Medical Department, Nashville, 1885, died at his home in Maben, Miss., September 12, after a long and painful illness.

Bernhardt Fincke, M.D. New York University, New York City, 1854, died at his home in Brooklyn, October 21, after an illness of a year, from senile debility, aged 85.

Dudley S. Laws, M.D. University of Nashville, Medical Department, 1873, died suddenly from heart disease at his home in Clarksburg, Tenn., October 19, aged 79.

William H. Carothers, M.D. Medical College of Ohio, Cincinnati, 1878, died suddenly at his home in Melrose, Mass., recently, from hemorrhage, aged 52.

Edmund Moore, M.D. Dalhousie University Medical Faculty, Halifax, N. S., 1874, died recently at Salisbury, N. B., where he had practiced for 32 years.

Frank W. Schuessler, M.D. University of Maryland School of Medicine, Baltimore, 1890, died at his home in Canton, Baltimore, October 16, aged 40.

E. B. LeFevre, M.D. Medical College of Ohio, Cincinnati, 1889; of Abilene, Kan., died from hemorrhage of the lungs in Danville, Ill., October 21.

Helen McAndrew, M.D. Hygeio-Therapeutic College of New York, New York City, 1853, died at her home in Ypsilanti, Mich., October 28, aged 85.

Timothy S. Foster, M.D. Medical School of Maine at Bowdoin College, Brunswick, 1862, died at his home in Laconia, N. H., October 24, aged 78.

Daniel Janney, M.D. Hahnemann Medical College, Philadelphia, 1850, died at his home in Grimes, Va., October 15, aged 79.

Duncan Sinclair, M.D. University of Maryland School of Medicine, Baltimore, 1855, of Rowland, N. C., died recently, aged 84.

Francis M. Richardson, M.D. Eclectic Medical Institute, Cincinnati, 1876, died at his home in Chicago, October 24, aged 75.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish name or address will be faithfully observed.

TREATMENT OF SCALP WOUNDS.

———, ———, Oct. 18, 1906.

To the Editor:—What is the treatment in the case of scalp wounds made by indirect violence, such as the head striking gravel on the road and in which in addition to one or more lacerated wounds, say two inches long, the scalp is separated from the skull, but not detached. In the case referred to, the periosteum of the skull has sloughed off, owing to the contusion it received. There is an area adjacent to the wound and about half the size of the same, where the skull is bare, but is covered by the scalp. In response to peroxid of hydrogen and copious irrigation of the pockets with antiseptic solutions, the wounds can be kept clean, yet no great advance is made toward a rational and satisfactory result. I have been unable to find any information regarding such a condition in any standard text-book on surgery.

A. B. Z.

ANSWER.—Our correspondent does not mention the length of time which has elapsed since the receipt of the injury, which is important in enabling one to form some idea of the present condition of the tissues. The important point in the case is, whether or not the bone has been so injured that necrosis has or will result. Mere separation of the scalp, including the periosteum, from the bone is not sufficient to produce death of the bone, as the soft parts may be replaced and perfect healing will result. Should the bone, however, be so seriously injured, or should infection of such a degree take place that death of the bone results, union between the scalp and the dead bone will not occur. Either the dead bone must be removed by the surgeon or one must await Nature's slow process of casting off dead bone. In the present case, free drainage should be established and the wound kept as surgically clean as possible. If the bone is not dead, as soon as the sloughing soft parts have cleaned up, the scalp will settle down and adhere to the skull again. If the bone is dead, it should be removed. Usually in such cases only the outer table is involved. As soon as all the dead bone, should any be present, is removed, the wound will close.

REQUESTS INFORMATION ABOUT DAYTON AUTOMOBILE.

SALT LAKE CITY, Oct. 27, 1906.

To the Editor:—Will any reader who has had any experience with the "Reliable-Dayton" automobile kindly give me his experience.

T. C. GIBSON, M.D.,
406 Tribune Bldg.

The Public Service

Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending Oct. 27, 1906:

Steer, Samuel L., asst.-surgeon, returned to Fort Assinniboine, Mont., from leave of absence.

Wales, Phllip G., surgeon, left Fort Wayne, Mich., on leave of absence for ten days.

Rhoads, Thomas L., asst.-surgeon, left West Point, N. Y., for Fort Crook, Neb.. his new station.

Maus, Louis M., deputy surgeon-general, returned from leave of absence to duty as chief surgeon, Department of Texas.

Duncan, William A., asst.- surgeon, arrived in San Francisco, for one month's leave of absence from the Philippines Division.

McCulloch, Champe C., Jr., surgeon, left Fort Meade, S. D., on leave of absence for one month.

Wadhams, Sanford H., asst.-surgeon, returned to Fort Slocum, N. Y., from detached service at Fort Mackenzie, Wyo.

Heysinger, James D., asst.-surgeon, granted an extension of sixteen days to his leave of absence.

Deshon, George D., surgeon, ordered to Rochester, Minn., for observation and treatment.

Lyster, Theodore C., asst.-surgeon, returned to Ancon Hospital, Canal Zone, from special leave of absence.

Ekwurzel, George M., asst.-surgeon, returned to Fort Keogh, Mont., from practice march.

Talbott, Edward M., asst.-surgeon, returned to Fort Leavenworth, Kan., from detached service at Kansas City, Kan., with troops.

Richardson, George H., contract surgeon, relieved from duty at the Depot of Recruits and Casuals, Angel Island, Cal., and ordered to duty at the Presidio of San Francisco.

McPheeters, Samuel B., contract surgeon, ordered from St. Louis, Mo., to Fort Robinson, Neb., for duty.

Kress, Clarence C., contract surgeon, ordered from St. Louis, Mo., to Fort Reno, Okla., for duty.

Cullen, Charles W., contract surgeon, ordered from Cincinnati, Ohio, to Fort Sill, Okla, for duty.

Stearns, Charles H., contract surgeon, relieved from duty at Fort Monroe, Va., and ordered to Fort Screven, Ga., for duty.

Branch, Frederick D., contract surgeon, granted leave of absence for two months, twenty-five day, with permission to go beyond sea.

Merrick, John N., contract surgeon, relieved from further duty at Fort Missoula, Mont., and ordered to Manila, P. I., for Philippine service.

Hull, Alva R., contract surgeon, ordered from San Francisco, to Fort Logan, Colo., with 21st Infantry, and thence to his home, Oconomowoc, Wis., for annuiment of contract.

Newton, Ralph W., contract surgeon, ordered from New York City to Fort Niagara, N. Y., for duty.

Burkart, John L., contract surgeon, left Fort Sheridan, Ill., on leave of absence for one month.

Craig, Emmett J., dental surgeon, arrived at San Francisco, on leave of absence for one month from the Philippines Division.

Navy Changes.

Changes in the Medical Corps, U. S. Navy, for the week ending Oct. 27, 1906:

Drake, N. H., medical inspector, retired, placed on the retired list of officers of the Navy from Oct. 6, 1906.

Donelson, M., acting asst.-surgeon, to the U. S. Naval Medical School, Washington, for instruction.

Casto, D. H., acting asst.-surgeon, to the U. S. Naval Medical School, Washington, for instruction.

Decker, C. J., surgeon, granted sick leave of absence for three months.

Stitt, E. R., surgeon, to Naval Medical School.

Holcomb, R. C., P. A. surgeon, additional duty as quarantine officer at Culebra, W. I., for the purpose of inspecting Government vessels at that port.

Munger, C. B., asst.-surgeon, detached Naval Training Station, San Francisco; to U. S. S. *Supply*, Naval Station, Guam, L. I., sailing Nov. 5, 1906.

Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ending Oct. 24, 1906:

Gassaway, J. M., surgeon, granted leave of absence for ten days from Nov. 4, 1906.

Carrington, P. M., surgeon, granted leave of absence for seven days under provisions of Paragraph 189 of the Regulations, from October 23, 1906.

Carrington, P. M., surgeon, granted extension of leave of absence for fifteen days from Oct. 30, 1906.

Cumming, H. S., P. A. surgeon, leave of absence granted for one month from September 15, amended so as to grant him one month's leave from Oct. 4, 1906.

Anderson, J. F., P. A. surgeon, granted leave of absence for one mouth from Nov. 5, 1906.

Long, John D., P. A. surgeon, relieved from duty at Manila, P. I., and directed to proceed to San Francisco.

Alexander, E., acting asst.-surgeon, granted leave of absence for seven days from Nov. 1, 1906.

Fisher, C. E., acting asst.-surgeon, granted leave of absence for seven days from October 17, 1906.

Mason, W. C., acting asst.-surgeon, granted leave of absence for twelve days from Sept. 17, 1906.

Simonson, G. T., acting asst.-surgeon, granted five days leave of absence from Oct. 19, 1906.

Straw, E. E., acting asst.-surgeon, granted leave of absence for twenty days from Oct. 15, 1906.

Walker, T. D., acting asst.-surgeon, granted leave of absence for ten days from Oct. 18, 1906.

Gahn, Henry, pharmacist, granted leave of absence for twelve days from Oct. 22, 1906.

Holt, E. M., pharmacist, granted leave of absence for twenty-seven days from Oct. 26, 1906.

APPOINTMENT.

Dr. J. F. Blanchard was appointed a temporary acting asst.-surgeon for duty at Newport, Vt., in connection with the examination of alien immigrants.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon General, Public Health and Marine-Hospital Service, during the week ended Oct. 26, 1906:

SMALLPOX—UNITED STATES.

Montana: Cascade County, Sept. 1-30, 1 case.
Oregon: Marion County, Sept. 1-30, 1 death.
Tennessee: Knoxville, Oct. 19-26, 1 case.
Texas: Houston, Sept. 29-Oct. 6, 1 case.
Utah: General, Sept. 1-30, 20 cases.

SMALLPOX—FOREIGN.

Africa: Cape Town, Sept. 1-8, 2 cases.
Argentina: Buenos Ayres, July 1-31, 99 deaths.
Canada: Winnipeg, Oct. 5-12, 3 cases.
France: Marseilles, Sept. 1-30, 12 deaths; Paris, Sept. 15-22, 2 cases, Sept. 29-Oct. 6, 2 cases.
Germany: Bremen, Sept. 29-Oct. 6, 1 case.
India: Bombay, Sept. 18-25, 1 death; Madras, Sept. 15-21, 3 deaths.
Italy: General, Sept. 27-Oct. 4, 1 case.
Russia: Moscow, Sept. 15-29, 6 cases, 2 deaths; St. Petersburg, Sept. 8-12, 4 cases, 2 deaths.
Siberia: Vladivostock, Aug. 21, 1 case.
Turkey: Constantinople, Sept. 30-Oct. 7, 1 death.

YELLOW FEVER.

Cuba: Havana, Oct. 19-21, 4 cases.
Guatemala: Gualan, Oct. 2, 4 cases.
Mexico: Merida, Sept. 30-Oct. 6, 4 cases, 4 deaths; Tustepec, 1 case, 1 death.

CHOLERA—INSULAR.

Philippine Islands: Manila, Sept. 8-15, 20 cases, 17 deaths; Provinces, 120 cases, 94 deaths.

CHOLERA—FOREIGN.

India: Bombay, Sept. 18-25, 21 deaths; Madras, Sept. 15-21, 89 deaths; Rangoon, Sept. 8-15, 1 death.

PLAGUE.

China: Hongkong, Aug. 25-Sept. 1, 1 case, 1 death.
Egypt: Alexandria, Sept. 21-25, 2 cases, 1 death; Suez, Sept. 21-27, 6 cases, 2 deaths.
India: General, Sept. 1-8, 4,304 cases, 3,134 deaths; Bombay, Sept. 18-25, 41 deaths; Karachi, Sept. 3-16, 18 cases, 16 deaths; Madras, Sept. 15-21, 1 death; Rangoon, Sept. 8-15, 1 case, 43 deaths.
Japan: Waykayama Ken, Oct. 2, present.
Mauritius: Aug. 8-24, 9 cases, 6 deaths.

Medical Education and State Boards of Registration

COMING EXAMINATIONS.

NEVADA State Board of Medical Examiners, Carson City, November 5. Secretary, S. L. Lee, Carson City.

NEBRASKA State Board of Health, State House, Lincoln, November 7-8. Secretary, Geo. H. Brash, Beatrice.

MAINE Board of Registration in Medicine, Portland, November 13. Secretary, Wm. J. Maybury, Saco.

CONNECTICUT Medical Examining Board, City Hall, New Haven, November 13-14. Secretary, Charles A. Tuttle, New Haven.

MASSACHUSETTS Board of Registration in Medicine, State House, Boston, November 13-14. Secretary, Edwin B. Harvey, State House,

WEST VIRGINIA State Board of Health, The Frederick, Huntington, November 13-15. Secretary, H. A. Barbee, Point Pleasant.

MISSOURI State Board of Health, Kansas City, November 26-28. Secretary, J. A. B. Adcock, Warrensburg.

Needed Reforms in the Medical Laws of the State of New York.—Under this head Dr. Frank Van Fleet, formerly chairman of the committee on legislation of the Medical Society of the State of New York, writes an interesting article in the October *Post Graduate*. This continues the effort to secure a single board of medical examiners. In regard to the defects of the present New York law, he says:

I am not in favor of so many laws as we, as a state, labor under to-day. The enactment of law is not ever a thing to be proud of, however necessary it may be. That we must have laws in the present condition of society is unfortunately too true; they are a sort of necessary evil, and being such ought to be as few and as simple as possible. Our present medical law, to my mind, is defective in the following particulars: First, it is cumbersome; second, it discriminates in favor of certain classes; third, it does not accomplish the purpose for which it was enacted; and fourth, it is unjust in its method of enforcement.

The first objection requires no argument, for all it is necessary to do is to read it and its cumbersomeness is apparent. I do not consider it is necessary to say more about this defect, nor would I consider it worth my time to criticise it if this was its only defect.

The second objection that the law discriminates in favor of selected classes, is a glaring defect, and almost sufficient, it seems to me, to warrant its repeal.

In regard to the second objection he shows that while there are three separate examining boards, the applicant does not necessarily appear before the board representing his school of practice, but may take his examination before any of the boards, since the examination is the same in all departments excepting in that relating to therapeutics and the treatment of disease. Referring to the fact that after a physician is once licensed no restrictions are placed on him as to what methods he is to employ, Dr. Van Fleet says:

This is, of course, as it should be. It would be impossible for a physician to act intelligently, or to do the best possible for his client in the treatment of disease, if he were limited to the employment of any single method. Indeed, an intelligent and conscientious physician would feel himself so hampered by a restriction of this kind as to be incompetent and unwilling to treat disease. . . . The greatest possible freedom must be permitted in the practice of the healing art if satisfactory results are expected, and even then, with all the methods of treatment, and all the remedies known to science at his command, the educated physician realizes his weakness and must at times admit himself baffled.

The present law has not worked to the disadvantage of the practitioners who have qualified under it; in fact, it has done more than anything else to break down the barrier which formerly existed between the practitioners of the various schools which these three boards represent. There is to-day practically no difference in the methods employed by the licensed physicians of this state in the treatment of disease.

But why have separate boards? If a separate board is to be allowed for every new sect in medicine which comes up, where will it end?

If homeopathy is recognized by the state, why not "osteopathy?" Is the state competent to discriminate between the truths of homeopathy and the fallacies of osteopathy? If not, why does the state accord to one the privilege it denies to another?

To ignore them, then, the state must flatly refuse to accord to one class of citizens privileges it accords to others, and this I do not believe the state will do. If this applies to homeopathy and osteopathy, why not to naturopathy, vitapathy, hydropathy, and so on? The state, in granting exclusive privileges to three classes of practitioners discriminates unjustly, unless provision is made for the recognition, as separate classes, of all other sects who are willing to comply with the requirements similar to (not necessarily identical with) those at present recognized.

Among other defects in the laws, Dr. Van Fleet reveals the failure to define clearly what the practice of medicine really is, and states the purpose of the law as follows:

The purpose was not to create or keep alive any particular system or method of practice, or to subsidize any school of medicine or to foster a monopoly. The purpose, pure and simple, was to protect the people of the State of New York from incompetent practitioners of the healing art. Lawyers and judges have been found whose minds are not broad enough to grasp this, and the former have urged, and the latter have ruled, that to practice medicine one must give drugs, and if one undertook to cure disease by any other method, the act did not constitute a violation of the statute.

So the law, by failing to give an accurate and clear definition of the term, has been used by unscrupulous or misguided people, to defeat the very purpose for which it was enacted. The law is unjust in the provision prescribed for its enforcement.

The author then shows that legal machinery of the state is not provided to enforce the law, this being left to the county societies. As to improvements in the law the author's suggestions are:

The present formation of the Board of Examiners I would do away with entirely. In its place I would substitute a single examining board, which would have nothing about it to indicate that it represented any school or schools of medicine. At a conference with the Department of Education last winter, in which I participated, one of the members of the department said, among other things, as I remember it, that if he or some member of his family was sick he would like to be able to call in some physician on whom the state had put its stamp of proficiency, without having to think anything about the school of practice the physician represented. What the layman desires when he is sick is to get well, and he wants this result accomplished in the simplest, most direct and safest way. He is not concerned about the method, whether it is regular or irregular, homeopathic or osteopathic. And the honorable physician will not let his patient suffer or die, or permit his cure to be delayed, because the best method of treatment is not the method of his school. I have always been glad that I was not the adherent of a "school" or a "method" of practice, but just an ordinary simple doctor, and the graduate of an ordinary simple medical college. I believe the time has arrived when there is no place for a doctor who calls himself by a peculiar title, or adopts a peculiar method of treatment, and from my conversation with members of the State Legislature, and of the State Department of Education, I believe this is the view which is coming to be generally accepted. So I would abolish separate boards of examiners and adopt a single board before which all applicants for the right to practice the healing art should appear, and when the person so applying had demonstrated his ability to recognize disease, and was reasonably familiar with the various methods of cure, I would grant him the right to practice. After that, if he wanted to call himself a homeopath or an osteopath or some other kind of a "path" that would be his individual concern.

How this single board should be appointed is one of the details to be worked out. I would favor the appointment of examiners by the governor of the state, or by the Department of Education, on the recommendation of universities having medical departments. I would advocate the passage of a law accurately defining the practice of medicine, or what would be better, defining the practice of the healing art, eliminating entirely the word "medicine," so that there could be no doubt in the mind of anybody that a person practicing this art for gain, who had not received from the state a certificate of proficiency, was a dangerous character, who should be put under restraint.

Finally, if it is necessary to have a separate organization to look after the enforcement of this law, as I am firmly convinced it is, I would advocate the formation of such a body composed of physicians and laymen, authorized by legal enactment to look after the enforcement of this and other laws affecting the public health, for there are other laws quite as important, and to this organization I would suggest that an annual appropriation should be made to carry on the work.

There was a bill introduced in the legislature of 1906, by the Assembly Committee on Public Health, which embodied some of the ideas I have attempted to express. It was known as Assembly Bill No. 1715. Something of this sort is sure to come to pass in the near future, and the medical profession should have a voice in it. The writing on the wall is very plain to many of us who have kept in touch with recent events. Changes are evidences of progress in this rapidly moving world of ours, and we can not stand still, for if we are not moving forward we are moving backward. If we would keep in the procession we must conform ourselves to the inevitable. Our present medical law does not meet the demands of the times, and it must be changed. The legislature and the Department of Education look to the medical profession to advocate such changes. Shall we recognize the inevitable and take the initiative, or shall we allow some other force to enter in and take the initiative while we stand aside?

Nebraska August Report.—Dr. George H. Brash, secretary of the Nebraska State Board of Health, reports the written examination held at Lincoln, Aug. 8-9, 1906. The number of subjects examined in was 8; total number of questions asked, 80; percentage required to pass, 75; candidates examined, 14; passed, 9; failed, 5. Eight reciprocal licenses were granted. The following colleges were represented:

PASSED.

College.	Year Grad.	Per Cent.
Northwestern Univ. Med. School	(1906)	89.5
College of P. & S., Keokuk	(1901)	80.7
Baltimore Med. Coll	(1906)	85.3
Harvard Med. School	(1902)	87
University of Nebraska	(1906)	85.5
Creighton Med. Coll	(1906)	75*, *79.2
Bellevue Hosp. Med. Coll	(1897)	80.1
Trinity University, Toronto	(1904)	80.8

FAILED.

College of P. & S., Indianapolis	(1905)	49.2
University of Nebraska	(1905)	†61.6
Creighton Med. Coll	(1906)	66*, *74
Western Med. Coll., London, Ont	(1904)	72.6

REGISTERED THROUGH RECIPROCITY.

College.	Year Grad.	Reciprocity with.
Rush Med. Coll	(1886)	Iowa.
Northwestern Univ. Med. School	(1900)	Illinois.
Sioux City Coll. of Med	(1905)	Iowa.
Drake University	(1906)	Iowa.
Kentucky School of Med	(1905)	Kentucky.
University of Maryland	(1900)	Maryland.
Central Med. Coll., St. Joseph, Mo	(1905)	Kansas.
Western Reserve University	(1882)	Ohio.

* Second examination.
† Fifth examination.

Society Proceedings

COMING MEETINGS.

Mississippi Valley Medical Association, Hot Springs, Ark., Nov. 7-8.
American Public Health Assn., Mexico City, Dec. 3-7.
Southern Surg. and Gyn. Assn., Baltimore, Dec. 11-13.

BOSTON MEDICAL LIBRARY.

Meeting, held Oct. 17, 1906.

DR. RICHARD J. CABOT in the Chair.

Treatment of Bacterial Diseases by Serum Therapy.

SIR ALMROTH EDWARD WRIGHT, London, England, said that bacterial diseases are the most important of all diseases. But the therapeutic treatment of them has been most imperfect. One hundred years ago by bleeding, large doses of antimony, etc., an attempt was made to fight the causes. Next the expectant method was introduced. The results were better than before, and this method is still largely employed. By it nine out of ten typhoid fever patients may be saved. But it is not satisfactory, for instance, in infectious endocarditis or in Malta fever. Nor is it useful in those diseases where Nature makes no effort, for example in lupus, chronic bronchitis or the chronic discharge from the uterus or ear. Expectant treatment covers but a small realm of disease and does it poorly. Finally, the antiseptic treatment was introduced to be employed internally as well as externally. But it has largely failed. Septicemic diseases are not much affected by antiseptics, e. g., typhoid fever or tuberculosis. Even the skin is not usually much influenced by them, e. g., acne. The antiseptic kills only the germs with which it comes in contact and we can never assume that the germs are only in the spot treated. If introduced into the blood, the antiseptic paralyzes the white blood corpuscle and prevents its phagocytic action on bacteria.

Next, with the safeguards of antisepsis, the surgical treatment was advocated and the word was extirpate. This is the negation of all proper therapeutics. As a result, often the bacteria are thrown into the blood stream and conveyed as foci elsewhere, and a simple local disease becomes multiple or miliary. Exposure of diseased parts to light of various kinds has been advocated. The light does not kill the germs, but it does draw lymph to the part and, hence, help some cases, just as poultices will, or as will the passive congestion of Bier's stagnation apparatus. This last is valuable in smaller joints but fails with the knee or hip. Finally, the serum treatment has been tried, but as regards streptococci, it has been disappointing. Hence, the necessity to look elsewhere for a method of scientifically and satisfactorily treating bacterial diseases.

The body itself, by itself will often work a cure. Therefore, there must be in the blood beside the nutriment material, which it certainly does afford the bacteria, some antagonistic forces. These are (1) the white blood corpuscles, the phagocytes, and (2), in the plasma some bacteria-trophic substances, which act like antiseptics on the bacteria and prepare them for the digestion of the phagocytes. These are styled opsonins. A case cited was of a man with a staphylococcus infection showing boils-sycosis, etc., when white blood corpuscles were compared with those of workers in the laboratory and found to ingest only half as many of these bacteria as the normal

healthy individual. This "opsonic index" was, therefore, 0.5 and when it was raised to 2.0 by Dr. Wright's method of vaccine treatment, he was cured. The normal opsonic index varies but little in healthy individuals. After inoculation, at first it drops a little—negative phase; then comes a marked increase—positive phase; to be succeeded in turn by a gradual decline to nearly the same level as before. A large dose of vaccine makes a much larger negative phase and allows little, perhaps no positive phase; i. e., it does harm. A small dose gives no negative phase and only a slight positive phase. Hence, it is important to determine in each case what the proper dose of that vaccine is for that patient, in order to obtain a higher opsonic index. A single inoculation is not adequate. We must repeat the dose. By too frequent doses we get a cumulation of negative phases with no chance for the positive phase to develop, and finally death ensues. The body can not meet too great a stimulation by vaccine. Therefore, each case must be watched. Each inoculation is to be treated as a separate event, and the attempt made to so regulate the dose and the interval that there shall be, a cumulation of positive phases and a rise of the opsonic index, step by step, after each dose.

Patients with a localized bacterial disease have a low power of resistance, a low opsonic index, 0.6 to 0.8. Many of these cases may be benefited by gentle massage, which induces an autoinoculation followed by a negative and a positive phase just the same as after vaccination. But there is marked danger. The germs may be scattered, just as they sometimes are by a surgical operation, and the dose be so great. A very marked drop is noted then in the opsonic index. Too thorough physical examination of a phthisical patient by a teacher and his class may produce the same untoward result. It is useful, however, to enable one to determine whether a focus is dead or still aglow, e. g., in the spine. Here a determination of the opsonic index, before and after a slight amount of motion, would at once determine the proper course of treatment. It is often necessary to increase this protective power and keep it high for a long period.

If the opsonic index is high, 1.6 to 1.8, it is of no use to try to make it higher by vaccine, and autoinoculations must be guarded against. Generalized septicemia always means autoinoculations. Dr. Wright cited a case and incidentally noted his belief that large doses of citric acid, given at once when a thrombus is formed, will decrease the coagulability of the blood and cause the prompt absorption of the thrombus. A patient whose system is doing nothing to fight the bacteria can be stimulated by a vaccine to do something. Sometimes several tests must be made in a single day. Usually, once in ten days will be often enough. Tubercular cystitis is one of the most satisfactory conditions for this method of treatment. An empyema or an unresolved pneumonia will yield. A case of cervical adenitis should yield in three months, doses being given three times in a month, the dose being so adjusted as to give the minimum negative phase. Boils are nearly always cured by one or two inoculations. Acne is much more resistant and requires two or three months. Suppurative cystitis gives good results. Vaccine from colon bacilli is always wise after an operation for gallstones. Vaccine can always be made directly from the pus of an operation. Hence, we may avoid a long operation by preparing the patient before with a vaccine. The patient to be operated on for hair-lip may be treated with a vaccine of the mouth-streptococci and thus fortified against th later development of suppuration from that cause.

IDAHO STATE MEDICAL SOCIETY.

Fourteenth Annual Meeting, held at Lewiston, Oct. 4-5, 1906.

Under the presidency of DR. J. B. MORRIS, Lewiston.

Officers Elected.

The following officers were elected for the ensuing year: President, Dr. L. P. McCalla, Boise; vice-president, Dr. J. M. Alley, Lapwai; secretary-treasurer, Dr. E. E. Maxey, Boise; chairman committee of arrangements, Dr. J. L. Stewart, Boise; chairman committee on legislation, Dr. W. F. Howard, Pocatello.

Boise was selected as the next place of meeting.

Resolutions Adopted.

The following report, made by a special committee appointed to consider recommendations contained in the secretary's report, was adopted:

1. We recommend that the society at this meeting instruct its committee on legislation to work for the passage of a proper measure to regulate the sale of drugs and proprietary and "patent" remedies.

2. We recommend that this society express to Senator Heyburn, through its secretary, the appreciation of the profession of our state for his able and persevering efforts, together with his coworkers, in securing the passage of the national Pure Food Law.

3. In the matter of the division of funds when new district societies are organized, it is recommended that the following plan be adopted as an equitable plan for dividing the funds of the original district society: (1) let each district society, the new and the remainder of the old, be allowed the full amount of dues and membership fees collected for the year in which the new district society is organized, for their respective districts, and (2) that the remaining balance in the treasury of the original society be divided between, or among, the districts in the ratio of the paid membership in each district for the year preceding the organization of the new district.

4. It is recommended that the Idaho State Medical Society instruct its committee on legislation to act for the society, in conjunction with the State Board of Medical Examiners, in an endeavor to enforce the law regulating the practice of medicine in Idaho; and it is further recommended that the campaign of organization be continued, and that every effort be made by the committee on legislation and the members of this society in an endeavor to secure the passage of needed medical legislation at the next session of the legislature.

A. M. A. Medical Education Standard Approved.

DR. MAXEY, secretary, presented the following resolution, which was adopted by the society:

Resolved, That it is the sense of this society that it commend the recommendations of the Council on Medical Education of the American Medical Association concerning the preliminary education required of candidates for the degree of doctor of medicine; that it recommends the adoption of this high standard of preliminary education by the State Board of Medical Examiners of Idaho; and that it instruct the committee on legislation of the Idaho State Medical Society to endeavor to secure any necessary amendment to our medical laws as such standard of preliminary education may require.

Health Bill.

On motion, the following resolution was adopted:

Resolved, That the members of the Idaho State Medical Society are heartily in favor of a law providing for a state board of health and the registration of vital statistics, and hereby instruct their committee on legislation to use its influence at the coming session of the state legislature in an effort to secure the passage of a health bill similar to the one introduced at the last session of the legislature.

President's Address.

DR. J. B. MORRIS, Lewiston, emphasized the importance of a more thorough organization of the profession of the state, and suggested the formation of several new district societies as a means of getting the profession together. He urged the members to use their utmost endeavor toward securing the passage of more stringent medical laws and to aid in enforcing state and national pure-food laws. He thought it would not be best, at the present time, to try to amend our medical laws, as has been suggested, to provide for reciprocity of state licenses.

Insurance Examining Fees.

In the report of the secretary, Dr. E. E. Maxey, he advocated an agreement of the physicians of the state to keep the rates for examining applicants for insurance not less than $5.

Prevention of Venereal Diseases.

DR. J. M. TAYLOR, Boise, read a paper on this subject.

DISCUSSION.

DR. J. N. ALLEY, Lapwai, thought the physician is to blame for a great many innocent infections. Too many uncured patients are allowed to marry innocent girls. He favors a campaign of education of the public that will enlighten the people as to the prevalence of venereal diseases, the difficulty of cure, the danger of innocent infection, and the proper methods of prevention. He agreed with the essayist in that alcohol is a very material factor in the propagation of venereal diseases. High living is another causative factor.

DR. C. W. SHAFF, Lewiston, said that police surveillance has proved a failure, for the simple reason that examining physicians will not take necessary pains in their examinations of prostitutes. He makes it a rule in his practice not to dis-

charge his patients with gonorrhea until at least two weeks after the gonococcus has disappeared from the discharge. He lauded the influence of the Y. M. C. A. in keeping young men pure and clean, and thought that physicians should encourage young men to affiliate themselves with such institutions.

DR. R. L. GILLESPIE, Portland, found many cases of melancholia caused by gonorrhea. He thinks that physicians should be moralists and give freely of their advice to the boy and girl just entering into manhood and womanhood. The dark side and dangers of sexual dissipation should be explained to them, and he sees no reason why a young man should not be as virtuous as he expects his wife to be.

DR. C. E. SEARS, Wallace, thought that there should be some set rule for saying that a man is cured, and suggested that in cases where a discharge still lingers, that the prostate should be massaged, the urine centrifugated and examined for gonococci every week for three months, before the patient can be considered cured.

Neurasthenia and Melancholia.

DR. R. L. GILLESPIE, Portland, read a paper on neurasthenia, and DR. JOHN W. GIVENS, Oro Fino, one on melancholia. These two papers were discussed jointly.

DISCUSSION.

DR. W. T. WILLIAMSON, Portland, thought heredity an element that enters into the cause of nearly all cases of neurasthenia and melancholia. He considers neurasthenia purely a nervous disease inasmuch as it has so far been impossible to discover its cause or pathology. Melancholia is not a disease; it is only a symptom. We are advancing in our classification of the types of insanity. He did not agree with Dr. Givens on the subject of discussing the suicidal tendency with melancholic patients. He thinks it is a mistake to do so, because the patient's mind is more or less in a groove and any argument with or presentation of the subject to the patient is suggestive. Such patients are not capable of reasoning and arguments usually excite antagonism. He emphasized the beneficial effects of opium in the treatment of melancholia by driving away the patient's melancholic thoughts and thus obtunding the diseased mind. This, with full feeding and proper exercise, is the best line of treatment.

DR. R. L. GILLESPIE, Portland, said that he did not wish to be understood as claiming that neurasthenia is a disease in the same sense as locomotor ataxia. He believes it to be purely functional, but its pathology is not known. These patients are in a groove, and the more they think the deeper becomes the groove. Children's habits should be better regulated. Our school system is too rigid. Excesses of every kind should be avoided. Liquor, tobacco, late hours, etc., have no place in a child's life.

DR. J. W. GIVENS, Oro Fino, believes in discussing the subject of suicide with his melancholic subjects, as it will often strengthen the paient and enable him to resist the desire. He said he is not afraid to discuss the patient's condition with him, but, of course, one must know the patient's condition and use care. He is of the opinion that we can overfeed these patients, as all of the digestive organs are more or less depressed and in no shape to be overburdened. In his opinion, melancholia is caused by a perverted nutrition, and this gives the indications for treatment.

Neglected Conditions of Childhood.

DR. E. F. CONYNGHAM, Lewiston, read this paper.

DISCUSSION.

DR. R. C. COFFEY, Portland, stated that he has found that a large per cent. of the nurses who enter the hospital before 21 years of age contract flatfoot. But age is not the only factor as luxury previous to coming to hospital in large framed women seems also to be a predisposing cause. He thinks that all children should go barefooted.

DR. A. C. SMITH, Portland, said that flatfoot never develops in children who have gone barefooted, and he thinks that all children should go barefooted.

DR. J. N. ALLEY, Lapwai, spoke of placing strips of sole leather in the shoe to raise the arch of the foot. In his experience this has been very satisfactory.

DR. C. E. SEARS, Wallace, said that in the use of the different appliances recommended for this trouble we forget that weakness of certain muscles is the cause of the deformity found, and appliances do not cure this weakness. Severe cases must have weak muscles exercised.

Diarrhea in Infancy and Early Life.

DR. ALEX. HUNTER, Kendrick, contributed this paper.

DISCUSSION.

DR. C. W. SCHAFF, Lewiston, laid stress on the fact that we are yet unable to determine in many cases the causative factors in the diarrhea of infancy. He stated that in Lewiston they had very few cases during the hot summer months, but in the fall, with the onset of colder weather, there is a marked increase in the number of cases.

DR. R. W. COFFEY, Portland, thought that the quality of the drinking water is to blame for most of these cases of diarrhea. In Portland the leading undertakers state that since the city began using the Bull Run water, or pure water, the death rate from this disease has decreased about 20 per cent.

DR. C. E. SEARS, Wallace, stated that at Wallace they had two sources of water supply—wells and city water. The latter is piped for some distance from a mountain stream and is considered pure. In the families using the city water he has found very few cases of diarrhea in children, while in families using well water there is an epidemic of diarrhea every year.

DR. J. W. GIVENS, Oro Fino, said that in the treatment of these cases he found it advisable to follow the suggestions of Christopher concerning the diet. When the stool smells sour, cut out hydrocarbons and feed the child a nitrogenous diet, and when the stool smells foul and very offensive, cut out nitrogenous diet and feed on hydrocarbons, such as rice-water, barley-water, etc. Albumin-water is an excellent food in most cases. It is often a problem to know what to do for these little fellows. The season of the year is not altogether the cause of these conditions. Watermelons and fruits unquestionably have causative effect. In his treatment of diarrheal conditions he has secured excellent results from the free use of mineral water, boiled milk and black pepper.

Surgical Anatomy of the Mastoid Antrum.

DR. C. W. SHAFF, Lewiston, read this paper.

DISCUSSION.

DR. A. C. SMITH, Portland, has often found it very difficult to find the triangle spoken of as a guide in locating the antrum. He thought a better plan is to use the external meatus as a point of base. A horizontal line passing through the upper half of the external meatus, and extending posterior far enough (about one-fourth inch) to the free posterior wall of the canal, will represent the lower and anterior limits of the bone incision. He contended that it is better to take a chance of cutting into the sinus than to leave a portion of the diseased bone. The hemorrhage can be controlled by a firm packing of iodoform gauze. With the facial nerve it is different. If it is possible to avoid injury to this structure it must be saved, but even here, if it is necessary to sacrifice the nerve rather than to leave diseased bone, the nerve should be cut.

DR. R. C. COFFEY, Portland, agreed with Dr. Smith that there are cases in which we are compelled to disregard all rules as laid down for guidance in operating on these cases. The surgeon must have a clear head, must know his anatomy, and use his best judgment in treatment of each case.

Obstetrics in Country Practice.

DR. W. A. ROTHWELL, Kendrick, contributed this paper.

DISCUSSION.

DR. S. E. BRUCE, Lewiston, took exception to the use of the antepartum douche, claiming that it is not only useless but often injurious.

DR. E. L. BURKE, Culdesac, thought that the diagnosis of the presentation is important. It is not unusual to prolong the use of forceps because of the failure to diagnose the presentation as a difficult one.

Diagnosis and Treatment of Gastric Ulcer.

DR. CHAS. E. SEARS, Wallace, read this paper.

DISCUSSION.

Dr. J. F. Hurlburt, Lewiston, said that this condition is often very confusing. The symptoms may not appear in their regular order, and not infrequently the first indication of an acute gastric ulcer is the hemorrhage. He is in doubt as to the indications for surgical interference.

Dr. R. C. Coffey, Portland, stated that the Mayos never operate on a gastric ulcer case until the patient has seen and tried the treatment of at least seven medical men. Ante mortem inspection has thrown much light on this condition. It is now known that the vast proportion of the chronic, incurable cases of dyspepsia are caused by chronic gastric ulcer. Rodman treats these cases for four weeks when, if there is no improvement, he considers them surgical.

Dr. A. C. Smith, Portland, believed that surgery is in a period of evolution. The objectionable features of gastroenterostomy are gradually being eliminated, but gastroenterostomy will continue to be done posteriorly, with short loop and elimination of the pylorus. He is of the opinion that the pyloroplasty of Finney will be the operation of the future for these cases. With this operation there are fewer adhesions and the pylorus is preserved.

Peritonitis and Intussusception.

Dr. T. J. Costello, Lewiston, read a paper on "Surgical Treatment of Peritonitis," and Dr. R. C. Coffey, Portland, one on "Intestinal Intussusception." These two papers were discussed jointly.

DISCUSSION.

Dr. A. C. Smith, Portland, said that the two main features of the treatment of peritonitis are posture and drainage. Elaborate work of any sort should be avoided at operation, and local anesthesia should be used in as many cases as possible. Females are often drained to advantage through the vagina. The mortality is high in gangrenous cases of intussusception on account of their acute intensity, and he believed it will always remain high. He thinks the radical operation will be done less in the future and that physicians will be more inclined to temporize. The ileo-cecal anastomosis with the Murphy button is very often a good operation, leaving the gangrenous portion to slough off. He prefers the lateral anastomosis as it is easier and more quickly done.

Dr. C. E. Sears, Wallace, said that early diagnosis gives the best means of saving these patients, and the earlier the operation is done the better the results. He thinks that the empty intestine and the prevalence of colic, in infants, are important etiologic factors in intestinal intussusception.

Dr. R. I. Newell, Spokane, thought that there is some question as to the advisability of using rectal salines because of the fact that such injections tend to excite peristalsis and increase the amount of invagination.

Dr. R. C. Coffey, Portland, said that no one operation is applicable to all forms of intussusception, and that the operation done by him on this case should probably be limited to chronic cases. In regard to the treatment of peritonitis, besides drainage, he puts the patient in almost an erect sitting position, about 60 degrees, using a double inclined plane for back and leg rest. It is a radical modification of the Fowler position, and, he thought, should be called postural position.

Value of Blood Examination in Surgery.

Dr. R. I. Newell, of Spokane, read this paper.

DISCUSSION.

Dr. C. E. Sears, Wallace, emphasized the point that the value of the white blood count in appendicitis and peritonitis is not in the single count, but in the results of a series of consecutive counts. He considers a single count as of practically no value whatever.

Dr. R. C. Coffey, Portland, said that our knowledge of the pathology of the blood is continually changing and enlarging. At present the tendency is to study the kinds of white blood cells found. An abnormal excess of the polymorphonuclear cells is considered of more diagnostic value than a hyperleucocytosis.

The Therapeutic Limit of Mechanical Therapy.

Dr. Susan E. Bruce, Lewiston, read this paper.

DISCUSSION.

Dr. W. A. Rothwell thought that mechanical therapy, if used in connection with common sense and regularity of time for going to stool, is of great value in the treatment of constipation.

Dr. R. L. Gillespie, Portland, said that massage undoubtedly has its place in therapy, but it can be overdone. The question of diagnosis is so important, however, that massage in ignorant hands is apt to do as much harm as good. Massage is acknowledge to be an excellent treatment for constipation, but it must not be carried too far, nor should other rational methods be excluded.

Therapeutics

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulæ and outlines of treatment are answered in these columns.]

Varicella.

In cases of varicella, isolation should be practiced, according to the *Cyclopedia of Med. and Surgery*. The child should, as a rule, be put to bed for a day or so and sponged once or twice daily with a warm carbolized solution, carbolized lanolin being applied to the spots to allay the itching. Later, when the crusts have formed, the following combinations may be applied:

℞.	Acidi carbolici	m. xv	1
	Acidi borici	3iss	6
	Glycerini	3iii	12
	Aquæ rosæ	f℥i	30
	Aquæ q. s. ad	f℥iv	120

M. Sig.: Apply to the affected parts once a day. Or:

℞.	Acidi carbolici	m. v	30
	Ichthyoli	3iss	6
	Petrolati liq. q. s. ad	℥i	30

M. Fiat unguentum. Sig.: Apply locally on a soft cloth. Or:

℞.	Ichthyoli	gr. x	65
	Ung. zinci oxidi	℥i	30

M. Fiat unguentum. Sig.: Apply locally on a cloth.

Acute and Chronic Bronchitis.

As a combination in the treatment of acute bronchitis, Stevens recommends the following:

℞.	Vini ipecacuanhæ	f3iss	6
	Potassii citratis	3iii	12
	Tinct. opii camphoratæ		
	Syrupi acaciæ, āā	f℥i	30
	Aquæ q. s. ad	f℥vi	180

M. Sig.: One tablespoonful every four hours in water.

When the condition tends to become subacute the following combination is advised:

℞.	Terebeni		
	Olei eucalypti, āā	f3ss	2
	Strych. sulphatis	gr. 1/3	02
	Codeinæ sulphatis	gr. ii-iii	12-.20

M. Fiant capsulæ No. xii. Sig.: One capsule every four hours.

In the chronic form the following combinations are of value:

℞.	Terebeni		
	Olei eucalypti		
	Olei santali, āā	f3i-iss	4-6
	Codeinæ	gr. iii-vi	20-.25

M. Fiant capsulæ No. xxiv. Sig.: One capsule after each meal and at bedtime. Or:

℞.	Terpini hydratis	3i	4
	Guaiacol carb.	3ii	8
	Strych. sulphatis	gr. ss	03
	Codeinæ	gr. iii	20

M. Fiant capsulæ No. xxiv. Sig.: One or two capsules three or four times a day. Or:

℞. Apomorphinæ hydrochlor.....gr. ss |03
Syrupi pruni Virg.....f℥ii 60|
Syrupi picis liquidæ.....f℥iv 120|

M. Sig.: One tablespoonful three times a day in water.

As an inhalation the following combination is of value, according to Stevens:

℞. Chloroformi .....f3ss-i 2-4|
Creosoti
Terebeni
Olei pini Sylves, āā.....f3iss 6|
Alcoholis q. s. ad.....f℥i 30|

M. Sig.: From 5 to 20 drops to be used in the inhaler three or four times a day.

Leucorrhea.

This condition is caused by a hypersecertion of the vaginal glands or those of the cervical canal of the uterus. According to Hare, in his "Therapeutics," this condition is dependent on many causes for its existence, such as a catarrh of the Fallopian tubes, a general plethoric condition or a state of anemia from any cause.

The treatment of leucorrhea, according to Hare, may be directed toward internal medication, with the hope of remedying the condition or by local applications. Some authorities advise strongly against any local treatment, especially when leucorrhea exists with the pregnant state. They believe that frequent antiseptic douchings destroy the epithelia and render the mucous membrane less able to withstand bacterial invasion. To correct the anemia which is so frequently present in these cases, Hare advises the following combinations:

℞. Acidi arsenosi.....gr. ¼ |015
Ferri reducti.....gr. v 30|
Quin. sulphatis.....gr. xxx 2|

M. Fiant pilula No. xx. Sig.: One pill three times a day.

Or:

℞. Tinct. ferri chloridi.....f3i 4|
Tinct. cinchonæ co.....f℥ii 60|
Tinct. gentianæ co q. s. ad.....f℥iv 120|

M. Sig.: One dessertspoonful three times a day, after meals.

This author states that small doses of the sulphate of iron are better than too large doses, owing to its astringent properties; at the same time the bowels must be carefully watched.

The local applications should consist in counter irritation and vaginal injections, or painting the vaginal mucous membrane over with proper applications, such as a mixture of iodin, carbolic acid and chloral, as follows:

℞. Iodi resublim.....3iv 15|
Acidi carbol. crys.
Chloralis hydratis, āā.....℥i 30|

M. Rub the iodin and chloral in a glass mortar into a powder and add the carbolic acid. Sig.: To be applied by the physician to the parts involved.

Astringent injections, according to Hare, are advisable. A very cheap astringent may be prepared by making an infusion of powdered white oak bark in a pint of water. The following combination may be used for the same purpose:

℞. Glycerini .....℥i 30|
Acidi tannici .....℥i 30|
Aquæ dest. .....Oiv 2000|

M. Sig.: To be used as a vaginal douche.

Or the following combination, according to Ringer, may be employed:

℞. Sodii bicarb. .....3i 4|
Tinct. belladonnæ .....f3ii 8|
Aquæ .....Oi 500|

M. Sig.: To be used as a vaginal wash.

When the leucorrheal discharge is fetid the following combination is advised:

℞. Potass. permanganatis .....3ss 2|
Aquæ .....Oi 500|

M. Sig.: As a douche.

In purulent vaginitis, specific or otherwise, the following is advised:

℞. Creolin .....f3ss-i 2-4|
Ext. hydrastis canaden. flu.....f3iiss 10|
Aquæ .....f℥viii 240|

M. Sig.: Two tablespoonfuls to a pint of hot water; shake thoroughly and use as an injection.

He mentions the fact that when vaginal injections are used large quantities—from three to four liters—should be used at a time. The following astringent solution is a very good one:

℞. Zinci sulphatis
Alum sulph., āā.....3i 4|
Glycerini .....f℥vi 180|

M. Sig.: One tablespoonful to each quart of water, as an injection.

When cases of vaginitis come on acutely some authorities advise rest in bed with a mild purgative along with the vaginal douches, which should consist of a gallon of hot boric acid solution, one teaspoonful of the powder to each pint of water or a 1 to 5,000 bichlorid of mercury solution. After the acute symptoms have subsided and the trouble becomes more or less localized, the inflamed areas may be touched with a silver nitrate solution of from 5 to 10 per cent. strength.

Epilepsy.

The essential feature in the pathology of epilspsy, according to M. R. Hughes, in the *Kansas City Medical Record*, is the alternating state, irritation and paralysis of the vasomotor mechanism of the brain and allied nervous system, but chiefly the brain. It is a functional vasomotor disease and alternating vasomotor condition of transitory paralysis and irritation, the irritation causing the contraction of the arteriole supply of the convulsive area involved. There is also ventricular dilatation, according to this author, caused by the excess of cerebrospinal fluid producing the coma and its symptoms. He states that no epileptic brain where death came in the status has ever been found with undistended ventricles. Petit mal attacks consist in a lesser vasomotor paralysis and lesser arteriole contraction involving the same motor area.

In the treatment of the disease, W. Runge, in the *British Medical Journal*, states that the diet should be unirritating and that indigestion and overloading of the stomach must be avoided. It has been found, however, that neither a vegetarian nor meat diet affects the number of fits. Exercise in the open air, without overexertion, is recommended. Among the medicinal preparations mentioned, lithium carbonate is one advised in cases in which there is no unusual output of uric acid, and while the author mentions a great many recent preparations which have been experimented with in the treatment of this disease, he states that the bromids still remain prominent as a therapeutic agent of epilepsy. Potassium bromid is considered the most effective preparation, or when this can not be given, sodium bromid, ammonium bromid or lithium bromid are recommended. He mentions the fact that strontium bromid has been found of value by some authorities on the ground that the system is more tolerant of this preparation than of the potassium bromid while the effect is equally as great. The important point that he brings out in the treatment of epilepsy is that the administration of the bromid should be continued over a long period of time. There are many opponents, however, to this preparation in combating the epileptiform attacks, basing their skepticism either on the poor results obtained in some cases, or on the fear of bromism in other cases. Other authorities, however, state that this latter fear is overdrawn and that the careful administration of the bromids will as a rule prevent the appearance of bromism. The digestion, of course, must be kept in the best possible condition by giving the patient large quantities of milk along with mineral waters in order to increase the excretion of solids through the kidneys.

When the heart is affected, potassium bromid must be administered with care, and in some cases must be entirely avoided. If there is increased salivation the author recommends tannin and hyoscyamus; for acne some preparation of arsenic is advised in combination with the bromids. The idea is still maintained that the diet should be poor in sodium chlorid as a means of rendering the bromin more effective. This idea is based on the fact that the bromin in the system takes the place of chlorin, consequently a diet which contains but a little sodium chlorid will render the patient more sensitive to bromid.

Runge speaks of the disadvantage of this method of treatment in that the patient quickly tires of the diet without salt,

and to remedy this condition the idea of using sodium bromid in the bread instead of common salt was introduced by Balint. His diet was as follows: From one-half to one quart of milk, from one-half to one dram of butter, three eggs, from 300 to 400 grams of bread and fruit. This diet contains two grams of salt and three grams of the bromids. Gowers recommends the combination of bromin with belladonna, digitalis and iron, while Brech advises strychnin with the bromid. Bechterew, according to the author, recommended giving the bromids in combination with infusum adonis vernalis. In some of his cases codein was combined with the bromids and was found to be very effective when the bromids alone failed. D. R. Brower of Chicago has had wide experience with both of these combinations with very beneficial results.

In summing up his article, the author states that the epileptic should order his whole life with reference to his disease; a suitable diet and a peaceful life is of great importance as well as the nature of his occupation. In general traumatic epilepsy he advises a bromid treatment, especially if after the injury general convulsions with loss of consciousness come on. On the other hand, trephining is to be preferred if at first there is only partial epilepsy and if the convulsions begin in a particular group of muscles, or if there is a localizing aura, especially if this aura can be produced by pressure on a scar. Typical Jacksonian epilepsy, whether traumatic or not, should always be treated early by trephining. For this purpose he recommends Horsely's method of excising the cortex involved. The long course of the bromid treatment should always follow the operation.

According to Italian investigators, who have made a study of the influence of diet in epilepsy free from salt and reduced in salt, the salt-free diet notably diminishes in all epileptics the number and severity of the attacks. In some cases they were kept away for several months. While in the reduced salt diet the number of fits was only diminished. To reduce the number and violence of attacks it was generally necessary to give small doses of bromid along with this diet, especially in the severe forms of the disease. According to their experience, a salt-free diet alone or in combination with the bromids, even when kept up for some years, did not produce on the patient any disturbance of the general condition of either the body or the mind.

Medicolegal

Sufficient Evidence of Severe Injury to Testicle Without Immediate Pain—Inferences Seemingly Opposed to Natural Law.

The Kansas City Court of Appeals says, in the personal injury case of Dunphy vs. St. Joseph Stockyards Co., that when one of the company's switch engines was derailed the plaintiff was sitting sidewise on the front drawhead with one foot on the footboard to partially support his weight, and with the projecting head of an iron pin in front of his privates. He claimed that the concussion from the derailment produced the wounding of his scrotum by the hard substance on which he was sitting. Whereas the company insisted that, under the facts disclosed by the plaintiff, it was physically impossible for him to have sustained the injuries of which he complained in the manner claimed by him.

According to the plaintiff, he experienced no pain at the time in the parts affected, and did not know he had been hurt until perhaps an hour afterwards. He did immediately suffer from nausea of some severity, but made no complaint. When the engine was replaced on the track, he resumed work and worked through the day. His testicles begun to pain him about an hour after the injury, and the pain increased during the day. After he went home in the evening, he complained to his brother of his injury, and both examined the injured parts. Two blue marks were discovered on opposite sides of the surface of the bag, indicating that it had been severely pinched. The next day he reported for duty and worked after a fashion, but was greatly distressed by the pain, which was then quite severe and continued to increase. He attempted to work during the next two days, and then was compelled to cease on account of the injury. The day he quit work he consulted a physician, who directed him to go to bed and use hot flaxseed poultices. He remained under that physician's care about a month, and then employed another one, who treated him for several months, and then found it necessary to remove one of the testicles on account of its rotten condition.

The company insisted, and in this was supported by the expert testimony it introduced, that it was utterly impossible for the testicle to have received an injury from a blow or from sudden compression of such severity that degeneration would follow without the accompaniment of intense pain, and, since the plaintiff admitted he suffered no pain, the court was asked to declare that he received no injury to his testicles from the negligence charged. The company argued and attempted to prove that the plaintiff for a year or more preceding the occurrence in question had been afflicted with gonorrhea. The whole fabric was built on an admission made by him that about one year before his injury the physician of a relief association had examined him and told him that he had the disease. But the court says that this was purely hearsay and devoid of probative value. The plaintiff vigorously denied that he had the disease or any of its characteristic symptoms. The physician who first treated him gave him no treatment for it, and the second one stated that he found no evidence of its presence.

Therefore the court was confined, it says, to the consideration of a single question: Was the inference that the plaintiff's injury resulted from a blow or bruise received during the derailment so plainly opposed to natural law as to compel its rejection? It is well settled that courts will not stultify themselves by giving any heed to the testimony of witnesses or the inferences deducible therefrom that are so opposed to all natural law and reasonable probability as to be manifestly false. On the other hand, courts should observe the utmost caution to avoid assuming knowledge of natural facts and laws that are beyond the scope of common positive knowledge. The mysteries of nature are so manifold, deep, and subtle that the finite mind can not indulge in dogmatic conclusions respecting them without falling into error. Human nature, being microcosmic, is not certainly known save in its most prominent outlines. Different men in their physical characteristics differ as widely as they do in outward appearance. No two individuals are alike, and, when the court is called on to apply procrustean rules, it should see to it that they fit all alike. It has been said that one man's meat is another's poison. What will kill one man will hardly injure another, and what will cause excruciating pain to one is often quite painless to another. The second physician, a reputable and skilled one, reached the conclusion from his knowledge of the case and its history that the plaintiff's condition was the direct result of the injury of which he complained. His process of reasoning was rational and plausible. In his opinion, intense pain does usually accompany a violent injury to the testicles, but the presence of pain and its degree depend on the physical peculiarities of the subject, the nature of the injury, and the circumstances under which it is received. In his science, he knew of five causes that could have produced the degeneration, cancer, syphilis, gonorrhea, tuberculosis and external injury. His investigations disclosed no evidence indicating the presence of the first four mentioned. By exclusion but one cause was left that could have produced the condition before him, and this he accepted as the real cause. Although it seems extraordinary that the plaintiff should have escaped immediate pain, the court can not say that this fact made his injury in the manner charged a physical impossibility. There was no error in treating this issue as one of fact. A judgment for the plaintiff for $2,000 is affirmed.

Liability of Railroad Company to Surgeon Under Rules.

The St. Louis Court of Appeals says that the case of Hays vs. Wabash Railroad Company was brought to recover for professional services rendered by the plaintiff in the treatment

of a man injured while a passenger on one of the company's trains. At the time the plaintiff was the local surgeon of the company, and also local surgeon of a hospital association composed of and supported by the employés of the company. The conductor of the train on which the man referred to was injured telegraphed to the plaintiff, informing him of the injury and asking him to meet the train and take charge of the man, which he did, having him removed to the hospital of the employés' association, where he operated on him and continued to treat him until he was discharged from his employment by the company. He reported the case to the chief surgeon of the hospital association, but did not report it to the company's chief claim agent, although the uncontradicted evidence was that it was his duty to do so and he was furnished with blanks for the purpose. The chief claim agent testified that on receipt of such reports he determined whether or not the company would bear the expense of medical and surgical treatment for injured passengers, and that no local surgeon was authorized to treat an injured passenger at the expense of the company without the consent or direction of the proper claim agent. The company, the evidence also showed, paid the man's hospital bill.

One of the company's rules was: "In case of wrecks or accidents where a number of persons, either passengers or employes, are injured and require immediate attention, summon at once the nearest competent surgeon; summon at the same time whichever local surgeon can be gotten to the scene of the accident most quickly, and notify by wire at once the nearest hospital and the chief officers of the road, giving full particulars as to the names and whereabouts of the injured persons, the name of the surgeon in attendance and stating what further action is required for the relief of the injured." Another rule was: "The bospital, dispensary and local surgeons who have heretofore, or may hereafter be appointed by the chief surgeon of the hospital association to such positions in connection with the hospital association, are hereby appointed local surgeons of this company for the care and treatment, under the rules bereinbefore established, of all passengers, citizens and non-employés who may be injured by this company's lines, and they shall be summoned if possible in all such cases, and as such will be respected and assisted in the discharge of their professional duties, when called on."

The court holds that, in meeting the train at the depot, in response to the conductor's telegram, taking charge of the man and removing him to the hospital, and there treating him for such reasonable time as the company's claim agent could have been notified of the case and his answer returned, the plaintiff acted strictly within the terms of the first rule quoted above and as he did not agree to render gratuitous services for the company, wa clearly entitled to recover the reasonable value of his services rendered during such time. Again, referring to both rules, it says that it was plain that under these rules the plaintiff bad authority in the first instance, to treat the man at the expense of the company, the question arising when, if at all (before the plaintiff's discharge as local surgeon), his authority ceased. The conclusion is that the plaintiff's recovery should be confined to services rendered in the circumstances stated above with reference to the application of the first rule.

The report to the chief surgeon of the hospital association, the court says, did not excuse the plaintiff's failure to report to the general claim agent, whose testimony was that be alone had authority, after receiving such report, to determine whether or not an injured passenger should be professionally treated by the company's surgeon. Nor does the court think that the effect of this rule or custom of the company was avoided by the fact that two assistants of the claim agent had visited the town to investigate the facts of the injury, one of them making a personal request of the plaintiff to cure the man, it further appearing that the agency of the one making the request did not include jurisdiction over personal injury cases, while there was no evidence that the other assistant claim agent said anything about treating the man, and while the general claim agent testified that he never heard of the case until he heard of it through the plaintiff's attorney.

But a rule of the company which stated that because it donated to the hospital association the use of its telegraph and train service to facilitate the care and treatment of sick or injured employés all persons in the company's service, and all others, were notified that no bills for medical or surgical services, etc., would be paid by the company, unless the same were first authorized by the general claim agent, the court holds was inapplicable to cases of injuries to passengers.

Current Medical Literature

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

Medical Record, New York.

October 20.

1 *Angina Pectoris; Its Mechanism and Treatment. F. Hare, London, England.
2 Diagnosis and Treatment of the Acute Infections of the Gall Bladder. L. W. Hotchkiss, New York.
3 *Illustrative Cases of Prostatic Carcinoma. J. B. Squier, New York.
4 *Koplik Spots; Their Relation and Interest to Laryngologists. H. G. Langworthy, Dubuque, Iowa.
5 The Medical Museum. D. B. Delavan, New York.
6 *Dried Tetanus Antitoxin as a Dressing for Wounds. J. J. Kinyoun, Glenolden, Pa.
7 *Case of Intestinal Obstruction in a Child, Due to Tuberculous Peritonitis Following Bronchopneumonia. H. H. Pelton, New York.
8 *Disinfection of Rooms by Formaldehyd. Comparative Bactericidal Value of Various Methods. H. A. Higley, Brooklyn, N. Y.
9 *Perforative Appendicitis Caused by a Foreign Body. F. H. Jackson, Houlton, Maine.

1. **Angina Pectoris.**—Hare states that the pain of angina pectoris depends on vascular distension in the mediastinum, which is the result of a more or less localized vasodilatation and of a more or less generalized peripheral vasoconstriction. Two other factors in the mediastinal distension which have to be considered are the work done by the left ventricle and the integrity of the mitral valve. Whatever reduces the work of the left ventricle will reduce the distension, and *vice versa*. The integrity of the mitral valve is essential for the development and maintenance of the mediastinal vascular distension. Inhalation of amyl nitrite is the most prompt and reliable means of relief in most cases. Iodid of potassium in large doses affords in many cases marked relief from the tendency to the recurring paroxysms.

3. **Prostatic Carcinoma.**—Squier emphasizes the futility of the endeavor to do more than palliate the patient's sufferings by operation when he is the victim of prostatic carcinoma. If the disease is at all advanced, the majority of patients live longer if palliative measures are employed than by extensive radical operation. Squier found that permanent suprapubic drainage gives great comfort to the patient.

4. **Koplik Spots.**—Langworthy has noticed that Koplik spots appear earliest on the mucous membrane near the angle of the mouth and in areas covered by the gums. A strong, clear light is essential.

6. **Dried Tetanus Antitoxin as a Dressing for Wounds.**—Kinyoun has applied antitoxin to abrasions, or incised, contused and lacerated wounds, and also a number of suppurating wounds with a view of preventing tetanus. These injuries healed more rapidly and with less disturbance than had been previously observed in those treated in the ordinary way. It has been demonstrated, he states, that the powdered serum was responsible for the good results. A number of infected wounds due principally to vaccination and furunculosis have been treated in like manner. In these cases healing rapidly resulted. The powdered tetanus antitoxin was also used once in a nasal operation. The wound healed within a week. These results showed that the dried serum possesses qualities other than its specific body, the antitoxin. This must be of the nature of an immune body.

7. **Intestinal Obstruction Due to Tuberculous Peritonitis Following Bronchopneumonia.**—Pelton describes the case of a child, less than a year old, that had an attack of broncho-

pneumonia in February. As the signs in the chest and elevated temperature did not entirely disappear, the possibility of tuberculous involvement of the bronchial glands and lungs was considered. The patient was removed to the hospital in the last part of March in a state of marked prostration. The abdomen was full, distended, tense and tympanitic, except in the flanks, where there was shifting dulness. There was general tenderness, more marked on the right side, and moderate general rigidity. Rectal examination was negative. Exploratory laparotomy revealed small miliary tubercles about the cecum where adhesions were most abundant. At the cecum a hard, movable mass in the lumen of the gut was felt. The mass was pushed on into the transverse colon, and the wound was closed. Death took place about two hours later. Autopsy was not permitted.

8. **Disinfection of Rooms by Formaldehyd.**—Higley declares that formaldehyd gas, when placed under proper conditions and in sufficient quantity, is a powerful bactericidal agent. This action, however, is limited to the surface of objects with which it comes in contact, its penetrating power being practically nil. He has investigated different forms of apparatus for producing and evolving formaldehyd gas. In the tables which he presents the best comparative bactericidal results were obtained with the lime method.

9. **Perforative Appendicitis.**—Jackson describes a case of perforative appendicitis which came under his care. A diagnosis of an exacerbation of a chronic appendicitis was made, and operation advised. When the peritoneum was opened a large amount of bloody serum poured out. The omentum was highly congested and was adherent to the cecum and completely enveloped the appendix. A pointed object was felt projecting through the omentum. It proved to be a fish bone an inch and a quarter long.

Boston Medical and Surgical Journal.
October 18.

10 *Small Fibroma of the Ileum Resulting in Obstruction of the Bowel, with a Consideration of Various Forms of Benign Intestinal Tumors. J. W. Dewis, Boston.
11 *The Bier Treatment of Infections and Septic Wounds of the Extremities. E. A. Codman, Boston.

10. **Obstruction of Ileum by Fibroma.**—Dewis reports the case of a woman aged 64, who for ten years suffered from obstinate and persistent constipation and occasional vomiting spells, without pain, and without relation to the ingestion of food. After partaking of a very hearty dinner she was attacked suddenly by severe abdominal pain and distress, vomiting of offensive material and symptoms of collapse. The abdomen was protruded, tympanitic and tender. Death ensued six days afterward, resulting from shock. On opening the abdomen there was found in the region of the ileocecal valve an intussusception about 2 inches long, with a round, movable body attached to the lower end. Growing from the wall into the lumen of the intestine, about 4 inches above the ileocecal valve, and lying over the edge of the invaginated portion was a small oval tumor, dark red brown in color, which was found to be a fibroma. Dewis believes that the acute obstruction was caused by the tumor. He reviews the literature on this subject and appends a long list of references.

11. **Bier Treatment of Infections of Extremities.**—Codman is very much impressed with the clinical value of the Bier treatment of infections and septic wounds of the extremities. The treatment is applied in the following manner: When an old (i. e., one who has been seen before) patient arrives in the morning his dressing is taken down and the wound examined and its condition recorded. A rubber strap two inches wide and provided with a buckle is applied about his arm or leg well above the lesion. This is drawn as tight as possible without stopping the pulse. The wound is covered with moist corrosive gauze and the patient sits down and waits an hour. The part is looked at from time to time to be sure that the circulation is not too greatly checked. At the end of the hour a moist dressing and splint are applied. The wound is not as a rule packed or drained. The same routine is followed each day. The cases which did the best were suppurations of the staphylococcus type, while the streptococcus or erysipeloid type has been less remarkably affected.

The New York Medical Journal.
October 20.

12 *The Salt-Free Treatment of Epilepsy, Apropos of Thirty-seven Cases. A. Gordon, Philadelphia.
13 *Eczema. A Sketch of the Process and Its Management. J. C. Johnston, New York.
14 *Radical Mastoid Operation Modified to Allow the Preservation of Normal Hearing. W. S. Bryant, New York.
15 Dwarfed and Deformed Mastoid a Sequel to Imperceptible Mastoiditis Complicating Chronic Suppurative Otitis Media. W. E. Driver, Norfolk, Va.
16 Improved United States Inspection of Animals, Meat and Meat Food Products. D. A. Hughes, Omaha, Neb.
17 La Médecine and Le Médecin in Molière. W. B. Konkle, Montoursville, Pa.
18 Postmortem Findings in Gastric Ulcer. M. R. Barker, Chicago.
19 *Gastrointestinal Disturbances Associated with Migraine. J. A. Lichty, Pittsburg, Pa.
20 Fatal Case of Scopolamin Poisoning. G. W. Ely, Pittsburg, Pa.

12.—See abstract in THE JOURNAL, Oct. 20, 1906, page 1323.

13. **Eczema.**—Johnston reviews the clinical history of this affection and presents particularly a very thorough study of its histopathology.

14. **Modified Radical Mastoid Operation.**—Bryant describes a modification of the radical mastoid operation in patients who had good hearing up to a short time before the operation. These, he says, are usually cases of acute extensive involvement of the temporal bone, more rarely cases of chronic purulent otitis media, in which the sound conducting mechanism has been retained more or less intact. The object in these cases is to remove all the diseased bone and to produce perfect drainage, while at the same time preserving the auditory function of the middle ear. The ligamentous attachment and mucous membrane reduplications of the ossicular system lie between the epitympanum and the atrium, and prevent through drainage, though they allow drainage from both their upper and lower surfaces. To establish this drainage Bryant makes a U-shaped myringotomy to drain the atrium, and opens the mastoid antrum to drain the epitympanum. It is also necessary to remove all the diseased bone to arrest the progress of the infection and open all the cells of the middle ear system to throw them into one cavity leading to the epitympanum. The outer anterior wall of the antrum should be wholly taken away, except enough to support the annulus with the adjacent membrana tympani. The suspensory ligament of the malleus must be protected from injury, also the fan-shaped ligament of the incus. By these procedures it is possible to drain the upper and back part of the tympanum through the mastoid wound, and the lower anterior part through the meatus without permanent injury to the sound conducting mechanism. A case in point is cited.

19. **Gastrointestinal Disturbances Associated with Migraine.**—Lichty adds 108 cases to 73 cases previously reported in which gastrointestinal disturbances were associated with migraine. He thinks that it is decidedly an hereditary disease. Of the 181 cases, 116 gave a definite hereditary history, and only a few gave no hereditary history at all. Of the whole number 155 were females and 26 males. Ninety had prolapse of one or more of the abdominal organs, most often the right kidney. One hundred and thirty-seven patients gave a definite history of digestive disturbances between the attacks, such as heaviness after eating, pyrosis, fermentation, constipation or diarrhea. One hundred and one gastric analyses were made. There were 32 cases of hyperacidity, 24 cases of hypoacidity, and 25 were normal. By regulating, or leveling up, as Lichty calls it, digestive disturbances, he succeeded in accomplishing fairly good results. Bromids and cannabis indica are the only two drugs he used.

Lancet-Clinic, Cincinnati.
October 20.

21 Relief of Pain in Labor. W. Gillespie, Cincinnati.

American Journal of Obstetrics, New York.
October.

22 *Careful Study of the Parametrium in Twenty-Seven Cases of Carcinoma Cervicis Uteri, and its Clinical Significance. J. A. Sampson, Albany, N. Y.
23 *Urethral Bacteria as a Factor in the Etiology of Cystitis in Women. F. J. Taussig, St. Louis.
24 *Evolution of Modern Cystoscopic Instruments and Methods. L. Peters, Columbia.
25 Cystocele. J. R. Goffe, New York.

26 The Operative Treatment of Cystocele in the Past One Hundred Years. C. G. Child, Jr., New York.
27 The Construction of a New Vagina. A. Brothers, New York.
28 A Fatal Case of Eclampsia, After the Delivery of Twins; Remarks on the Etiology and Pathology of the Disease. C. G. Parnall, Jackson, Mich.

22. **The Parametrium in Carcinoma Cervicis Uteri.**—Sampson was able to demonstrate cancer either in the parametrium, the pelvic lymph nodes or both, in 20 out of 27 specimens studied, and furthermore, the pelvic lymph nodes were not removed in 3 of the 7 cases in which the growth was apparently local, thus suggesting that it may not have been local in all of these 3 cases. In 3 of the 10 specimens in which cancer was not found in the parametrium, it was found in the pelvic lymph nodes, i. e., a small primary growth had metastasized to the pelvic lymph nodes without apparently infecting the parametrium through which it had passed. The parametrium was found involved in 17 instances; 8 times by direct extension alone, either *en masse*, or in the form of thread-like processes frequently along the lymph channels or in the nerve sheaths; 3 times by metastases in the lymph structures of the parametruim without any evidence of a direct extension of the disease beyond the cervix; and in 6 cases both forms of invasion were present. In the 9 instances of metastases in the parametrium, the lymph nodes were involved in all but one case, and in only one case was the metastasis apparently in a lymph channel.

Adhesions, from pelvic inflammatory disease, independent of the cancer, may make the cancer appear more advanced than it is, by causing pain which may wrongly be attributed to the cancer. The presence of a direct extension of the disease into the parametrium is usually accompanied by a reaction on the part of the surrounding tissue, which manifests itself by a cellular infiltration or hypertrophy of this tissue, thus causing induration in addition to that which may be caused by the cancer. The parametrium may feel indurated and yet show no evidence of the cancer in it. A parametrium may feel normal and yet contain cancer, occasionally as thread-like extension but probably more often as metastases. The pelvic lymph nodes are involved in from one-third to one-half of the operable cases, and only by the microscope can it be determined whether they are cancerous or not.

The primary growth may be limited to the cervix, and yet it may have metastasized to the pelvic lymph nodes, or the former may be large and the latter nodes free. A wide excision of the parametrium is demanded, first, because it is so frequently involved, 17 out of 27 cases; and secondly, because the growth is local in from one-half to two-thirds of the operable cases, and probably even in 40 per cent. of the extensive ones. Sampson believes that in probably half of the cases of cervical cancer seen at the present time there has been a history of neglected uterine bleeding for over six months; this was true in the 27 cases reported here. A short period of neglected uterine bleeding or other symptoms referable to uterine trouble, may permit the growth to extend so far that the disease becomes incurable.

23. **Urethral Bacteria in Cystitis in Women.**—Taussig states that the normal urethra free of disease is sterile in only a small proportion of cases. In his series of 45 cases it was sterile eight times. In about half of the total number of urethræ examined pathogenic germs were present. The percentage in his series was as high as 62.5 per cent. Of the pathogenic bacteria found, *Staphylococcus pyogenes albus* is the most common. The occurrence of the colon bacillus seems very variable. It is found frequently when patients are confined to bed. In his series it was isolated only three times. That these urethral bacteria are actually carried into the bladder by catheterization was shown in eight examinations in which the urethral secretion and the urine obtained by catheterization were compared. In 6 cases the bacterial findings were identical, and in the other 2 cases the difference was a slight one.

Irrigation of the urethra with boric acid removes a large proportion of the urethral bacteria, but when the number is great does not suffice to remove all. Taussig claims that the double catheters devised for the purpose of avoiding contamination with the urethral bacteria do not as yet deserve to be generally used. Tests made with the instrument of Rosenstein show that its protection is only a partial one. It has other objections, so that ordinarily the usual glass catheter is preferable. Whenever repeated catheterization becomes necessary, therefore, Taussig advises certain precautions to prevent an infection of the bladder by urethral bacteria. Hexamethylenamin or an allied product should be given internally. The ordinary glass catheter is introduced part way into the urethra and the urethra irrigated with half a pint of boric-acid solution, taking care that the fluid does not enter the bladder. The catheter is then passed into the bladder, the urine emptied, and the bladder irrigated with one to two pints more of boric-acid solution.

24. **Evolution of Cystoscopy.**—Peters believes that the cystoscope of the Nitze type is the best instrument for cystoscopy in the male, but that it is unnecessarily elaborate, delicate and expensive for examining the female bladder where the conditions are so much simpler than in the male. Kelly's instrument, he thinks, is the ideal one for the female bladder.

American Journal of Surgery, New York.
October.

29 Subcutaneous Rupture of Abdominal Viscera, with Especial Reference to the Intestine and Kidney. E. Eliot, Jr., New York.
30 Surgery of the Tympano-Mastoid Region of the Infant and Young Child. S. J. Kopetzky, New York.
31 Drainage of the Pelvic Cavity of the Male (in Peritonitis). W. Jepson, Sioux City, Iowa.
32 Fracture of the Base of the Fifth Metatarsal Bone by Indirect Violence. W. M. Brickner, New York.
33 *Roentgen Ray Treatment of Malignant Disease of the Bladder Through a Suprapubic Incision. A. L. Gray, Richmond, Va.
34 Rupture of Both Kidneys with Intraperitoneal Hemorrhage; Removal of All of Left Kidney and Part of Right Kidney. A. L. Franklin, Cumberland, Md.

33.—See abstract in THE JOURNAL, Sept. 15, 1906, page 889.

Physician and Surgeon, Detroit and Ann Arbor, Mich.
September.

35 Unsuspected Parasitic Origin of Many Dermatoses. W. F. Breakey, Ann Arbor.
36 Acute Pneumococcic Cerebrospinal Meningitis of Nasal Origin. H. A. Freund, Ann Arbor.
37 Lessons in Longevity. J. S. Caulkins, Thornville, Mich.
38 Metatarsalgia. W. E. Blodgett, Ann Arbor.

Chicago Medical Recorder.
October 15.

39 Some Forms of Hereditary Cataract. C. A. Wood, Chicago.
40 Nervous Children. A. Church, Chicago.
41 Treatment of Rectal Fistula. C. J. Drueck, Chicago.
42 Comparative Speed Efficacy of the Intravenous Method of Administering Mercury in Syphilis. W. F. Bernart, Chicago.
43 Physiologic and Toxicologic Effects of Alcohol. J. Madden, Portland, Oregon.
44 The Magnate's Heart. W. F. Waugh, Chicago.

Journal of the Kansas Medical Society, Lawrence.
October.

45 Difficulties of an Internist. J. H. Latta, Wichita.
46 Acute Epidemic Jaundice. H. H. Ross, Sterling.
47 Brain Tumor. W. S. Lindsay, Topeka.
48 Postgraduate Work in Europe. J. E. Hunt, Atchison.
49 Medical Treatment of Diseases of the Gall Bladder and Biliary Tracts. D. I. Maggard, Wichita.

Denver Medical Times.
October.

50 Management of the Diabetic. E. P. Hershey, Denver.
51 Diabetes. P. D. Rothwell, Denver.
52 Treatment of Diabetes Mellitus. F. A. Greedy, Denver.
53 Case of Diabetes Mellitus. G. B. Crews, Denver.
54 Surgical Treatment of Tuberculosis of the Upper Air Passages and the Ear. R. Levy, Denver.
55 Intestinal Tumor. N. A. Johnson, Denver.
56 Treatment of Puerperal Sepsis. G. Law, Greeley.

Utah Medical Journal.
October.

57 Methods and Principles of Diagnosis in Stomach Diseases. W. R. Tyndale, Salt Lake City.
58 Perforating Gastric Ulcer. F. L. Dixon, Denver.

Journal of the Association of Military Surgeons of the United States, Carlisle, Pa.
October.

59 Effects of Climatic Extremes on the Health of Battleship Personnel. C. J. Decker, U. S. N.
60 The Medical Officer and the Line—A Reminiscence. R. S. Woodson, U. S. A.
61 Penetrating Gunshot Wound of the Abdomen, with Nineteen Perforations, Operation with Recovery. J. H. Iden, U. S. N.

Interstate Medical Journal, St. Louis, Mo.
October.

62 Importance to the Surgeon of a Study of Anatomic Appearances in the Living. M. H. Richardson, Boston.
63 Pyuria. E. G. Mark, Kansas City, Mo.

Indiana Medical Journal, Indianapolis.
October.

64 Arthritis Deformans and Chronic Articular Rheumatism; Their Treatment. G. D. Kahlo, French Lick Springs, Ind.
65 Phenomena of Life.
66 Influence of the Blood Glands on the Process of Metabolism. A. Lorand, Carlsbad.
67 Priapism from Nasal Reflex; Something for the Rhinologists. A. G. Hobbs, Atlanta, Ga.

The Medical Fortnightly, St. Louis.
October 10.

68 Internal and External Urethrotomy Combined. R. Harrison, London.
69 Talks to Recent Graduates. A. L. Benedict, Buffalo.
70 Ideal Attitude of the Physician Toward Alcohol as a Medicine, as a Food and as a Beverage. W. E. Shaw, Cincinnati.

Louisville Monthly Journal of Medicine and Surgery.
October.

71 Address of President Before Kentucky State Medical Association. G. S. McDonald, Beattyville.
72 Therapeutic Notes. W. T. Marrs, Peoria Heights, Ill.
73 Two Experiences with Acetozone. G. P. Brady, Chicago.
74 Uses of Atropin. A. P. Banfield, Catlettsburg.
75 Report of Cases. H. H. Grant, Louisville.
76 Fractures of the Upper Portion of the Femur. A. D. Willmoth, Louisville.
77 Uncle Josh on Modern Surgery. U. V. Williams, Frankfort, Ky.

Cleveland Medical and Surgical Reporter.
October.

78 Opium—A Practical Study. P. W. Shedd, New York.
79 Affections of the Seminal Vesicles. J. H. McVay, Toledo.
80 The Tonsil as a Factor in Infectious Diseases. C. H. Rust, Cleveland.
81 Ptomain Poisoning. P. H. Barton, Cleveland.
82 Congenital Abnormalities. J. T. Schlesselmann, Good Thunder, Minn.
83 A Plea for a Broader View of Homeopathy. C. S. Mack, Laporte, Ind.
84 Optical Defects of the Normal Eye. A. E. Ibershoff, Cleveland.

The Post-Graduate, New York.
October.

85 A Rapid Cure of Epithelioma of Lip. C. S. Cole, New York.
86 Report of a Method of Treating Pulmonary Tuberculosis. R. H. Halsey, New York.
87 Russell Treatment of Consumption Applied to Tuberculous Bones and Joints. A. H. Cilley, New York.
88 Malaria; Its Nature and Origin. H. T. Brooks.
89 Needed Reforms in the Medical Laws of the State of New York. F. Van Fleet, New York.
90 Myiasis. D. W. Cairns, New York.

Medicine, Detroit, Mich.
October.

91 Suggestions in Special Lines of Research Work for Women. V. A. Latham, Chicago.
92 Treatment of Iritis and Serous Iritis by Acetozone. C. Wray, London.
93 Enuresis. W. F. Stucky, Louisville, Ky.
94 Nargol in Acute Gonorrheal Prostatitis with Involvement of the Vesical Neck. C. L. Wheeler, Lexington.

Northwest Medicine, Seattle, Wash.
October.

95 Issues Which Confront the Medical Profession of the State of Washington. G. W. Libby, Spokane, Wash.

Journal of the Minnesota State Medical Association and the Northwestern Lancet, Minneapolis.
October 15.

96 Epidemiology as Applied to Typhoid Fever in Minnesota. H. W. Hill, Minneapolis.
97 Criminal Abortion. J. W. Andrewes, Mankato.
98 Objectionable Influence of Proprietary Medicines on the Young Practitioner. W. S. Fullerton, St. Paul.
99 Podagra. H. L. Staples, Minneapolis.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal.
October 6.

1 *Medical Women and Public Health Questions. Professor Byers.
2 Place of Dermatology in the Medical Curriculum. N. Walker.
3 *Influence of Light-Hunger in the Production of Psoriasis. J. N. Hyde.
4 *Evidence of the Existence of an Autotoxic Factor in the Production of Bullous Disease. J. C. Johnston.
5 Demonstration by Lantern Slides. J. A. Fordyce.
6 *Errors in the Treatment of Cutaneous Cancer. A. R. Robinson.
7 *Evolution of Intraprimary Lesions of Syphilis. R. W. Taylor.
8 *Case of Pityriasis Rubra. T. C. Gilchrist.
9 Case of Dermatitis Vegetans. W. T. Corlett.
10 Wrong and Right Use of Milk in Certain Diseases of the Skin. L. D. Bulkley.
11 *Observations on the Etiology and Treatment of Eczema. G. Chambers.
12 The Blood in Relation to Skin Diseases. T. Houston and J. C. Rankin.
13 International Coöperation in the Inspection of Emigrants and Immigrants. P. H. Bryce.
14 State Control of Health. J. C. Drennan.
15 *Legislation Regarding Food Preservatives. A. McGill.
16 *National Supervision and Standardization of Food. H. L. E. Johnson.

1. Medical Women and Public-Health Question.—Byers points out a few of the many public-health questions in which medical women may find ample scope for work, such as the medical inspection and supervision of school children; the reduction of infant mortality; the establishment of infant milk depots.

3. Light-Hunger in Production of Psoriasis.—Hyde emphasizes conclusions previously set forth that psoriasis is an expression in the skin of the human body of its resentment against long-continued exclusion of light from the surface. Psoriasis, he says, never affects the lower animals for the reason that the integument of such animals is very rarely screened from the light by artificial covering. If, he continues, psoriasis in man be an expression of resentment on the part of the skin against the partial or total exclusion of light from its artificially covered surfaces, it is clear that the number of persons whose skin is thus abnormally sensitive is relatively small. If psoriasis be a result of light-hunger in the skin of certain abnormally sensitive subjects, because of the greater or less degree of exclusion of light resulting from artificial covering of the body, the disorder should be most prevalent and most severe at those seasons of the year and in those countries in which sunlight is least abundant. The localization of the disease in the integument should be largely determined in the regions of such exclusion. The effective treatment would be by illumination of the regions chiefly involved.

4. Autotoxic Factor in Bullous Disease.—In view of the clinical evidence of systemic poisoning, which is known to be non-bacterial, the occurrence of eosinophilia and indicanuria, and the improved results of elimination treatment, Johnston thinks it hard to escape the conclusion that bullous disease is an autointoxication, and, further, that that autointoxication has its origin in the failure of the proteid metabolism. It is safe to assume, he says, that in the course of the process there is elaborated, possibly among many other toxic bodies, one with an action on vessel walls as specific as that of snake venom or the nettle. It operates, probably, everywhere in the body as well as in the papillary layer of the skin. The ultimate conclusion is inevitable that the skin lesions are local expressions of a general disturbance, and that the bullous group is only a striking variation from the general run of the poisonings which have their origin in perversion of the body processes.

6. Treatment of Cutaneous Cancer.—Robinson believes that it is impossible to lay down any special treatment of universal application in cases of cutaneous cancer. The treatment in each case should be determined by the individual characteristics presented by the growth, the nature, extent, depth and site of the lesion. With regard to general constitutional treatment he has found so far no evidence of any satisfactory result from internal medication, though he considers that very possibly a future opening up great possibilities lies in this direction, particularly by influencing the general economy by the secretions of ductless glands. He is convinced, however, that the imbibition of alcohol by the subjects of cutaneous cancer seriously hinders the good effects of treatment. The treatment, of whatever kind, should be directed to complete and thorough removal of the growth and with the least possible deformity. The mode of removal depends entirely on the character and site of the lesion—for example, flat growths should not be excised, but caustics and Roentgen rays employed. The Roentgen rays, in his opinion, however, have

been far too widely employed, almost justifying their designation as race suicide machines; they should be restricted to certain specific forms, and their use preceded by agents capable of lowering the vulnerability of the parts.

7. Interprimary Lesions of Syphilis.—Careful study has convinced Taylor that the syphilitic infective process is from the start a very rapid one, and that the disease is systemic from the date of its inception. The poison strikes directly for the blood vessels, and, causing there its peculiar changes, runs along them with astonishing rapidity and diffuses itself systematically throughout the body. The occurrence of successive chancres and of interprimary precocious syphilides, therefore, does not show that the parts invaded are the seat of an immunity due to their not yet being syphilitically infected, but, on the contrary, that these parts are from the onset actively syphilitic, and that the tissues react moderately well to the repeated early specific infection either as a result of experimentation or in clinical practice. Traumatism undoubtedly is largely the cause of all these lesions. The following conclusions were drawn:

1. By the autoinoculation of the secretion of the hard chancre in the primary period of a proliferative lesion resembling a secondary papule rather than a true chancre is produced.
2. In many cases a syphilitic is infected several times following a first infection, and a succession of primary lesions is produced.
3. In some cases infection of one or more portions of the body, usually extragenital, is produced by a second syphilitic individual or doner a short time after the development of the initial lesion.
4. Infection of a patient by a second syphilitic a short time after his or her virgin or primary infection occurs in exceptional instances.
5. Successive syphilitic lesions run a regular course, and do not usually portend malignancy.
6. The view that syphilitic infection is for a time local, and that there is an immunity to further early specific neoplasms in contiguous parts, is based on a false conception of the course of syphilitic infection. The poison of syphilis acts promptly, early, and progressively, and is a potential factor until its culmination is achieved in the developed systemic secondary stage.
7. The claimed immunization in primary syphilis is a chimera and founded on false pathology.
8. Though in general syphilis pursues a tolerably orderly course and its general exanthematic manifestations appear at the classical secondary climax, sparse precocious exanthemata may not infrequently be observed.

8. Pityriasis Rubra.—Gilchrist reports a case of this kind occurring in a woman aged 36, which was followed by gangrene of the left foot and the distal half of the right hand. The gangrenous process was noted from the very beginning and could not be prevented or stopped in its course. The affected parts were amputated.

11. Treatment of Eczema.—Chambers has obtained very gratifying results from the use of normal saline solution in the treatment of acute eczema. In making the application cheese cloth—8 to 10 thickness—is moistened with the solution and applied to the patches. To prevent drying the moist dressing is covered with oiled silk. The dressing should be changed twice a day. In cases in which the eczema is impetiginous he adds boric acid in sufficient quantity to the normal saline solution to make about 1 in 60. At each change of dressing it is well to wash the affected parts with the solution. As soon as the skin, by its color, smoothness, absence of crusts, etc., shows diminished inflammation and improved keratinization Chambers discontinues the dressing and applies a soothing ointment, such as Lassar's paste. Subsequently a mildly stimulating ointment may be required.

15. Legislation Regarding Food Preservatives.—McGill is in favor of specific permission in the legalization of food preservatives, that is, the law must name the substances which can be used, or it must be specifically prohibitive. The quantity that can be used also should be stated.

16. National Supervision and Standardization of Food.—Speaking of the recent legislation in the United States providing for pure food and meat inspection, Johnson says that from the politico-industrial point of view this legislation is excellent so far as it goes. From a medico-hygienic standpoint, however, it is not entirely efficient or satisfactory, as it tends to conserve the financial interests of the producer and to jeopardize the health of the consumer, by delaying the operation of the food bill, and by omitting the date of slaughter, production and inspection from the government certificate or label, thereby placing an immense quantity of meat and meat products, prepared under presumably careless and objectionable methods, now in cold storage or warehouse, on an equality with, and indistinguishable from, recent products prepared under careful government supervision.

The Lancet, London.

October 6.

17 *Scientific Investigation of the Psychical Faculties or Processes in the Higher Animals. I. P. Pawlow.
18 The General Medical Council; Its Powers and Its Work. D. MacAlister.
19 The Theory and Practice of Medical Education. N. H. Alcock.
20 *Injection of Antitoxin in Diphtheria by the Intravenous Method. A. O. Bisson.
21 Purin-Free Diets. W. A. Potts.

17. Psychical Faculties in Higher Animals.—The point considered in this lecture by Pawlow are psychologic definitions, reflex stimulation of the salivary glands, conditioned and unconditioned reflex action, methods of eliciting conditioned reflex action, various modifications and combinations of conditioned stimuli.

20. Intravenous Injection of Diphtheria Antitoxin.—Bisson records 200 cases of diphtheria treated by the intravenous injections. There were 90 mild pharyngeal cases and all of the patients recovered. Out of these 67 had the whole of the antitoxin intravenously, the others had it partly subcutaneously and partly intravenously. The total dosage given varied between 2,000 and 20,000 units. There were 30 severe pharyngeal cases, with 3 deaths due to paralysis. The total doses of antitoxin varied between 20,000 and 70,000 units. In 13 cases the antitoxin was all given intravenously (one of these patients died), in the others partly in that way and partly subcutaneously. Of 31 very severe pharyngeal cases 16 resulted fatally, death being due to cardiac paralysis. The total doses of antitoxin were between 20,000 and 110,000 units. In 4 cases all the serum was injected intravenously, and 2 resulted fatally. In 3 mild laryngeal cases the patients recovered, the antitoxin (8,000 units) being given intravenously. Ten severe laryngeal cases, in 2 of which the antitoxin was given entirely intravenously, recovered. Intubation was performed in all these cases. There were 5 very severe laryngeal cases, with one death from bronchopneumonia. One had all the serum intravenously. Three out of 4 mild pharyngolaryngeal cases had all the serum intravenously. All the patients recovered. In only 2 out of 8 severe cases of this type was the serum given intravenously. There were 2 deaths in this group. From October, 1904, to April, 1906, altogether 660 cases of diphtheria were treated in the Plaistow Hospital, with 92 deaths. Comparing this death rate with that of the cases treated by the intravenous method, it is 13.94 per cent. in the former and 16.5 per cent. in the latter. This, Bisson says, is partly due to the fact that all the very severe cases were chosen for the intravenous treatment. Out of the 200 cases there were 9 tracheotomies, with 3 deaths—a mortality of 33 per cent.—and there were 18 intubations, with 2 deaths—a mortality of 10.10 per cent.

Indian Medical Gazette, Calcutta.

September.

22 Cataract in the Capsule. H. Smith.
23 Some Observations on the Breeding Ground of the Common House Fly and a Description of a Species of Moth Fly. G. D. Franklin.
24 An Account of Plague in Bengal. (To be continued.) W. W. Clemesha.
25 Extraction of Cataract in the Capsule Versus the Ordinary or Capsule-Laceration Method. H. Gidney.

The Clinical Journal, London.

September 26.

26 *Group of Cases Illustrating the Surgery of the Biliary Apparatus. A. E. Barker.
27 Pyloric Obstruction in Infants. A. Garrod.
28 Radiotherapy in Skin Disease. J. Belot.

October 6.

29 Forms of Surgical Tuberculosis in Children. R. Johnson.
30 Tracheotomy. J. Berry.
31 Anemia in Children. H. Thursfield.

26. Surgery of Biliary Apparatus.—Barker reports the following cases: 1. Gallstone impacted in the common duct; cholecystectomy; common duct explored from duodenum; stone removed; recovery. 2. Cholelithiasis; cholecystectomy; stone removed; recovery. 3. Suppurative cholelithaisis; *B. coli communis;* ab-

scess of the liver under gall bladder and reaching to portal fissure; abscess opened and stitched to abdominal wall; gall bladder opened separately, mucopus evacuated, and several stones drained separately; death occurred a month later. 4. Suppurative cholecystitis and gallstones; cholecystostomy; drainage; recovery. 5. Cholelithiasis; cholecystitis; cholecystectomy without opening gall bladder; recovery. 6. Carcinoma; nodule involving the common duct; extreme jaundice and suffering; cholecystenterostomy; complete relief. 7. Cholelithiasis with many adhesions; cholecystectomy; recovery. 8. Suppurative cholelithiasis; cholecystectomy after slitting up common duct; recovery. 9. Symptoms resembling severe biliary colic; exploration; hard mass in second part of duodenum with surrounding adhesions; duodenal ulcer; gastroenterostomy; recovery. 10. Symptoms obscure, rather pointing to cholelithiasis; hard lump and adhesions in second part of duodenum; probably chronic ulcer; gastroenterostomy; recovery. 11. Large stone in common duct; removed by choledochotomy; gall bladder excised; subphrenic abscess opened between ninth and tenth ribs; recovery. 12. Gangrenous cholelithiasis; large stone impacted in cystic duct; stone removed; gall bladder drained; recovery. 13. Suppurative cholelithiasis; large stone in cystic duct; removed; gall bladder stitched up; wound drained; recovery. 14. Cholelithiasis; cholangitis; cholecystectomy and drainage of common duct; death. 15. Cholelithiasis; cholecystectomy after freeing adhesions; recovery. 16. Cholelithiasis and cholangitis; cholecystectomy and opening of the common duct, which was drained with a rubber tube; recovery.

The Australasian Medical Gazette, Sydney.

August 20.

32 Epidemiology of Plague. J. A. Thompson.
33 Aneurism of the Ascending Aorta, with Slow Extravasation of Blood into the Pericardial Sac. J. C. Verco.
34 The Leucocytosis of Hydatid Disease. D. A. Welsh and J. E. V. Barling.
35 Administration of Morphin in Cases of Abdominal Section. C. S. Hawkes.
36 Case of Rupture of the Uterus. H. Carr.
37 Case of Bilharzia Hematobia. H. S. Stacy.
38 Case of Cerebrospinal Meningitis. G. Cuscaden.
39 Five Cases of Ankylostomiasis. F. Hamilton-Kenny.

Intercolonial Medical Journal of Australasia, Melbourne.

August 20.

40 Local Anesthesia. J. Ramsay.
41 Cocain Anesthesia by Schleich's Method. W. Moore.
42 Spinal Analgesia as a Special Form of Anesthesia. B. T. Zwar.
43 Case of Cerebellar Hemorrhage. A. V. M. Anderson.
44 *Access to the Knee Joint by Anterior Longitudinal Incision, with Section of the Patella. R. H. Russell.
45 Arrest of Respiration After Operation on the Skull. W. A. Wood and R. R. Stawell.

44. Exposure of Knee-Joint by Longitudinal Incision.—The operation described by Russell is said to be free from the drawbacks attending transverse section of the patella, and gives incomparably better access to the interior recesses of the joint. It is performed as follows, the knee being moderately flexed: 1. Make an incision starting two inches above the upper edge of the patella, carried downward to the tubercle of the tibia, passing over the middle of the patella and ligamentum patellæ. 2. Saw through the patella in the line of the incision opening the joint; incise the anterior joint structures upward to the upper limit of the suprapatellar pouch, and downward, splitting the ligamentum patellæ throughout to the tubercle of the tibia. 3. Fully flex the knee, and with blunt hooks applied to the two halves of the patella, pull them apart until they slide over the condyles of the femur. A few snips with scissors will release the synovial attachments at the lower part of the joint. It will now be found that the two halves of the patella will naturally tend to evert, so that they will lie on the sides of the limb, each with its articular surface outward; in fact, the whole of the anterior and lateral joint surfaces will be turned inside out. The operation having been completed, the limb is straightened, and the two halves of the patella return naturally to their normal position in the joint. There need be no wiring of the patella. The operation is finished by suturing the capsule of the joint from the patella upward; while from the patella downward, one or two sutures immediately below the bone are all that is required. Russell performed this operation on two occasions; both were for the performance of arthrodesis. The result in both cases was perfect.

Semaine Médicale, Paris.

46 (XXVI, No. 37.) *Le rôle des matières minérales dans l'organisme. A. Charrin.
47 (No. 38.) *L'autoinfection puerpérale au point de vue bactériologique. R. De Bovis.
48 (No. 39.) *Leucémie et radiothérapie. C. Aubertin.
49 Le calcul des probabilités appliqué au pronostic. M. Landolfi.

46. The Part Played by Mineral Substances in the Physiology of the Organism.—Charrin reviews the recently acquired knowledge in regard to the importance of the rôle of mineral substances in physiology, anatomy, chemistry and pathology, showing how the cell is liable to be influenced by them from innumerable points of view. At present the gaps in our technic leave many of their attributes still a problem, but even with the study of osmosis alone we have learned the secrets of a number of the organic mechanisms.

47. Puerperal Autoinfection from the Bacteriologic Standpoint.—De Bovis devotes several pages to a critical review of the contradictory literature on this subject. He remarks that it is evident that the obstetrician ought to sterilize the field just like the surgeon, but asks: Can he do it? He doubts if this is possible, even in the best regulated clinics. If the field were sterilized at the commencement of labor it would be impossible to keep it sterile during the long hours of labor with the woman moving about. Theoretically the vulva should be aseptic, but this can not be accomplished absolutely in practice. After childbirth the normal defensive action of the vagina is temporarily lost, to a greater or less degree, and germs may spontaneously work their way upward. The uterus may be sterile during the first day or so after delivery, but all investigators agree that by the fourth day from 33 to 85 per cent. of the women have pathogenic germs in the uterus, and their researches did not include anaërobic tests, which would probably bring the percentage still higher. The germs were found most numerous in the febrile cases, but they were encountered even more often in the non-febrile ones. De Bovis concludes that the possibility of puerperal autoinfection seems to be established beyond question, but that the obstetrician has it in his power to reduce materially the number of microbes. He adds that the microbes do not proliferate unless they find a pre-existing infection of the genital tract or relics of inflammation or structural conditions favoring the mechanical retention of morbid products. On the other hand, it is extremely doubtful, he continues, whether infection can develop in an absolutely healthy and well-formed woman without the intervention of some foreign factor. Puerperal autoinfection is thus seen to obey the same laws as general pathology—the presence of infectious germs on the one hand and a predisposed organ on the other. With insufficiently sterilized external genitals, the obstetrician may infect the woman with his finger or instrument, or rather inoculate her. In introducing into the vagina or uterus microbian species from without—which are the most virulent—he doubles the dose, both quantitatively and qualitatively. The patient who might have been able to conquer her own microbes succumbs in the struggle against the imported ones.

48. Roentgen Treatment of Leukemia.—Aubertin's conclusions in regard to Roentgen treatment of leukemia are that it is liable to prove a very effectual symptomatic measure against the disease, but more than this must not be expected from it. The patient should be kept under supervision, and as soon as the blood picture even approximates normal he would suspend the exposures. He would resume them again whenever the blood picture shows that further symptomatic treatment is needed. The exposures, he thinks, should be at considerable intervals, and be regularly and uniformly distributed over the entire blood-forming apparatus, lengthening the intervals as the blood picture shows signs of improvement, and never pushing the treatment to the stage of reduction of the colorless corpuscles below normal numbers. It is a purely symptomatic treatment, but of such possible efficacy that every leukemic patient should be given the benefit of it. The acute form of the disease is the least tractable.

Berliner klinische Wochenschrift.

50 (XLIII, No. 34.) Ueber Syphilome innerer Organe Neonatorum und ihre Beziehungen zur Spirochæte pallida. V. Babes and Th. Mironescu (Bucharest).
51 Ueber Metastasen Bildung bei transplantierten Sarkomen der Maus (of the mouse). M. Haaland (Christiania).
52 Fälle von Enteroptose und Cardioptose mit Rückkehr zur Norm (with return to normal). M. Einhorn (New York).
53 Zur Bewertung des Antistreptokokken-Serums für die Behandlung des Puerperalfiebers auf Grund statistischer Untersuchungen. Busalia (Hannover).
54 Changes in Organs Under Influence of Suprarenal Extract.—Weitere Untersuchungen ueber die von den Nebennieren-Extrakten bewirkten Veränderungen der Blutgefässe und anderer Organe. L. d'Amato (Naples).
55 (No. 35.) Geburtsstörung nach Ventrifixation des Uterus (Interference with childbirth). Hocheisen.
56 Miliartuberkulose und Skorbut. Géronne.
57 *Action of Quinin on Hemoglobin and Test for Carbon Oxid in the Blood.—Ueber die Wirkung des Chinins auf den Blutfarbstoff nebst Mitteilung einer einfachen Methode zum Nachweis von Kohlenoxyd im Blut. S. v. Horoszkiewicz and H. Marx.
58 Ueber die kombinierte Resorcin- und Röntgen-Behandlung des Lupus vulgaris nach Ehrmann. S. Reines.
59 Zur Statistik und Pathogenese des Quinquaudschen Zeichens (crepitation of joint surfaces). E. Lauschner. (Concluded.)
60 Die modernen Grundlagen der Balneologie. L. Mohr.
61 (No. 36.) Experimental Absorption of Dead Tubercle Bacilli.—Resorption toter Tuberkel-Bacillen. A. Marmorek.
62 Examination of Blood in Nervous Affections.—Blutuntersuchungen an Nervenkranken. R. Bing.
63 Erkrankung der Caruncula sublinguails. E. Davidsohn.
64 Zur Serumbehandlung des Heufiebers (of hay fever). W. Welchardt.
65 Flour in Infant Feeding.—Mehlkinder. A. Keller.
66 Are Modern Methods of Diagnosing Syphilis Scientifically Accurate?—Genügt die moderne Diagnose syphilitischer Erkrankung wissenschaftlichen Forderungen? O. Rosenbach.

57. **Quinin Test of Blood Spots.**—Marx has recently published an announcement that quinin alters hemoglobin in a peculiar manner. Blood submitted to the action of a 15 per cent. solution of quinin for a few days changes color and the spectroscope shows, instead of the original oxyhemoglobin lines, a characteristic spectrum between the Fraunhofer C and D lines, corresponding to a wave length of from 596 to 628. These facts are important from a medicolegal point of view, as blood spots on linen, dating from 1901, placed in a hot, 15 per cent. solution of quinin, gave the characteristic quinin-blood spectrum distinctly. By heating a mixture of blood and a 10 per cent. solution of quinin, in the proportion of 2 to 4, the red blood changes rapidly to brown and the spectrum becomes visible at once. A characteristic reaction is also obtained with blood impregnated with carbonic oxid. The blood is mixed with an 8 per cent. solution of quinin hydrochlorate in the proportion of 2 c.c. blood to 4 c.c. of the quinin solution. The mixture is then heated slowly and evenly over a Bunsen burner until it boils up once. After cooling enough to handle the test-tube, two or three drops of freshly prepared ammonium sulphate are added, and the whole is briskly shaken at once. If the blood contains carbonic oxid, it turns a brilliant carmine red, while normal blood becomes a dirty greenish brown. These tints are durable for weeks.

Centralblatt f. Chirurgie, Leipsic.

Last indexed, page 1233.

67 (XXXIII, No. 34.) *Median Incision for Opening the Esophagus.—Mediane Schnittführung zur Eröffnung der Speiseröhre. H. Hans.
68 (No. 35.) *Silver-Rubber-Silk Instead of Silver Wire for Buried Sutures.—Silberkautschukseide an Stelle des Silberdrahtes zur versenkten Naht. O. Witzel. Id. Its Production. Wederhake (Bonn).
69 Ueber retrograde Darm-Inkarceration. E. Halm. Also in No. 39.
70 (No. 36.) Pharyngotomia suprahyoidea. L. Grünwald.
71 *Die nachträgliche Entfernung eingewachsener oder eingeklemmter Gazestreifen (removal of gauze that has grown in or is otherwise held). C. Lauenstein.
72 (No. 37.) Dorsale Fixation des Armes bei Schlüsselbeinbruch (in case of fracture of the clavicle). C. Bayer.
73 Oiled Silk to Protect the Intestine in Tamponing the Peritoneum.—Protektivsilk als Deckmittel für den Darm bei peritonealer Tamponade. Id.
74 Erhaltung des Weichteilnasengerüstes bei Oberkiefer-Resektion (retention of support for soft parts of nose in resection of upper jaw). C. Israel.
75 (No. 38.) *Zur Technik der Trepanation. M. Borchardt.
76 (No. 39.) *Zwei Modifikationen der Matrazennaht (mattress suture). A. Hofmann.

67. **Median Incision of Esophagus.**—Hans removed a deep impacted coin from the esophagus of a small child by a median incision below the trachea, over a Wildunger bougie filled with lead, introduced through the mouth. He considers a median incision for a foreign body low down superior to the usual technic.

68. **Silver-Rubber-Silk Instead of Silver Wire for Buried Sutures.**—Wederhake describes the manner of preparing a suture material for buried sutures, which Witzel has been extensively using with constantly increasing satisfaction. It does not absorb watery fluids, is very strong, and is absolutely sterilized in the making, while the technic of its production is simple and inexpensive. Every physician can make his own supply. The foundation is silk, which is wound on thick Kocher drains or glass plates, and the fat removed by soaking for 12 hours each in ether and then in absolute alcohol. The silk is then placed in a 10 per cent. solution of peroxid of hydrogen for 20 minutes. It is then removed to a silver solution made by adding drops of normal caustic soda solution to 30 c.c. of a 1 per cent. aqueous solution of nitrate of silver until the blackish brown sediment that forms is not increased by the addition of more drops of the soda solution. Usually about 10 drops of the soda solution are required. To the blackish brownish fluid resulting, water of ammonia is added, drop by drop, constantly shaking, until the precipitate produced by the silver nitrate is completely dissolved, and the fluid becomes clear and transparent. The silk is left in this silver solution for one hour. By the end of this time the silk has become so impregnated with pure molecular silver that it turns a deep black, with a silvery sheen. It must be examined to see that this impregnation proceeds evenly. Transverse sections of the silk should appear black with no white specks. The silver-silk is then dried in the incubator at 100 C., and then transferred to pure chloroform for two hours. After this the silk is placed in a chloroform solution of rubber for 12 hours. The rubber solution is made by dissolving 8 gm. black rubber (such as can be obtained from a dental depot) in 50 c.c. of chloroform. The silk is then rinsed in chloroform, dried, and then boiled for 10 minutes in a 1 per 1,000 solution of corrosive sublimate, in which it is set aside to keep ready for use. The same technic is applicable also to thread, hemp, etc. A simple silver-silk, without the rubber, is made by placing the silk in a 10 per cent. solution of peroxid of hydrogen for one hour, and then transferring to the silver solution for one or two hours, according to the size of the silk thread. After this it is boiled for 10 minutes in 1 per 1,000 solution of corrosive sublimate, in which it is kept ready for use. Witzel regards this silver-rubber silk as the solution of a pressing problem, the suture material thus prepared having all the good qualities of silver wire and of silk, with none of their drawbacks.

71. **Removal of Adherent Strips of Gauze.**—Lauenstein takes hold of the end of the strip of gauze with forceps and, instead of pulling it out, twists it continually on its axis. His experience has been that this loosens up small regions of adhesions at a time, and the final removal of the gauze is then an easy matter, even after a Mikulicz tamponade.

75. **Technic of Trephining.**—Borchardt gives illustrations of some instruments he has devised which he thinks are an improvement over those in ordinary use.

76. **Modifications of Mattress Suture.**—Hofmann illustrates his technic. The first view shows the usual mattress suture. The thread is then brought back and under the loop on the other side, and the ends are then tied. This materially reduces the traction on the edges of the wound. The two loops of the mattress suture thus form an X instead of lying straight and parallel as usual. The other modification is that the stitches, instead of passing below the edges of the wound, are brought out again just before the edges are reached, and pass above them. This also relieves the traction on the parts.

Centralblatt f. Gynäkologie, Leipsic.

Last indexed, page 1333.

77 (XXX, No. 34.) *Nervous Affections in the Puerperium.—Zur Kasuistik der nervösen Erkrankungen im Wochenbett. H. Sutter.
78 Perniziöse Anämie im Puerperium, kompliziert mit septischer Infektion. H. Meyer-Rügg.
79 (No. 35.) *Catalytic Action of Colloid Silver and Permanganate to Enhance Action of Peroxid of Hydrogen.—Ueber Spülungen mit Wasserstoffsuperoxid unter Einwirkung von Argentum colloidale oder von Permanganat. H. Füth (Zweifel's clinic, Leipsic).
80 (No. 37.) Eklampsie ohne Krämpfe (without convulsions). G. Binder.

81 Simplification of Technic of Obstetric Measurements.—Zur "Vereinfachung" meiner Mess-Methode der Conjugata obstetrica. L. v. Bylicki.
82 (No. 38.) Zur Indikation und Technik der Hebotomie. L. Seeligmann.
83 Zur Atonie des nicht schwangeren Uterus (of non-pregnant uterus). J. Meyer.

77. Nervous Affections in Puerperium.—Sutter describes a case of psychoneurosis befalling a young woman in the second week after childbirth. It was the only case of unmistakable hysteria discovered among 300 gynecologic and obstetric patients whose nervous condition had been specially investigated at his clinic. In this case the birth was illegitimate and the woman was facing court proceedings when she suddenly developed total paralysis, with attacks almost epileptiform in character, but all passing away in the course of two months.

79. To Enhance the Action of Peroxid of Hydrogen by Catalysis.—Füth calls attention to the way in which colloidal silver hastens the decomposition of peroxid of hydrogen without being altered itself. The combined action of the two is extraordinarily efficient in cleansing and disinfecting. A putrid endometritis rinsed with even a weak concentration of the two loses its fetid odor immediately. The colloidal silver acts as a catalyzer. He injected the two substances independently, through separate catheters, in such a way that they blended as they emerged. As colloidal silver is comparatively expensive, he experimented with other drugs and found that all the peroxids have a promoting effect on the decomposition of each other. Potassium permanganate and peroxid of hydrogen have a chemical reciprocal action on each other, and both yield oxygen. The addition of a little acid causes still more energetic decomposition on the part of the permanganate, and results in the production of a colorless salt of the acid used. He commends this combination as a remarkably effectual exaggeration of the familiar action of peroxid of hydrogen, magnifying its action immeasurably and accelerating it. The most practical form in which to apply the combination is to make two solutions. No. 1 is made by adding 35 c.c. of 3 per cent. H_2O_2 to a liter of water; No. 2 by adding 2 gm. of potassium permanganate and 5 c.c. of diluted (30 per cent.) acetic acid to one liter water. Decomposition commences as soon as the two solutions come together. In the combination $5H_2O_2$ plus $2KMnO_4$ makes $5O_2$; 1 gm. H_2O_2 gives thus 0.94 gm. O, about 700 c.c. O_2 When equal amounts of the two solutions are blending properly the escaping fluid is colorless, while if one or the other of the solutions preponderates, the outflow will be colored. Consequently, the receptacles holding the two solutions must be at the same height and each be connected with a catheter that allows two currents—an ordinary two-way catheter, such as is used for rinsing the bladder—will be found convenient for treating inoperable uterine cancer.

Zeitschrift f. klinische Medizin, Berlin.

Last indexed, page 756.

84 (LIX, Nos. 2-4, Bäumler Festschrift.) *Orthoperkussion, Orthodiagraphie und relative Herzdämpfung (heart dulness). G. Treupel and W. Engels.
85 *Ueber das Verhalten der weiblichen Geschlechtsorgane bei Hysterie, Herzleiden und Chlorose (female sexual organs). P. Diepgen and M. Schröder.
86 *Beiträge zur Pathogenese der paroxysmalen Tachykardie. H. Reinhold.
87 *Zur Kasuistik der Rückenmarks-Tumoren (of spinal cord). Schüle.
88 Ueber einen Fall von Typhus-abdominalis mit hyperpyretischen Temperaturen. K. Mollweide.
89 *Heart Block.—Zur Kenntnis des Herzblocks beim Menschen (Adams-Stokesscher Symptomenkomplex). E. Roos.
90 Physiologic Importance of Rhodan Compounds.—Weitere Untersuchungen ueber die Bedeutung der Rhodan-Verbindungen im Tierkörper. A. Edinger and P. Clemens.
91 Metabolism in Case of Exophthalmic Goiter.—Zum Stoffwechsel bei Morbus Basedowii. P. Clemens.
92 Ueber 2 Fälle von Pentosurie nebst Untersuchungen ueber ihr Verhalten bei verschiedenen Ernährungsformen. F. Blum.
93 Ueber das Auftreten des Babinskischen Reflexes nach Skopolamin-Injektionen. R. Link.
94 *Zur Diagnose von Knochenmarkstumoren aus dem Blutbefunde (blood findings with tumors of bone marrow). K. Schielp.
95 Klinische Untersuchungen der Viskosität des menschlichen Blutes (human blood). Determann.
96 Ueber die Giftwirkung einiger Stämme von Aspergillus fumigatus und Penicillium glaucum nebst einigen Bemerkungen ueber Pellagra (toxic action). M. Otto.
97 *Body Weight and Milk Diet in Scarlet Fever.—Körpergewichte und Milchdiät bei scharlachkranken Säuglingen. H. Risel.
98 Studien ueber Urobilinurie und Ikterus. Ein Beitrag zur normalen und pathologischen Physiologie der Leber (liver). W. Hildebrandt.
99 Das Verhalten der Leukozyten bei Röteln. Id.
100 Ein Fall von nicht parasitärer Chylurie mit Sektionsbefund. F. Port.
101 Ueber die Bedeutung des Bacterium coli für menschliche Pathologie, mit besonderer Berücksichtigung der Infektion der Harnwege und der septischen Erkrankungen. G. Liebermeister.

84. Orthopercussion and the Relative Heart Dullness.—Treupel and Engels affirm anew that orthopercussion surpasses all other known methods of determining the outlines of the heart by percussion, and gives important information when all other means fail. They add a number of tracings of the findings in various cases, with discussions of several technical points. The orthopercussion findings were traced first and then the findings with orthodiagraphy.

85. Menstruation in Case of Hysteria, Chlorosis and Heart Affections.—Diepgen and Schroeder examined 75 hysterics, 116 women with heart affections, and 141 with chlorosis, in respect to menstruation. They found that the menses commenced unusually late in women who developed hysteria or chlorosis afterward. Menstruation was also inclined to be tardy and weak, an indication of defective physical development, to which was also due the predisposition to hysteria or chlorosis later. Hysteria seems to be a frequent cause for dysmenorrhea, but gynecologic affections accompanying hysteria seem to be merely an inciting cause, like the trauma in traumatic hysteria. In heart disease the general enfeeblement of the organism is responsible, as a rule, for the anomalies in menstruation observed. The findings all confirm the assumption that chlorosis is the result of a defective physical development.

86. Paroxysmal Tachycardia.—In the first of the 2 cases described, the tachycardia was due to a syphilitic basilar meningitis; in the second to a tumor in the left half of the brain. The findings in the heart were entirely negative in each case. Reinhold reviews the recent literature on the relations between paroxysmal tachycardia and affections of the nervous system.

87. Tumor of Spinal Cord.—Schüle's patient was a lad of 14 who presented symptoms diagnosed at first as sciatica. Pains and weakness in the legs appeared later, accompanied by abnormal desires to urinate. The kneejerk and tendon reflex could not be elicited, but the cremasteric reflex was pronounced. Nothing abnormal could be discovered in the spine. A sarcoma was diagnosed, in the vicinity of the twelfth dorsal vertebra, and it was removed. The benefit was only transient, as the malignant growth soon recurred.

89. Study of Heart Block.—Roos describes in detail a case of the Adams-Stokes' symptom-complex observed in a man of 72. It was a typical example of what Charcot called permanent slow pulse with syncopal, apoplectiform and epileptiform attacks. The syndrome becomes much more comprehensible when underlying heart block is assumed. Some affection of the bundle of His causes the trouble, while the rest of the heart is behaving normally. This assumption is rendered still more plausible by the fact that the trouble is observed in arteriosclerotics and in men oftener than in women. But even in the young and in persons not affected with arteriosclerosis, the bundle of His might become injured from some cause, possibly a myocarditic or syphilitic lesion. Stengel found in one case a patch of sclerosis in the septum when the rest of the myocardium was apparently sound. Heart block must be included among the severer affections of the heart, although patients may long survive. (See editorial in The Journal, Sept. 8, 1906, page 779).

94. Diagnosis of Tumors in Bone Marrow from the Blood Findings.—The blood findings in the 3 cases described differed in several respects from the findings known in any other affection. In each case there was metastasis in the bone marrow of a latent sarcoma or carcinoma in the stomach or intestines. The cancerous degeneration of the bone marrow was revealed by the presence of abnormal cell forms different from those observed in leukemia and severe anemia. Owing to the tendency of sarcomatous tumors to involve the blood vessels, the finding of tumor cells in the peripheral blood is not surprising. The problem will be to stain these cells in such a

way as to differentiate them from the manifold types of physiologic marrow cells or lymphocytes. These abnormal cells formed nearly 9 per cent. of the leucocytes in the first case in which the cancerous degeneration of the bone marrow had caused very slight symptoms during life, and the primary tumor in the stomach had remained entirely latent. Neuralgia had been observed at various points, but there was no tenderness of these points on pressure or tapping. In the second case there were no abnormal cells, but typical myelocytes were numerous as also the preliminary forms of neutrophile leucocytes and the red corpuscles showed great differences in size and outline, testifying to severe injury of the bone marrow. The latent primary focus was a carcinoma in the appendix, but points in the sternum and sacrum were painful when tapped, and the diagnosis of malignant metastasis in the bones was confirmed by autopsy. The characteristic changes in the blood findings in these cases confirm the importance of the blood for the diagnosis of malignant disease even in an early stage. In the third case these abnormal cells formed 14 per cent. of the total leucocytes and the red corpuscles showed great differences in size and shape. The abnormal cells were from two to four times as large as a red corpuscle, the enlargement being due principally to the size of the nucleus. The smaller ones had a round or notched nucleus, somewhat poor in chromatin, with a reticular loose structure. In some the chromatin was irregularly arranged so that parts seemed quite light. The nucleus was surrounded with a narrow, sometimes barely visible protoplasm, with faintly basic staining properties. The nucleus showed very little resisting power, and looked like a soft mass spreading out between the neighboring erythrocytes in several directions, without any perceptible lesion in the nucleus envelope. The larger forms had more protoplasm, and the nucleus was lobulated or shaped like an S, or was divided into two or three nuclei. The protoplasm did not show any granulation.

Zeitschrift f. Krebsforschung, Berlin.

Last indexed, page 468.

102 (IV, No. 2.) Transplantables Rund-Zellen-Sarkom des Hundes (of the dog). A Sticker.
103 *Zur Statistik und Kasuistik metastatischer Tumoren, bes. der Carcinom-Metastasen im Zentral-Nerven-System. K. Krasting.
104 Malakoplakie der Harnblase (of bladder). K. Hart.
105 Die mikroskopische Struktur der Magen- und Darm-Carcinome und ihr Verhältnis zum makroskopischen Bau. C. U. Ariëns Kappers and P. H. van Roojen.
106 Die idioplastische Verbildung der Krebszelle und ihre Ursache, mit bes. Berücksichtigung des proteolytischen Enzyms (transformation of cancer cells). J. Rüif.
107 Die Schüllerschen Körperchen als die angeblichen Erreger der malignen Geschwülste (Schüller's bodies in cancers). H. Deetjen.

103. **Cancer Metastasis in the Central Nervous System.**—Krasting's article is based on 12,730 autopsies at Basle, from 1871 to 1905. Malignant tumors were found in 1,238 cadavers, that is, in 9.72 per cent. of the total material. Only 160 were sarcomata, the others were all carcinomata. The number of cases of carcinoma has increased regularly each year, from 1, 3, 19 and 10, in the first four years, to 48, 58, 65 and 57 in the last four years. Sarcoma has kept at about the same annual average of from 2 to 6. The findings as to location, age, etc., are tabulated separately. The majority of carcinomata occurred between the ages of 40 and 70, but sarcoma was observed about equally at all ages. Tumors in the brain were found in 144 cadavers, primary in 63.19 per cent. Of the 53 metastatic tumors in the brain it was a sarcoma in 14 and a carcinoma in 39. Primary carcinoma was not found in the brain in any instance, but secondary carcinomatous tumors in the brain were observed in about 18 per cent. of all cases. The melanotic sarcoma is the most malignant in respect to sarcomatous metastasis in the brain; the comparatively youthful are the most affected, and males more than females. Metastasis in the brain was observed in 4.77 per cent. of the carcinoma cases, and males predominated here also. Metastasis in the brain was observed most frequently with malignant chorioepithelioma, and next, in turn, with carcinoma of the suprarenals, pharynx, jaw, prostate, breast, bronchus, lungs, thyroid, sigmoid flexure, gall bladder, rectum, uterus, and, lastly, the stomach. The metastasis was multiple in only about a third of the cases. With the solitary tumors, the left side of the brain was affected twice as often as the right. The cerebrum was generally the seat of the metastasis, next in frequency the dura mater, the cerebellum and, lastly, the spinal cord. The cortex is most frequently affected, and the left central convolutions more than other parts. About 120 articles are reviewed from the literature for comparison.

Riforma Medica, Naples.

Last indexed, page 902.

108 (XXII, No. 32.) *New Pigment in Urine.—Un nuovo pigmento urinario. E. U. Fittipaldi.
109 *Tuberculosis of Glands Simulating Neoplasms.—Il morbo di Hodgkin e la tubercolosi a forma neoplastica delle ghiandole linfatiche. O. Cignozzi.
110 (No. 33.) *Cancer Precipitins.—Cancroprecipitine e loro applicazione alla diagnosi precoce del carcinoma gastrico. D. Maragliano.
111 Ricerche cliniche sulla separazione endovesicale delle urine dei due reni. D. Taddei. (Commenced in No. 32.)
112 2 osservazioni di encefalite emorragica. G. Valdonio.
113 (No. 34.) Protective Action of Liver in Regard to Cholera Toxin.—Intorno all' azione protettiva del fegato verso la tossina colerica. G. Padoa.
114 Come bisogna interpretare il fenomeno della spirochete pallida Hofmannii nella sifilide? R. Campana.
115 Sulla formazione di anticorpi in seguito all'ingestione di glutine vegetale (antibodies formed after ingestion of vegetable gluten). G. Castronuovo.
116 *Lead in Ice Cream and Ices.—Sulla presenza del piombo nei gelati. A. Baldoni.
117 (No. 35.) Submucous Lipoma of Colon.—Lipoma sottomucoso della flexura coli dextra. S. d'Este.
118 *Anemie gravi e setticemia da micrococco tetrageno albo. A. Brugnola.
119 *Curability of Tuberculous Meningitis.—Osservazione sulla guarigione nella men. tub. V. E. Ovazza.

108. **New Pigment in Urine.**—Fittipaldi has isolated a chromogen from the urine, after removal of the biliary pigments, which he thinks has never been described before. It was found only in icteric urine, never in the bile or liver tissue, and he suggests that it may have some importance for diagnosis and prognosis in case of icterus from cancer or cirrhosis. The simple technic of its isolation is described.

109. **Tuberculosis of Glands Simulating Neoplasms.**—Cignozzi's study of this subject is based on a case observed and on analysis of the literature. The findings establish the fact that the tubercle bacillus is able to induce in the lymphatic system lesions and symptoms similar in every respect to those of true pseudoleukemia, including hyperplastic multiple enlargement and suppuration of glands, enlargement of spleen and liver, fever, epistaxis and emaciation. The complete absence of caseous degeneration in the glands suggests lymphosarcoma or other neoplasm. The histologic lesions are atypical in nearly every respect; hyaline degeneration is frequent, and numerous congested vessels are prominent, the lumen permeable. The best means of diagnosing the condition is by extirpation of one of the glands. In his patient the enlarged glands in the neck and inguinal region nearly all suppurated, after which the patient improved. The findings in the sputa were always negative but at last accounts, although the general health had improved, one apex seemed slightly affected.

110. **Cancer Precipitins.**—Dario Maragliano has been experimenting with cancer juice obtained directly from the stomach of persons with cancer of the stomach, and injected into animals. The animals thus treated developed a serum which had a precipitating action on gastric juice from persons affected with cancer of the stomach, while no precipitation occurred with normal gastric juice. He found, however, that the cancerous gastric juice which he had injected contained four albuminoids: *a*, that common to the entire organism, contained in the blood; *b*, that common to all ulcerating sores; *c*, that peculiar to the stomach itself, and, finally, *d*, that peculiar to the cancer. In the precipitation test the first three kinds of albuminoids have to be got out of the way first before the true cancer albuminoid can give the specific reaction. The possible polyvalency of precipitating immune serums is a fact long since established. He injected from 3 to 10 c.c. of gastric juice obtained from the fasting stomach of patients with unquestionable gastric cancer, using rabbits and goats for the immune animals. Sometimes the gastric juice was so toxic that 1 c.c. was enough to kill a rabbit if not sufficiently diluted. After the fourth or fifth subcutaneous injection the precipitating reaction was usually evident at room

temperature between the second and sixth minutes. Earlier or later than this shows that the immunization is too intense or not intense enough. The fractional precipitation is the most difficult part of the task. There have to be three solutions prepared: *a*, normal human serum diluted 1 to 30 with physiologic salt solution; *b*, a solution of the secretion of a human ulceration diluted until it gives a distinct reaction with acetic acid plus potassium ferrocyanid, and *c*, the rinsing fluid from a stomach affected with gastritis, containing albuminoids independent of those ingested in the food. This fluid must have a neutral reaction, and cause turbidity when treated with acetic acid plus potassium ferrocyanid. These three solutions are mixed, forming a limpid fluid with a neutral reaction, and it is added to the immune serum in the proportion of one part fluid to two parts serum. It is shaken up repeatedly and set aside for from 24 to 48 hours. The resulting biochemical reaction passes through the stages of turbidity, formation of flakes and final precipitation of a sediment. The supernatant, limpid serum has thus been freed of the precipitins specific for the albuminoids of the blood, of the ulceration and of the special secretions of the morbid stomach. The residual serum contains only precipitins specific for the albuminoids of gastric cancer, and this is now being used in the clinic for diagnostic purposes, and also in a tentative way in therapeutics. He does not mix this serum with the cancer juice, but pours the latter on top, diluting it to a lesser specific gravity than the serum, and makes his diagnosis from the whitish ring that forms at the zone of contact in from two to five hours, according to the activity of the serum.

116. **Lead in Ice Cream.**—Baldoni has been examining the vessels, etc., used in making ice cream and ices at Rome, and shows that there is danger of lead poisoning from the frequent use of lead in the vessels and implements. He found from 1.7 to 2.5 mg. in portions of ices weighing from 652 to 710 gm. each.

118. **Serious Anemia from Micrococcus Tetragenus Albus.**—Brugnola reports 2 cases and cites 2 others published by Baccarani and Arullani in which classic parasitic anemia was induced by the presence of the *Micrococcus tetragenus albus*. In his 2 patients the anemia was associated with septicemia. Both patients improved gradually under iron and hygienic measures.

119. **Curability of Tuberculous Meningitis.**—Ovazza reports a case of what was assumed to be tuberculous meningitis in a boy of 4. After three months of serious symptoms an intercurrent varicella lasted a week or so, after which the symptoms gradually subsided and the child was up and about by the end of the sixth month, and by the end of the year seemed to be quite cured, intelligent and lively. He was in the hospital seven months. The temperature was high during the first ten days of the onset, but was always subnormal after that. Treatment was purely symptomatic, without lumbar puncture, merely ice to the head during serious symptoms, repeated small doses of calomel; twice an "abscess of fixation" was induced in the thigh for revulsion; an ether-iodoform pommade was applied sometimes to the head, and pills of iodoform were given occasionally, with small doses of potassium iodid.

Norsk Magazin f. Laegevidenskaben, Christiania.

Last indexed XLVI, page 1326.

120 (LXVII, No. 4.) Epidemi af poliomyelitis ant. acuta i Hvaler lægedistrikt sommeren 1904. Nannestad. 41 cases.
121 *Length of Survival of the Tuberculous in Norway.—Undersøgelser over livsvarigheden hos tæringssyge i Norge. P. F. Holst and others.
122 Studier over slambad (mud bath). P. A. M. Mellhye.
123 Clamp to Remove Small Foreign Bodies in Leg or Arm.—Tang til fjernelse af smaa fremmedlegemer i extremiteterne. S. A. Heyerdahl.
124 (No. 5.) *Medicolegal Features of Deaths from Burning.—Retsmedicinsk bedømmelse af indebrændte. F. Harbitz.
125 *Den respiratoriske therapi ved emfysem og bronchit. G. A. Haus.
126 How Long is Syphilis Virus Contagious?—Hvorlænge holder syfilisvirus'et sig smitsomt? R. Krefting.

121. **Length of Survival After Onset of Tuberculosis.**—A committee has been diligently at work since 1904 collecting data in regard to the after history of persons known to have pulmonary tuberculosis in Norway. Blank circulars were sent to physicians and reports were received in return of 2,005 cases of pulmonary tuberculosis, 905 men and 1,100 women. The findings are tabulated under various headings. They show among other points that out of 2,002 tuberculous patients whose history was traced for four years, 1,094 had died and 908 were still living, with 52.3 per cent. still able to keep at work. Out of 1,658 whose history was traced for nine years, 1,336 had died by the end of this time, and 322 were still alive, with 67.4 per cent. still able to work. The committee calls special attention to the surprisingly large proportion of the tuberculous with comparatively unimpaired earning capacity after four years. The data further show that the average survival after symptoms of tuberculosis were first observed ranged from 36 to 59 months.

124. **Medicolegal Features of Autopsies of Persons Burned to Death.**—Harbitz has been making a special study of this subject with much experimentation on the cadaver, as mentioned in an editorial Oct. 20, 1906, page 1305. He describes a special case in detail in which a healthy man was burned to death in a house, the fire not lasting over half an hour. He also gives the particulars of 2 cases in which the victim of a murder had been afterward burned. The various points for differentiation of a crime of this kind are summarized. As blisters may be produced after death, and as carbon oxid can diffuse through the tissues after death, too much stress should not be laid on these findings. The effect of the heat in causing strange attitudes, contracting the internal organs and bending the limbs back on themselves is described. In the first case reported the presence of 100 c.c. of a reddish fluid between the skull and the dura mater was shown to be due to the action of the fire and not to extraneous violence, as first supposed. See editorial in The Journal, July 28, 1906, page 276.

125. **Respiratory Treatment of Emphysema and Bronchitis.**—Haus traces the course of 6 patients under treatment by respiratory exercises. In the first case a man of 49 had bronchitis every winter. The bronchitis was accompanied with dyspnea and cyanosis when the patient was first seen. After 42 séances of respiratory therapy in the course of seven weeks the lung capacity increased from 3,000 to 4,000 c.c. while the dyspnea and cyanosis disappeared. The excursions of the thorax increased from 1 to 5 cm. He also relates his favorable experience with inhalations in treatment of catarrhal and other affections of the air passages, especially when combined with the respiratory exercises.

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

Pediatrics, Edited by I. A. Abt, M.D., Assistant Professor of Medicine (Pediatrics Department), Rush Medical College; and Orthopedic Surgery, Edited by J. Ridlon, A.M., M.D., Professor of Orthopedic Surgery, Northwestern University Medical School, and G. L. Bailey, M.D., Instructor in Orthopedic Surgery, College of Physicians and Surgeons. Being Vol. VII, Series 1906, of the Practical Medicine Series, Comprising Ten Volumes on the Year's Progress in Medicine and Surgery, under the Editorial Charge of G. P. Head, M.D., Professor of Laryngology and Rhinology, Chicago Post-Graduate School. Cloth. Pp. 267. Chicago: The Year-Book Publishers, 1906.

Die Behandlung der Herzkrankheiten mittels kohlensaurer und elektrischer Bäder, Massage, Gymnastik, und Diätetik. Gemeinverständlich dargestellt von Dr. Paul C. Franze Arzt in Bad Nauheim. Paper. Pp. 61. Price, mk. 1.60. Munich: Verlag der Aerztlichen Rundschau, 1906.

Die Stellungnahme des Arztes zur Naturheilkunde. Eine objektive Kritik von Naturheilkunde und Schulmedizin nebst Beiträgen zu einer biologischen Heillehre, von Dr. Esch in Bendorf. Paper. Pp. 22. Price, mk. 0.40. Munich: Verlag der Aerztlichen Rundschau, 1906.

First Report of the Clinic for the Treatment of Communicable Pulmonary Diseases, Department of Health, City of New York. Cloth. Pp. 46. Thomas Darlington, M.D., Commissioner of Health, John S. Billings, Jr., Director.

Transactions of the Twenty-Eighth Annual Meeting of the American Laryngological Association, held at Niagara Falls, N. Y., May 31 to June 1-2, 1906. Cloth. Pp. 347. New York: Published by the Association, 1906.

The Journal of the American Medical Association

Published under the Auspices of the Board of Trustees.

VOL. XLVII. CHICAGO, ILLINOIS, NOVEMBER 10, 1906. No. 19.

Original Articles

HEADACHE AND EYESTRAIN.*

GEORGE M. GOULD, M.D.
PHILADELPHIA.

That a vast majority of all cases of headache, certainly nine-tenths, are due to eyestrain is a truth beyond question. That with headache, and often without it, a large indefinite proportion of digestional, nervous and psychic disease is due to the same cause is quite as true. A few cases may be due to malfunction or organic disease of other organs, but it is not known in how many of these cases eyestrain is the primary cause of these extraocular diseases; it is also unknown in how many the eyestrain may be the direct and contributing cause of the headache ascribed to the extraocular disease.

PROFESSIONAL NARCOTISM.

In 31 years the members of the American Ophthalmological Society have contributed three papers suggesting that eyestrain is the cause of some headache, and one member has contended that nasal disease, not eyestrain, is the cause of frontal headache. But there have been 122 papers on ocular tumors and many hundreds on ophthalmic surgical subjects. Medical opinion in continental Europe has never head of eyestrain as a cause of anything, much less of extraocular disease, and in England professional pandiculation is confined to a very few "extremists," the mass still dreamlessly sleeping as sweetly as their continental brethren. In our country the testimony as to the rôle of eyestrain in producing headache is positively overwhelming, but the great body of our medical men are still begging for "just a little more sleep, a little slumber, a little folding of the hands to sleep." As to the ocular origin of much neurasthenia, gastric disease, general ill-health, suicide, etc., we have only got as far as nightmare. What are the results of this professional narcotism?

1. The country practitioners, and some of the silent, modest, general physicians of the cities, are awake to the possible ocular origin of these headaches, etc., but the so-called leaders, the writers of text-books, the members of the professorial class, all these, except one or two, are wholly indifferent to the matter. The text-book of Allbutt is described as the best on general medicine in the world. It contains not a word on the subject of the ocular origin of headache, or the ocular origin of any other disease, not even the psychic disease of text-book makers.

2. The general medical profession of America is a hundred times more conscious and acknowledging in the matter than the oculists. It is, of course, beneath the dignity of most neurologists to care about the cause or the cure of any disease. While the governor of Massachusetts, in his inaugural address, says that untold numbers of children are becoming ruined in health because of headache, eyestrain, etc., leading members of great ophthalmic societies ridicule such folly. While one great diagnostician says that all sorts of gastric diseases, as is "familiar to all," are often due to eyestrain and cured by glasses, all the stomach specialists in the world and 99/100 of the oculists of the world deny the truth. While a great New York surgeon says he refers a large proportion of his patients threatened with abdominal operation to the oculist, who cures them brilliantly, the entire ophthalmic profession smiles inaudibly at this supposed "extremism." While the best orthopedic surgeon in Philadelphia publicly states that a large proportion of cases of lateral curvature of the spine are due to eyestrain and ocular function, ophthalmologists are silent or sorrowfully groan and squirm. While medical journals are teeming with reports of the world's greatest scientist as to the sleeping sickness in Africa, the appalling sleeping sickness at home does not at all interest. While from 40 to 60 per cent. of school children, by actual examination, are suffering from headache and other systemic effects of eyestrain, and while great school teachers are trying to get the oculists to stop it, famous ophthalmic specialists are pretending to refract without a mydriatic and with the ophthalmoscope or the ophthalmometer alone, and, of course, the spectacles they prescribe are ludicrous blunders; consequently their pet amusement is to guy the "eyestrain faddist." The professor of medicine in a great university school writes me that, excepting one, he can not make the oculists of his neighborhood believe in the eyestrain origin of diseases demonstrably due to eyestrain.

What is the reason for such a topsy-turvey world? Why are we caught in such a set of contraindications and absurdities?

The answers are many, but there is only one that can be emphasized here, and it is absolutely decisive. As general practitioners you desire to cure your patients. Most of you are not professors, mixed up with, and your personalities enslaved by college rivalries, hospital cliques and personal ambitions. You don't care a button for conservatives or extremists, but you desire, first of all, the truth, the knowledge of the causes and the cure of diseases.

NEED OF REFRACTION EXPERTS.

The single explanation of all this wrangling and misunderstanding is that refraction is not a science; your refraction work is not well done. If the experiment could be rightly carried out, of ten or of fifty different prescriptions for the eyestrain of one and the same patient, by as many different oculists of different cities, even in America, no two would probably agree. The test of the eyestrain theory has never been made; no attempt at it has been made. There is no uniformity of teach-

* Read in the Section on Practice of Medicine of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

ing as to the science and art of refraction. If our car axles, dynamos, watches, engine valves and thousands of instruments of precision were made with the lack of precision customary in the diagnosis of refraction errors by the oculists of the world, our civilization would come to smash in 24 hours. If the truth of the eyestrain theorist is to be tested, there is only one pair of lenses which can cure a certain patient. There is not a serious and adequate school of refraction in the world, not an attempt to establish such a school. Until you establish such a school most of your attempts to cure your patients of headache, neurasthenia, disordered nutrition, functional gastric, intestinal and abdominal diseases, many nervous and mental diseases, etc., will generally end in failure.

Wilson,[1] of Montrose, Pa., thus puts his finger on this ailing place:

It is a fact that nearly all the headaches just above and back of the eyes are caused by defective vision, and that large numbers of school children go to their physicians and are given headache remedies without end. This is to no purpose, and they finally have to give up school on account of becoming nervous wrecks, unless by chance they happen into some jewelry store and are given some kind of lenses to wear, which may relieve the trouble to some extent. The country physician should take up refraction work, because the great mass of working people simply can not pay the fee demanded by the oculists and are forced to put up with the indifferent work of the so-called opticians. Two or three hundred dollars will buy the necessary equipment, and a month's work in some eye infirmary will give one a start, and one can do as well at once as any optician will ever be able to do.

As a profession and as specialists we have not raised one finger to prevent or to undo the deep disgrace hinted in these lines. There is not a single adequate, serious school of refraction in the world, nor is there a sign that one is coming. Yet such a school is more needed than all the ophthalmic departments in all the medical colleges and hospitals of the world. If there are a few careful and skilful refractionists in the United States who might agree in their diagnosis of one case, there are 5,000 who would disagree, disagree, root and branch. There are whole states and territories, whole sections, in which no poor person can possibly get such medical service.

Moreover, there are at the least 15,000,000 American children and adults afflicted with lateral curvature of the spine. All the smiles of incredulity will not, alas, lessen the number, nor the horror of the consequences of the abnormalism. There is no existing machinery, no care or solicitude to prevent the headache and other sufferings, none to prevent the very existence of these millions of scoliotics. The defect arises unknown and unsuspected by physicians and by orthopedists; when it is incurable the orthopedist learns of a few of the cases. Surely over 90 per cent. of these scoliotics owe their tragedies to ocular function and malfunction, readily demonstrable, and its result always preventable. Two months ago, for example, a child of five years of age was brought to me with many complaints, vomiting of food, peevishness, ill-health generally; a nurse and a physician were retained as constant attendants of the child. I found a grade of astigmatism so low that great authorities in this society publicly to the profession and daily to their patients, state that it is useless to correct. Both axes of the astigmatism were at 105 degrees, a defect that produces head tilting and spinal curvature. The child had both. Glasses were applied, and since then the head tilting and the incipient spinal curve have disappeared. There is no vomiting. No drugs are now required. There is steady gain of weight and complete return to normal health. What would have been the life history of this little one had it fallen into the hands of the "ophthalmic surgeon" who scorns the refractionist; who sneers at functional and beginning disease; who does his refraction with the ophthalmoscope, and without a mydriatic; who loves surgery 50 or 500 times as much as he does the prevention of disease; who loves surgery 5,000,000 times as much as he loves the prevention of surgery; who is 40 or 100 times more interested in a sarcoma or an osteoma, or a coloboma, than in the headache and vomiting, and "neurasthenias," and suicides of his patients?

Physiologic pathology, not the outworn and senile anatomic variety; functional, not organic disease, clinical, not laboratory and ultrascientific medicine; individualistic treatment, not that by averages and rules; prevention as well as the cure of disease; such are to be the watchwords of the future.

OCULISTS AND FAKERS.

At present we oculists are most busy and earnest, and effectively so in creating and commissioning "fake" ophthalmic and refraction schools, refracting opticians, peripatetic spectacle peddlers, and quack M. D. oculists. These things are the direct result of our neglect. No blame of course to them who make their chief corner stone the block we have rejected. There are eighty or ninety good reasons why headaches may not be relieved by our prism glasses. At present osteopathy is influencing legislatures, and ignorantly, but far more successfully than many of the profession, it is treating the millions of distorted or weakened and diseased backs and bodies of our people; we neglect the study of the spinal column utterly and wholly in the functional and beginning stages of lateral curvature. Osteopathy is a product of our professional neglect and bigotry, and especially of the ophthalmic variety.

Great surgeons and orthopedists say, if a child does come into their hands with lateral curvature, "O, let it go; give it some exercises; it will get well as it grows older." But spontaneous cure never comes. If they pretend to treat it at all, they give it over to a nurse to handle. In truth they do not treat it until they can treat it surgically; and there was never a case of organic lateral curvature cured, either surgically, or by all the horrible torture chamber machines a Hoffa could devise or picture. Not a man knows the cause of this defect, and how, therefore, can there be a cure? The superintendent of schools of New York City orders his hundreds of thousands to carry their books on one side one-half the time, and on the other side the other half. In this same city great classes of poor children are formed in lines and taught to bend their bodies at command to one side, and then to the other. Better would it be to hold a black cat over the crossroads at midnight and mumble a charm. Osteopathy is a wretched thing, but it often cures and, however, blindly and stupidly it is making some sort of use of deep massage, the stone which the medical architects refused.

Eddyism is rampant in the land and professionally we are largely responsible for Mrs. Eddy, her foolish children, and her million dollar temples. As medical men we have wholly neglected the attitude of mind of the patient to himself, and to his disease. Especially to her disease! We have been so absorbed in our so-called

1. The Journal A. M. A., May 19, 1906.

"science," our professional dignity, our personal reputation and success, that we have forgotten the first duty of any human being: the duty to be kind, and to take a personal interest in each other as individuals, especially if they are our patients. The second duty, also too frequently we have forgotten: to be sincere, to believe in ourselves and our therapeutics. With all the follies of faith cure and of unchristian unscience, the Eddyistic sillies did not forget those two fundamental duties.

Again the quacks have made use of our refused quarryings as corner stones of their healing temples. It is ridiculous bigotry to make fun of the quacks we ourselves allow or create. These quackeries are not made up entirely of errors, follies, greeds, and stupidities. And our medical practices, "scientific" and "ethical" as we fondly imagine them to be, are not without elements and alloys of quackery, folly, and greed.

The more conservative, the more "scientific," the more self-satisfied, the greater, usually, is the alloy of error and quackery. Especially in the cities; especially among the leaders, the professors, the text-book makers; especially among the specialists. The hope of progressive and helpful medicine lies in the general and country practitioners, the modest unknowns of the cities, the protestants and extremists. Anything, even earthquakes, are needed to shatter the complacency of the success hunters and of the success getters.

Every text-book, and almost every monograph, and medical journal article will be revolutionized when your oculists agree; your oculists will not agree until you as general practitioners secure the establishment of at least one serious refraction school, with a two-year, or a three-year obligatory course of postgraduate study. And this, as general physicians, is your concern. You will be compelled at last to force us to do our long-neglected duty.

HEADACHES DUE TO AURAL DISEASE.*

PHILIP HAMMOND, M.D.
Aural Surgeon, Massachusetts Charitable Eye and Ear Infirmary; Instructor in Otology, Harvard University.
BOSTON.

Headache to-day, as in the time of Hippocrates, is one of the most common symptoms presenting itself to the practitioner. The modern classification varies somewhat from that laid down by the father of medicine, but, notwithstanding the progress of the ages, many cases continue to be intractable. There are few symptoms whose control affords more relief to the suffering patient.

Among the organs of special sense whose derangement may cause the utmost discomfort to the patient the nasal accessory sinuses and the eye have been prominently mentioned. I add to this list a consideration of certain diseased conditions of the ear, some of them capable of causing not only the most violent headache, but even death.

The ear is generally looked on merely as a means of communication with the outside world, and its intimate relation with the more vital structures of the head is, in consequence, likely to be overlooked. Then, too, the ear, although exceedingly sensitive in responding to sound impulses, does not betray a slight falling off in function as does the eye. A loss of vision of 50 per cent. could scarcely pass unnoticed, and yet half the hearing power may be lost without the patient being aware of it. Because of this fact it is natural that the attention should have been called first to ocular defects as a cause of headache.

Intimate Connection Between the Innervation of the Ear and the Central Nervous System.—This was early established by Zuckerkandl and later observations have offered further clinical proof of this relationship. In some instances the mere presence of cerumen in the canal has caused most intense headache. Cephalalgia is fairly commonly caused by aural disease. It is seldom overlooked in the acute form, because directly referred to the ear. In more chronic cases, as we shall see later, the diagnosis may be more difficult.

Obstruction of the Eustachian Tubes.—Gradle[1] has observed that children, especially, are likely to have an almost continuous headache from slight obstruction of the Eustachian tubes. With this condition the hearing may not necessarily be greatly impaired, and unless one ear be much worse than the other the underlying cause may escape observation. This condition has been termed by Legal[2] cephalalgia pharyngo tympanica. The headache is of a dull, heavy character, and the patient is incapable of sustained work.

Careful inspection of the drum membrane should establish the diagnosis, and complete relief almost immediately follows the simple procedure of inflating the middle ear. This relief is usually temporary, and steps should be taken to remove any adenoids, or other cause of obstruction of the Eustachian tubes.

In the more chronic adhesive processes in the tympanic cavity the subjective symptoms are not always so definitely referred to the ear. Absolute pain is seldom observed with this condition. When found it is generally a referred neuralgia, and its cause must be sought elsewhere. A feeling of fulness in the head, or pressure in the brain, may, however, be associated with the chronic dry catarrh of the ear.

Except in the more advanced stages, the defect in hearing may pass undetected, as the patient may continue to hear the spoken voice to the maximum distance long after distinct pathologic changes have taken place in the ear.

Inflammation of the Middle Ear.—Headache is occasionally caused by acute inflammation of the middle ear, and under these conditions is usually relieved by paracentesis. Politzer believes that some of the most obstinate headaches are caused by a hyperemia transmitted to the scalp. Severe pain in the head accompanying aural disease, not confined to the region of the ear, persisting in spite of treatment, is regarded by Syme[3] as indicating the impending onset of intracranial infection.

For many years we have recognized this to be true of the existence of meningitis, or possibly of brain abscess, and we are now learning that it may be significant of the presence of a sinus thrombosis due to the ear.[4]

---

* Read in the Section on Practice of Medicine of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

1. Gradle: THE JOURNAL A. M. A., 1888, vol. xi, p. 339.
2. Legal: Deutsch. Arch. f. klin. Med., 1888, vol. xl.
3. Syme: "Indications for Operation in Chronic Purulent Otitis Media," Brit. Med. Jour., 1906, vol. i, p. 250.
4. In addition to the authors cited in the text, the reader may consult the following: Paget: "Aural Cases in General Practice," Brit. Med. Jour., 1906, vol. i, p. 248; Kopetzky: "The Diagnostic Significance of Headache in Diseases of the Ear, Nose and Throat," N. Y. Med. Jour., 1905, vol. lxxxii, p. 1159; Knapp, P. C.: "A Case of Otitic Purulent Meningitis," Jour. Nerv. and Mental Diseases, 1905, vol. xxxii, p. 738; Roughton: "Clinical Lecture on Cerebellar Abscess, etc.," Lancet, 1905, vol. ii, p. 1597; Barnhill: "Diagnosis of Intracranial Complications," THE JOURNAL A. M. A., 1905, vol. xiv, p. 1486; Jervey: Med. Record, N. Y., 1899, vol. v, p. 351; Vansant: Phila. Med. Jour., 1899, vol. iv, p. 484; Dundas Grant: Jour. of Laryngology, 1899, vol. xiv, p. 457.

It is in the cases of old chronic suppuration, however, that we are most likely to have the more enduring forms of headache. These cases may run their course for years, without any particular symptoms. There may be so little discharge that it is regarded as wax, and the diminished hearing has ceased to annoy the patient, he is so accustomed to it.

Exfoliated epithelium and other products of long-continued suppuration collect in the cavities of the middle ear and mastoid, often forming masses as large as a peach stone. Examination shows that these masses are built up layer by layer, one outside another, until they assume such proportions that they not only fill the unoccupied space inside the temporal bone, but by pressure necrosis actually cause absorption of extensive areas of the bone.

It is apparent even to the casual observer that such a process might reasonably be expected to announce its presence by the existence of more or less pain in the head. This discomfort is usually described by the patient as a dull heavy sensation, but it occasionally assumes a most acute form, when the suffering is almost unendurable. This exacerbation is often caused by the use of fluids in syringing the ear, and particularly by the use of peroxid of hydrogen. Because of the length of time during which this mass, or cholesteatome, has been forming, it is dry and compact. The addition of water almost immediately causes it to swell, with the result that a pressure that is simply tremendous is exerted on all parts with which the mass is in contact. In this way it not infrequently happens that facial paralysis is caused, and occasionally a purulent meningitis may be traced directly to this source.

Caries: These new formations within the temporal bone are not the only cause of headache in chronic purulent otitis media, as this symptom is frequently associated with the presence of caries, especially when accompanied by granulations. It is noticeable that patients undergoing treatment for the relief of chronic suppuration are able to realize the presence of masses of granulations even before the attending physician has discovered them. They will complain that the head feels heavy and queer, and investigation will usually reveal granular areas. Promptly following the removal of the offending growth, the uncomfortable sensations disappear.

Diagnosis: Diagnosis of the presence of chronic suppuration in the middle ear can often be made by simply noting the presence of discharge, and ascertaining the period of time during which it has existed. In perfectly typical cases, there is likely to be an extremely offensive odor, characteristic of caries. Often, however, there will be little or no visible discharge, and the conditions can be made out only by the most careful examination, using head-mirror, speculum and the other common instruments employed in aural practice. It is an exceedingly common occurrence for an ear that has suppurated at some former time to remain apparently dry for many years, with perhaps a few occasional crusts. In these cases diagnosis is not so easily made, except in the hands of one experienced in such examinations.

Treatment: Treatment should aim toward a complete removal of all diseased tissue. This may sometimes be accomplished by the use of astringent and antiseptic solutions introduced into the ear. When there is distinct caries of the bone, however, the plain surgical indication is for its removal. If confined to the ossicles, they may be easily taken out, and in certain cases not only will the suppuration be cured, but a very useful degree of hearing may be preserved.

In more advanced cases in which the disease has invaded the temporal bone, it may be that nothing short of a complete radical mastoid operation will be curative. In any event cessation of discharge will probably mean relief from headache.

CONSTITUTIONAL HEADACHES.*

GEORGE L. WALTON, M. D.
BOSTON, MASS.

A young woman complains of constant headache of many years' duration. Being asked if it is really continuous she answers, "Certainly, it never leaves me day or night." The headache is not distinctly localized. There is an obvious refractive error, but its correction affords no relief. There is obvious nasal defect, the treatment of which is negative, a possibility Dr. Coakley has emphasized. There is malposition of the uterus, but local treatment proves inefficacious, and the patient returns to the neurologist ready for the next therapeutic procedure. I assume, of course, that organic disease of the brain, kidney or other organ has been eliminated and that no toxic cause has been discovered. What is the probable diagnosis? Constitutional headache.

This symptom is included among the stigmata of so-called degeneration or, as I prefer to name it, deviation, but its adequate description and pathogeny I do not find. I propose, therefore, to give my own idea of it.

What Constitutional Headache Is.—The patient may show no special physical peculiarity except perhaps unusual delicacy or, perhaps more frequently, she presents many signs of deviation from the average normal, either physical, physiologic or mental, or all three. On the physical side we may find a too prominent forehead, a projection of the lower teeth beyond the upper, peg-shaped lateral incisors, hair on the face in the female, or absence of hair if the patient be a male, marked facial asymmetry, and badly formed or badly set ears. On the physiologic side we may find a hypersensitiveness to sights, sounds or thoughts, sometimes associated with an extreme acuity of special sense. Such patient may have vision, for example, double that of the average normal. On the mental side we are peculiarly liable to find deviation. Such a patient is likely to be high-strung, intense, unable to relax either physically or mentally. Strong likes and dislikes are prominent. Even in the course of the examination the tendency will be indicated by the exaggerated self-consciousness; the fussy antagonism, the questioning of each step in the examination, the calling for a fan, or a glass of water, and the request that the window be opened or closed. Certain sources of irritation "simply drive the patient wild"; or she "simply can not bear" something, though the cause may be nothing more serious than hearing another person clear his throat or seeing him rock. The patient herself, meantime, may be obviously addicted to some obsessive habit as grunting, sniffing or blinking, if not to habit chorea. *Folie du doute,* the touching habit, hypochondriacal ideas and chronic indecision may complete the picture, for which I venture to coin the word obsessia, since all these faulty mental habits may be analyzed into obsessive tendencies. A striking example

* Read in the Section on Practice of Medicine of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

of this mental peculiarity told me recently that she perfectly abominated cereals, that she simply could not stand vegetables, that she could not bear anything in the shape of an apple, that she could not abide spinach, and that baked beans made her sick at the stomach. The habit movements, the grunting and allied actions are performed by such an individual in response to a feeling that she must make them or explode. The hypochondriacal ideas result from such an obsessive desire to feel comfortable, that any variation from perfect comfort becomes unendurable.

This line of thought prepares us to appreciate the probable nature of the constitutional headache. In its typical form this headache is not perhaps what the average normal individual would call a headache at all. It is merely rather an uncomfortable sensation which is so irksome to the ideo-obsessive, and becomes so aggravated by the focusing of her attention on it that at last only such terms as agonizing, frightful and excruciating seem adequate. In ordinary parlance such a headache should lay the patient low, whereas she sits in the neurologist's office at the end of a long examination perhaps smiling and complacent, explaining her own ability to do so by the fact that she has an extreme degree of will power. She has ample will power but it is ill directed.

In other words, this headache is probably the patient's interpretation of the ordinary sensations resulting from cerebral activity. The sense of mental fatigue, for example, may be more acutely realized than in the ordinary individual, besides being really excessive, because the mental processes, though ill directed, are kept up more continuously than in the average individual through the patient's inability to mentally relax. This produces the vicious circle. The headache in this case is only another sign of deviation, of which the error of refraction, the congenital nasal or uterine defect are merely other indications.

The Constitutional and the Reflex Headaches.—There is perhaps no sharply dividing line between the constitutional and the purely reflex headache. The ticking of a clock may be the exciting cause of insomnia, but the very fact that a clock tick keeps a person awake indicates a sensitive organization on her part which constitutes the underlying cause. Pollen may be the exciting cause of hay fever, of which, however, the primary underlying cause must be the unfortunate constitution of the individual which renders him susceptible. Similarly, when we credit a quarter of a diopter of astigmatism with being the cause of migraine, it would probably be more accurate to say that the error of refraction is the exciting cause, while the primary and underlying cause is the inherited constitution of the patient which renders him susceptible. In other words, between the purely reflex headache on the one hand, and the purely constitutional on the other, there are doubtless a large number of cases in which the two elements are so combined and so interdependent that it is only viewing one side of the shield to class the headache as either purely reflex or purely constitutional.

Treatment.—The treatment of constitutional headache is obviously not hopeful, for its eradication would involve an entire change in the patient's inherent make-up, including susceptibility to fatigue. The correction of obvious ocular, nasal, uterine or other defect is indicated by way of giving the reflex element the benefit of the doubt. Special drugs are of no value, though it is, of course, indicated to build up, as far as possible, the patient's general condition not only by drugs but by exercise, diet, baths and the regulation of the habits. If by mental training the patient may be led at least to modify the obsessive tendency, a step has been made in the right direction.

CHRONIC HEADACHE ASSOCIATED WITH PELVIC DISEASE.*

F. H. DAVENPORT, M.D.
BOSTON.

By chronic headache, as I understand it in this discussion, is meant not a constant headache, but one which recurs at more or less frequent intervals and is of a uniform type. This symptom is not very common in connection with pelvic disease. In taking 1,000 cases from my note book, I find it mentioned 98 times, constituting only about 10 per cent.

In studying these cases and noting the pelvic condition with which the headache is associated, I find the greater part may be placed under two heads. First, those connected, as regards to time, with the menstrual function; second, those which seem to be due not especially to the particular pelvic disorder found in the case, but that seem to be an expression of the neurasthenia of which the pelvic lesion is one of the predisposing factors.

1. Due to Menstrual Disturbance.—Taking the first group, I find that 30 cases, or about one-third, are directly associated, as regards time, with menstrual disorders, and the one abnormality which is constant in these cases is a diminution of the amount of blood lost, either from scanty flow with the regular periods, or from delayed menstruation, the interval being more than four weeks, or from both irregular and scanty menstruation combined. In many of these cases menstruation occurred very irregularly, from five weeks to two or three months between the periods.

The most common type of headache found in these cases comes on a few days before the flow occurs, lasting from one day to several, and ceasing promptly as soon as the flow is established. The headache usually precedes the period, but in a few cases in which the flow is fairly regular, but scanty, the headache appears after the period. This type frequently accompanies chronic metritis, when tissue changes have taken place in the uterus and the organ has become cirrhotic. Headaches occurring during the flow are very rare.

The explanation of this form of headache is obvious. There is a hindrance to the normal free and sufficient escape of blood, and as a result a pelvic congestion. This interference with the pelvic circulation shows itself by disturbances elsewhere and the headache is a manifestation of this.

The treatment for this variety of headache consists, first, in general measures to improve the patient's health with the hope that there will be coincidently a change for the better in the rhythm and amount of the menstrual flow. As a rule, these patients are delicate, weak, anemic, and anything which will make them stronger physically is of value. These measures readily suggest themselves and are those which are usually employed in such cases without reference to the particular cause of the trouble or the special form in which the symptoms manifest themselves. The most important are improving the

---

* Read in the Section on Practice of Medicine of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

digestion by insisting on as much food as can be assimilated and of a quality which will not tax the digestive organs. Regular and suitable exercise to improve the muscular tone is of great importance. Freedom from mental strain, as study in the case of young girls and social dissipation in those older, should be insisted on.

In other words, measures which will make blood, improve its circulation and steady the nerves will tend to regulate this function. For this purpose drugs are an adjunct, but should not be depended on alone. The most important are iron and manganese, which physiologically tend to improve the quality of the blood. Hand in hand with these general measures and for the relief of the headache itself, local treatment should be employed, and in this way much more direct and quick improvement can be attained. If Nature does not provide relief by a prompt escape of a sufficient amount of blood, local depletion should be employed.

Of the various methods suggested for this purpose there is none which is so simple in its application and so efficient in its results as the use of wool tampons soaked in glycerin. As soon as the slightest suspicion of headache makes its appearance, or even anticipating this by a day or two, such a tampon should be inserted into the vagina and allowed to remain for two days. The result will be a profuse watery discharge of blood serum which relieves the engorged pelvic blood vessels and equalizes the circulation. At the end of the second day the tampon should be removed and a second substituted. These should be applied every second day until the flow appears.

It is not an uncommon occurrence for the patient to experience marked relief within a few hours after the first treatment, and the headache to be kept in check during the whole premenstrual epoch. If repeated before every menstruation for several months, the period of headache is shortened and in many cases a cure is effected. In the cases in which the headache follows instead of precedes the menstruation, the same treatment should be instituted as soon as the period is over and kept up for several days.

2. *Due to Neurasthenic Condition.*—The second largest group in my series of 98 cases consisted of 23 in which the headache seemed clearly due to neurasthenic condition. They were not associated particularly with the menstrual period, but were brought on by overfatigue, either mental or physical. There was usually, to be sure, some accompanying local pelvic lesion, but that varied indefinitely and did not seem to be the cause. The important question here is as to the propriety or necessity of doing anything for the local difficulty, and my advice is as follows:

Unless there is some weighty reason for not remedying the existing trouble, I usually advise it on the ground that the pelvic disorder, if not the cause, is, at least, a factor in keeping the nervous system below par, and that the patient will improve faster and more surely if this additional source of trouble is removed.

It is not within the scope of this paper to go into a detailed statement of the treatment of these cases. I think that headache is not a common symptom of other pelvic conditions. It was noted in only 14 cases out of 130 retroflexions and versions. There were 13 cases of anteversion, but most of these had at the same time scanty or irregular menstruation, and were probably of a poorly developed type. Some prolapse or enlargement of the ovary was found in 8 cases. Laceration of the cervix was present in 16 cases, and that is significant as emphasizing the fact that lacerations and irritations of the cervix frequently manifest themselves more by reflex disturbances than by local symptoms. In only 4 cases of fibroid tumors and none of ovarian was headache present as a symptom.

CONCLUSIONS.

1. Chronic headache associated with pelvic disease is accidental, except when it is the most marked symptom or irregular or scanty menstruation.

2. In other pelvic disorders, it is usually an expression of the neurasthenic condition of which the pelvic lesion is merely one factor or accessory predisposing cause.

3. Treatment for the first class of cases consists of general building up measures and local depletion.

4. Treatment of the second class consists in the rectification of existing local trouble unless especially contraindicated, but the main reliance is to be placed on prolonged and systematic treatment of the neurasthenia.

INJURIES TO THE CHILD'S HEAD DURING LABOR.*

B. SACHS, M.D.
Alienist and Neurologist to Bellevue Hospital.
NEW YORK.

For many years I have been anxious to enlist the interest of the obstetrician and of the general practitioner in the injuries which the child's brain is apt to sustain during parturition. The general opinion prevails, and it is not wholly wrong, that the child's head is wonderfully tolerant and that the child is none the worse for prolonged labor and for instrumental delivery. The physician who has delivered a woman of a living child without seriously injuring the mother and without leaving on the child the outward mark of difficult labor feels proud of his achievement, and if the child has no convulsions during the first 24 or 48 hours of life, if it appears to move all its limbs, the physician walks away with pride and an easy conscience. He has done his duty according to his own best light and in accordance with the best teachings of the day. So long as the sounds of the child's heart remained normal there was no apparent reason to hasten the birth of the child and his entire concern was for the health of the mother. That she deserves prime consideration I shall be the first to allow, and yet I say deliberately that the world is full of imbeciles, of paralytics, of epileptics, not only in our almshouses and public institutions, but in some of our best families, who might have been normal individuals if they had been given a "square deal" at the time of birth.

Let us see what happens and whether the matter can in any way be remedied. In a course of studies which I began years ago with Dr. Peterson, my attention was attracted to the fact that of all the cases of infantile cerebral paralysis a very considerable number were either first-born children or had been born after prolonged, often dry, labor. Careful statistics of several hundred of such cases showed that less harm is done by instrumental delivery than by prolonged labor. It is easy to understand, however, that unskilful instrumen-

* Read in the Section on Diseases of Children of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

tal delivery has been a frequent cause of trouble. In first-born children and in those born after difficult labor the skull and the brain are apt to be seriously compressed. As a result of this compression, hemorrhage takes place from the minute vessels, particularly the veins of the pia, and an effusion of blood follows, covering a smaller or greater portion of one or both hemispheres.

In the case of forceps delivery, as well as in many of the prolonged labors, the hemorrhage is apt to occur over one or both motor areas, and this one fact accounts for the frequent occurrence of spastic hemiplegias or diplegias that are developed in very young children. If the hemorrhage takes place over other parts of the brain a condition of imbecility or of epilepsy may develop with little or no paralysis.

From an etiologic point of view it matters not whether there is paralysis, idiocy or epilepsy; one or often all of them are developed and may be due to conditions present at the time of birth. It is in only the extreme cases that the symptoms of the injury done are so manifest that the physician in attendance can observe the harm done. In a large number of cases slighter hemorrhages have occurred, and the symptoms of paralysis, of imbecility and, above all, those of epilepsy are developed only within weeks, sometimes months, after birth; but the causal relation between the conditions at birth and the subsequent illness is none the less certain.

I am firmly convinced that protracted labor is the most powerful factor in these conditions. More than ten years ago I said, in my book in a chapter in which the obstetrician would not be so apt to find it, that the prolonged compression of the skull during the last month of pregnancy would seem to exercise considerable influence on the development of cerebral spastic palsies, but that the chief damage is done during the period of actual labor. If physicians were more confident of the safety of the forceps and of their own skill to apply them, protracted labor would not be so powerful an etiologic factor as it is at present.

A word of warning, therefore, should be uttered to the obstetrician that, other things being equal and, above all, the life of the mother not being in danger, it is wise to curtail the period of labor as much as possible and not necessarily to wait until the child's heart action becomes feeble. Many children might have escaped epilepsy, idiocy and paralysis if the period of labor had been properly managed.

For the severe cases of meningeal hemorrhage at birth Cushing has recently suggested the opening of the skull, a washing out of the blood clots, and, so far as I know, he has practically cured two of four children on whom this plan has been tried. The procedure is a daring one and it will apply only to relatively few of the cases and would not be at all applicable to that larger number of cases in which the injury at birth is not so apparent and in which the full consequences of protracted labor or of unskilful instrumental delivery are in evidence only weeks and months after birth. If the condition has once been established which gives rise to paralysis, epilepsy or imbecility, little can be done by the physician, however painstaking he may be. The hemorrhage that has occurred is bound to be followed by secondary processes and the normal development of the cortex and of the other parts of the brain and central nervous system associated with it will be interfered with. We must depend wholly either on prophylactic measures or on more skilful manipulation of labor on the part of the obstetrician. How the practice of to-day may be modified, obstetricians must determine. But I can not help feeling that the medical men in attendance at confinements have for years followed a policy of indifference toward the welfare of the child and have allowed too many children to be born into the world after labor unnecessarily prolonged and in conditions that are a distinct disadvantage to society and to the individuals for the entire period of their natural lives.

DISCUSSION.

DR. EFFA V. DAVIS, Chicago, said that as a matter of fact the head of the infant is intended to stand a tremendous amount of pressure. She said that instead of using the forceps, a much safer plan is the regulation of the size of the child, which she believes can be controlled. The mother must be under strict supervision, especially in the higher class of patients who have great leisure. The children which she has seen who have become paralytic have been children of degenerate parents.

DR. C. G. KERLEY, New York City, declared that he has been impressed with the fact that there are more of these cases than there should be. Dr. Sachs' views bear out Dr. Kerley's in relation to the cause being rather the trauma taking place in prolonged labors than actual injury with the forceps. Many such cases are seen, he said, in out-patient and in private work, and it has not been his observation that a family history of degeneracy has had much to do with it.

DR. R. B. GILBERT, Louisville, Ky., quoted the old adage that an ounce of prevention is worth a pound of cure, and said that it is applicable in a matter of this sort, because the cure of infants injured during parturition has not been satisfactory. The measure suggested by Dr. Sachs, he said, does not commend itself to him. He has seen a number of these injuries, and several years ago adopted a method which has proved satisfactory—that of inducing labor two or three weeks prior to full term, making the labor safe for the infant and often much safer for the mother. He never puts an instrument into the uterine cavity, but uses tampons soaked in glycerin, daily increasing the size of the tampon. The method facilitates labor and the child is born two or three weeks ahead of time, and there is scarcely a chance for injury. One woman with deformed pelvis, who had had hip disease early in life, he delivered in that way four times and each of the four children was born in safety. To be sure, they were reared in incubators, but at the end of the seventh month the labor was made entirely easy in this way. Dr. Gilbert suggested the method as a prophylactic measure rather than the application of the forceps to which Dr. Sachs called attention.

DR. J. C. COOK, Chicago, stated that in many years' experience in a good-sized clinic he has put forth every effort to establish the relation between cerebral palsy and labor and without success. None of the children, the subjects of long and tedious twenty-four- and fifty-two-hour labors, has had palsy. Neither has Dr. Cook been able to establish any relation between palsy and the first child. In his experience it is not the first children who are afflicted, but may be the second, third or fourth. He feels that the great majority of these cases are due to some pathologic condition in the brain or blood vessels, either prior to or after labor. The majority of cases have seemed to him to be either prenatal or postnatal in origin rather than due to injury received at the time of birth.

DR. B. SACHS, New York, said that his reason for bringing up the subject was to get the members of the Section to further the cause of respecting the child at birth as well as the mother. Physicians have been taught that the mother is to be considered. Of course she is, and she is of prime consideration; but the child gets far less consideration than it deserves and far less than obstetricians are able to give it. Dr. Sachs said that he has given the subject much attention since 1890, when he published his first paper in connection with the cerebral palsies. He believes that those familiar

with recent text-books will know that they credit him with the division of these cerebral palsies of children into three groups. Dr. Sachs made the division into prenatal palsies, those due to accidents at birth and those that are of postnatal origin. With the first and last obstetricians have nothing to do, but there remains a very considerable number of cases in which the palsies are absolutely the result of accidents at the time of labor, and nothing else. The anatomic proof has been given in several instances in which children were born with all the symptoms which are now associated with cerebral paralysis due to difficulty in labor, the child dying after a few days. Dr. Sachs stated that there can be no doubt about the baneful influence of difficult labor on the brain of the child. The marvel is that so many children escape.

PREGNANCY AND LABOR COMPLICATED BY ANTERIOR FIXATION OF THE UTERUS.*

G. M. BOYD, M.D.
Professor of Clinical Midwifery to the Medico-Chirurgical College; Physician to the Philadelphia Lying-in Charity.
PHILADELPHIA.

In 1886, ventrofixation was welcomed. We felt that at last a positive means for curing the retroverted uterus had been found. The early operations surely accomplished the purpose sought for. The uterus was firmly fixed to the anterior abdominal wall by sutures; in some cases, in addition to this, extensive scarifications produced strong fibrous adhesions. The results of these operations were most gratifying. The symptoms complained of disappeared rapidly. All went well until we began to hear of complications developing during pregnancy and labor, complications causing so much obstruction by the firm and thickened anterior wall of the uterus that at times the most serious operations in obstetrics were demanded in order to accomplish the delivery.

With the news of these complications, cases that only time could produce, we now find the various operators modifying the procedure, some using a single stitch to fix the uterus, others removing all sutures in two weeks, a third class including only the peritoneum in the tension-suture; and so on, we might mention the various operations, all having the purpose of obviating the complications in future pregnancy and labor. Anticipating the danger of future trouble, some operators have made the attachment to the abdominal wall so slight that I fear a careful examination in a certain proportion of cases might find the uterus just where it was before the operation and the patient complaining again of her old symptoms.

Ventrosuspension, the operation performed to-day, is primarily also a fixation. It becomes a suspension only when Nature is good enough (possibly in anticipation of future pregnancy) to permit the uterus to leave the point of attachment, a ligament forming, which varies in length, thickness and elasticity. Gillette[1] says that "no operator can ever know with certainty the degree of strength of his made attachment, and for this reason can never know whether it will be sufficient to hold the uterus in place and yet not interfere with the normal development of the uterus during pregnancy." The fact that these new made bands do not always enlarge with the growing uterus, as do the round ligaments and other uterine structures, is a reason for the immeasurable mischief that they occasion. Again, should the fixation-suture become infected, an accident that can not always be guarded against, no matter how skilled the operator, the uterus may remain fixed.

Vaginal fixation, at one time resorted to, has been abandoned on account of the serious dystocia following pregnancy. A difference of opinion still exists among surgeons as to the effect of ventral fixation, or suspension, on the course of pregnancy and labor. Many of the text-books still recommend it, attributing the complications that sometimes follow to errors in technic. Beyea[2] says: "The complications that are said to ensue nearly all occurred in operations performed before 1896, when ventrofixation was performed, not ventrosuspension. The literature furnishes no proof that ventrosuspension is attended with complications." He described 42 cases of pregnancy and labor following operation, and in no instance was there a complication; also, in none of his 500 cases reported did ileus or other accidents follow.

Kelly[3] enumerates three objections to the operation of ventrosuspension as usually performed and thinks that his operation, if properly done, overcomes them all: 1. The operation substitutes a fixed, unnatural anteflexion for a retroflexion. 2. It interferes with the natural distension of the bladder. 3. In the event of pregnancy occurring after suspension, the patient's life might be imperiled by the inability of the uterus to develop normally.

Kelly further says that an experience of six years has brought a satisfactory answer to each of these queries in favor of the operation. While in the majority of cases ventrofixation does not complicate pregnancy, the impression has gradually gained ground that dystocia may follow in a certain proportion of cases; so that many surgeons have abandoned its use in child-bearing women.

Gillette[1] states: "Reports of such disasters have now become so numerous that I think this operation has had its day and will soon be relegated to the junk heap occupied by many another pernicious discarded surgical procedure."

Ten years elapsed before we began to appreciate fully the obsetric complications.[4] In the past decade we have accumulated sufficient material to say definitely that a new chapter has been added to obstetrics. This chapter, I feel, will be enlarged on in the future, unless the operation is abandoned.

In this paper it is my purpose to consider some of the complications that are liable to occur during pregnancy and labor, to review three cases,[5] and, finally, to study briefly the literature for the purpose of determining whether either operation is justifiable from the obstetric standpoint.

Case 1.—*Ventrofixation followed by Obstructed Labor, Sloughing of the Cervix, and Vesicovaginal Fistula.*

Mrs. W. was admitted to the Philadelphia Lying-in Charity, June 9, 1897.

History.—She had had one child at term. Two years before, ventrofixation had been performed. She had had two miscarriages since, and she came to us pregnant for the fourth time, the uterus now carrying the fetus to term. She stated that she had fallen in labor 18 hours prior to admission, and that her physician had twice applied forceps without success.

Examination.—She was much exhausted from the long labor. She had fever and rapid pulse. The fetal heart could not

---

* Read in the Section on Obstetrics and Diseases of Women of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

1. Gillette: Ohio State Med. Jour., August, 190

2. Beyea: Penna. Med. Jour., May, 1906.
3. Kelly: "Operative Gynecology," 1902, vol. ii.
4. Noble: Amer. Jour. Obstet., August, 1896.
5. Two of these cases have already been reported; the third case demeanded Cesarean section.

be heard. Internal examination revealed the cause of the dystocia. The posterior lip of the cervix was drawn up and posteriorly, the anterior uterine wall acting as an obstruction to the engagement of the cephalic extremity. With the long labor, the death of the infant, and the excessive moulding of the presenting part, it had at last made some descent.

Operation.—The patient (in bad condition) was anesthetized; and the edematous and injured cervix was dilated. Forceps were then applied to the much-moulded head; and, with axis-traction, she was delivered. The infant weighed seven pounds. The lacerated cervix could now be easily felt, and the thickened anterior wall of the uterus, which had caused the obstruction.

Postoperative History.—After as careful a toilet as was possible with the patient in so bad a condition, she was put to bed. As might have been expected, she developed a rapid putrid infection, with high temperature, rapid pulse and offensive lochia. The anterior lip of the cervix sloughed off; and with this, a portion of the floor of the bladder. A vesical incontinence was then explained by a fistula.

She improved slowly, but it was not until one month after her delivery that she was in condition to make a repair of the bladder injury. The fistula was found high up in the left side of the cervix, and communicating with an extensive laceration of the latter. It was first necessary to repair this laceration; then the fistula was closed with silver wire sutures. The stitches were removed in two weeks, and the patient was discharged in good condition.

CASE 2.—*Ventrofixation, followed by Pregnancy. High Position of the Cervix and thickened anterior Wall of the Uterus. Labor prematurely Induced.*

Mrs. W. aged 33, was admitted to the Philadelphia Lying-in Charity, Jan. 15, 1898.

History.—She had had three children, all living. Three years before, one ovary had been removed and ventrofixation performed. She menstruated regularly after this operation until May 18, 1897. After having missed her first period, she had a show every two weeks for three months. Fetal movements were felt in September. In December there was a show, with great pain, for three weeks; and at the same time there was lumbar pain and irritability of the bladder, accompanied by a constant dragging pain in the sacral region and lancinating pain at times. Both inguinal regions were the site of continuous pain, but it was most severe in the left side and down the thigh.

Examination.—On admission, she was found to be pregnant seven and one-half months. The ovoid was presenting by the breech. Internal examination was accompanied with pain; it was difficult to reach the cervix which had been drawn upward and posteriorly; the anterior wall of the uterus was much thickened, and seemed to offer an obstruction to the engagement of the presenting part. External version was performed, and the patient was kept in bed with lateral compresses to the uterus. We succeeded without much diffifficulty in keeping the head at the pelvic inlet.

Operation.—Fearing that by allowing the patient to go to term we might have greater trouble, it seemed wise to induce labor at the eighth month. This was carried out Jan. 29, 1898, by introducing two rubber bougies into the uterus. This was followed by slight pain and an unfortunate rupture of the membranes. The pains gradually became more frequent and severe, but were not accompanied with dilatation. After fourteen hours without any real progress, the cervix dilated to the size of a quarter dollar. We gave ether, and terminated the labor with forceps. Some difficulty was experienced in dilating the cervix.

During the operation it was noticed that, although the fetal heart had been closely studied during her labor, the waters were stained with meconium. We feared the death of the infant; and, unfortunately, we were right. The cord was pulseless, and the fetal heart could not be heard.

CASE 3.—*Ventrofixation; Labor Obstructed; Anterior Wall of the Uterus Greatly Thickened, Resembling a Fibroid Tumor; Cesarean Section.*

Mrs. M., aged 33, a multipara was seen by me in consultation, Feb. 15, 1906.

History.—The first-born of her children is 10 years old. This labor had not been difficult. Two years after the birth of this child, and eight years ago, the uterus, for the relief of retrodisplacement, was suspended to the anterior abdominal wall. A stitch-abscess prolonged the convalescence. Three years after this operation, her second child was born after a difficult labor, which ended with forceps. The child was born alive.

Present History.—The patient is pregnant at term, and already twenty hours in labor. She stated that she has had much discomfort throughout the pregnancy, chiefly a dragging sensation and pain in the ovarian region. The membranes had ruptured soon after the onset of labor. The pains at first were strong and intermittent, but now are less severe and almost continuous.

Examination.—The uterus, the size of a pregnancy at term, was irregular in shape, suggesting a transverse presentation. A marked depression was seen on the abdomen, at the place of the attachment of the uterus to the abdominal wall. The pelvis was normal in size and shape. The vagina was dilated, and the cavity of the pelvis empty. High up, near the sacrum, the cervix was felt with difficulty. Even after a test of twenty hours' labor, the cervix was not dilated. A large mass, the thickened anterior wall of the uterus, was felt at the brim of the pelvis, completely occluding the inlet. With difficulty the finger was inserted into the cervix, and the presenting part could not be positively diagnosed. The child was in an imperfect oblique position, with the head to the right. The fetal heart was heard, but not distinctly.

Operation.—As the patient had been a long time in labor, with some of the early symptoms of obstruction, she was immediately prepared for operative interference. Anticipating section, several hours elapsed before ether was given her. Even with the relaxing effect of anesthesia, the cervix remained high, and the obstructing tumor could not be displaced. Craniotomy could not have been performed. Cesarean section was the only method of delivery possible.

On opening the abdominal cavity, the uterus was found bound down in front. It was drawn into the wound; a longitudinal incision was made; and the child was rapidly extracted. Then the tumor (the hypertrophied anterior wall of the uterus) could be distinctly felt as a spherical mass projecting into the cavity of the uterus. After liberating the uterus from its point of attachment to the anterior abdominal wall, the incision, now on the posterior wall of the uterus, was closed. Convalescence was uneventful, and mother and child are doing well.

COMPLICATIONS TO PREGNANCY AND LABOR.

If the uterus is found fixed, it is more likely to occasion dystocia than when it is suspended; but even in this case trouble may follow, as illustrated in a case reported by Gillette,[1] in which death resulted from internal hemorrhage following the tearing loose of the suspensory ligament from its uterine attachment. It has brought with it a flap of uterine tissue about the size of a silver dollar. In many of the later cases reported the trouble followed a suspension carefully performed.

The complications have been tabulated by Kelly[3] as follows: 1. Marked retraction of the scar, due to the tugging of the adherent uterus. 2. Constant hypogastric pain. 3. Retraction and displacement of the cervix, even up into the abdominal cavity. 4. The formation of a tumor obstructing the pelvic inlet, resulting from hypertrophy and deficient expansion of the anterior uterine wall. 5. Excessive thinning of the posterior wall of the uterus. 6. Abortion or premature labor. 7. Persistent and excessive nausea.

During labor the following complications may be noted: 1. Prolongation of the pregnancy. 2. Inertia of the uterus, due to excessive thinning of its walls. 3. Dystocia, due to the tumor formed by the contracted anterior wall of the uterus. 4. Inability of the cervix

to dilate, owing to its abnormal position. 5. Increased frequency of abnormal presentations. 6. Rupture of the scar of fixation. 7. Rupture of the uterus.

In 1905, Andrews[6] collected from foreign and American literature 395 cases of pregnancy following ventrofixation. This report included Noble's[4] cases, collected in 1896. In 259 of these cases the labor was normal; the remaining 146 cases were complicated in some way.

Abortion occurred 36 times; that is, in almost exactly 9 per cent. So far as these figures go, they do not point to a special liability to abortion after ventral fixation. He further says that we must consider, on the one hand, the fact that several of the patients had had abortion before the operation and, on the other hand, that unsuccessful results and uninteresting cases are not so likely to be reported as are successful results and interesting cases, such as those in which labor is terminated by Cesarean section.

Dragging sensations, pain, dysuria, and vomiting were present. In one case collected by Noble[4] premature labor was induced because of persistent vomiting. High position of the cervix was recorded in 22 cases. This is the most common difficulty met with after ventrofixation. Cesarean section was necessary in 20 cases. In each case the cervix was high, and in many the fetus could not be reached from below. Rupture of the uterus was noted in 3 cases. This accident may take place spontaneously, owing to the extreme thinning out of the uterine wall, or may follow attempts at version.

Clark and Bowley[7] report a case of fixation performed in 1901. In 1903 she became pregnant and went to term. The fetus was in transverse position. The cervix was high, and the anterior wall of the uterus much thickened. Internal version was decided on, when a rupture of the uterus was discovered. Cesarean section was immediately performed and the patient recovered. In my case demanding Cesarean section the cervix was above the sacral promontory.

Dickinson performed Cesarean section in a case in which the external os lay against the sacral promontory and the internal os was higher than the first lumbar vertebra.

In 1904 Lynch[8] collected also 20 cases of Cesarean section performed for fixation. Some of these cases are included in Andrews'[6] report. In 19 of these cases the position of the cervix was mentioned. It was situated above the promontory of the sacrum. The pelvis was normal or only slightly contracted in every case but one. Twins were noted in 2 cases. There was transverse presentation in 15 cases. Vertex was noted in 3 cases; the breech, in 2 cases; in 3 others the position was not given. In these 20 Cesarean sections, the maternal mortality was over 38 per cent., and in the 18 cases in which the result to the fetus was noted there was a mortality of 44.5 per cent.

In 1896 Dorland[9] tabulated 179 cases of pregnancy following this operation. In only 38 per cent. was the pregnancy uncomplicated. In 14 per cent. of the cases abortion and premature labor occurred.

	Cases.	Per cent.
Retraction of the cervix to the level of the promontory, or higher	10	7.0
Threatened rupture of the uterus	9	6.5
Abnormal presentations	9	6.5
Serious dystocia	23	17.0
Postpartum hemorrhage	3	2.2
Retained placenta	3	2.2

Version was performed nine times; three children died. Forceps were used eleven times; three children died. Cesarean section was resorted to six times; three mothers and three children died. Craniotomy destroyed one child; one child died after a breech extraction, and one mother perished with a retained dead fetus. The maternal mortality was 14 per cent.; the fetal mortality, 58 per cent.

These statistics and my experience with the cases herein described make me feel that it is unwise to perform fixation or suspension of the uterus before the menopause.

Lynch[8] says: "I am inclined to take the ground that neither procedure is justifiable until after the menopause, as it does not seem proper to undertake an operation for the cure of a condition that does not threaten the life of the patient and merely exposes her to a certain amount of discomfort, when we know that it may give rise to most serious dystocia should she become pregnant."

The high fetal and maternal mortality following dystocia, especially after Cesarean section (almost 50 per cent.) makes it very important that all cases be very carefully studied in order that a careful diagnosis of the extent of obstruction may be ascertained. I take it that the appalling mortality has been due in part to an inaccuracy of diagnosis and to the too long indulgence in temporizing methods of treatment. Should the patient become pregnant, it is important to look immediately for symptoms that suggest suspension or fixation. These are nausea, vomiting, irritable bladder and dragging pains. Vaginal examinations should be repeatedly made for the purpose of ascertaining the position of the cervix and the anterior abdominal wall. In early pregnancy it will be possible to liberate the uterus by abdominal section. When the patient is seen only just before labor, this procedure is contraindicated owing to hemorrhage and the fact that liberation of the uterus does not remove the obstruction in the anterior wall.

Goubaroff[10] and Bidone[11] report a case in which, during labor, the uterus was liberated without benefit. It was finally necessary to dilate the cervix artificially and perform craniotomy.

Dorland[12] and Noble[4] have advised the induction of labor (at the eighth month) whenever a study of the case threatens difficult labor.

Lynch[8] thinks that the field for the induction of premature labor is extremely limited, for these reasons:

1. It does away with the possibility of spontaneous labor at term.

2. It is associated with a tremendous fetal mortality.

3. The operation may prove to be extremely difficult in the cases in which it may be indicated, and in some instances prove impossible of accomplishment. In my second case reported, labor was induced at the eighth month of gestation; but, failing in this method of treatment, it was finally necessary to perform an accouchment forcé. I am opposed to inducing labor in this class of cases, as I am opposed to its use in contracted pelves. The difficulty in estimating the length of gestation and the high fetal mortality makes it wiser to let the patient go to term and have the test of labor.

In the latter months of gestation the shape and size of the uterus must be studied and the position of the fetus determined. If the uterus is fixed, the fetus will

6. Andrews: Jour. Obstet. and Gyn. British Empire, August, 1905.
7. Clark and Bowley: Johns Hopkins Hosp. Bull., March, 1905.
8. Lynch: Johns Hopkins Hosp. Bull., May, 1904.
9. Dorland: Univ. Med. Mag., December, 1896.
10. Goubaroff: Medical Week, Paris, vol. iii, 1895.
11. Bidone: Distocie gravi da isteropessi atti della Societa Italiana de obstetricia e ginecologia, 1896, vol. iii, p. 258.
12. Dorland: Amer. Jour. Obstet., January, 1897.

often occupy an oblique or transverse position, and the cervix may be drawn upward and backward. Occluding the inlet of the pelvis may be found the much hypertrophied anterior wall of the uterus. When these symptoms are found at term, the case should be looked on as greatly complicated. The progress of labor is usually retarded. It is often ushered in with the rupture of the membranes. As a rule, the pains are abnormal. Usually they are not severe and soon lose their intermittent character. Owing to the unequal development of the uterus, the anterior wall much thickened and the posterior wall greatly thinned, the cervix does not dilate.

If, after the patient has had the test of labor, the cervix is within reach, it may be manually dilated and the forceps or version resorted to. If the cervix is within reach and an obstructing tumor is found, it may then be necessary to make Dührssen's incisions of the cervix before applying the forceps.

In exceptional cases this course will not suffice, and the Cesarean section must be resorted to. The fallacy of allowing Nature to take her course or of attempting the forceps operation without first dilating or incising the cervix, the first case reported illustrates. These remarks, I hope, will prompt a discussion, not of the various methods of performing ventrofixation or suspension, but of the wisest methods of treating pregnancy and labor, should they be so complicated.

1909 Spruce Street.

DISCUSSION.

DR. S. P. WARREN, Portland, Me., said that he had just passed through his first experience with labor following a ventrofixation, in which the gestation was or had been normal. He was called in consultation as to the method of delivery. The labor had taken the course which seems to be classical in these cases; beginning with escape of the waters without pain, then pain commencing after a few hours and steadily increasing. After thirty-six hours there was no presenting part, the cervix was just above the reach of the finger and far back, and pains were severe. He advised laparotomy and freeing of the adhesions, and Cesarean section if necessary afterward. While another consultant and himself were preparing for operation, the head was found low down in the strait, and in a posterior position, while there was decided hemorrhage. Delivery was hurried with short forceps, and as soon as the child was born there was a profuse spurting hemorrhage. Examination showed complete central rupture of the cervix, extending vertically into the body of the uterus. The tear was sutured and the patient did well. The question of ventrofixation is very important to the obstetrician. In cases of child-bearing women with retrodisplacements and constant backache, should the uterus be suspended? Suppose the woman subsequently becomes pregnant, what may the obstetrician expect. Ninety-four per cent. deliver themselves without trouble. How are the other 6 per cent. to be dealt with?

DR. J. W. BOVÉE, Washington, D. C., said that ventrosuspension or ventrofixation is an illogical operation, accompanied by instances of difficulty in delivery, intestinal obstruction and death. There had also been failure to retain the uterus in its proper position.

DR. C. C. FREDERICK, Buffalo, N. Y., used to do ventrofixation and ten years ago saw a woman die in whom he had done the operation two years previously; at that time he said he would never do it again unless the patient was sterile, or unless it was absolutely impossible for her to become pregnant. He has kept his vow. He protested against ventrosuspension. It does not hold up the uterus. He has performed the operation and later has been compelled to open the abdomen and found the ligament nearly obliterated. There are other better means of holding a retroverted or otherwise displaced uterus.

DR. F. F. LAWRENCE, Columbus, O., said that he had had no experience with women confined at term following ventrofixation or ventrosuspension, but he had had two unfortunate cases of obstruction of the bowels following ventral suspension. Two other cases gave him much anxiety; one of these aborted twice and the other three times. The latter was anxious to become a mother and submitted to a second operation. In this he separated the attachment to the abdominal wall and shortened both broad ligaments. She subsequently gave birth to a healthy child. Ventrosuspension or fixation or any other operation which destroys the mobility of the uterus cannot be considered either logical or surgical. The first movement the uterus makes is that of descent before it becomes retroverted. This descent is made possible only by a relaxed broad ligament. The logical and the surgical thing to do is to shorten the broad ligament first and, if need be, the uterosacral ligaments, according to Dr. Bovée's method.

DR. G. M. BOYD, Philadelphia, was sorry that more had not been said of the obstetric complications. The surgeon may not attend the patient during pregnancy, but if he finds his patient in a long labor with the cervix drawn up almost beyond reach, the situation is often a serious one. The patient should be carefully studied during her pregnancy, and the obstetrician should be governed by the size and position of the cervix and the position of the fetus. If the cervix is not high and the head is dipping into the inlet during the latter months the patient may go to term and through labor without complications. It is always unwise to induce premature labor in these cases.

INSTRUMENTAL DILATATION OF THE PARTURIENT UTERUS.*

F. S. NEWELL, M.D.
BOSTON.

The object of this paper is the consideration of the various methods of dilatation of the parturient uterus with special reference to the indications for and the results of the use of the steel dilators as a substitute for the manual methods of dilatation; particularly in those cases in which some urgent indication for the termination of pregnancy or labor is present.

In a general way the conditions which may call for a cervical dilatation may be classed under the headings of hemorrhage, toxemias of pregnancy and diseases complicated by pregnancy; and to these must be added the condition of abnormal rigidity of the cervix which nature fails to overcome unaided even after a fair trial. Various other conditions may necessitate the operation at any time, though much less commonly than the conditions named.

The various methods of dilatation which must be taken under consideration to meet these various conditions are manual dilatation, instrumental dilatation and vaginal Cesarean section; and the choice of operation must be made in each case in accordance with the conditions present, although general rules for procedure can be formulated.

MANUAL DILATATION.

There is no doubt but that the hand is the best and safest dilator which has been discovered as yet and is to be preferred to any instrument in proper cases, but its usefulness is limited by the fact that it is easily exhausted, and therefore can give satisfaction only in cases of slight or moderate difficulty, while the fact that even in these cases, the pressure of the cervical ring necessitates more or less frequent change of hands in all but the easiest operations adds markedly to the danger of infection of the patient during the operation. In cases of marked rigidity the hand is absolutely inefficient. Safe dilatation by any method depends on the recogni-

* Read in the Section on Obstetrics and Diseases of Women of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

tion of the principle that the cervix is composed of muscular tissue and that dilatation depends on tiring out the muscle and not stretching it. Proper cervical dilatation demands in many cases such a prolonged dilatation that the hands of the operator become incapacitated for the extraction of the child which is to follow, with the result that the chances of the child are compromised to a greater or less degree, particularly if the extraction proves at all difficult, while the trauma to the vagina in a long operation adds distinctly to the danger of sepsis.

The facts that the hand is capable of exerting efficient pressure for only a limited length of time; that in patients who are not in labor the cervix must usually be partly dilated instrumentally before the hand can be used at all, as the fingers can not be passed through the internal os, in the majority of cases, until partial dilatation has taken place; and that in many cases the cervical rigidity is so marked that the force which the hand can exert is inadequate for the purpose, at least without subjecting the patient to a prolonged operation attended by a marked degree of shock and trauma, make it evident that manual dilatation is a procedure of limited usefulness and that in difficult cases or in cases in which a rapid delivery is indicated, the substitution of a more efficient method is necessary.

In most cases of placenta prævia and in cases of broken cardiac compensation complicating pregnancy, as well as in the majority of cases in which indications for immediate delivery arise after partial dilatation of the cervix has taken place, the rigidity of the cervix is comparatively so slight that dilatation can be accomplished by the hand without impairment of its functions, and in this class of cases the hand is the best dilator that we have. The dilating power of the hand must be intelligently applied, or manual dilatation becomes a source of great danger to the patient, particularly in the soft, but brittle cervix of placenta prævia. The literature of manual dilatation is full of cases which show the damage that can be done if the cervix is dilated too rapidly and without due appreciation of the possibilities of danger. The desire to hasten the operation as much as possible in the presence of threatening symptoms often leads to bad results in cases in which patience and time would obviate most of the danger.

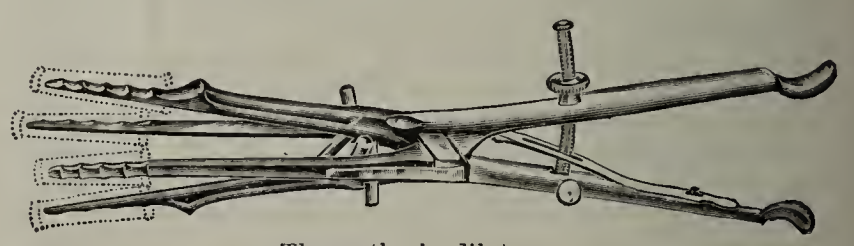
INSTRUMENTAL DILATATION.

In many cases in which manual dilatation is impossible, or possible only after a dangerously prolonged operation, the methods of instrumental dilatation find their place. In this class we must place the majority of patients with eclampsia, cases of concealed or accidental hemorrhage, and such other patients as present indications for immediate delivery in the presence of a degree of cervical rigidity which is more than moderate. In the last class are included cases in which induction of premature labor is indicated in the absence of any attempt of Nature toward taking up or dilating the cervix when there is no reason for hurry, since in these cases labor is best induced by partial dilatation of the cervix, followed by packing the cervical canal and vagina with gauze, leaving the rest to Nature. Instrumental dilatation may also be indicated in the rare cases of placenta prævia which present a marked degree of cervical rigidity.

Instruments.—The instruments which have been devised for the purpose of dilating the cervix are many and varied; from the de Ribes and Barnes elastic bags to the powerful Bossi dilator and its modifications. The field of usefulness of the elastic bags is a limited one. It may be defined as existing only in patients in whom the induction of labor is considered desirable in the absence of reasons for haste, for example, induction of labor for deformed pelvis when Cesarean section is not considered advisable, and even in these cases since a certain degree of cervical dilatation is necessary for the introduction of the dilating bags, a preliminary dilatation by means of a steel dilator is usually necessary. In placenta prævia, and in broken heart compensation, when rapid delivery is desirable to shorten the period of danger, their action is too slow to be satisfactory, while in the eclampsia, the most common indication for instrumental dilatation, all slow methods of dilating the cervix dependent on uterine irritation are absolutely contraindicated on account of the increase in convulsions which attends their use.

The earlier steel instruments were unsatisfactory owing to their lack of power and the fact that even after full expansion the degree of dilatation which they were capable of was often insufficient to overcome the rigidity of the cervix, and a more or less difficult manual dilatation was necessary to complete the operation.

The first satisfactory dilator was the Bossi dilator, a powerful four-bladed instrument, which possesses certain very definite advantages. Almost any cervix can be dilated easily and rapidly from the beginning, the application of force to the cervix by means of the four blades stretching it in all directions, while a continued pressure is maintained which is not possible in manual



The author's dilator.

dilatation by any method. When a moderate degree of dilatation is accomplished the small tips of the blades necessary for use in the undilated cervix can be covered with broad shields and the danger of cutting or splitting of the tissues by the smaller tips avoided. It has certain very definite disadvantages; it is too powerful, or rather, since the force is applied by means of levers controlled by a screw, it is possible to exert too much force and impossible to control it intelligently. Even though fitted with a device for measuring the amount of force applied it would still be dangerous, because each increase in expansion of the blades is regulated mechanically, and a very slight turn of the screw may be enough to rupture the cervix.

The ideal instrument for dilatation is one which, while capable of accomplishing the work done by the Bossi dilator, is under the absolute control of the operator. In other words, the power must be applied by the hand and be susceptible to intelligent regulation according to the resistance to be overcome. As a step in the right direction, I would instance my own dilator, which is the only one of the more powerful dilators that I have used. To my mind it has the great advantage over the Bossi that the force applied to the cervix is absolutely under the control of the operator and the use of force enough to do serious damage is an indication of lack of judgment or inexperience on the part of the operator. My own experience with it has convinced me that the cervix can be dilated from the beginning to

three quarter dilatation with no more trauma to the cervix than in a carefully conducted manual dilatation and with far less shock to the patient on account of the shortening of the operation.

Various claims have been made for instrumental dilatation which can not be substantiated, but properly performed it has very definite advantages, both for operator and patient. It has been said that in some cases the vagina is so small that it is lacerated by the introduction of the hand for manual dilatation, a danger which does not exist in instrumental dilatation. This is unquestionably true in certain cases, but the point is lost sight of that dilatation is usually followed by operative extraction and that the most complete dilatation of the vagina possible is desirable before extraction, particularly in a primipara, is undertaken. The assertion that the frequently repeated change of hands necessary in all but the easiest of manual dilatations adds greatly to the danger of septic infection, can not be contradicted and on this ground instrumental dilatation is by far the safer operation, but since vaginal dilatation is always indicated as a preliminary operation and since we have as yet no substitute for the hand in that operation, the danger of sepsis can never be entirely eliminated. The greatest advantages of instrumental over manual dilatation are: greater power, resulting in the shortening of the operation; the possibility of maintaining a constant pressure of almost any degree desired, and the saving of the hands for the operative procedure to follow. The greatest disadvantage is the possibility of serious damage if the steel dilators are employed unintelligently or in improper cases.

Method of Use.—The chief requirements for the proper use of a steel dilator are an accurate perception, which can only be gained from experience, of the degree of force which may be safely exerted in the individual case; patience to tire out and dilate instead of rupturing the cervical sphincter; and a disregard of the time consumed in the operation, only qualified by the condition of the patient. Undue haste is the greatest source of danger and an accurate knowledge of the patient's condition during the operation must be maintained to guard against this temptation, for most of us are prone to hasten the operation unduly in order to see the results of our work, thus inflicting an unnecessary degree of shock and trauma to the patient.

Technic.—The cervix should be exposed by a speculum and the anterior lip seized by the bullet forceps and drawn down to the vaginal outlet. The small tips of the dilator are then passed into the cervical canal and then through the internal os. Manual pressure on the handles to the highest degree consistent with integrity of the cervix is then applied, the cervix being kept under constant tension. The dilatation of the cervix can be observed by the eye or by the disengaged hand of the operator, who can thus estimate the degree of tension to which the tissues are subjected and judge the force which can be exerted without danger. As soon as sufficient dilatation has taken place, the larger tips are applied to diminish the risk of cutting the cervical tissues and thus starting a tear and the dilatation is continued until the point has been reached when the cervical rigidity has disappeared and the hand can be passed into the uterus and dilatation easily completed. As a general rule the cervical rigidity is practically overcome by the time the cervix is half dilated, and the process can be easily finished by the hand, the same precautions against rupture of the cervix being observed.

Results.—It will be urged against the steel dilator that extensive cervical laceration is caused by its use, but similar results follow manual dilation, and in my experience extensive laceration not infrequently occurs in natural labors where dilatation has been accomplished by the membranes or by the presenting part. My own experience is that the results are not so very different as regards laceration whatever mechanism of dilatation has occurred, although the possibilities of damage are necessarily much greater when a powerful instrument is employed, particularly if undue force is used or improper cases are selected.

In the soft but easily torn cervix which is seen in placenta prævia, the steel dilator may be a source of great danger and is seldom necessary, since it is very rare to find sufficient rigidity in these cases to be a serious obstacle to manual dilatation. In multiparæ with old cervical lacerations the steel dilators must be used with added precautions since comparatively little force is needed to extend an old tear, but while an instrument of the type of the Bossi dilator is so dangerous as to be practically contraindicated in these cases, the careful use of a dilator controlled by the hand is comparatively safe.

It is in the eclamptic patient with a rigid cervix, in whom no sign of labor is present, that the steel dilator finds its greatest usefulness, shortening to a reasonable time, operations which previously required hours and resulted in the death of the patient from shock, with the result that one element of danger in eclampsia, the danger of overwhelming shock from a prolonged operation, has been eliminated.

In a series of twenty cases in which the manual steel dilator was used, I find notes made at the time of the discharge of the patient which show that three patients suffered from extensive cervical tears reaching to the vaginal vault. In the other cases, laceration was noted as slight or moderate in degree. Two of the three cases of excessive laceration were cases of placenta prævia in which my experience has taught me that the steel dilator is seldom a necessary or even advantageous instrument, and always carries a certain risk over manual dilatation. In the third case, complete dilatation was reached in twenty-three minutes from the beginning of the operation, whereas forty minutes is as short a time as is consistent with safety in all but the exceptional case, since it takes at least that time to tire out an average cervical muscle without doing more or less serious damage.

On the other hand, I find in cases of complete placenta prævia dilated manually the same tendency to deep laceration, and I believe that undue haste in the presence of hemorrhage is the principal factor in causing laceration, the cervix in placenta prævia being unusually brittle and non-elastic. Any instrument which increases the tendency to the application of undue force in these cases should be discarded, as more harm is to be apprehended from its use than any benefit which it confers.

The great advantage of the steel dilator over the manual methods of dilatation can best be emphasized by the following case:

Mrs. F., aged 29. Third pregnancy. Confinement expected March 15. On December 25 patient was seized with sharp abdominal pain and slight flowing which was relieved by rest in bed and moderate dose of opium.

On December 29 pain and flowing recurred in moderate degrees, but without elevation of pulse or temperature. About 6 p. m patient had a sudden sharp hemorrhage, losing from

one-half pint to a pint of blood. Pulse jumped to 120 and patient fainted. Patient was seen at once by Dr. Crane, who called a consultation. Examination showed blood clot protruding from cervix, and apparently a placenta prævia. Immediate delivery was advised and accepted. Attempts at manual dilatation persisted in by three physicians for two hours, resulted in cervical dilatation to a degree that two fingers could be inserted through the os with considerable difficulty and no further progress seemed possible. The patient's condition then became such that further ineffective operation was thought inadvisable and opiates and general stimulation were used.

Next morning the patient was sent to the Boston Lying-In Hospital. Examination showed a patient slightly built and showing signs of marked anemia. Pulse, 120, of fair quality. Temperature, 101. On abdominal palpation uterus was found to be distinctly larger than a normal seven months' pregnancy and showed marked irregularity on the right side. No signs of labor were present. The fetal heart could be heard.

The vaginal examination showed the cervix dilated sufficiently to admit two fingers and extremely rigid, resisting attempts at further dilatation. The cervical canal was filled with clots and a low attachment of the placenta, practically a marginal placenta prævia could be made out. By means of the steel dilators the cervix was easily and rapidly dilated and a dead child weighing 2½ pounds extracted. The time consumed in the whole operation was twenty minutes. The placenta was found detached and free in the uterine cavity and removed. Following placenta contraction, the uterus expelled a quantity of blood clots, from one pint to one and a half in amount, and other clots were removed from the right side of the fundus, thus accounting for the irregular enlargement of the uterus and for the marked signs of hemorrhage without sufficient external loss of blood to account for the symptoms. Examination of the cervix showed no fresh tear.

During the early days of her convalescence the patient ran a mildly septic course, being treated by irrigation with sterile salt solution, followed by the instillation of 2 ounces of 5 per cent. alcohol into the uterus, where it was allowed to remain. On the sixth day the temperature reached normal and remained there until the time of discharge on the seventeenth day.

This case illustrates the ease and safety with which cervices too rigid for manual dilatation can be dilated by an efficient steel dilator, and shows the amount of operative shock, as well as the danger of infection, which could have been avoided by its use in the first place.

VAGINAL CESAREAN SECTION.

In spite of the great power which it is possible to apply by means of the steel dilators, an occasional case will be found in which the cervix is excessively rigid, or the seat of cicatricial stenosis so that the degree of force necessary for dilatation or the length of time required for the operation may be such as to render the operation unjustifiable and a more rapid method is indicated. Although I have never yet seen such a case, there are unquestionably cases where a cervical indication exists for either a vaginal or abdominal Cesarean section and the choice of operation must be made in accordance with the other conditions present.

Theoretically I believe that there are certain objections to the vaginal Cesarean section. In the first place it is an operation best adapted to the hospital where there are proper assistants and appliances and is not suited to the out-of-town practitioner's needs, even if he is qualified to perform it. In the second place it requires a degree of surgical knowledge and skill which can not be expected except in the specialist. In the third place I can see possibilities of considerable danger in its performance. I have seen at least one report of injury to the bladder which resulted in a vesicovaginal fistula requiring a secondary operation, not a serious danger with the patient's life at stake, still a danger to be considered. Finally, from my experience with abdominal Cesarean section, I have learned that the uterus splits readily, even when a sufficiently large incision has been made for the extraction of the child, and I can not but believe that the vaginal incision will at times be extended into a rupture of the uterus requiring an abdominal operation for closure, in a patient who has not been prepared for a laparotomy.

Theoretically then I believe that the cervical incision should be reserved for the extremely rare cases in which dilatation is impossible or too dangerous, and in which abdominal Cesarean section is believed to be contraindicated for some reason and that instrumental dilatation, properly performed, offers the best chance of safety to the majority of patients.

MANUAL AND INSTRUMENTAL DILATATION OF THE PREGNANT AND PARTURIENT CERVIX.*

J. CLIFTON EDGAR, M.D.
NEW YORK CITY.

Most of the graver obstetric operations find their necessity in the difficulty or impossibility of overcoming two barriers to delivery by the natural passages. The first of these is the resistance offered by the bony pelvic inlet and the second the obstruction of the cervix.

Leaving out of consideration for the moment the causes of fetal dystocia, I believe that, broadly speaking, the most important factor in maternal dystocia is in the large proportion of instances of this second barrier to the progress of delivery, namely, the barrier of the cervix.

Unlike the barrier presented by a contracted pelvis, this barrier of the cervix is always present; and although it is true that in physiologic labor it is readily and safely removed by the natural efforts, it is, I firmly believe, equally true that unfortunate results for both mother and child are far oftener the consequence of non-dilatation or unsatisfactory dilatation of the cervix than of obstruction offered by the bony canal. Hence, the importance of the various methods for removing this barrier of the cervix either by incision or stretching, and their appropriate application.

I accept it as proved that the cervical canal of one inch in length, bounded above by the internal and below by the external ring, retains its integrity until toward the end of pregnancy, the internal os remaining closed in most instances.

Toward the end of pregnancy, or at the beginning of labor, the upper portion of the cervical canal begins to expand for the reception of the ovum. This unfolding depends in the last days of pregnancy on the sometimes unnoticed, but often clearly marked intermittent uterine contractions, increasing the intrauterine pressure and the resistance which the uterine walls offer to the increasing growth of the ovum, so that the presenting part of the amniotic sac is forced into the os internum. Hence it is that we usually find an earlier expanding of the internal os in the primigravida, in whom the intrauterine pressure is greater than in the multigravida, and in the latter in overdistension from hydramnios and twins.

The relative cervical changes in primigravidæ and multigravidæ are interesting from a clinical standpoint. Although the intermittent uterine contractions are less frequent in the primigravidæ, the tension of the lower

* Read in the Section on Obstetrics and Diseases of Women of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

uterine segment is greater. In the multigravidæ the tension in the lower uterine segment is less than in the primigravidæ and, therefore, pressure is not so readily communicated to the margin of the upper orifice and wall of the cervical canal. When it is communicated, dilatation of the entire cervical canal readily follows, while in the primigravida, on the other hand, dilatation of the upper cervical canal first occurs, the more distant lower portion, namely, the external os, remaining unaffected.

So it happens in a primigravida that the upper cervical canal is usually expanded for the reception of the

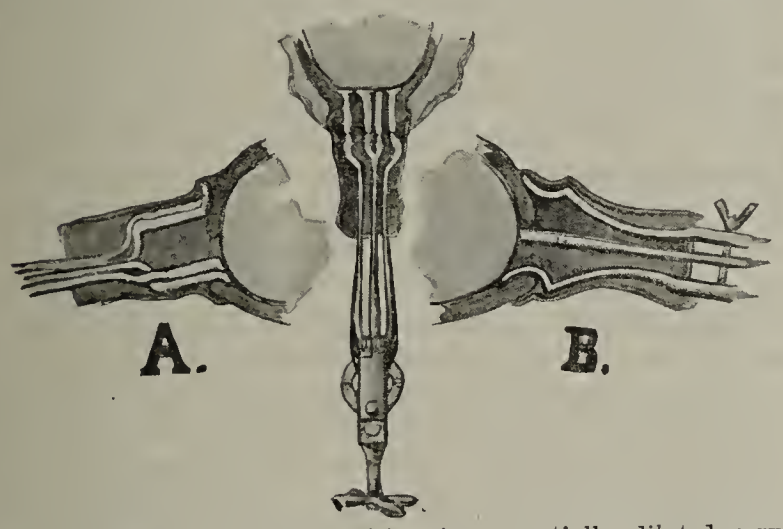


Fig. 1.—Bossi dilator in position in a partially dilated cervix. A. B. shows slipping of the terminals of steel dilators from the ring of cervix when dilatation is nearly completed.

ovum some time before labor, and this is less often the case in the multigravida under ordinary circumstances. In the latter in abnormal instances, as in overdistension from twins and hydramnios, the unfolding up to the upper portion of the cervical canal is most clearly demonstrated and almost complete.

Softening of the cervical connective tissues begins early in pregnancy at the external os and progresses steadily upward, the upper cervical zone being the last

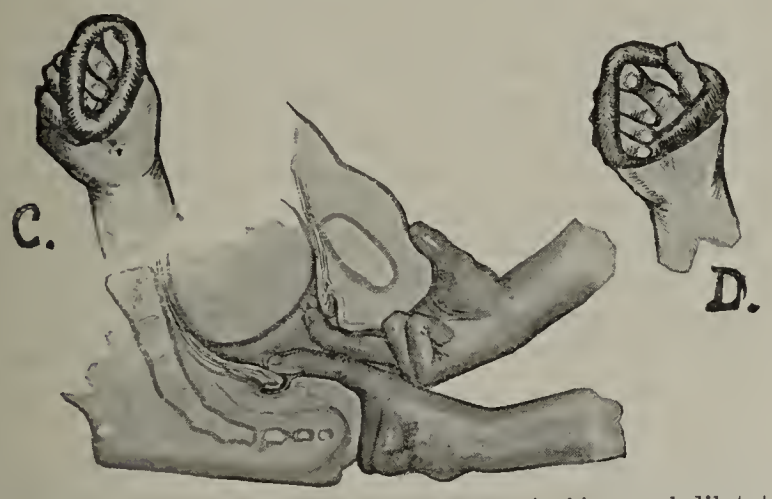


Fig. 2.—Position of the hands and fingers in bimanual dilatation of the cervix. C. D. unimanual dilatation of the cervix.

affected. This softening is the result of the lymphatic and venous stasis caused by pressure from above, and is a serous infiltration in the lymphatic interspaces. The essential connective tissue elements being thus deprived of their cohesive force which originally held them together, offer but little resistance to the progress of dilatation and delivery in the last third of gestation. Thus we see that, while the natural processes of dilating the muscular structures of the cervical sphincter work from above downward, softening of the connective tissue takes place from below upward.

THE BARRIER OF THE CERVIX IN EARLY AND LATE ABORTIONS.

In the first two-thirds of gestation no lower uterine segment forms and very little change in the cervical sphincter is found, with the exception of some softening of the lower portion.

On the occurrence of labor at this time in a primipara the ovum is first arrested by the internal os and, after the resistance of the latter is overcome, passes into the cervical canal which becomes distended and funnel-shaped (cervical abortion). The external os, however,

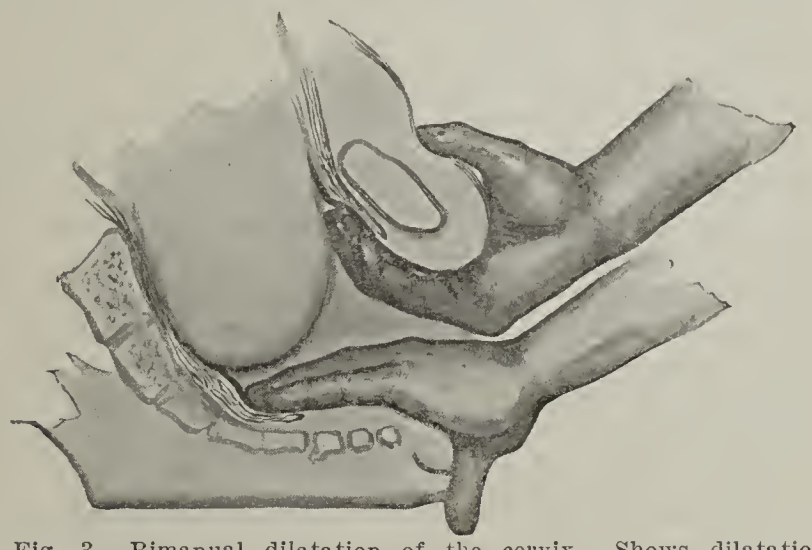


Fig. 3.—Bimanual dilatation of the cervix. Shows dilatation complete and paralyzing the ring of the os.

in primiparæ, still offers considerable resistance, and the ovum may remain in the cervical canal for a long period. In a multipara, on the other hand, under ordinary normal conditions, the external os offers no resistance, since it has been dilated by previous deliveries, and after its resistance has been overcome the ovum, if entire, is easily and quickly expelled.

Fig. 4.—Bimanual dilatation of the ring of the cervix, when the body of the fetus occupies the vagina and vulva.

In abnormal rigidity in a multipara from chronic metritis and connective tissue development the internal os offers marked resistance. In such cases, according to Bayer, a lower uterine segment and cervical dilatation process forms as in normal labor at term.

THE BARRIER OF THE CERVIX IN PREMATURE AND FULL-TERM DELIVERY.

Expanding of the upper portion of the cervical sphincter in primigravidæ and dilatation of the whole canal in multigravidæ and the progressive softening from below upward in both take place in the last month

of gestation, often earlier in the multigravidæ, so that every week, every day, as we reeede from the preparatory stage and the aetual onset of labor itself the difficulties of any method of rapid artifieial stretehing of the eervieal sphineter inerease.

Beeause of so many and varied anatomic conditions of the pregnant and parturient eervix, eaeh and every method of artifieial cervieal dilatation has its plaee to meet these eonditions. The uterine and cervical tampon, the uterine bougie, graduated hard dilators, braneheed steel dilators, hydrostatie bags, superfieial and deep eervical ineisions and vaginal Cesarean seetion, are all applieable, in appropriate instanees, to meet varying indications.

When one hears a sweeping eondemnation of this or that method of cervieal dilatation, as with steel dilators of the Bossi type, or by vaginal Cesarean section, it is fairly certain that the one making sueh a statement fails to appreeiate the varying eervical eonditions and the value of these procedures, or has not had suffieient experience with them. Sueh a one, with equal justiee, might claim that, beeause he has always used a knife for eutting purposes and found it convenient as far as his experienee went he has no use for scissors. Our attitude toward new methods of treatment should be to try them all and adopt the best.

Broadly speaking, the whole cervix ean be regarded as a species of sphineter, whose sphincteric aetion is opposed by the influence of the other muscular layers of the uterus. By the inereased intrauterine pressure by the intermittent uterine eontraetions in the last weeks of gestation in the preparatory stage of labor and the beginning of aetual labor, the cervieal sphincter is weakened and broken and the supravaginal portion is expanded for the reception of the ovum in primigravidæ and dilated along its whole length in multigravidæ, and finally in labor drawn up into the walls of the lower uterine segment and finally disappears into what has been termed the "region of the internal os." The softening of the eervix progressively inereases from below upward in both instanees.

With these premises we can make the statement that artifieial removal of the barrier of the cervix can be aeeomplished in three ways, namely: 1, By stimulating the eontraetions of the uterus and inereasing intrauterine pressure by the introduction of foreign bodies within the uterus, as the uterine bougie, the gauze tampon or hydrostatie bags; 2, by overcoming the sphineter action of the eervix with the hand or hands or metal instruments; 3, by incision of the sphineter, as in deep cervieal ineisions or vaginal Cesarean section.

Clinically, I am aeeustomed to divide my eases in whieh either manual or instrumental dilatation of the pregnant or parturient uterus is demanded, into those ealling for, first, rapid dilatation, namely, within an hour, and, seeond, those in whieh more time is available for the removal of the eervieal barrier.

RAPID DILATATION OF THE CERVIX.

To aecomplish rapid dilatation, we have at our command to-day ineision and mechanieal dilatation of the cervix, the former including vaginal Cesarean seetion and deep eervieal ineisions. My experienee has taught me that after the thirtieth week of gestation meehanieal means for the rapid dilatation of the eervix will suffice in most eases and that incision of the cervix for purposes of dilatation is rarely ealled for.

Previous to the introduetion of the Bossi type of dilator I ineised a number of eerviees by both superfieial and deep ineisions. Sinee its introduetion I have cut very few eervices. I consider the Bossi dilator a valuable addition to our resourees and its use justifiable along the lines in a moment to be suggested. As we reeede from the thirtieth week of gestation the number of cerviees that ean not safely be rapidly dilated by manual and instrumental means inereases.

In my experienee bimanual stretehing of the cervical sphincter for rapid delivery has given the best results. While I only called attention to this method in November, 1896, the hospital records of my eases show that I have been dilating the eervix by the bimanual method in eases of eelampsia, placenta prævia and delayed labor sinee 1892. I have every eonfidenee in the effieaey and safety of bimanual stretching of the cervieal ring as a means of dilatation when earefully and skilfully performed. Further, my experience leads me to advocate strongly the use of the two hands for eervical dilatation along the lines already suggested.

It is a signifieant faet that in my sixteen years' experienee in five maternity hospitals I have yet to meet an interne who, having tried the two methods of eervieal dilatation, namely, with one and with two hands, did not finally adopt the method requiring the use of the fingers of both hands, and for the following reasons: 1. The bimanual method is a eloser imitation of the natural process than any other method of manual dilatation, being in this respect analogous to the bag of membranes or the hydrostatie bag, beeause the foree used for dilating the cervieal ring is directed from above downward (Fig. 2). 2. Far greater force can be brought to bear on the eervical ring, if need be, by the bimanual method than by any other, beeause the fingers of both hands are brought into play and the stronger flexor museles of the fingers and hand are the ones made use of. 3. There is no danger of prematurely rupturing the membranes, as there is when the fingers of one hand are passed through the cervix. 4. There is no interferenee with the original presentation or position, sinee the finger ends elosely hug the lateral uterine wall; this ean not be said of any other manual method of dilatation, nor even of hydrostatie bags. 5. The bimanual method is far less fatiguing than any other method, because the strain is distributed in both hands, and the sense of toueh of the operator's fingers is unimpaired, as there is no eonstriction of the hands as there is when one hand is used. 6. The amount of foree exerted ean be better estimated with two hands than with one; henee the danger of laeeration is lessened. 7. In plaeenta prævia there is less separation of the plaeenta with the bimanual method than with the fingers of one hand when thrust through the ring of the os (Fig. 2, C and D). 8. The bimanual method can be performed while a part of the fetus, as a leg or after-eoming head, already oeeupies the vagina. This advantage applies to no other method of manual dilatation and is, in my opinion, its greatest reeommendation (Fig. 4).

OPERATION.

My method of procedure is as follows:

After the usual preparation of the patient, and plaeing her in the lithotomy position at the edge of the table, I pass the index finger of the left hand into the os and, hooking the distal phalanx within the internal or external os, as the ease may be, I draw the whole cervix forward and a little downward against the posterior pubie wall and fix it there. I then insert the right index finger

along the dorsum of the left, using the latter as a guide (Fig. 2). A sterile towel, drawn tightly over and stitched to the perineum and pinned to the sheet covering the table on either side, will prevent contact of the lower fingers with the anus.

Where much difficulty is experienced in inserting the second finger, I immediately resort to a preliminary dilatation with the Bossi dilator, enough to allow the introducing of the two indices into the cervical canal. This is so much a routine with me now that the Bossi dilator is always boiled as a preparation for delivery of eclamptic and placenta prævia cases at the Manhattan Maternity and my Bellevue service and I am accustomed to carry it with me to such cases seen in consultation. I have failed to find any advantages in the two-bladed dilator of Gau that the Bossi instrument does not possess.

The two index fingers being now introduced, dilatation is secured by them and successive fingers as they are introduced, by pressure in opposite directions, by a kind of eccentric massage, the fingers of opposite hands making gentle and steady pressure downward and outward in opposite directions; first, antero-posteriorly, is exerted being constantly changed so that all portions then laterally and obliquely, the points at which pressure of the cervical ring are subjected to it. After the four fingers of each hand have been introduced, some little time must be spent in producing complete relaxation, effacement and paralysis of the resisting external cervical ring, so that no difficulty shall be encountered from obstruction here during the extraction of the child (Fig. 3).

In the class of cases in which much resistance is encountered by reason of the non-disappearance of the supravaginal cervix and in which time does not permit the preliminary use of hydrostatic bags to excite the uterus to draw up the internal os, I have found an invaluable aid in the metal dilator of Bossi. I find that ten or fifteen minutes' use of this instrument in such cases sets up uterine action and consequent drawing up of the internal os, also causes softening of both rings of the cervix and relaxes them sufficiently to permit of a subsequent safe and rapid manual dilatation (Fig. 1).

I never use the Bossi dilator to complete the effacement of the cervix, as by so doing I believe we run great risk, but only as a preliminary procedure, believing the fingers to be safer and more closely imitative of Nature's method of dilatation and more under the control of the operator (Fig. 1, A and B). The Bossi type of dilator is apt, after partial dilatation is obtained, to slip away from the ring of the cervix and rupture the uterus above or vagina below.

SLOW DILATATION OF THE CERVIX.

For slow cervical dilatation my main reliance is on the hydrostatic bag of the Champetier de Ribes type. It acts by increasing intrauterine pressure and exciting uterine contractions. Occasionally it fails of its purpose, but I have yet to observe an instance in which the introduction of a hydrostatic bag for several hours did not so change the cervix, by causing a drawing up of the internal os and softening of the vaginal portion, as to render a subsequent bimanual dilatation a safe and easy procedure. My experience has taught me that the solid uterine bougie acts in the same way, but to a less extent. In my experience, also, both the hydrostatic bag and the uterine bougie act more promptly and energetically in primiparæ than in multiparæ, probably because of the greater intrauterine pressure in the former. Because of this action of the hydrostatic bag and bougie of exciting the changes in the cervix favorably for a subsequent manual or instrumental dilatation I am accustomed to employ them often, as preparatory means, when necessary, and then dilate the cervix, the patient being anesthetized, bimanually, and either deliver artificially or leave the case for spontaneous expulsion.

50 East Thirty-fourth Street.

DISCUSSION

ON PAPERS OF DRS. EDGAR AND NEWELL.

DR. PHILANDER HARRIS, Paterson, N. J., stated that every obstetrician should be capable of manually dilating the cervix by one method or another in the later months of pregnancy. The method which he has employed necessitates the introduction of the entire hand into the vagina. If the vagina is too small to admit the hand, or if the child is so engaged in the pelvis that there is not sufficient room in the vagina for the hand the method cannot be used; furthermore the method can not be employed unless the cervix admits the index finger to the metacarpophalangeal knuckle, or can be dilated so as to thus admit the index finger. When this degree of dilatation has been effected in any manner the tips of the first finger and thumb of a strong hand should be capable of exerting enough force to carry forth the dilatation. Probably few hands are strong enough to exert sufficient strain to tear the cervix until the cervical ring is enlarged sufficiently to admit three fingers and the thumb. As the cervical ring enlarges, less force is required to effect dilatation.

In the later stages of dilatation, he said, when four fingers and the thumb are introduceable, a strong hand is capable of lacerating most uteri. Many uteri have been uselessly torn by the hand in the finishing stages of dilatation. Dr. Harris has unintentionally effected such lacerations. He ordinarily dilates the cervix to a circumference of eleven or twelve inches, after which, if there be no osseous obstruction, and the anesthetic having been withdrawn, the child is generally delivered in a very few minutes. Dr. Harris stated that every one should know some good method of dilating the cervix with the fingers and hand. Whatever manual method may be used, the task is often very fatiguing and the operator may at times greatly need the aid of an assistant to carry on the dilatation while resting his hands. Dr. Harris said that the instrument which he devised for dilating the cervix for parturient purposes, works admirably, and while it has qualities not possessed by any other dilator, it is open to an objection which must attach to all dilators, and that is, the difficulty of knowing whether the cervical ring embraces the concavities of its terminals. He has had two embarrassments, neither of which were in any way of a serious character, in the use of his own dilator, although the concavities of its terminals are deeper and broader than those of other dilators. He asked Dr. Edgar to state in what particulars he considers his (Harris') dilator inferior to the dilator of Bossi.

As to vaginal Cesarean section, he said that there are certain conditions which undoubtedly indicate its use. One of these conditions is cancer of the cervix, the other is where there is an extensive deposit of white fibrous tissue, resulting from previous operations or traumatism, and in which the uterus will be found practicably undilatable. Such uteri can be torn, but they can not be dilated sufficiently, and therefore constitute conditions calling for the employment of vaginal Cesarean section. There are other conditions requiring resort to vaginal section, but they form a small and possibly exceptional series of cases. Dr. Harris does not feel that this operation should supplant dilatation, which is generally so easily possible and certain in result. The non-gravid cervix and the cervix which has not recently been gravid, possess but little of the quality of dilatation, while the uterus which is gravid or has recently been gravid, is dilatable.

When pregnancy occurs it effects certain changes in the musculature of the cervix. It locks the cervical gateway of the parturient canal, but while it thus guards the threshold, it prepares the gateway to open, or to be opened, widely enough to permit escape of the fetal products when necessary. Ordi-

narily, if Nature does not open the gateway, the physician may, when he thinks the patient's interests are bettter subserved, safely and surely open the cervix by exerting therein a sufficient and continued strain either with the fingers and hand, or by some well adapted instrument.

DR. G. M. BOYD, Philadelphia, said that, although in his opinion the instrumental methods of dilatation and the various dilators are useful to a degree, it would be a step backward if too much stress is laid on instrumental methods. Manual dilatation is serving him so satisfactorily that he wished to defend that method of slow or rapid delivery. All of the instruments described will be of service to dilate the cervix to the size of a half dollar. The cervix will be capable of stretching to that extent, and beyond that it will tear in many cases under the use of instruments or hands. He would rather feel a tear than have an instrument make it. Incisions in the cervix have sometimes been necessary in his hands, though manual dilatation has been satisfactory. In almost all cases it will finally be necessary to accomplish the delivery by manual dilatation. The instruments, therefore, can only begin the operation. Manual dilatation requires time to accomplish delivery, but it is time judiciously spent.

DR. CHARLES STOLTZ, South Bend, Ind., had some experience with manual dilatation and considers it a most trying ordeal on the operator as well as on the patient. He finds it a very exhausting procedure. Recently he had a primipara, 29 years old, whom he delivered of a very large monstrosity, in which the entire calvarium was absent. The head, the presenting part, was therefore, not of dilating shape, and besides the axis of the child was not in harmony with the axis of the birth canal, making artificial dilatation of the cervix necessary. After fifteen hours of ineffectual pains, he proceeded to do bi-manual dilatation, preliminary to a podalic version. He worked all night on that cervix and never before nor since has he had such a perineal tear. He felt chagrined about it because he had affirmed such results inexcusable.

He has used the Bossi dilator four times with the best results for complete dilatation of the cervix. Once, four weeks after term, twenty-four hours of ineffectual pains, in a mal-presentation; once, to induce labor in a case of profound toxemia of pregnancy at term; and twice to terminate late abortions, where, in each case, the fetus had been dead for some time in an inert uterus. His method of using the dilator is as follows: Insert it, put the cervix on the stretch with the screw, then pass a finger or fingers in between the blades, using the knuckle on the limbs of the instrument as a fulcrum, thus doing the dilating with the fingers just as in manual dilatation. He stretches every segment of the cervix with his fingers, using the screw just merely to take up the slack, then proceeds as before, time after time, until complete dilatation is made. A sterile gauze sponge may be wrapped around the back of the hand to modify pressure on the knuckle. By adopting this plan dilatation can be effected rapidly and effectually.

DR. CHAS. J. HASTINGS, Toronto, Canada, thinks that there is not so much dependent on the method of dilatation, whether it is instrumental or manual, as on the person who dilates. One can readily understand that the method one is most familiar with seems the best, and no doubt it is the best to him. In Dr. Hastings' opinion, with an instrument having a true pelvic curve, in the hands of a careful operator who will make, say a quarter turn to the minute, dilatation should be accomplished with perfect safety. In regard to manual dilatation, he said that in his experience the hand, unless it is very small, in the cramped position it has to occupy, soon becomes powerless. He does not see why manual dilatation should endanger the patient by infection. No one should operate without gloves. It is extremely important, however, to emphasize the danger of these instruments in unskilled hands. The use of the obstetric forceps has been followed by disastrous results in the hands of some, while it is absolutely safe in the hands of others. Regarding choice of cases, this, he said, is practically limited to eclampsia and concealed accidental hemorrhage. Dilatation in placenta prævia must be extremely guarded and limited, because of the enormously enlarged vessels at the placental site and the friable conditions of the tissues, which readily produce uncontrollable hemorrhage.

DR. CHARLES E. PADDOCK, Chicago, agreed with Dr. Hastings. He recalled the advice given some years ago in a prominent text-book on obstetrics, to leave the obstetric forceps at home, to be sent for when needed; that the temptation was too great, and that the instrument might be used without the necessary indications. He believes this advice applies to any of the metal instruments used for the dilation of the cervix. He has found but one case where he thought such an instrument might be indicated. The instrument shown by Dr. Newell appealed to him as one which could be used with the greatest safety and efficiency. As to lubricants, he has found the natural secretions sufficient, without resorting to other means.

PROF. A. DÜHRSSEN, Berlin, Germany, said that Olshausen had with the use of the Bossi dilator in eclampsia a mortality of 37 per cent., and Bumm, of Berlin, had in 70 cases of eclampsia, with the use of vaginal Cesarean section, only two deaths. Therefore, he repudiates the Bossi method entirely. In cases of closed cervix it is dangerous, and the dilatation of the supravaginal part of the cervix is unnecessary, and, furthermore, delivery can be performed by deep cervical incision or by vaginal Cesarean section. The Bossi method invariably leads to tears. Cases are reported where after the use of the Bossi, the patient ruptured her uterus in a subsequent labor. Dr. Dührssen was pleased to hear Dr. Harris say that there are cases in which no method of manual dilatation is possible. Manual dilatation is also impossible in cases of rigid cervix. There is a lack of elastic fibers in the cervix, since these cases can not be dilated, and the most dangerous tears usually follow attempts at dilatation. In these cases it is only possible to dilate through incision. This operation is now no longer confined to hospitals. If there is a skilful specialist he can do it just as well at home. It is necessary to be a skilful operator to perform a proper vaginal Cesarean section. Dr. Newell said that it is possible for the incision in vaginal Cesarean section to tear further; but this does not occur if the incision is properly made.

PROF. A. VON ROSTHORN, Heidelberg, Germany, said that the obstetricians of Germany are divided into two groups; one emphasizes incision, the other recommends dilatation. The Germans are more in favor of the incision method, for then one knows what he is doing, and it is surgical. All these things must be done carefully. When von Rosthorn did his first incision of the cervix, he was astonished how quickly it was done and how simple it was. He made the incision in the anterior wall only to the internal os, and was able to remove a small child easily with the forceps. The operation lasted only a few moments. He prefers the incision method, especially where the work must be done quickly. When there is time, the balloon method can be used.

DR. W. E. BOARDMAN, Boston, favors manual dilatation, although he admits that in the hands of a skilful operator, instruments can be used with comparative safety. But speaking not only to the skilful surgeon, but also for the benefit of the general practitioner, he objects to putting into his hands an instrument capable of doing so much harm. No instrument can have the intelligence of the human hand. The aseptic and antiseptic methods of the present day give assurance to the operator, so that the use of the instrument may not be attended with many of the dangers that formerly accompanied it. With gloves perfect asepsis exists.

DR. J. H. CARSTENS, Detroit, said that Dührssen's operation is not a difficult one. After separating the bladder from the uterus, an incision of about two inches is made, without opening the peritoneum. Through this opening a fetus can be delivered in a few moments. By keeping near the median line of the uterus, on account of the smallness of the vessels there, there will be very little hemorrhage, and delivery can be affected by forceps or version in two or three minutes. The whole operation can be done in six or seven minutes. When it is considered that this operation is only necessary in uremic convulsions, the operation of Dührssen is the only one of choice.

DR. R. S. YARROS, Chicago, said that in most multiparæ the Harris method serves well. There are certain cases, especially in old primiparæ, in which the method fails entirely. A number of years ago Dr. Yarros had a primipara suffering from eclampsia, in which the Harris method was absolutely useless.

She feels quite sure that if she had performed the Dührssen operation the patient might have been saved. In two recent cases the Dührssen incision was used with very excellent results. She said that it is a simple procedure, and will be found extremely useful in a certain number of cases.

DR. J. C. EDGAR, New York, has yet to see a dilator that will not tend to slip after two-thirds dilatation had been gained. For fear that it was a personal equation, he turned the Bossi and Harris dilators over to his assistant in one case and asked him to complete a dilatation, and he had the same experience that Dr. Edgar had had. The dilator of Newell, he said, is a radical advance on all the dilators, and the point is that the hand is really doing all the dilating. One can not estimate the dilatation with an instrument; the hands must be used. Dr. Edgar's position as regards dilatation of the cervix is that there are cervices that will resist both manual and instrumental dilatation. Instances where rapid dilatation is required, in which the cervix will resist a combined operation, are very exceptional. The incision of the cervix after Dührssen is valuable, he said, but when the statement is made that the incision will not extend, one must be careful how that statement is made. He has made several deep incisions, and has a photograph of a uterus of one case where it could be demonstrated that four incisions were made, yet on the left side one incision extended up into the broad ligament. In making the original incision one can not tell exactly how much room is necessary for the extraction of the after-coming head.

DR. F. S. NEWELL, Boston, agreed with Dr. Edgar in what he said of the slipping of the terminals. His idea of the best use of the dilator is to abolish the cervical rigidity. More babies have been sacrificed by the hands of the operator being too tired to complete the operation than anything else, and he thinks it very important for the operator to save his hands for a difficult extraction. The vaginal Cesarean section, he said, is a most excellent procedure, but he does not think it necessary in the great majority of cases. The question of obstetrics being done by the general practitioner is worth consideration, but the earlier it is recognized that obstetrics is a surgical disease, the better it will be for all.

THE MEDICAL TREATMENT OF CANCER.*

ROBERT REYBURN, A.M., M.D.
Dean of Medical Department, Howard University.
WASHINGTON, D. C.

For several years I have made a special study of cases of cancer, for the purpose of endeavoring to discover some of the causes, and thus to throw light on the proper method of treatment. I have reached certain well-defined conclusions in my own mind concerning this most important subject.

As a preliminary to the question of treatment it will be necessary here to epitomize briefly my opinions concerning the causes of cancer.

The first and probably the most powerful predisposing cause of cancer is senility, or old age, of the tissues and organs of the body. An apparently formidable objection will at once be made to the above statement by citing the well-known fact that cancer is found in young persons, and is sometimes (though rarely) congenital. While this is perfectly true, yet it should be remembered that senility is only a comparative term. Many persons are practically as old in their tissues at twenty or thirty years of age as others are at sixty. The real test of old age is not the number of years a person has lived, but the retrograde metamorphosis and degradation which has taken place in the various parts of the body.

When we see the arcus senilis in the eye of a patient, or note that he is suffering from fatty, calcareous, arteriosclerotic or other forms of degeneration of the organs of the body, we at once know that this person practically belongs to the class of the aged, and this important fact must always be borne in mind in the treatment of such a patient. This same degeneration of the tissues is often inherited, and is probably the reason why the offspring of syphilities and tubercuious patients, and drunkards often suffer from cancer at an early age. These children, there is every reason to believe, do not inherit the cancer neoplasm as such, but the resisting power of their tissues is so lessened as to form a suitable soil for its growth and propagation.

The vast majority of cases of cancer then occur in persons whose tissues are undergoing degeneration either from advancing age or senile changes. In women about the time of the menopause and in men of a similar age, when the duties and labors of life begin to seem to be a heavier burden than they were in youth, this disease becomes more prevalent.

Another curious fact is the interesting prevalence of cancer during the last thirty years. Dr. Roswell Park[1] says that if the present increase of cancer in the United States continues from 1899 to 1909 there will be more deaths from cancer than from consumption, smallpox and typhoid fever combined.

Cancer is also increasing in England. In 1898 there were 25,196 cases of cancer reported, or 902 per million of the total population. The male rate was 19.6 and the female rate was 10 per cent. greater than the average of the past ten years.[2] In Germany the same fact is noted. In 1898 there was twice as many cases of cancer relatively to the total population as there were in 1879.[3]

GEOGRAPHICAL DISTRIBUTION OF CANCER.

This relative increase in the number of cases of cancer is found to exist at present in all civilized countries, and it should be noted that this is coincident with the great improvements in the diet and hygiene of the population of our great cities, as compared to their condition during past generations.

I do not wish, however, to be misunderstood, or to assert that the increase of cancer is due to the improved hygiene and diet of the present generation, but I believe it to be due to the over-consumption of a particular kind of food about which I will speak more in detail hereafter.

Cancer *per se* is not a disease which prevails extensively in hot climates. Especially is it rare among those races inhabiting hot climates who live almost entirely or wholly on vegetable foods. It is comparatively rare in tropical countries. In Borneo it is unknown. Dr. A. B. Dahlgetty says that he has never seen a case of malignant disease of the mamma in a native of Hindostan. He wonders whether the constant presence of malaria in these countries has anything to do with it. He also calls attention to the want of pressure on the breasts of the Hindoo women by their thin and light clothing, and in the second place to their habit of suckling their children until the breasts are literally sucked dry. Such a gland would appear less likely to undergo perverted action than a gland arrested while its function is still in full force.

The inhabitants of certain parts of China, Burmah and India suffer comparatively little from cancer, and in certain localities in these countries it is very rare. What is the cause of this comparative exemption? The facts would seem certainly to warrant the assertion that a diet of vegetable food is inimical to the development of cancer.

---

* Read before the American Therapeutic Society, May 5, 1906.

1. Medical News, April 1, 1899, p. 399.
2. Philadelphia Med. Jour., April 21, 1900, p. 887.
3. Medical Record, May 17, 1902, p. 776.

INFLUENCE OF ALCOHOL.

The second predisposing cause of cancer that I would mention is the habitual use of the various forms of alcohol as an article of diet. No one can deny the enormous amount of evil that is done to the individual who partakes of alcohol, and also to the community as a whole from its use as an intoxicant. But there is a more insidious and more dangerous effect on the tissues of the body from smaller quantities of alcoholic drinks (when taken regularly) than is generally recognized. The dilute forms of alcohol enter into the blood and thence circulate through every tissue and organ of the body.

What is the effect of this? The alcohol, by powerful affinity for the water of the tissues, dehydrates and prematurely hardens them; not only this, but alcohol is a retarder of waste in the body. In other words, it diminishes the metamorphosis of tissue, it hinders the separation from the tissues of the body of those effete and waste products which should be eliminated. These used-up and waste matters are retained in the body, and tissue hardening and degeneration of organs are the results. If we may use the simile, the fuel is ready for a spark to kindle it, and if we have a local irritation, an injury or necrosis of the living tissue, a malignant or other neoplasm may result.

These remarks do not apply to the drunkard; we all know what his fate will be. Many persons live daily under the influence and die from the effects of alcoholic drinks who are never suspected during their lives (except by their physicians) to have used them. The daily use at meals of various "bitters," etc., is essentially nothing more than a thinly disguised tippling under the form of medication, and produces dire effects in the course of time, especially when at the same time little or no bodily exercise is taken.

INFLUENCE OF DIET.

The third and most important predisposing cause of all we believe to be the consumption of too much meat and nitrogenized food. If we consider the uses of meat as an article of diet, we will speedily see that it is taken to supply the waste of the muscles and other nitrogenous tissues of the body. In persons living inactive lives the consumption of bodily tissues is at a minimum, and hence they need very little meat or nitrogenous food. If these same persons are habitual consumers of alcoholic drinks, even in small quantities, their power of assimilating meat is still further decreased.

In fact, as persons advance toward the close of life their needs for food, and especially for the nitrogenous parts of it, are lessened, and the amount of food given to such persons should be diminished.

Sir Henry Thompson, who is now past 83, says that in old age we ought to diminish the amount of food taken; he further says that half of our ills in old age are due to overfeeding. He also advises and has practiced in his own person the total giving-up in later years the use of alcoholic drinks.[4] In persons who consume large amounts of nitrogenous food, and even when they are habitual users of alcohol, the frequency of cancer is greatly diminished when their avocations require them to take a great deal of exercise, or when they perform hard manual labor. In 50 years of continuous practice I have seen very few cases of cancer (with the exception of lip or tobacco cancer) occurring among men who labor in the open air. The reason, no doubt, is that the waste materials produced in the body are burnt up by hard manual exercise.

Whatever theory we may adopt as to the causation of cancer, there are two facts of history that seem to be now generally admitted. The first of these is that it is probably always local in its early stages, and the second is that its origin is due to some injury or local irritation of the parts affected.

SUMMARY OF CAUSES.

Finally, I wish to summarize, by giving the following facts, which seem to me to express the history of the causation of cancer:

1. Cancer is a disease of senility or decay of the tissues, or at least occurs at the time when the retrograde metamorphosis of the tissues is taking place.

2. Cancer is comparatively rare in hot climates, and especially where the diet of the inhabitants is composed chiefly of rice, or other starchy food.

3. Cancer is very prevalent at the present time wherever animal food is largely consumed; the number of cases of cancer has been found to increase in proportion to the increase in the consumption of nitrogenous or animal foods.

4. The theory of Dr. Gaylord that cancer is caused by a protozoon or animal micro-organism seems to be disproved by later investigations, and the probability is that cancer is simply erring epithelium which has taken an abnormal growth and development.[5]

TREATMENT.

Believing, as we do, that cancer is simply an error of cell development depending on the retention of waste matter in the system, the treatment of cases of cancer may be divided into two classes, namely, the preventive and curative.

The preventive treatment of cancer has been largely ignored by medical men, and yet if the above views of the causes of cancer are correct, it is of overwhelming importance.

Cases of cancer then should be diagnosed and treated at the earliest possible moment.

The most potent cause of the failure of our treatment of cancer is the neglect of the patient to apply to the physician for treatment until the disease has become so far advanced as to render the case hopeless. How often do women from mistaken feelings of delicacy hide from their physicians the growth in the breast, or the sanious or bloody discharge from the uterus, which are the warnings of the danger to the health and life of the patient.

There are at least two distinct types or classes of patients suffering from cancer who require and can be benefited by our medical counsel.

These varieties of cancer are radically different in their causation and require very different treatment.

The first is the anemic variety. These patients come to the physician weak, pale and bloodless and often suffering from chronic leucorrhea or other uterine disorders.

What will the physician do with such patients as these?

He will, of course, give them iron in large and rapidly increasing doses, give them, in fact, as much iron in the form of Vallet's mass (ferrous carbonate) tincture of the chlorid of iron or Blaud's pills as their stomach will assimilate.

He will examine carefully the condition of the reproductive organs, and so far as possible will correct what-

4. THE JOURNAL A. M. A., Nov. 23, 1901, p. 1402.

5. For further proof of this see article published in the Jour. of Med. Research, Boston, April, 1902.

ever there is amiss. If he succeeds in bringing back to the cheek the bloom of health by his treatment, he will eliminate to a great extent the possible danger from cancer. The diet should consist of the various forms of digestible and unstimulating vegetable foods. Alcohol, as a food, should be entirely eliminated, and meats and other nitrogenous foods should be reduced to a minimum amount.

Careful attention should be given to the regular action of the bowels, which should take place at least once each day. The urinary secretion should be examined and proper means adopted to correct any disorder or diseased condition of the kidneys.

To epitomize the treatment of the cases of cancer, it should simply be the effort of physicians to endeavor to bring their cancerous patients into the highest condition of personal health and excellence of hygiene.

The second and very different type of cancer we would like to name the plethoric type.

These women come to the physician often suffering very little except from a slight sanious discharge, which seems to them so trivial that it is hard for them to think that they require any medical attention. They are generally indolent, stout, well-nourished and consume an abundance of food. In fact, they consume too much animal food. As they consume more food than the body needs, the waste nitrogenous matter accumulates in the system and they suffer accordingly. Suffering, as they do, from an over-plus of nourishment, they require purgatives, starvation and enforced exercise.

These young women, when they first appear in the rôle of patients, think very lightly of their symptoms, but finally to their horror, the fatal diagnosis of cancer is made and they are rudely awakened from their dream of security.

CONCLUSION.

Finally, I wish to state, that it is perfectly astonishing and lamentable to see the apparent helplessness of most of the members of our profession, when confronted with the cases of cancer.

Generally, no attempt is made by the physicians to treat these patients by medication, or to improve their hygiene, and the whole treatment seems to be confined to the knife, the *x*-rays, or some form of electricity.

Valuable as these agents are in the treatment of cases of cancer, yet it is my firm belief that our success in these cases would be far greater, if we would combine with them appropriate medical treatment. Each case must be studied individually and treated accordingly.

ROENTGENIZATION IN THE TREATMENT OF CANCER.

WITH AN EXHIBITION OF CASES IN WHICH THE EVIDENCES OF MALIGNANT DISEASE HAVE DISAPPEARED UNDER ROENTGEN RADIATION.*

CLARENCE EDWARD SKINNER, M.D.
Physician-in-Charge of the Newhope Private Sanitarium.
NEW HAVEN, CONN.

One of the burning questions before the medical profession to-day is "How shall we treat our cancer cases?" The first thought that responds is "With ablative surgery;" the second brings before us the disheartening proportion of hopeless recurrences that follows such management and which varies from 60 to 80 per cent. in different hospitals; the third invokes the Roentgen ray; the fourth, destruction of the affected tissues by caustic pastes; and the fifth, destructive sterilization of such tissues by massive mercuric cataphoresis.

Of the last-mentioned, not enough is generally known as yet to render possible the formation of reliable conclusions, but the results obtained by the father of this method, Dr. G. B. Massey, Philadelphia, and by a few others, are such as to give ground for the belief that it is destined to play a not unimportant part in the future management of malignant disease. Caustic pastes are rationally applicable only to superficial processes, and failures and recurrences are by no means uncommon. This narrows down the choice of procedures in the vast majority of these cases to employment of the knife or the Roentgen ray, or a combination of both.

The possibilities and limitations of ablative surgery in cancer have been pretty thoroughly determined and are very generally recognized and admitted; those of the Roentgen ray are fairly well understood and generally admitted among properly qualified Roentgenotherapeutists, but the rest of the profession are very much in the dark as regards this agent and it is of the utmost importance to sufferers from this disease that knowledge of the subject should be widely disseminated.

To attempt such dissemination by word of mouth alone, however, involves such a strain on the credulity of those not familiar with the subject that I shall precede my statements to-day by an ocular demonstration of the results which have been attained on a few patients who have undergone Roentgenization for cancer during the past four years. Results speak for themselves, and one undeniably positive result speaks louder and more significantly than a dozen negative ones.

CASES.

CASE 1.—Patient was a farmer, aged 55. Several members of his family had had cancer.

History.—About 8 years ago he first noticed a small scab on the side of his nose opposite the inner canthus. It increased in size and ulcerated. Various remedies had no effect on it and when he first consulted me, Feb. 12, 1903, it was three-eighths of an inch in diameter, deeply ulcerated with raised, indurated edges, and discharging profusely.

Treatment.—From this time until April 4, a period of two months, he received 18 Roentgen-ray applications with complete healing as a result. There has been no recurrence and no treatment of any kind applied to the part since. The cosmetic result is perfect.

CASE 2.—A man, aged 66, farmer by occupation, whose mother, aunt, and one sister suffered from cancer.

History.—About 5½ years ago he noticed a small brown spot on his left temple which was accompanied by itching, gradually grew larger and finally ulcerated. He consulted a physician, who recommended the use of a caustic plaster, the application of which was not followed by any beneficial result. The lesion continued to increase in size and the pain in severity, and he finally consulted a surgeon who told him that the case was inoperable.

Treatment.—He consulted me first on April 29, 1902, about a year and a half after having first noticed the growth; it was then the size of a silver twenty-five-cent piece with raised, indurated edges. From this date to June 30, a period of two months, he was Roentgenized 20 times with complete disappearance of the lesion as a result. This was four years ago, lacking one month. There has been no recurrence and he has had no treatment of any sort since. The cosmetic effect is irreproachable.

CASE 3.—A man, aged 60, painter by occupation, with no history of cancer in his family.

History.—About 10 years ago he noticed an itching mole on the right side of his nose which broke down and increased in size for 3 months, at which time he applied a caustic plaster

* Read with exhibition of patients at the one hundred and fourteenth annual convention of the Connecticut Medical Society at New Haven, Conn., May 24, 1906.

which did not cause it to heal. He then went to the New York Cancer Hospital where the growth was removed surgically. It shortly recurred and increased in size until at the time of his consultation with me it was the size of a twenty-five-cent piece, discharging profusely, and deeply excavated with raised, indurated edges. The accompanying illustration is from a photograph taken at that time, but it does not show the depth of the ulceration, as, through a misunderstanding, the photograph was taken when the lesion was covered with a scab.

Treatment.—He received his first Roentgen treatment March 10, 1903, and during the next 4 weeks was Roentgenized 8 times. During this period the only change observable was that the scab formed more rapidly than before, there was slight lessening of discharge and slight redness of the healthy tissue about the lesion. At this time he was forced to discontinue treatment by an attack of acute rheumatism which kept him at home for 6 weeks. He then called on me again but the lesion had entirely healed during this interval and has never recurred or been treated in any way since. The cosmetic result is all that could be desired, the excavated area having filled out to the level of the surrounding parts so that scarcely any depression even is visible.

A peculiarly interesting feature about this case is the striking way in which it exemplifies the cumulative action of the ray. Almost no change of a reparative nature was observable at the time he received his last application, but during the following 6 weeks the transformation, resulting from the treatment, developed rapidly. These three patients have been well and free from recurrence between three and four years.

In cases of mammary cancer it is my belief that the best interests of the majority of such patients demand immediate, radical extirpation, to be followed, in every case, by Roentgenization after the wound has healed. It is but fair to state, however, that some operators, with greater experience in mammary cancer than myself, regard Roentgenization, at least in primary, localized cases, with more confidence than the knife, either alone or in conjunction with the ray. Their results are such as to render the point a justly debatable one, and positively determinable only by future investigation.

The last case to which I desire to call attention was reported in full by me to the Electrotherapeutical Section of the International Electrical Congress at St. Louis, in September, 1904, and constitutes, so far as I have been able to ascertain, the most remarkable exemplication of the curative power which the Roentgen ray exercises over malignant disease, thus far observed. Certainly no case so striking has been reported.

CASE 4.—A school-teacher, aged 39, on whom hysterectomy and ovariotomy were done 8 years ago for what was supposed to be a fibroid tumor of the uterus; no microscopic examination was made.

History.—About 2½ years after this operation she noticed a hard tumor in the lower abdominal wall in the region of the cicatrix. There was no pain and no discomfort but rapid growth.

She consulted Dr. Maurice H. Richardson, of Boston, who referred her to Dr. W. B. Coley of New York, for treatment by the erysipelas toxins. During the next 10 months she was treated with the toxins which caused the growth to decrease in size during the earlier part of this period, but they then lost their power and at the end of this time, in January, 1902, when she was referred to me by Dr. C. A. Bevan of West Haven, the mass measured 10 inches from side to side at the level of the anterior superior spines of the ilia, 8 inches vertically in the median line, and about 5 inches antero-posteriorly in the median line. Microscopic examination of sections removed from the tumor while she was under Dr. Coley's care demonstrated it to be a fibrosarcoma and the mass was rapidly increasing in size. The patient was losing flesh, markedly cachectic, very weak, and complained bitterly of pressure symptoms.

Treatment.—Roentgenization was begun Jan. 28, 1902, and during the next 4 months she received 46 applications. Her general condition commenced to improve at once but the tumor itself had increased somewhat on the right side, but decreased slightly on the left side; on the whole, the tumor was slightly larger at this time than it had been when we started, and the only feature about the case that encouraged me to continue the treatment was the marked improvement in her general condition.

She then went to her home in Massachusetts for a short visit and when she returned a decrease in the size of the tumor of about 20 per cent. was noticed and made it necessary for her to shorten her waist bands and the fronts of her skirts to keep them from dragging on the ground.

From June 17 to September 3, a period of 2½ months, she received 31 Roentgenizations. Her general health continued to improve and the tumor steadily decreased in size and at the end of this period she resumed her occupation of teaching school, which had been interrupted for about a year and a half.

To make a long story short, the whole treatment of this case extended over a total period of two years and three months, during which time she received 136 applications of the Roentgen ray, more than half of which were given during the first 8 months. She received her last Roentgenization May 20, 1904, at which time no trace of the tumor was discoverable, nor had it been, according to the testimony of her family physician, for several weeks previously. The fact of its disappearance at this time was confirmed by examination by Dr. C. A. Bevan, West Haven, and in July by Dr. W. B. Coley, New York, so that this patient has been perfectly well without any evidence of recurrence for more than two years. At the present time she weighs more than she has ever weighed in her life before, is apparently perfectly well in every way, and has taught school uninterruptedly since September, 1902.

BENEFITS OF ROENTGENOTHERAPY.

These cases justify the bald statement that cancerous processes are amenable to Roentgenotherapy, whether superficially or deeply located, and that it is capable of accomplishing beneficial results in cases of so severe a type as to present absolutely no hope even of relief under any other management. It must not be understood, however, that all cases of malignant disease will respond happily or with equal readiness, even when the highest degree of technical skill and the dictates of the ripest experience are invoked in the administration. Individual idiosyncrasy, as regards protoplasmic vitality and the strength of the tendency toward the normal development of cell types constitutionally inherent in different patients, enters the problem with great force. In some persons cell vitality is at so low an ebb that but little disturbance is required to produce a widespread aberration from the normal cell types; in others it is so pronounced that very large degrees of such irritation as usually induces malignant cell growth, are undergone with impunity. These same principles apply as regards the amount of corrective influence required to restore normal conditions in any individual case. But the cardinal fact that the beneficent power is inherent in the ray remains demonstrated and it is our future function to ascertain, if possible, gain control of those extraneous factors and conditions which introduce the element of uncertainty into the treatment of the individual case. Roentgenization appears, then, to be destined for a prominent rôle in the therapy of cancer.

ROENTGENOTHERAPY AND SURGERY.

The next thing to be ascertained, viz., definition of that rôle, at once brings up for consideration the question, "Shall the ray be relied on alone, to the exclusion of the knife, or shall it be applied in conjunction therewith, and if so, how?"

As regards the first part of the question, clinical ex-

perience has shown that it is justifiable, and usually preferable in judiciously selected cases, to rely on Roentgenization to the exclusion of the knife in cases of superficial epithcliomata involving only the external skin. The proportion of successful results is just as large (some operators claim that it is larger) as that attainable with the knife or caustic pastes, the cure is just as radical, and the cosmetic results are much better. An additional advantage is that if recurrence takes place it is usually permanently amenable to a further course of radiation, whereby the extensive removal of tissue is avoided. I will say, in passing, that malignant processes involving mucous membranes do not respond as kindly to Roentgenization as do those which are confined to the external skin. In inoperable cases, wherever situated, Roentgenization must of necessity be relied on to the exclusion of the knife. That it merits consideration in even the most desperate of these, however, is demonstrated by the abdominal case already described.

As regards the second part of the question, clinical experience has shown that when the growth is deeply located or large in size, a much larger proportion of satisfactory results can be obtained by combining the knife and the ray than by relying on either alone. The logic of this proposition is as follows: When a large mass of malignant tissue disappears under Roentgenization, its disappearance is usually accompanied by a variable degree of general systemic toxemia which has been known to be severe enough to kill the patient of itself, and which is always liable to impair general or local metabolism sufficiently to interfere greatly with, and sometimes entirely to defeat, the restoration of normal conditions. Its removal by the knife, *en masse,* eliminates this danger. 2. When the disease process is deeply located, the intensity of the influence which it is possible to exert on the lesion, is so lessened by the passage of the ray through the overlying tissues as seriously to impair its remedial effect. Removal of the lesion by the knife confines the work demanded of the ray to the destruction of microscopic, outlying foci of malignancy, whereby the probability of a favorable outcome is greatly enhanced.

Whether or not a cutting operation for cancer should be preceded by Roentgenization is still a mooted point. In its favor is the probability that limitation of the process can be effected through inhibition of the growth of malignant cells at its periphery, thereby increasing the probability that complete removal can be attained. On the other hand, grave impairment of the reparative functions of parts thus treated has been noted, and the loss of time involved in delaying the operation may at times be a serious matter. There is so little unimpeachable evidence that well-applied Roentgenization has ever been instrumental in actively disseminating a malignant process, and so much in opposition to this theory, that this part of the subject is hardly considered to merit discussion among present-day Roentgenotherapeutists and we can dismiss the subject without further mention. As regards pre-operative radiation, therefore, the conditions surrounding each individual case must determine its management.

Roentgen operators are unanimous, however, in the belief that every ablation for cancer should be immediately followed by Roentgenization, as a routine measure, which belief is based on the following:

1. A large proportion of recurrent malignant growths does not respond kindly to Roentgenization, perhaps because of the increased malignancy with which operative interference seems to imbue some cancers, notably sarcomas.

2. If Roentgenization is delayed until recurrence is manifest, the process may then have become so widely disseminated as to preclude the possibility of benefit from radiation.

3. If the affected area is radiated immediately after radical extirpation of the lesion, the degree of remedial (destructive?) influence demanded of the ray will be limited to such as will be necessary for the elimination of microscopic foci of malignancy, whereas if recurrence is awaited, the remedial influence required will be much greater because the lesions will be much larger and better developed, and the degree of increase demanded may be so great, especially when deeply-located structures are involved, as to be impossible of attainment. Under such circumstances we would be confronted with a condition which might have been eradicated had we acted promptly, but which our omission had allowed insidiously to develop and compass the destruction of the patient.

4. We know that in a certain proportion of cases treated by a cutting operation alone, recurrence will not take place and the cure will be radical. On the other hand, we also know that we never can assure any one patient that recurrence will not take place in his case, and we are perfectly certain that recurrence will declare itself in a large proportion of all cases. If immediate post-operative Roentgenization is omitted in any one case, that may be the very one in which we shall encounter recurrence and it is highly probable that had we applied the ray immediately after the operation the accident would have been prevented. By Roentgenizing every operative case we are assured of having exerted every effort for the relief of the patient, and that we have saved all of our patients that it was possible to save.

CASE 3.—Before treatment.

5. It is imperatively incumbent on us to apply any measure which has the power to destroy or inhibit malignancy, to the task of lessening the proportion of post-operative recurrences; that the Roentgen ray manifests such a power is proved beyond a doubt, and the clinical experience of those who have thus employed it, with a correct technic, has amply confirmed the validity of this contention.

The consensus of expert opinion to-day, then, may be broadly summarized as follows:

1. In superficial malignant lesions involving only the integument, Roentgenization is the procedure of election; 2, in operable lesions more deeply located or involving mucous membranes, the advisability of combining ablative surgery and Roentgenization should always

be earnestly considered, and such combination will give the best results in the majority of cases; 3. a course of Roentgen ray applications should follow every cutting operation for malignant disease, as a routine measure, and sometimes, perhaps, should also precede the operation; 4. Roentgenization should be persistently applied to all inoperable cases as long as the patient shows any signs of response, however slight.

IMPORTANCE OF TECHNIC.

By far the most important factor which is active today in determining whether the results of Roentgenization shall be satisfactory or the reverse, is the degree of knowledge possessed by the operator concerning Roentgen ray phenomena, both physical and clinical, and his ability to utilize this knowledge practically; in other words, the technic. The difference between the results of intelligent, scientific, efficient Roentgenotherapeutic technic and the reverse resembles very closely that which would obtain between appendectomies performed in a tenement-house kitchen without antiseptic precautions by a second-year medical student and the same operation performed in a well-equipped hospital by a master of surgery. The subject of technic is too specialized in character to admit of discussion in detail at this time, and I shall not enter into it further than to call attention to the following facts which have more or less vital bearing thereon:

1. There are electric conditions generated in the neighborhood of an excited Crookes tube, and perhaps other radiations than those of Roentgen emanating therefrom, which probably play a considerable part in the physiologic influence exerted.

2. The Roentgen radiation from any Crookes tube, whether of high or low vacuum, is composed of rays of varying degrees of penetrative power present in varying proportions as regards quantity.

3. Only those rays which are absorbed by the tissues, i. e., reach but do not penetrate through them, effect physiologic modification thereof. Hence an operator must know which rays are best adapted to the particular pathologic condition under treatment and be able so to manipulate the generating apparatus as to obtain them.

4. The penetration of the Roentgen radiance generated by a given Crookes tube is directly modifiable by the amount of current used to excite it and by the introduction of resistance (spark-gap) into the tube circuit. This latter factor is especially effective when a static machine is employed as the tube excitant, so much so, indeed, that a tube so low in vacuum that it gives off no appreciable Roentgen radiance at all without spark-gaps, can be made to deliver rays of high penerating power by their use.

5. Rays of different degrees of penetrating power can be filtered out of the emanation from an excited Crookes tube by placing in its path various substances such as sole leather, plain or impregnated with normal salt solution, when it is desired to eliminate those rays that are absorbable by the skin, aluminum when it is desired to eliminate the so-called "soft" rays in general, silver when the rays of high penetration constitute an undesirable factor, etc.

6. Volume, as well as penetrative power, constitutes an important element in the physiologic influence and therapeutic efficiency of this force.

7. Volume is directly proportional to the amount of current traversing the tube and indirectly proportional to the degree of tube vacuum.

8. The intensity of the *x*-ray varies inversely as the square of the distance; hence, the location of the source of the rays (anode) as regards its distance from the lesion and determination of the time duration of the exposure are factors of the first importance. Fortunately these can be calculated mathematically and are easy to ascertain; unfortunately they are as much neglected by the average exponent of Roentgenotherapy as they are easy of attainment.

9. It is necessary that the quality and quantity of the rays therapeutically administered should be under intelligent control and susceptible of measurement, and here we are confronted with a grave difficulty. The penetrating power can be satisfactorily determined by Benoist's penetrameter and Pfahler's modification of this instrument[1] has rendered it entirely safe as far as injury to the operator is concerned; but no practical instrument has yet been devised which will measure ray volume or quantity with any degree of accuracy, and volume is of as much importance in this equation as penetrating power. The operator is, therefore, obliged to rely on his experience with his own individual tubes for his estimate of their physiologic and therapeutic efficiency, this knowledge of one tube is of no value as regards determination of the index of any other, and every tube is an unmodified interrogation point to any radiologist who has not used it before.

CONCLUSIONS.

From the foregoing it is apparent that, although a man may be an excellent surgeon or an erudite physician, these qualifications of themselves do not by any means constitute him a competent Roentgenotherapeutist or justify him in wholesale condemnation of this remedial measure because of unfortunate results or a lack of good results which may have come under his observation from Roentgenization as it is commonly applied to-day. The attainment of satisfactory results necessitates on the part of the operator a good knowledge of the physical properties of the ray, a broad and comprehensive familiarity with its clinical behavior, and an intimate knowledge of the possibilities and behavior of his individual tubes and generating apparatus. These qualifications are, unfortunately exhibited by but few of those who are Roentgenizing pathologic conditions to-day, a generous estimate placing their number in the United States at about 50, and it is a matter of wonder that there are so many happy results and so few accidents. It is also not to be wondered at that the vast majority of surgeon-radiologists are much better surgeons than radiologists, but this unfortunate fact is responsible for a very large proportion of the sweepingly pessimistic reports of cases from high sources that have been ineffectually Roentgenized.

Due appreciation of these facts is gradually permeating the general professional mind, however, and inducing Roentgen operators to fit themselves properly by conscientious, special study for their work, and the time is not far distant when the beneficent potentialities of this remedial agent will be accorded the high rank they deserve in the management of this most distressing and destructive ailment.

1. Archives of Physiological Therapy, June, 1906.

Doctor and Automobile.—Almost before the general public believed that the automobile was more than a passing craze physicians were buying cars and proving that even in its early, crude state it was of immense advantage to them in the pursuit of their professional duties.—Doolittle in *The Automobile.*

METHYLTHIONIN HYDROCHLORID IN INOPERABLE CANCER.*

ABRAHAM JACOBI, M. D.
NEW YORK CITY.

While the remedy of which I shall speak is not new to me, it is new to the larger part of the profession. Methylene blue was introduced into practice in malignant tumors by Moorhof-Mosetig of Vienna. I believe the first man who introduced it into America was Willy Meyer of New York. At that time I used it a good deal by the injection method. The injections are very painful and inadmissible because it is impossible to prevail on any patient to submit to them for any length of time. Therefore, for fourteen or fifteen years, I have given methylene blue, or as it is now called, methylthionin hydrochlorid, in my own way internally.

WHEN TO USE IT.

As a rule we see cancer in an advanced state. Small cancers, local cancers, will very frequently go into the hands of the surgeons where they belong and the operation is certainly the first thing to be thought of in practice, but there are a great many cases that have never been recognized and that distinctly prove inoperable for that reason, together with others that have been operated on once or twice; for instance, cancer of the breast, or intra-abdominal cancer. The large majority of cases I have had in the last fourteen or fifteen years were intra-abdominal cancer of the liver, gall bladder and omentum and frequently combinations in all these organs. A number of cases occur on which no surgeon would dare to operate, not even to perform laparotomy to see what is going on inside. These inoperable cancers I have invariably treated with methylene blue.

One case was that of a woman in whom was diagnosed a cancer of the right ovary and of the neighboring structures. It was not accessible from below; it occurred fourteen or fifteen years ago. I gave her methylene blue. She took it a long time; she was in a low state of health; the tumor was very large; she did not get well, but when she died, after years, she had an ovarian tumor and a tumor about the size of two walnuts, only. They were cancer and there is no doubt that the whole tumor was cancer. It was reduced, I think, by the treatment. She died of her cancer, but having lived a number of years comparatively well and gaining weight, so that she was able to superintend her household. Such cases I have seen in varying numbers.

I believe I see a new case of cancer once a month at least. Of these, 20 or 25 per cent. are of the inoperable kind. Some that have already been operated on can not be turned over to the surgeon again. Then will come methylene blue treatment. I have seen such cases in fairly great numbers. They certainly count up in the course of fourteen or fifteen years. I have had one woman under observation for eight or nine years. She weighed 91 pounds at first observation; she was jaundiced and is jaundiced yet, and still weighs 91 pounds. Once in six months she reports that she is perfectly well. She is still yellow, still has lumps. Ordinarily she would have died seven or eight years ago.

One of my patients is a business man who came to me six or seven years ago. At that time he weighed 124 pounds. now he weighs 146. At that time he was not able to attend to his business. For the last four or five years he has attended steadily to his business day in and day out. A large tumor in the epigastrium has dwindled away to about the size of a walnut. He is apparently well and weighs 25 pounds more. He certainly knows that he is sick and accordingly he will complain, but he goes about from morning to night.

So I can say that I have a number of cases. I do not think, however, that I have ever cured a case. I have seen patients die during the treatment, but I have also seen them comparatively well, attending to business, living three, four, seven and eight years, and perhaps finally submit to their disease.

In the last few months my attention has been directed to the large number of bodies that are favorably influenced by light, that have fluorescent qualities. It appears that methylene blue belongs to that class. I have commenced to expose my methylene-blue patients to the sunlight; whether it will be of any use I can not say. I have exposed them in the solarium or in bed rooms, kept them there undressed hours and hours, as long as their household or business will permit them. It is not impossible, it is even probable, that light will do a great deal more in connection with methylene blue than methylene blue alone. I simply say I am positive that it has rendered me a great deal of good service in at least 120 or 150 cases in the course of the last fifteen years. I have not gone before the profession with my results to any great extent. Only now and then have I mentioned them before societies, but never to such an extent as now. A number of physicians and surgeons in New York have had their attention drawn to the subject and are trying the remedy. It is well tolerated.

HOW TO USE IT.

I give the drug in pills, in small doses, 2 grains a day, and run up slowly to 3, 4 and 6 grains a day. I have heard of bigger doses being given, but I have never required larger ones. I think the 2 or 4 grains should be made up in pills with a dose of three-fourths grain of extract of belladonna daily. I know that the extract of belladonna will relieve the dysuria much better than nutmeg, which has been recommended for that purpose. When you give 6 grains there should be three-fourths of a grain of belladonna given through the day, because adults will not bear belladonna so well as children. They are easily overdosed, they get dry throats in much less time than children with comparatively large doses. It is easy to give it in that way. I frequently combine it with arsenous acid (arseni trioxid). The dose would be 1/40, 1/30 up to 1/20 of a grain of arsenous acid three times a day. It can be made into pills with belladonna and methylene blue and there is no harm, when occasion requires, to give strychnia or extract of nux vomica in order to make up the pill, so the prescription would be 2 to 4 to 6 grains of methylene blue in four doses. It is best given after meals, one at bed time, with perhaps 1/10 grain of strychnia and 1/10 grain or more of arsenous acid a day with or without a vegetable purgative if that be necessary.

Patients should be told at once that the urine will be blue from the very beginning, that it will stain the linen and that the stains can not be removed. I advise, therefore, my patient to have an old handkerchief handy and to wipe off the last trace of urine. Apart from that, patients will not suffer any convenience. In my experience not one in twenty will complain of dysuria. The belladonna appears to act very well. I have recommended it in a number of cases operated on in order to

* Remarks made in the Section on Pharmacology and Therapeutics of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

prevent relapses. It is impossible to speak with mathematical certainty about the result of that, but I believe that relapses have been prevented. I should recommend it in every case of cancer of the uterus that has been operated on and when relapses must be feared. I believe that I have seen less relapses since that has been done. Still, an actual, statistical proof of negative experience can not be had.

CONCLUSION.

Because I considered the matter of too great importance to be published prematurely, I have not spoken of it extensively before. I wanted to be perfectly sure about my results. I wanted to have a sufficient number of cases to base my assertions on. I believe I have now waited long enough. I think that after fourteen or fifteen years one is entitled to speak of a subject that appears to be of great value. It has done a great deal of good in my practice. I have certainly restored a good many people to their work. I have kept a number of people alive two, three, six and eight years longer than would have been their share.

DISCUSSION.

Dr. H. R. Slack, La Grange, Ga., said that he had had a limited experience in the use of methylene blue in inoperable cases of cancer. In 1895 a man came to him complaining of sore throat. Examination showed an alarming condition. There was evidently carcinoma of the tongue. He referred him to a specialist in throat diseases in Atlanta, who pronounced it an inoperable case of cancer of the tongue. The man returned about six weeks later. At that time he could swallow no solids at all. Dr. Slack began the use of methylene blue, injecting hypodermically 1 c.c. of a 2 per cent. solution every other day. The treatment was very painful, but was very satisfactory. At the time he began treating him with methylene blue the cancer was as large as an egg. It diminished rapidly in size and the man lived for three years in comparative case. Another case was that of a woman with inoperable cancer of the uterus, which involved the vagina. General metastases had taken place. She had hemorrhages almost daily. He used methylene blue in that case and the woman lived for seven years in comparative ease, and attended to her household duties. Up to three weeks before her death she did not have to use opium to soothe her pain. The methylene blue relieves the shooting pain that patients complain of, and it certainly is the most satisfactory treatment for inoperable cases involving a mucous surface that he has seen. *X*-ray is best for external cancers.

Dr. W. J. Robinson, New York City, said that his experience with methylthionin has been limited to gonorrheal urethritis. In 1895 he published an article on that subject in the *New York Medical Journal*, in which he reported a severe case of strangury and dysuria following the use of this drug, and for a long time after that he did not use it, for the effect was a very severe one. He was not at all certain, however, whether the bad result was due to the methylene blue or to certain impurities in it, or to a different drug substituted for it. For a long time methyl violet was (inadvertently or ignorantly, not deliberately) substituted by some druggists when methylene blue was prescribed. He declared that the physician should make sure that he gets a United States Pharmacopeia preparation, or, better still, that he specify a certain definite brand he knows to be all right. Many dyes go under the name of methylene blue which are really not methylene blue, but substances injurious to the system. Some of these substances contain a good deal of arsenic and zinc.

Dr. S. Solis Cohen, Philadelphia, said that he has given medicinal methylene blue in large doses, that is to say, from 5 to 10 grains, frequently 15 grains, in a day; not, however, in the treatment of cancer, in which conditions its internal use is new to him. He was speaking as to the tolerance of the human organism toward the drug. He has never seen strangury or dysuria or any untoward effect whatsoever. Patients—chiefly cases of chronic or obstinate malaria or malarial sequelæ—having been cautioned that their urine would appear blue, have been spared any fright from this source. He asked whether Dr. Jacobi considered that the fluorescent effect of the methylene blue could be stimulated by *x*-ray or by artificial light as well as by sunlight. He has seen good results from the method, using, however, fluorescin or esculin or quinin. He will try methylene blue with the artificial radiation also.

Dr. W. J. Morton, New York City, said that the trouble in treating these inoperable cases is well known. He thinks it wise to point out the salient idea of prolonging the lives of such patients, who are often invaluable people. It is well to dwell on palliative measures as well as on the will-o'-the-wisp seldom reached, viz., a complete and rapid cure. He welcomes the position that Dr. Jacobi outlined in another sense. He is most interested that a man of Dr. Jacobi's great and varied experience in medicine should see his way to drop the purely drug side of the remedy and turn to the physical, for instance, the nature of fluorescence. In 1902 Dr. Morton published his first observations on the value of fluorescent drugs in general. He followed that publication up at the end of two years, and after a good deal of experience thought it a matter of duty to point out how important this matter of fluorescence is in the administration of medicines. He believes that the effect of certain medicines is due to their fluorescence and not to any other pharmacal quality. It is not absolutely known how quinin will cure malaria. May it not be due to its quality of fluorescence? In regard to the class of cases Dr. Jacobi alluded to Dr. Morton said that he has used methylene blue only in one instance, for at that time he drifted into the other fluorescent substances, and his next experiences were with quinin and with fluorescin and esculin. The fact that many medicines owe their efficacy to their fluorescent quality was brought out first by experimenters who confined their experiments entirely to light, viz., the Finsen light and sunlight. Considering that the practice might be broadened, he has been in the habit, since 1902, in all cases of cancer of saturating patients with one fluorescent substance or another, often the fluorescin, often quinin, and then submitting them to the *x*-ray, to radium and to the high-frequency currents. He has verified what he published in The Journal A. M. A., June, 1904, by administering to himself fluorescin in aqueous solution 1 to 30, 30 to 40 drops. In 20 minutes this quality of fluorescence will be observed in the urine, and in case there is an open ulcer it may be observed on the dressings. If such an experiment be made and the patient be taken into a dark room and good radium be used and the radium tube (which in itself has no light and is enclosed in an aluminum capsule), be placed in the web of the finger, in from eight to ten minutes any observer will be able to follow the hand by aid of the light spot produced. This is an absolute proof that radium sets up fluorescence in the living being at the site of disease. If Dr. Jacobi would add to his methylene blue the treatment by the *x*-ray and the radium, it would probably be a still further advance over his present splendid results.

NOSTRUMS AND FRAUDULENT METHODS OF EXPLOITATION.*

L. F. KEBLER, Ph.C., M.D.

Chief of Drug Laboratory, Bureau of Chemistry, U. S. Department of Agriculture.

WASHINGTON, D. C.

The charge is frequently made that, in discussing the so-called "patent medicines," writers and speakers are extremely uncharitable in that they do not even attempt to differentiate between the good and the bad, but class them all under the unsavory term "nostrum," which em-

* Read in the Section on Pharmacology and Therapeutics of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

* Published by permission of the Secretary of Agriculture and the Postoffice Department.

braces everything that pertains to charlatanism and fraud. In order that there may be no misunderstanding, permit me to state at the outset that in this paper nothing will be considered except what will be denominated by the most charitably inclined as nostrums.

The chief transgression of nostrums lies not so much in the composition of the remedies as in the methods used for exploiting them. Most of the medicines employed by nostrum venders consist of one or more drugs of recognized merit. The fraudulent element lies, to a very large extent, in the mystic, misleading and deceptive advertising literature employed for exploiting them. It seems that the more extravagant and exaggerated are the claims made for a remedy the better it succeeds. It must, however, be stated that there are some mixtures which are considered as good "repeaters" and which depend largely for their success on the presence of some habit-forming drug.

Promoters of nostrums take advantage of many features that have been or are at present prominently before the medical profession and which have been, in a measure, popularized by the lay press. Purported wonderful curative virtues of radium are called into vogue, the efficacy of electricity is drawn on, the heralded value of lecithin as a brain food is not forgotten, new drugs claimed to be found in foreign lands are utilized, and even the physical laws have not escaped, as is shown by the mechanical appliances utilized for increasing the supply of blood to the generative organs by means of vacuum apparatus.

Many of the remedies might be called "cure-alls," but for convenience the following classification, based on the claimed curative features, is employed.

HAIR RESTORATIVES.

"ANTI-KINKINES."

The mixtures represented by the above term are advertised in such papers as are circulated to a considerable extent among the colored race. The claims made for them are that they will straighten or make straight kinky, knotty, curly hair, produce a luxuriant growth of hair, and make gray hair return to its original color. The advertisements generally employed by these concerns usually represent the cuts of the "before" and "after" treatment, intending by so doing to give the impression that the remedy advertised produces remarkable results.

"CLOSSINE."

"Clossine" is advertised by the Bruno Manufacturing Company, Boston. It is an ointment, consisting for the greater part of petrolatum. This remedy does not claim to take the kink out of the hair, but simply states that it will make it straight. It is also represented that "Clossine" "turns gray hair dark," which was questioned when the article first came up for investigation. In reply the manufacturer submitted a sample colored black, and represented that this particular form of "Clossine" was employed when it is desired to make gray hair black. The mixture is the same as generally employed, the difference being only that a black dye was used instead of some other color. The first sample examined was colored green, and if the same logic is followed out green hair would result when the green ointment is applied, a chameleonic curiosity brought up to date.

"GLOSSINE."

This remedy is advertised by the Helen Martin Toilet Company, Richmond, Va. It is represented that the mixture will "restore gray hair to its former color;" also that it will make the hair "grow out on bald spots." An investigation showed that the mixture employed contained the following ingredients:

Quinin Sulphate.	Oil of citronella.
Resorcin.	Oil of bergamot.
Petrolatum.	Tr. cantharis.
Stearic acid.	Harmless green color.
Paraffin.	

Virtually no defense was made when the above firm was confronted with the fraudulent nature of its claims. While it must be admitted that some of the ingredients present in the formula are generally recognized as having some virtue in favorably influencing the growth of hair, exactly on what remedies is based the claim that it will make hair "grow out on bald spots" it is difficult to understand, and the company did not throw any light on this point, much to the sorrow and regret of many of us.

"KINKINE."

The mixture employed under the above name consists of cocoanut oil and crude petrolatum, the mixture being flavored with oil of bergamot. One of the fraudulent schemes employed by this firm, which is somewhat novel for this class of remedies, is the claim that the marvelous properties possessed by the mixture were discovered by a famous English physician who, an investigation showed, was purely an imaginary individual.

"OZONIZED OX MARROW."

This remedy is distributed by the Ozonized Ox Marrow Company, Chicago. It is represented as a wonderful discovery and that it makes kinky hair straight. The "before" and "after" treatment pictures referred to above are very generally employed. Examination shows that the composition of the preparation consists of lard, beeswax, castor oil, beef marrow, gum benzoin, oils of orange, lemon, cloves, lemon grass and lemon flower. The name "Ozonized Ox Marrow" itself is a fraud, because, first, it does not contain any ozone, and, second, it is impossible to ozonize such a mixture. Some experiments were made to ascertain whether there was any possible basis for the claims made by this firm, which resulted in the fact that this mixture has no more virtue in causing kinky hair to assume a straightened appearance than any other ointment consisting of similar but entirely different ingredients, neither having such properties.

"STRAIGHTINE."

This is manufactured by the Nelson Manufacturing Company, Richmond, Va. It is represented that "Straightine" makes kinky, curly hair straight and that it is unlike any of the other preparations on the market. "Nelson's Straightine, the latest discovery for making Knotty, Kinky, Curly Hair Straight." The mixture employed for the purpose of accomplishing these marvelous results consists of petrolatum 90 parts, purified beef suet 10 parts, and oil of bergamot to give a suitable flavor.

CONSUMPTION CURES.

"EAST INDIA CONSUMPTION CURE"—DR. STEVENS.

The promoter is a Mr. W. A. Noyes, Rochester, N. Y. The scheme employed is to advertise in local newspapers "a free treatment for consumption," giving at the same time the formula of the medicinal compound to be used with instructions that if the prescription can not be filled by the local druggist to advise the advertiser of this fact and forward the necessary amount of money and the prescription will be filled from headquarters. The

published prescription contains a number of coined names which are not familiar to the druggist, neither can he nor any one else find the same in either ordinary or extraordinary pharmaccutical literature. Among these names are "Asiatic Halish Sativa," "Diosmæ" and "Cashgar." The invariable result is that the druggist is unable to comply with the request of the individual delivering the prescription, and if the party desires to secure the remedy it will be necessary to comply with the suggestion contained in the advertising literature, namely, to forward the prescription to the advertiser.

It is held out in the advertising literature that the chief active ingredient of the medicine is cannabis sativa. On investigating a sample of the material it was found to contain the following ingredients:

Cinchona bark powdered.	Rochelle salt.
Ipecac.	Morphin.

While a combination of the above character is useful as a medicinal remedy, there is no truth whatever in the representations and claims that it is a consumption cure. It is a snare and a delusion in that it robs the unfortunate victims of valuable time which, if utilized by the proper open-air treatment, might result in the restoration of health.

In this connection it might be of interest to note that the scheme employed by this firm, namely, the publishing of prescriptions containing a number of coined names which are known only to the promoter is frequently employed by unprinicipled advertisers. The prime object, of course, is to compel would-be patients to forward prescriptions to the office of the firm advertising same for compounding. The filling in some cases requires money in advance, but frequently the prescription is filled on the most trivial pretext and sent by express c. o. d. If the prospective patients are disinclined to pay for the package, a bluff is sent from the office that an order is filed with the firm. The above scheme also in a measure discounts the local druggist in the eyes of the patient because he is led to the belief from the advertising literature that the formula is readily filled by a competent druggist. This is an unjust reflection.

"LUNG-GERMINE."

A remedy advertised by the Lung-Germine Company, Jackson, Mich. Not one of the members of this company possesses so much as a high school education, to say nothing of medicine. The claims made by this company are clearly indicated by the following quotations taken from the literature employed:

"Consumption Cured by Lung-Germine."

"Consumption and all diseases of the throat, lungs and bronchial tubes permanently cured by Lung-Germine."

"Permanent cure for Consumption."

"The permanent cure of Consumption."

Analysis of the sample submitted shows that it is simply an hydro-alcoholic solution, containing 0.72 per cent. of ferric sulphate, 1.11 per cent. of magnesium sulphate, 0.03 per cent. of manganese sulphate and 9.08 per cent. of free sulphuric acid. During an interview the charge was made that the chemist did not know his business, because he failed to find "Ochra" (an iron ore) which was present. The history of the purported discovery of "Lung-Germine" is similar to that of many other fraudulent remedies. In this case the discoverer happened to be "an old German doctor-scientist who lived in Hamburg, Germany." This doctor "at last succeeded in finding a combination or formulæ that would actually destroy tubercle bacilli, regardless of their localization, without injury to the patient. This is the underlying principle by means of which "Lung-Germine" is claimed to eradicate tuberculosis from the system. To quote again:

> The immediate and direct operation of Lung-Germine is the destruction of the disease germs, whether they be located in the lungs, bronchial tubes, glands of the throat or neck, or in any other organ of the human system, is entirely immaterial. . . . The lungs, as a matter of fact, are very sensitive organs, and when these germs are being torn from their lodgments and discharged together with the impurities and secretions, it often weakens the patient considerably. *This is the most important period of the whole treatment and the turning point to recovery.* . . .

It is almost unnecessary to state that it is well known that there is no single medicine or mixture of medicines which can enter the living tissues of the human system and destroy the tuberculous germs, and, furthermore, there is at present no known medicine which can cure consumption.

Throughout the advertising literature accompanying "Lung-Germine" the representation is made that "Lung-Germine" is a positive cure for consumption. This is also indicated by the guarantee slip which the patient is requested to fill out and return to the company. The guarantee is, in substance, that the company will return all money paid to the Lung-Germine Company for the first month's treatment of "Lung-Germine," provided no benefit or favorable changes are made in the patient's condition during this time. The guarantee, however, is quite a different thing from the representations made by the company, namely, that "Lung-Germine" will effect a permanent cure. The price of a two-ounce bottle is $5.00.

PLASTERS AS POSITIVE CURES FOR CONSUMPTION.

The company promoting this scheme is located at Camden, Maine. The plaster employed is similar—except in multiplicity of drugs utilized—to those commonly used by the medical profession and the laity for the treatment of certain affections. The composition of the plaster as represented by the company and confirmed in part by analysis is set forth by the following formula:

140 lb. Rosin.	2½ lb. Venice turpentine.
20 lb. Tar.	1¼ lb. Oil of hemlock.
5 lb. Mutton tallow.	1¼ lb. Oil of red cedar.
10 lb. Burgundy pitch.	1¼ lb. Oil of origanum.
10 lb. Beeswax.	1¼ lb. Laudanum.
5 lb. White pine turpentine.	1¾ lb. Camphor gum.
	5 oz. Tartar emetic.
2½ lb. Balsam of fir.	

With these plasters it is represented not only to be able to cure consumption, but "Lung Complaints, and all Bronchial Troubles, Kidney Diseases, Heart Diseases, Liver Complaints, Dropsy, Female Weakness, Sore and Weak Eyes." It is the height of folly for any individual to claim that a simple plaster will cure all the diseases contained under the above headings. One of the reasons advanced for the superiority of the plasters is that they are spread by hand and not by machinery. They certainly contain nothing to warrant these representations, neither is the effect produced by the application of the same such as to warrant them. To show up the above ridiculous features it is only necessary to enumerate such diseases as chronic bronchitis, bronchiectasis, bronchial asthma, emphysema, gangrene and abscess of the lungs, as well as Bright's disease, heart disease due to mitral lesions, dropsy due to kidney or heart disease, etc. Exactly in what manner plasters of the type represented can have any influence on sore or weak eyes is difficult of comprehension.

The manner in which it is claimed that these plasters act is set forth in the following quotation:

The remarkable cures performed by these plasters are brought about by their action in drawing from the body and absorbing the poisonous germs of disease, and when one has been applied on the affected part of a person for a few days, it will become so impregnated with disease that it can absorb no more, therefore the necessity of changing for fresh ones often.

It is difficult to understand in what miraculous manner these plasters are able to draw from the body and absorb the poisonous germs of diseases.

The advertising literature contains numerous testimonials on which evidently are based the following misrepresentations relating to what these marvelous plasters are known to cure:

SOME OF THE DISEASES ORDWAY PLASTERS ARE KNOWN TO CURE.

We have on file, and can produce, unsolicited testimonial letters covering all the diseases mentioned below, either from the people themselves or actual eye witnesses. What stronger evidence could we give? Consumption, Rheumatism, Pneumonia, Fever, Lame Back, Lame Side, Female Weakness, Sore Lungs, Sciatica, Dropsy of the Kidneys, Kidney Trouble, Asthma, Heart Disease, Diphtheria, Dyspepsia, Bright's Disease, Backache, Lumbago, Bronchitis, La Grippe, Catarrh of the Stomach, Neuralgia and Sick Headaches, Abscess, Sprains, Cuts, Goiter, Sore Breast, Blood Poison, Nervous Prostration.

It is well established at present that the vast majority of testimonials are either fraudulent or have a questionable cause for existing.

"TUBERCULOZYNE."

This remedy is placed on the market by a firm located at Kalamazoo, Mich. It is very interesting to note that the claims made are only for the cure of consumption.

Two liquid preparations are employed, one colored amber with caramel, and another red with an anilin dye. The chief active constituents of the red medicine are alcohol and phosphatic material. Those of the amber-colored preparation are alcohol and a small quantity of an organic copper salt. It is also claimed by the firm to contain heroin. The presence of this, however, could not be established, and even if present it certainly does not possess a curative effect for consumption.

A careful investigation of the remedy discloses the fact that the virtue of this medicine is claimed to reside almost solely in the small quantity of organic copper salt present. An extended investigation was entered into for the purpose of ascertaining to what extent such a copper salt was known by the medical profession to be of value in the treatment or cure of consumption, and no one appeared to be familiar with any properties inherent in organic copper salts that would be useful in the treatment or cure of consumption. It was found, however, that a considerable number of experiments had been made by a French physician in some of the French hospitals with certain organic salts of copper, and, according to his results, such copper salts appear to have a beneficial influence in the treatment and cure of consumption, and when the case came up for final hearing this was the evidence presented by the company to show that it has a substantial basis for its remedy. Under the conditions it was difficult to assert that the remedy was not consistent with its claims. This brings out one of the most difficult features constantly being met with in dealing with these products. Medical literature teems with just such things as these, and it is not difficult to find evidence apparently of an authentic character to bolster up almost any fraudulent claim. Such is not only the case with past records, but current literature is following in similar footsteps. An interesting feature in connection with the treatment of this remedy is that the general directions prescribe the regularly recognized open-air treatment, coupled with a careful regulation of the diet. This is undoubtedly the basis of any success that may result from the use of this remedy rather than the medicine itself.

CURE-ALLS.

"AMERICAN HERB CURE."

The above name is employed by a Dr. Munroe, doing business throughout the states west of the Mississippi River. The scheme employed is that of an itinerant drug vender. The claims are those usually represented by men of this type, namely, cure-all, as is clearly indicated by the following extract taken from the advertising literature:

It will remove all animal parasites from the system; positively cures Rheumatism, Neuralgia, Ague, Catarrh, Scrofula, Syphilitic Humors and is a Specific for Liver and Kidneys.

The representation is made that a number of different mixtures are employed for the cure of different affections. An investigation, however, shows that the medicines marked 1, 2 and 3, respectively, are of one and the same composition, namely, senna leaves, black cohosh root, burdock root, mandrake root, colocynth apple, aloes, capsicum, and sassafras. The manner in which this mixture is employed is simply to make an infusion and take of the resulting tea as indicated by directions accompanying each package.

To illustrate the absurd features contained in this treatment, it is necessary to refer only to a case that came under investigation, namely, that the said Dr. Munroe took for treatment and represented to effect a permanent cure of a case of diabetes mellitus for the consideration of $30, and if he failed in making a cure the money would be refunded. It is only necessary to state here that the case was not cured and that Dr. Munroe did not refund the money. The reason set forth by him was that the patient did not represent to him the actual condition of the disease, that instead of its being in the incipient stage it was actually in the chronic condition. This latter point is brought out to show the schemes usually resorted to for the purpose of evading the return of money once in possession.

"FORCE OF LIFE"—REMEDIES EXPLOITED BY THE FORCE OF LIFE COMPANY, NEW YORK CITY.

According to the advertising literature, these remedies embody what might be considered some of the latest achievements both in chemistry and medicine. The sheet anchor of the whole system appears to reside in the chemical compound known as lecithin, "The Force of Life," and the recently discovered chemical element, radium. The literature which sets forth the virtues of lecithin describes in most glowing terms how Dr. Hadley had discovered "in the sheen of the midnight glow" a method for making lecithin synthetically. It is represented that lecithin possesses the power of rendering the human system immune to the invasion of bacteria and that it actually kills microbes and germs, thus preventing them from producing disease.

The preparations employed by this firm are represented in the form of liquids, tablets and capsules. Four liquid preparations were submitted, marked "First Week," "Second Week," "Third Week" and "Fourth Week," respectively, leading to the belief that they are either of different strengths of the same medicine or solutions containing different ingredients. An examination, however, showed that they are essentially of the

same composition, differing only slightly in the percentage content of the several component constituents. The following results represent the approximate average composition of the four packages:

	Per cent.
Water	71.53
Alcohol, by weight	7.00
Volatile acids as acetic	0.61
Non-volatile acids as tartaric	0.70
Sugars	3.96
Glycerin	10.18
Glycerophosphates	2.89
Undetermined	3.13

As above pointed out, lecithin is the agent on which is largely based the wonderful virtues of these remedies. A careful search for this compound was made, but it could not be detected.

Two kinds of tablets were also submitted, one lavender in color and the other yellow. The yellow tablets contain terpin hydrate, heroin and licorice root, and the lavender tablets contain inspissated oxgall, pancreatin, colocynth extract, quinin hydrochlorate, extract of nux vomica, extract of taraxacum, and sodium and calcium glycerophosphates. It was impossible to establish the presence of lecithin in either mixture.

The capsules were designated "Life-Ray Capsules" and were claimed to contain either radium or to be charged with radium. A careful examination of the capsules and their contents shows that they do not possess any radio-activity, but, on the other hand, consist chiefly of starch and calcium sulphid. It was represented that these capsules could not be purchased, but were simply loaned to the patient as an adjunct in the treatment with the other remedies.

Had Dr. Hadley succeeded in preparing lecithin artificially it would certainly be considered a "marvelous discovery," but the simple fact that none of the medicines examined contain this compound indicates that he is not taking advantage of his discovery. A considerable number of observations have been made relative to lecithin as a medicinal agent, but thus far no one is able to point to any noteworthy results. Whether lecithin will ever attain the eminent position medicinally ascribed to it by some remains for the future to demonstrate. It is a well-known fact that this chemical is present in nerve tissue and is a common constituent of many food products, such as the yolk of eggs, beans, peas, lentils, milk, etc. Exactly in what manner and in what form lecithin is absorbed and utilized is not definitely known, but it seems singular that lecithin isolated by solvents from different sources and given in minute doses should possess the claimed extraordinary virtues while the influence of the comparatively large amounts taken daily with food seems to be lost sight of.

"NUTRIOLA."

The methods employed by the promoters of the remedies sold under the above title have been made public in The Journal.[1] A considerable number of mixtures are used to meet almost all conditions of impairment. All of the medicines employed consist of useful ingredients, in various combinations, similar to those commonly employed by the medical practitioner. They are all of recognized merit, but possess nothing novel nor do they surpass in merit other well-known remedies of similar combinations.

It is contended that the Nutriola medicines are new because it was admitted that "at best the chemical analysis was only approximate." All the chemists in the world, severally and combined, could not make more than a partial analysis, far from proximate, of a sample of the well-known medicine, "Warburg's Tincture," and yet who for a moment, because of this impossibility, would think of calling "Warburg's Tincture" a new medicine. Again, it is contended that the chemist reported the presence of strychnin in one tablet which it does not contain, but it does contain "a small amount of solid extract of nux vomica, belladonna, etc., combined with other valuable chemicals." The company also contended that a certain red tablet contained, among other valuable ingredients, iron peptonate and manganese dioxid, and a yellow tablet contained pepsin, pancreatin, Taka-diastase, aromatic powder, etc. When, however, informed that the red tablet was simply Blaud's Mass and in the yellow tablet it was possible to recognize positively only one medicinal agent, viz., ginger, it was admitted that tablets containing such ingredients were used at one time. The yellow tablets were tested for both amylolytic and proteolytic activity with negative results. The Nutriola firm at first refused to furnish the composition of its remedies, but finally did so, and all conclusions, so far as the remedies are concerned, were based on the information supplied by the company.

"SALVITA REMEDIES."

The Salvita Medicine Company, Battle Creek, Mich., announces:

> The Only Sure Cure for Nervous and General Debility, . . . Organic Weakness, Impaired Vitality, All Rheumatic Affections, Heart, Stomach, Kidney and Liver Complaints, Female Troubles, Catarrh of Any Organ and All Chronic and Wasting Diseases.

It is also represented that these remedies will conquer all physical pains and bodily weakness and are:

> A true specific for all cases of addiction to liquor, morphin, cocain and tobacco habits. . . . Cures all blood disorders. . . . It does not contain any alcohol or opiates.

The patient is also led to the belief that all these wonderful results are produced without the use of drugs.

Examination of the remedies employed by this company shows that they are possessed of the usual medicinal agents employed for treating various affections. The "Nerve Tonic" contains hypophosphites, nux vomica, clover tops, sarsaparilla, gentian, etc. The "Salvita Oil" is nothing but an ordinary liniment, the chief constituents of which are turpentine, gum camphor, capsicum and castile soap. Among the other preparations employed by this firm are "Kidney and Bladder Tablets," "Liver and Constipation Pills," "Cold and Lagrippe Ovules." It is represented that the chief ingredients contained in the "Cold and Lagrippe Ovules" are quinin sulphate, ammonia muriate and camphor. An investigation showed that these pills contained neither quinin sulphate nor ammonia muriate, but in place of them acetanilid is employed. Attention also must be called to the fact that it is represented in the advertising literature that these preparations do not contain any opium. This representation is false, opium being one of the chief constituents of some of the preparations. From the above information it can readily be seen that a vast majority of the representations made by this firm are false and fraudulent.

(*To be continued.*)

1. The Journal A. M. A., April 28, 1906.

Naming of Carbon Compounds.—One: This syllable indicates the ketone group, R′.CO.R′, thus propanone or acetone is $CH_3.CO.CH_3$.—*Pharm. Rev.*, August, 1906.

UTILITY OF SALINE SOLUTION IN TREATMENT OF FEVER.*

J. MADISON TAYLOR, A.B., M.D.

PHILADELPHIA.

Increasing experience in the employment of physiologic saline solution (6/1000) by the mouth in all febrile states in children encourages me to offer present certain conclusions. This solution was formerly and erroneously called "normal salt solution." My findings are not sufficiently comprehensive as yet to report in full, but this shall be done later.

In a paper[1] read as part of a symposium on pneumonia before the Medical Association of Greater New York, Dec. 11, 1905, the rationale and value of the measure was outlined, with some items of history and personal experience.

The use of salines by hypodermoclysis and later by enteroclysis has become an established form of treatment affording relief in many exceptionally severe disease states. The results noted in patients *in extremis* have been pretty well established to be of more than partial value. The effects attributed to this agency are variously interpreted. In this short communication it must suffice to outline the physiologic warranties and to point out such explanations of the indications as are so far acceptably offered.

NEED OF SALINE SOLUTION.

Biologically it is admitted that, our origin being from marine forms of life, our cells still retain certain features exhibiting marine characteristics. The fluid media, the body fluids, the blood, depend for their most important activities chiefly on an adequate proportion of chlorid of sodium, whatever rôle the other salts may play. The significance of this fact was clearly set forth by Sajous,[2] who made plain that the chief rôle, in the maintenance of the integrity of the blood, is played by the status of its alkalinity. Some distinctly original observations and conclusions are presented bearing practically on our interpretation of vital phenomena, fully sustained by citations.

A brief outline of the clinical bearings of these facts may serve as clinical indications. The plasmatic salines are supplied variously in the food in health, as condiments and as constituents of certain articles, but in disease a restriction and alteration of customary diet, anorexia, etc., cuts this down. The outgo proceeds unchecked, in many conditions it is markedly increased. There being no intrinsic reserve, since the source of supply is wholly external to the organism, the tissues must soon suffer a saline starvation, with its obvious consequences: impairment of cellular interchanges, osmosis, diapedesis, etc., but especially a lowering of the oxygen-carrying power of the plasma. In my paper[1] referred to it is said, whatever theory of immunity we adopt, whether we conclude with Büchner that the blood protects the body through the presence in this tissue of "alexins," whether, with Ehrlich, we grant the tissue cells the power to secrete "receptors," whether we agree with Sajous[2] that the internal secretions supply the needful protective agents to the blood, the fact remains that the life fluid is unquestionably endowed with a substance capable of staying the hand of death when conditions are such as to enable it to act unhindered. "We know now," recently wrote Behring, "that immunizing antibodies regularly appear in the blood whenever an infectious disease terminates in recovery." Is this not the one feature of the problem which should command our keenest interest? Have we not here the one greatest weapon through which it is possible to reach and overcome deadly pathogenic elements? It is to this weapon and to the preservation of its integrity as a potent means of attack that reference is here made. We are looking on all sides for immunizing sera, which, like antitoxin in diphtheria, will enable us to cope with the great scourges of humanity, among which pneumonia is rapidly taking the lead. In a recent address, Behring, advancing it as a biologic law, says: "Specific immunizing substances can be obtained in no other way than from the blood and organic juices of individuals who have passed through the diseases against which we wish to produce immunity." Now, since saline solution can, as proven experimentally, maintain the blood's antitoxic properties, it can do so only by enabling these blood and tissue juices to act efficaciously and specifically, and, according to Sajous, the early use of saline solution, in all febrile infections, must, therefore, produce the effects that we are trying to obtain from specific sera.

We fail to preserve economically the integrity of the immunizing principles of the blood if we wait until the system is practically overwhelmed by toxins; until the functions of the cells that produce them are well nigh paralyzed; until the lungs are engorged to such an extent that cyanosis occurs; until pulmonary edema is present or threatened; until the overworked kidneys can withstand no further sudden assaults of toxic waste; until the blood, already poor in oxygen, can hardly bear dilution, and, finally, until the nerve centers are so dulled that they no longer respond to peripheral impressions. As well to wait for the moribund stage to occur in a case of diphtheria before using antitoxin as to employ saline solution during this stage of desperate struggle.

Very different is Sajous' conception of the importance of the early and constant use of saline solution. Here all untoward features, just reviewed, are taken into account, and the aim is eminently in keeping with the most advanced teaching of experimental research, namely, "to preserve and enhance the blood's bactericidal and antitoxic properties from the outset of the disease." This was embodied over three years ago by Sajous in a sentence which should be carefully noted, since it has already been instrumental in saving life:

> The primary effect of deficiency of alkaline salts in the blood being to inhibit nutrition, to impair the efficiency of, and finally arrest the protective functions of the organism, it constitutes one of the most active causes of death.

The practical importance of the blood's alkaline salts has been emphasized repeatedly. A brief quotation from Howell's recently published "Physiology" will suffice:

> The salts of the blood have most important functions. They maintain a normal composition and osmotic pressure in the liquids and tissues of the body, and by virtue of their osmotic pressure they play an important part in controlling the flow of water to and from the tissues. Moreover, these salts constitute an essential part of the composition of living matter. In some way they are bound up in the structure of the living molecule, and are necessary to its normal reactions or irritability.

BLOOD SALTS AND FEVER.

Now, given any disease attended by marked fever, the loss of the blood's main salt, sodium chlorid, is not replaced, owing to restricted diet, anorexia, and the many

* Read in the Section on Diseases of Children of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

1. N. Y. Med. Record, Jan. 13, 1906.
2. "Internal Secretions and Principles of Medicine," 1903. p. 778 et al.

factors which cause the patient to reduce greatly the intake of normal food. At least one-half ounce of sodium chlorid being voided daily in the urine of an adult, the time soon comes when the cells are hampered in their vital functions, they gradually cease to secrete their autoprotective antibodies, thus giving free sway to the pathogenic elements. In pneumonia especially, the cells hold their sodium chlorid in reserve and the salt soon ceases to appear in the urine. But watch these cases; notwithstanding Nature's attempt to thwart a desperate situation, the patient steadily sinks, deprived of that which represents in this connection their *pabulum vitæ*. Sajous' teachings are thus summarized:

> Steadily as the febrile process advances the salts are consumed, and being inadequately renewed, the vital and defensive functions are increasingly hampered until life ceases.

Hence he advises early and continuous use of saline solution, from the outset, at the end of all fevers, so as to avoid any chance of reaching an individual danger limit.

What connection is there between a febrile process and the adequacy of the blood salts? In reply I quote from a book[3] published since the above teachings were placed on record. Referring to the diminution of the blood alkalinity during fever, the author says:

> The cause of this change is unknown, but whatever the true explanation may be, it is probable that the change is highly important for the organism, for it is an unfavorable sign in febrile disease, and it is known that diminished alkalinity of the blood goes hand in hand with increased susceptibility to infection.

Sajous has already adduced considerable experimental evidence to the same effect, including that contributed by Metchnikoff, Behring, Nissen, Paul, von Fodor, Blumenthal, and many other authorities.

My friend, David Riesman, says that he is inclined to attribute my effects chiefly to the ingested water. His rule, in adult cases of fever, is to insist that they take four ounces of water every two hours. This induces polyuria, up to 80 or 90 ounces daily. He is convinced that nervous symptoms are thereby made less pronounced; there is less tympany and the tongue is more moist. The bowels are not made loose. My findings are on similar lines, but the bowels seem to do better for the salt. Valuable as the use of excessive amounts of water undoubtedly often is, we should approach the subject with caution, having due regard to the possible dangers of injudicious urging to take as much as possible. In this connection it is pertinent to refer to the suggestive paper of Morris Manges,[4] who also quotes Kraus.[5] In his (Kraus') recently published treatise on the "Dietetic Treatment of Cardiac Disease" he says:

> Water once within the body is no longer (merely) water, but must be considered in its relations to the various salts, colloids, etc., with which it comes in contact. . . . Every drop of water introduced into the system must be excreted directly or indirectly, by the heart . . . increasing the demands on that organ.

He agrees with von Noorden that the increased drinking of water does not materially affect the breaking down of albumins. The increase of metabolism, on the whole, is great, but takes place at the expense of the carbohydrates and fats. An important point quoted from Baruch is that, whereas ingestion of hot water raises pulse rate and lowers blood pressure, cold water diminishes pulse rate and raises blood pressure, but water of 60 F. has very little effect. In a case in which the heart is no longer competent or weakened, we do well to heed the fact, pointed out by von Noorden and his pupils (Ritter, Dapper, Reetkowski and Mohr), that the daily quantity of water should be restricted to one and one-quarter liters (about 2½ pints) daily, exclusive of fluids in food. The elimination of important salts, he says, is not lessened by this restriction. Manges recommends that in infectious diseases and septic conditions the water should be given cold and in frequent small quantities.

3. Lazarus Barlow: "General Pathology," 1905, second edition.
4. "Dangers of Excessive Water Drinking," N. Y., Med. Jour., Jan. 21, 1905.
5. Handbuch der Ermalrungs Therapie, von Leyden und Klemperer, 1903.

AUTHOR'S METHOD.

My own method is to give to all children, in whom a rise of temperature occurs, freely of the normal physiologic saline solution (6/1000) usually half an hour before feeding time, every three hours. They are encouraged to drink all they will. For infants the saline solution (6/1000) is used in the modification of milk and in diluting whatever food is used. Children rarely object to the saline taste, which, indeed, is scarcely perceptible, and soon become accustomed to it. My head nurse, service of 1905, Miss Hill, tells me children occasionally noticed its unusual taste, but soon grew to like it. During my present service, Miss Fox, head nurse, tells me she observes no objections at all. Both volunteered the remark that the cases progressed apparently more satisfactorily under the saline régime.

As to the elimination of skin and kidneys, always difficult to estimate in young children, we have not secured exact data. In another year, with coöperation of my colleagues, it is hoped to make a more complete study of these points. It is likewise obviously difficult to institute accurate comparisons with cases treated otherwise. It is my hope to interest physicians whose opportunities for clinical experience are large, to employ this exceedingly simple, convenient and eminently rational auxiliary treatment. It furnishes, in reality, a form of food and, to my mind, is the essential principle of febrile dietetics.

CASE SUMMARIES.

Appended are the notes of eleven cases from my present service, chosen solely on account of their extreme severity, all showing grave complications. Four of these patients died soon after admission, being classified as moribund; yet two of these survived longer than was deemed possible.

CASE 1.—A. E., aged 10 months, was admitted April 3, 1906, ninth day of double pneumonia, accompanied by pronounced meningeal symptoms. Temperature for four days, 102 to 104.5, pulse 130 to 180, respirations 40 to 60. On fourth day temperature dropped by lysis, with corresponding drop of pulse and respiration, meningeal symptoms cleared up gradually and patient was discharged cured two weeks after admission.

CASE 2.—H. M., aged 9, was admitted April 27, 1906, second week of typhoid fever, along with bronchopneumonia at right apex. Temperature 102 to 104 for seven days; pulse and respiration correspondingly high. Dropped by lysis eighth day after admission. No other complications. Discharged cured May 25, 1906.

CASE 4.—W. H., aged 1, was admitted May 1, 1906; double pneumonia. Patient was cyanotic, temperature 99 to 101, pulse 160 to 170, respirations 90 to 100. Died 16 hours after admission.

CASE 5.—J. W., aged 22 months; had pneumonia six weeks previously in hospital. Patient returned May 7, 1906, with double bronchopneumonia. Temperature 100 to 105, pulse 140 to 180, respirations 50 to 90. Distressing dyspnea. Died May 12, 1906.

CASE 6.—D. F., aged 8, was admitted April 1, 1906, on probably the third day of a typhoid, along with pneumonia at right apex. Temperature 103 to 105, pulse 120 to 150, respirations 36 to 56 until the ninth day, when temperature dropped by lysis. During the first week there was marked distension of abdomen, lasting about three days. Patient was discharged cured April 30, 1906.

CASE 7.—J. DeG., aged 6, was admitted April 1, 1906, fourteenth day of typhoid, with meningeal symptoms. Temperature first seven days 101 to 104, pulse 120 to 160, respiration not accelerated. At the end of second week (nine days of disease) the temperature was normal. Two days later patient showed symptoms of pneumonia. Temperature for next seven days 101 to 104.5, pulse 140 to 160, respirations 40 to 54, dropped by lysis. Patient, who had been sullen and rather stupid from time of admission, brightened up rapidly on seventh day and was discharged in good condition May 28, 1906.

CASE 8.—D. R., aged 10 months, was admitted April 1, 1906, with severe pneumonia, practically moribund. Temperature 103 to 104, pulse 140 to 160, respirations 32 to 70. Lived 48 hours after admission.

CASE 9.—M. W., aged 1, was admitted May 15, 1906, with pneumonia and extremely severe gastroenteritis. Patient was poorly nourished and apparently in dying condition. There were seven or eight stools daily, almost pure mucus. Temperature 98 to 102, pulse 140 to 200, respirations 30 to 80. Lived one week.

CASE 10.—W. M., aged 10 months, was admitted April 4, 1906. Double pneumonia, involving entire left lung and apex of right lung. Life despaired of daily for 10 days. Temperature 102 to 106, respirations 40 to 72, pulse 120 to 180 for six days, then 99 to 104 next nine days, and 100 to 103 next 10 days. Normal at end of fourth week. There was more or less gastrointestinal disturbance during entire four weeks. Child was discharged in good condition May 26, 1906.

CASE 11.—L. D., aged 1, was admitted April 5, 1906, desperately ill with double bronchopneumonia. Temperature ranged from 99 to 105 for four days, then dropped to normal. Next day temperature rose to 105, pulse to 180, respiration to 60, and remained high for six days, then dropped by lysis. In 24 hours temperature rose to 103, pulse to 170, respiration to 50. Temperature dropped again in seven days and remained normal. There was marked gastrointestinal disturbance during second and third week of illness. The patient was discharged perfectly well May 1, 1906.

ADMINISTRATION OF SALINES BY THE MOUTH.

The use of salines by the mouth has been employed by Dr. J. B. Todd, of Syracuse, who twice reported his experience.[6] He gives convincing reasons for preferring the administration of salines in this way rather than by the surgical method of hypodermoclysis or the uncertain one of enteroclysis. He asserts rightly that it is not physiologic to crowd a large amount of salt into the tissues at one point and one time. A continued supply is vastly better from all standpoints.

Recently Garcia Y. Marin[7] described his success in the employment of massive injections of normal salt solution in the treatment of typhoid fever. He claims that these large daily saline infusions amply fulfil the chief indications, which are (*a*) to destroy the etiologic factors; (*b*) to supplement natural defenses of the organism against infection, and (*c*) to favor elimination of toxic principles, the retention of which causes the typhoid states. His results were an increase of blood tension, augmentation of the quantity of urine, a transitory rise of temperature followed by reduction, abundant bowel discharges and profuse sweatings, excitation of the glandular functions and nervous forces.

6. N. Y. Med. Jour., May 20, 1905; also N. Y. Med. Record, April 14, 1906.
7. Le Jour. de Med. et Chir., Montreal, March, 1906.

DISCUSSION.

DR. H. C. WORTHINGTON, Oak Park, Ill., said that he has always given mutton or chicken broth along with the food in the treatment of febrile cases, and he believes that stimulation has come from the salt in the broths. He believes that it is a thoroughly good thing to add these broths to the milk diet.

FOREIGN BODIES IN THE BRONCHI.

THEIR SUCCESSFUL REMOVAL WITH THE BRONCHOSCOPE.*

EMIL MAYER, M.D.
Adjunct Attending Laryngologist to the Mt. Sinai Hospital and Chief of Clinic, Ear and Throat Departments, Mt. Sinai Hospital Dispensary.
NEW YORK CITY.

There is such a variance in the character of the foreign bodies that find their way into the bronchi, and persons are so variably susceptible to their presence, some with slight complaints, others mortally ill, that the recital of individual experiences must surely help in the momentous decision we are called on to give. May we temporize, or must we act at once? To help in this elucidation is my reason for presenting my own observations of five cases seen in a little more than a year.

CASE 1.—On Jan. 24, 1905, in consultation with Dr. Sidney Yankauer of this city, I saw a ten months' old boy, who, while the juice of an orange was being insinuated into his mouth, inhaled one of the orange seeds. I responded promptly, arriving an hour after the accident; the child was coughing distressfully and markedly cyanotic. The coughing soon ceased and with it the breathing became freer.

Operation.—By my advice the child was taken to a hospital, tracheotomy done, and with my assistance the seed removed by Dr. Yankauer through the bronchoscopic tube. The child already showed signs of interference with vesicular breathing and pneumonia was threatened. Only prompt removal prevented that occurrence.

This case, which has been more fully reported,[1] is especially interesting in that it is the youngest patient thus far recorded as inhaling a foreign body with successful removal by means of the bronchoscope.

CASE 2.—A child, aged 6, patient of Dr. Charles A. Elsberg, swallowed a glass-headed pin. Dr. Elsberg kindly permitted me to attempt its location by direct bronchoscopy. I was unable to introduce the bronchoscopic tube successfully, nor did I persist in many attempts, as the child was already enfeebled by its coughing and distress. As the sequel showed, even if located, it could not have been extracted in the usual manner, for on introducing a large endoscopic tube through the tracheotomy wound the pin was seen lying crosswise, and it required much bending by powerful forceps to extract it. Complete recovery followed.[2]

CASE 3.—On Sept. 28, 1905. Dr. C. A. McWilliams, adjunct attending surgeon to the Presbyterian Hospital, informed me that he had a boy, aged 5, with a foreign body in the right bronchus, and as there were no bronchoscopic instruments in the institution he was in a quandary. I cheerfully offered my services, and, as the patient was then in a comfortable condition, an appointment was made for the following day, September 29, at 4 p. m.

History.—The following history was given: On September 26, three days previous, while he was playing with some beans, he came to his mother and said that he had swallowed one. He was slightly uncomfortable, but his mother was not alarmed

* Read in the Section on Laryngology and Otology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

1. Medical Record, Feb. 11, 1905.
2. Laryngoscope, December, 1905, p. 944.

about him. In the afternoon he became somewhat blue and complained of pain behind the upper part of the sternum. The physician who was called advised removal to the hospital.

Examination.—The examination made is in the hospital records as follows, under date of September 28, two days after the accident: "All other parts are normal, but the lungs are seriously involved. The expansion is more marked on the left and the left chest is more prominent. The right percussion note is dull, on the left hyper-resonant. Auscultation sound on left loud and vesicular breathing lowered and bronchial on the right. Dulness is marked over the lower portion of the right chest, and all the evidence of occlusion of the right bronchus."

Operation.—Direct bronchoscopy under chloroform narcosis was attempted, but soon desisted, because of the very small size of the larynx. Dr. McWilliams then deftly performed tracheotomy. The foreign body was seen at the end of the brnochoscopic tube with the Killian lamp. The bean was removed with Dr. Yankauer's assistance. It was macerated and I removed it in three pieces. Dr. Northrup, who was present, examined the chest and noted the remarkable rapidity with which the lung cleared up on the removal of the obstruction. The patient was exceedingly restless during the night, respirations grew more and more rapid, the pulse weakened, and, at 8:10 a. m., September 30, he died.

Case 4.—An adult woman who had inhaled pieces of turkey bone five months previously, was under the care of Dr. Charles A. Elsberg. The case is of interest in that the diagnosis was made by clinicians originally and that one well-known authority opposed operation.

Operation.—The patient suffered so much from violent spasms of coughing that she begged for relief. Direct bronchoscopy was not attempted. I was present at the operation. Tracheotomy was done, a large endoscopic tube introduced, the Killian light thrown in and several pieces of bone were removed with alligator forceps. Recovery followed.

I have the consent of the operating surgeon to add the above case to the list of my bronchoscopic experiences.

Case 5.—*History.*—F. M., aged 9, schoolboy, living in an adjacent city, was brought to my office on April 14, 1906, with the following history: On Nov. 9, 1905, he had procured a piece of brass in a prize package which is made for the express purpose of putting over a tooth, that the child may startle other children by showing "a gold mounted tooth." A counterpart, which was shown me, had a piece of brass about three-fourths of an inch long attached to the base of a cap-shaped piece. While having this in his mouth the child inspired it and cough and dyspnea set in promptly. With this history several physicians had seen the patient but none could satisfy himself that a foreign body was present.

The dyspnea soon ceased and attacks of coughing at intervals remained. There would be rest for a time and then a most violent spasm of coughing would last unceasingly for an hour. Of late daily chills occurred, the patient was emaciated and feeble; no abnormality was found in the nose or throat; on the right side there was marked retraction of the lower border of the right lung and a whistling sound on expiration over the right bronchus. The opinion was given that there was a foreign body in the right bronchus.

Operation.—He was taken to the *x*-ray department of the Mt. Sinai Hospital and with the fluoroscope I distinctly saw the body. On April 22, 1906, he was admitted as my patient in the Mt. Sinai Hospital. On April 23, under chloroform anesthesia, several attempts were made at direct bronchoscopy, the tube finally entering. The foreign body was not visible, so I promptly did a low tracheotomy. While the assistants held the trachea apart with long silk sutures a much wider tube was introduced, the foreign body was seen in the right bronchus and removed.

On the fifth day, the patient having breathed well twenty-four hours with the tracheal tube *in situ*, corked up, the tube was removed, and on the eighth day he was discharged cured, the foreign body having been five months in his bronchus. The external wound has since entirely healed.

Of these five patients, one died. It will be remembered that in that case the foreign body had been inhaled two days previous to admission of the patient in the hospital, that the foreign body was not only of a solid nature, but of the kind that swells, and that the symptoms of pulmonary obstruction were hourly increasing. Hence, when I was notified of the presence of the foreign body and asked to assist in its removal with the bronchoscope, I feel now that I should have insisted on its immediate removal, and the patient considered as an emergency case. I had not seen the patient to know for myself his condition, as I am not connected with the hospital in question. The attending surgeon stated that at the time of notifying me the patient was in a fairly comfortable condition and it seemed as if he could well wait the customary operating hour of the next day. While the result might have been the same, its early removal would have increased the chances for recovery.

As an added lesson in the study of this comparatively recent subject, the following conclusions may be given:

1. Certain bodies may be left *in situ* for some time without producing symptoms immediately dangerous to life.

2. The presence of a foreign body of a solid nature or one that has a tendency to swell, occluding the entrance of air into the lung below it and producing symptoms that gradually become more severe, should be looked on as constituting an emergency case to be operated on at once. Indeed, we should anticipate the symptoms, as was done in Case 1, in which I insisted on immediate operation and in which the orange seed was removed within three hours of its inhalation. In this case the parents were for delay, as the cyanosis had disappeared, but I insisted on its immediate removal.

DIAGNOSIS.

Regarding the question of diagnosis: With the urgent symptoms that are present and the direct statement of the patient or witness to the accident, the diagnosis is readily made. Without immediate symptoms one would suppose a foreign body had entered the esophagus. With metallic substances the Roentgen ray is apt to be our main dependence, yet, in Case 2, the foreign body, a glass-headed pin, was not seen. Most careful auscultation will, however, aid materially. In the case of solid bodies, the absence of breathing below it, with dulness and retraction of the side will be noted. In bodies that are not entirely obstructive a musical sound on the expiratory act is heard, as was shown to be the case in Cases 2 and 5.

TREATMENT.

The diagnosis having been established, we must decide as to the manner of removal. Unless there is some reason of great importance for delay, operation should be undertaken early, as in the fewest instances may we expect the substances to be coughed up. As before stated, the operation may be one requiring prompt attention in order to save life, others may wait our own convenience as to time.

Should attempts at direct bronchoscopy be made in these cases? When we consider that the majority of these are in young children with very small laryngeal orifices, the length of time a direct bronchoscopy requires, and the possibility of injury to the laryngeal membrane, we feel that a tracheotomy is far preferable. The operation is quickly done, a much larger tube may be inserted in the trachea than could be inserted in the

larynx (in Dr. Elsberg's two cases and one of my own, the largest endoscopic tube was used) and, furthermore, we are so much nearer the foreign body for manipulation. I should, therefore, answer the question that tracheotomy with subsequent removal is by far the best method in these cases; and objection to it can not be maintained. It is a time saver. In one instance in which no haste was necessary, I timed the operator and it took 1½ minutes until the trachea was opened and ready for the tube. In the after-treatment it will be necessary to keep the temperature of the room warm, to prevent, to a great degree, the danger of pneumonia.

Special care and nursing is required for a few days, and although none of these patients was possessed of means, yet they could and did secure the needed attention. As these remarks are intended for the presentation of personal experience, no general reference to the literature of the subject is made, nor is such necessary, as the subject has been so well presented with a reference of 50 recent cases in a paper by Thomas A. Clayton.[3]

CONCLUSIONS..

As a result of my experience, I conclude:

1. The diagnosis may often be fully established by auscultation and percussion and the use of Roentgen rays may not always be depended on.
2. Solid bodies producing occlusion should be operated on immediately.
3. Tracheotomy affords by far the best chance for the patient.
4. The public, as well as the profession, is in great debt to Professor Killian for his valuable instruments and his work on "Bronchoscopy," resulting in the saving of many lives that otherwise would have been lost.

25 East Seventy-seventh Street.

(*Continued on page 1586.*)

DIAGNOSIS OF TUBERCULOSIS IN INFANTS AND CHILDREN.*

EDWIN E. GRAHAM, M.D.
Professor of Diseases of Children, Jefferson Medical College.
PHILADELPHIA.

The cause of tuberculosis is the tubercle bacilli. It is an infectious disease. About 8 per cent. of all children who die show at autopsy evidences of tuberculosis. Tuberculosis in one or in both parents is a distinctly predisposing cause, and poor hygiene, improper food or, in fact, any influence of a debilitating nature predisposes to the disease. Bronchopneumonia, pleurisy, repeated attacks of bronchitis or chronic throat conditions and the acute infectious diseases, pertussis, measles and influenza, all predispose the child to subsequent tubercular infection.

Tuberculosis is common in children over 4 months of age, but congenital tuberculosis is rare and the number of cases reported of children who die of tuberculosis before the fourth month are probably many of them congenital. The infection may enter through the respiratory tract, the digestive tract and the skin. The latter is very rare. In a large majority of cases, probably 90 per cent., infection takes place through the respiratory tract. Diseases of mucous membranes, such as one sees in chronic throat conditions in children, especially enlarged tonsils, increase the possibilities of a tuberculous infection, as a healthy mucous membrane offers more resistance to the passage through it of the tubercle bacillus than a mucous membrane in a diseased condition. The tubercle bacillus is usually carried by air containing the tubercle of dried sputum. After penetrating the mucous membrane, the bacilli enter the lymphatic ducts and are arrested in their progress by the lymphatic glands. These glands may be those of the neck, trachea or larger bronchi. As a result of this infection the glands undergo acute inflammation and caseation or the process may be checked and encapsulation takes place, the disease being arrested permanently or perhaps only for a time. A great deal depends on the child's resistance, the process being much more likely to be checked by the lymphatic glands in a strong and vigorous child than in one which is frail and delicate. The initial lesion may be in the walls of the smaller bronchi, alveoli, or in the connective tissue of the lung.

As a diseased intestinal mucous membrane offers less resistance than does a healthy one to the passage of the tubercle bacillus, chronic intestinal disease or intestinal ulceration increases the liability of infection of the mesenteric glands. In infancy meningitis is often associated with tuberculosis in some other part of the body, and in the first two years of life tuberculosis shows itself especially in the bronchial lymph glands, lungs and brain. It is very important to appreciate the fact that tuberculosis of the lymph glands is a prominent characteristic of the disease in early infancy and childhood, and that this glandular tuberculosis may remain dormant months or years, but in the end may set up a rapidly developing tuberculosis. After the third year tuberculosis of the mesenteric glands, the peritoneum and the intestines is more commonly seen than in earlier life, but during the entire period of infancy and childhood the lungs are almost invariably involved in all cases of moderately advanced tuberculosis.

The most common form of tuberculosis is a double tuberculous bronchopneumonia, a disease running a more rapid course in infants than in older children. In this tuberculous bronchopneumonia the breaking down of the lungs and the formation of cavities is very common, and the younger the child the more rapid is this process. Simple bronchopneumonia is usually also present in these lungs. In a very large majority of cases the bronchial glands and the glands at the root of the lung are involved, one or more of them perhaps having undergone caseation, possibly ulcerating into a bronchus and rapidly spreading the disease to the surrounding lung.

The clinical picture that one meets with in tuberculosis in infancy and childhood presents many curious features often rendering an early diagnosis difficult and at times well-nigh impossible. For the sake of convenience I will describe a chronic, a subacute and an acute form of pulmonary tuberculosis:

Chronic Pulmonary Tuberculosis.—This is a form in which we have the lung bound down with pleural adhesions, portions of the lung the seat of recent tuberculous infection, other portions showing the typical evidences of old tuberculous disease, dense fibrous tissue surrounding small or large cavities or caseous masses, enlarged bronchial glands with perhaps calcification or cascation. In these cases the younger the child the less frequently do we find a complicating tuberculous enteritis. This is probably due to the fact that tuberculous enteritis in the large majority of cases is secondary in

---

* Read in the Section on Diseases of Children of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

3. American Medicine, March 17, 1906.

its nature, usually following tuberculosis of some part of the respiratory tract. Pulmonary tuberculosis in infants runs a more rapid course than in older children, hence less time is given for secondary tuberculous infection of the intestine. Abscess formation in the infant is usually present at death, but has not advanced as a rule as far as we find to be the case in older children; consequently, the amount of tuberculous material coughed up and swallowed is probably distinctly less in infants than in older children. Disturbances of digestion are very common in tuberculous infants, but they are usually dependent on the depressed vitality of the baby and its weakened digestive powers and not on tuberculous disease.

The history of these cases is often as follows: First, there is primary bronchopneumonia which runs a slow course and ends in an incomplete cure. The cough does not entirely disappear, the child's health and strength does not completely return. Some broncho-vesicular breathing and impairment of resonance remains. A second attack of bronchopneumonia occurs, and again the recovery is incomplete or the child develops measles, pertussis or severe influenza, which is followed by a rapid increase in the tuberculous symptoms. The earliest evidences of lung involvement are usually found in the upper middle part of the lung, either in front, the upper axilla or in the interscapular region; that is, in the upper portion of the lung, but not as in adults at the apex of the lung, showing clearly that the infection occurs usually through the bronchial glands at the root of the lung. The disease runs a slow course. At death cavities are usually present and are more easily recognized during life in older children than in infants. This is due to the fact that in infants cavity formation is often deep seated in the lung, surrounded by a zone of tuberculous and non-tuberculous pneumonia, and that the cavities are less likely to be walled off by dense fibrous tissue. In fact, after the eighth year of life, the disease in children approaches closely the adult type. Toward the end of life the pulmonary symptoms are easily recognized and the secondary evidences of tuberculosis in the brain, glands and peritoneum are usually distinct.

Subacute Cases.—The disease in these cases runs a more rapid course, the ordinary duration being from two to six months. The pulmonary symptoms appear early in the disease, perhaps in the very beginning of the illness, and the symptoms at this stage of the disease are those of an ordinary attack of bronchitis or of a mild bronchopneumonia. An attack of pertussis or measles in which the child recovers imperfectly, the cough persisting, the temperature remaining above normal and the child failing to regain in the proper time its former health, should make one suspicious of the development of a possible previous latent tuberculosis.

In these subacute cases, while the pulmonary symptoms are often present from the beginning of the illness, cases are not infrequent in which a gradual loss of weight and strength precede for a month or six weeks the development of the lung symptoms, or at least during this month or six weeks the cough is comparatively slight and spasmodic in type, resembling more or less the cough of pertussis.

In these cases the fever usually rises, the pulmonary symptoms progress, the cough increases in amount and the child continually loses in strength and weight, respiration becomes more rapid, the pulse increases in frequency and indigestion. resulting from the child's weakened physical condition, helps still further to reduce its vitality. Hemoptysis is rare, and the severe diarrhea with abdominal pain and tenderness indicating a high degree of tuberculous enteritis is also rare. Dropsy is occasionally met with, and when present usually indicates that the child's death is not far distant. Toward the latter part of the disease anemia becomes marked and nephritis, due to amyloid degeneration of the kidneys, may develop. The following case seen in consultation February 15, 1906, with Dr. Waldo F. Sawyer, Vineland, N. J., represents this type of illness:

CASE 1.—Oscar K., aged 5, was breast-fed until 11 months. He had pertussis at the age of 3 months and measles at the age of 1 year. He made good recovery from both. There was a maternal family history of tuberculosis.

Examination.—In the past three and one-half months he has lost 11 pounds; present weight, 29 pounds. He coughs very little except after eating. The cough is distinctly spasmodic, resembling pertussis. There is continued fever; present temperature, 101 F. There is marked enlargement of cervical glands and impairment of resonance in upper portion of right axilla with broncho-vesicular breathing. There are physicial signs of bronchitis in left lung.

Diagnosis.—Subacute tuberculosis, infection through respiratory tract, tuberculosis of the lymphatics of the neck, of the glands at the root of the lung, subacute tuberculous bronchopneumonia of both lungs.

Acute Cases.—The acute cases show tuberculous deposits scattered over and in both lungs and miliary tubercles in both lungs, and in addition a simple bronchopneumonia. Symptoms in these cases closely resemble symptoms of ordinary bronchopneumonia non-tuberculous in type. The fever is irregular, 100 to 104 F., the cough gradually increases in severity, the pulse is rapid, there is distinct dyspnea, the child rapidly loses in weight and strength and dies with all the evidences of steadily increasing weakness, and progressive development of the lung symptoms or perhaps death is due to a tuberculous meningitis. The lungs show a diffused bronchopneumonia with scattered areas of consolidation.

The following case also shows the difficulties often met with in arriving at a positive diagnosis of tuberculosis:

CASE 2.—On Feb. 18, 1906, I saw in consultation with Dr. Lowenburg the child of Dr. C. Patient was a boy, aged 2, well developed and had always been in good health. His only trouble was chronic constipation, from which he had suffered almost continuously since birth. For a month before I saw him he had continued fever of a mild type except during the ten days preceding my visit, when the temperature had reached 105 daily, with 103 as the minimum.

Examination.—His mind was clear, his pupils normal, he complained of no headache, had a slight cough, his tongue was coated, he took his nourishment fairly well. Bowels, as usual, were constipated. Lymphatics of neck and inguinal lymphatics were enlarged, upper middle portion of left lung anteriorly showed an area of impaired resonance about as large as a silver half-dollar. His breathing over this area was harsh. A blood examination showed no evidences of malarial organisms. A Widal taken three days previously was negative. Leucocytosis, 20,000.

Diagnosis.—It was difficult to make a positive diagnosis. Typhoid fever was excluded by second Widal. Autointoxication of gastrointestinal origin seemed hardly probable in view of the fact that the boy had always been constipated. Malarial fever was excluded and the diagnosis seemed to rest between a tuberculosis and a central pneumonia. Forty-eight hours later the temperature dropped to normal and remained normal; the drop of temperature being preceded a few hours by a fall in the leucocytosis to 7,000, apparently confirming the diagnosis of pneumonia.

It is often extremely difficult in the earlier stages and in the latent period of tuberculosis to collect sufficient evidence on which to base a positive diagnosis. Each case must be considered and studied separately. If the child is strong tuberculosis is not so likely as in one that has been frail and delicate. The possibility or probability of infection should be considered. Has the child lived in hygienic or unhygienic surroundings? Has its life been such as to expose it often to tuberculous infection? Has it lived in a house where a previous case of tuberculosis existed? Have there been any previous signs or even suspicions that the child has been tuberculous, as shown by its lymphatics, hip-joint disease and tedious convalescence from any illness as typhoid, pneumonia, pertussis or measles?

Protracted cases of bronchopneumonia of the subacute type followed perhaps by chronic inflammation of the connective tissue of the lung, may be difficult to diagnose from cases of subacute tuberculous bronchopneumonia. In a tuberculous form the lung symptoms may not be present from the onset of the disease, and wasting and loss of strength are usually more marked than in simple bronchopneumonia. When bronchopneumonia shows a tendency to persist beyond the usual period the possibility of its being tuberculous should be considered, and if the process is tuberculous, the fever, cough and emaciation are usually progressive. Bronchopneumonia is more often found at the lower back part of the lungs, tuberculosis at the upper portion.

Leucocytosis is usually absent in tuberculosis, unless we have a case of mixed infection. The leucocytes are, however, relatively high in infants. Digestive leucocytosis must also be taken into consideration. There is leucocytosis commonly in septic conditions, diphtheria, pneumonia, and this is of importance in summing up the evidence against the case being tuberculous. Leucopenia is commonly seen in tuberculosis and malaria, also in uncomplicated cases of typhoid fever, and if the diseases in which the number of white cells is usually diminished can be excluded with the exception of tuberculosis, it may assist in deciding the case to be of a tuberculous character. Blood cultures are often of distinct advantage in a doubtful case; 5 c.c. of blood should be secured and agar cultures made, preferably 1 c.c. of blood in five different agar tubes. This may, of course, fail, but, on the other hand, it may be of advantage in establishing a differential diagnosis from pneumonia or typhoid by showing the presence of the pneumococcus or the typhoid bacillus.

Chlorosis often presents a picture resembling closely tuberculosis of the lungs and lymphatics. The anemia may be present in a marked degree early in the tuberculosis; in fact, before the lungs or glandular symptoms are observed. According to Hayem, a true chlorosis may co-exist with a latent tuberculosis. The finding of tubercle bacilli in the sputum or stools, fever, progressive loss in weight, and a family history of tuberculosis, with perhaps the history of exposure to tuberculous infection, may enable one to make the diagnosis. Occasionally it is almost impossible to decide whether or not a tuberculous element is present and producing the anemia.

Inoculation experiments of glandular substance are often of aid in a differential diagnosis, and in the more chronic types of the disease may decide the tuberculous nature of the illness. The inflammation and caseation of a few tuberculous mesenteric glands may be occasionally shown by local tenderness or pain on pressure.

Again, tuberculous infection of the cervical lymph glands is very uncommon under 3 years of age. In fact, the younger the child the less likely are the enlarged lymphatics of the neck to be tuberculous. To this rule, however, there are exceptions, a case of tuberculous cervical adenitis in an infant of four months being recently reported by Dr. L. E. LaFetra.

In a doubtful case presenting skin eruptions, the tubercle bacillus has been recovered from the eruption, as in a case recently reported by Dr. Irving Snow of Buffalo. The failure of young children to expectorate, as they swallow the expectoration as soon as it is coughed into the pharynx, makes the sputum in these cases extremly difficult to obtain. This can be overcome by passing a soft rubber tube well in the esophagus and examining the adherent mucus for tubercle bacilli.

The examination of the fluid removed by lumbar puncture will often aid in the establishment of a diagnosis. I have used tuberculin very little, as an irregular fever, not infrequently seen in young children, renders its use of doubtful value in many cases.

In closing, I do not wish to be understood to be put on record as implying that the diagnosis of tuberculosis is as a rule difficult in the advanced stages of the disease, but this paper is presented because I am often asked to decide as to the presence or absence of tuberculosis when the symptoms are vague and indefinite. In these cases the diagnosis is often obscure, and I hope the discussion of this paper may perhaps throw some light on the differential diagnosis in children in whom the symptoms of tuberculosis are vague and indefinite.

(*Continued on page 1586.*)

Special Article

CAP AND GOWN IN MOLIÈRE.

W. C. TAIT,

Attorney for the Board of Medical Examiners of California.

SAN FRANCISCO.

In the "*Malade Imaginaire,*" Béralde, who is the mouthpiece of Molière, says to Argan, the imaginary invalid: "Yes, you have but to speak with a gown and cap and any gibberish becomes learning, and any nonsense sense"; and Toinette, the rollicking maid-servant, hastens to add: "There, sir, if it were only for your beard, that goes a great way already, for the beard makes more than half the physician." Béralde is attempting to persuade his brother Argan to become a physician in order to cure him of his infatuation for physic and the physician. But Argan, simple minded and credulous, imagines that in order to be a doctor it is necessary "to study, to know Latin, to understand the diseases and the remedies to apply," an idea that Béralde ridicules, assuring him that he already knows as much as the average physician, without ever having studied medicine, and that cap and gown take the place of learning. Argan finally yields, and he is made a doctor by a friendly faculty, after a farcical examination for which he is coached.

I had always regarded the famous scene of the reception of the Imaginary Invalid as pure burlesque, and also as a gross libel on the medical profession of the XVII century, until Reynaud's "*Les Médecins au temps de Molière*" fell into my hands. Reynaud informs us that the famous scene is by no means pure fiction, that the France of Molière abounded with friendly faculties, of whom a diploma, carrying with it the right to practice, might be had almost for the asking; and, still worse, that Montpellier, one of the oldest and most renowned faculties of Europe, was scarcely more than a diploma mill. It was a common saying at Paris, where the degree of M.D. could only be obtained by a long course of study and a term of actual experience, that to receive the cap and gown at Montpellier,

you devoted to the study of medicine "about the time it takes young birds to get their feathers." It also appears that the graduates of that faculty set up in practice at Paris, where they were arrested and prosecuted for illegal practice. A battle royal between the two faculties followed, which ran through several decades and compared to which our modern struggles with the diploma mills and their output sinks into insignificance. In fact, a parallel for the virulence and ferocity that characterized this professional struggle of the XVII century can be found only in the religious fanaticism of the period. In two respects, the famous controversy resembles that precipitated by modern boards of medical examiners as soon as they undertake to enforce the law—the Paris faculty was supreme within that jurisdiction; and in addition to invoking the law, which required of every practitioner an examination before the faculty after a full course of instruction, the faculty saw fit to go behind the foreign or provincial diploma.

Montpellier and the accused invoked the famous *ubique gentium*, the right to practice anywhere on earth conferred by her diploma and derived from the Papacy, and answered the charge of fraud in the procurement of her diploma by arrogantly pointing to her announcements. But, despite the protest and outcry of the proud alma mater, the fact remained that in numerous instances the cathedral bells had announced the elevation of an ignoramus to the degree of doctor. There had been an examination, but it was as farcical as that of the *Malade Imaginaire*, or, like Argan, the candidate had been coached for the occasion. The president of the faculty, a man of learning and repute, had seated the newly-made doctor alongside of him, had bestowed on him the traditional ring, the golden belt and the red gown lined with ermine, and given him a light blow on the cheek, in token that he was henceforth a free man, which Molière, with his genius for satire, turned into a license to purge, inject, bleed, cut and kill anywhere on earth. Yet, as a matter of fact, all these honors had been conferred on an untutored and unlearned person. The worst feature of the whole farce was that the president, in his address of welcome, following the time-honored custom, had insisted on the importance of admitting to the profession only learned and worthy persons.

In his first manuscript of *Le Malade Imaginaire*, Molière had called the candidate worthy alumnus of Montpellier, but finally laid the scene of the reception nowhere. It properly belonged to no age nor country, no more than did the imaginary invalid or Monsieur Purgon, for the friendly faculty is immortal. Molière might just as well have placed the scene in Germany, for instance, where they had the *doctores bullotti*, doctors by the grace of the authorities, where in more than one university the student might live at the Brocken or Auerbach's Cellar and, provided he had paid the fees, receive the coveted M.D. He did not go through on the skirts of Marguerite, but on the long training gown of the rector magnificus.

But what mattered it how the title had been procured or how ignorant the recipient might be. The cap and gown were symbols of learning and skill and, provided he spoke with authority and assurance, all men had confidence in the wearer; besides, had not a learned faculty solemnly certified to his learning and ability? We have in Goethe the picture of Faust disgusted with the barren erudition of the schools discarding his academic gown, and Mephistopheles attired in the livery of the master, receiving the student in his study. Picturesque, but unreal scene! The Faust of Goethe is Goethe himself, the philosopher who breathes the spirit of the XVIII century, not the XVI. The real Faust did not resign, nor did Mephisto or Wagner succeed him. He did not despise the learning of the schools, nor did every midnight find him pouring over dusty manuscripts or the sacred writings, as in the drama of Goethe. On the contrary, many an evening found him with the students at Auerbach's Cellar, and Easter morning saw him on his way to church. The respect of the multitude is not treated with contempt, as in the tragedy. Faust wore the academic cap and gown as proudly as ever knight bore sword. Subject of an omnipotent prince, he obeyed his behests, and when some rich or powerful patron solicited, the coveted sheepskin issued, armed with the academic seal and the signatures of the whole body of the faculty.

The reception of Argan reads like a chapter from the history of medical education in the United States prior to the eighties, when the state bowed to the alma mater and honored her credentials without examination. The friendly faculty is directly responsible for the existence of boards of examiners, and these boards are responsible for the death of hundreds of diploma mills. One has only to consult "Polk's Medical Directory" for 1902 in order to see their tombs. If the state medical societies were to write the epitaph, it would doubtless be *requiescat in pace*. Their alumni make it *resurgam*. They keep the memory of the dead alma mater green and at every session of the legislature their prayers for her resurrection are heard. The legislature has the power to raise the dead, but the power is invoked in vain.

Thanks to boards of examiners, it is necessary in the United States to study in order to be a doctor. The state has not the monopoly of medical education as it should have, and as it has in the country of Molière. The faculties still confer degrees but the state alone grants the license, and only after an examination before its own sworn servants. Cap and gown are still recognized, but they have lost their ancient magic. The state looks behind the trappings for the man, and rightly so, for what assurance have we but the license that cap and gown are not borrowed livery, or the gift of a friendly faculty, or of a too indulgent mother. We, too, have our Montpelliers.

Medicine, physician and patient, occupy easily the first place in the works of Molière. If one will visit his neglected gallery —I say neglected, for who to-day reads *Le Malade Imaginaire*, *Tartuffe* or *Le Misanthrope*— one will see *Le Médecin Volant*, an ignorant valet, attired in the long-trailing gown and the pointed cap of the then physician, duping a wealthy bourgeois; *Le Médecin Malgré Lui*, a drunken woodchopper and wifebeater, whose only license was a beating, and his dupe, another bourgeois even more credulous than his brother. Alongside of the immortal Tartuffe, hypocrite and impostor, are seen Tomès, Macroton, Desfonandres and Bakis, the four physicians of *L'Amour Médecin*. They disagree and quarrel. Further on, doctors and apothecaries, syringe in hand, pursue Monsieur de Pourceaugnac, who does not care a straw for physic and refuses to be purged and bled. Next to the proud figure of the Misanthrope appears the equally haughty Monsieur Purgon, who menaces the trembling Imaginary Invalid with a host of diseases, abandoning him to the "feculence of his humors and the corruption of his blood," because he has had the audacity to refuse to permit Monsieur Fleurant, the apothecary, to administer the enema prepared by Purgon's own hands, which was to evacuate and expel all the peccant humors. The gallery ends with *Le Malade Imaginaire*, the masterpiece of humor and satire, in which the author-philosopher, already sick unto death from an aneurism, seems to gather, for a final onslaught on the physician and his art, all the sharp-pointed shafts, which, from his early youth, he had been continually hurling at both.

The Imaginary Invalid is also the last of the comedies to be acted by the author-actor. Molière was playing the part of Argan in the fifty-second year of his age, had spoken the famous Juro, the oath of allegiance to the faculty, when he was unable to proceed, and was shortly afterward carried to his luxurious abode, a dying man. The "Rival Doctors" and the "Doctor in Love," works of his early youth, are unfortunately lost. We are denied the pleasure of seeing the doctor make love. Molière doubtless made him as ridiculous as young Thomas Diaphorus, who presents Angelique, his intended, with his thesis against the circulators, and breaks down in the middle of a studied and absurd compliment to her step-mother. We probably have the "Rival Doctors" in the quarreling physicians of *L'Amour Médecin*.

Molière believed he had a mission to perform on earth, the mission being that of the comedy; in his words, to correct the vices and the follies of mankind. One of these follies was our faith in the physician and the art of medicine. That art, declares Béralde, is an amusing mummery. Béralde is Molière. Wherever in the comedies contempt is expressed for the physician and his art, and the passages abound, it is the contempt of Molière. The Shepherdess in the *Malade Imaginaire* sings

the philosophy of France's first literary genius and the world's greatest writer of comedies:

Ignorant doctors,
Your highest knowledge is but pure chimera.
Those uncertain remedies of which the simple people
Think that you know the admirable virtue,
Cannot cure the ills I feel;
And all your gibberish can be received
Only by an Imaginary Invalid.
Your highest knowledge is but pure chimera,
Vain and little informed doctors, etc.
Strange and unnatural refrain for a shepherdess!

It is a common mistake to believe that Molière's satire is directed against the quacks. Molière portrays but one physician, the member of the faculty. Call him the licensed physician if you wish. The word charlatan is not to be found in his pages, unless it is the *opérateur* of the Pont Neuf, who sells orvietan. One is very apt to think the thesis of young Doctor Diaphorus in the *Malade Imaginaire* is aimed at the quacks. But *circulateur* does not signify itinerant, but circulator, i. e., one who believes in the circulation of the blood. That young gentleman, like every member of the faculty, took an oath never to consult with an unlicensed practitioner and to give him no quarter generally. In reality, like his fellows, he left the task of the prosecution to the strenuous dean of the faculty, contenting himself with writing a thesis against the partisans of Harvey, whom he regarded as fully as pernicious to mankind as the quack. The physician of Molière is a pedant, not a charlatan.

Van Laun, one of Molière's translators, has it that no two of his physicians are exactly alike. It is difficult to see wherein they differ, for all are insufferable pedants, vain and ignorant pretenders, and all speak gibberish and nonsense. It is the gibberish of the period, the nonsense of Galen and the humoral theory of disease.

The reason for Molière's deep aversion and bitter antipathy for the profession has often been sought. Reynaud advances the hypothesis that the author of the *Malade Imaginaire* was the original of that character, and that he bore the profession a grudge because of its failure to cure Molière. I confess I cannot reconcile myself to the idea of Molière being a hypochondriac. Antipathy to physic is natural to many men. My own father, college professor, with two sons in the profession, carried the prejudice to the grave, dying at fifty-two of pneumonia, and refusing to the last to have a physician or to take any drug. Montaigne's antipathy is as deep as Molière's, and he claimed it was hereditary. But some little suspicion attaches to both of these great writers. Montaigne, in the throes of nephritic colic, calls a physician, but merely for his agreeable conversation, he claims. Molière, when ill, sends for Mauvillain, but writes Louis XIV that he did not take his remedies and recovered. While it might not be fair to accuse the author of the essays of suffering himself to be copiously bled or of swallowing rat's excrement for his stone, or Molière of being the slave of Purgon and Fleurant, or of permitting himself to be prostrated with Mauvillain's antimonial wine; yet, after all, is not the philosopher who, when seriously ill, sends for the esculap quite as suspicious as the sceptic who, when in extremis, calls a spiritual adviser?

The philosophic reason for the hostility of Molière is to be found, I believe, in the dialogue of Béralde and Argan, which covers an entire scene and is a complete disquisition on the subject of medicine. In this scene, Béralde (and Béralde is Molière), pretends that it is ridiculous for one man to undertake to cure another; and, when Argan inquires the reason for this singular opinion, Béralde replies: "For the reason, brother, that the springs of our machinery are a mystery, of which, up to the present, men can see nothing; and that Nature has placed too thick a veil before our eyes for our knowing anything about it." This then is the reason why, in the opinion of the author, "medicine is an amusing mummery, and the whole excellence of the physician's art consists in a pompous gibberish, in a specious verbiage which gives you words instead of reasons and promises instead of effects." This is why Argan and the mock physicians of Molière, ignorant valets and clumsy louts, are, in his opinion, quite as learned and skillful as the Purgons and the Diaphoruses.

Almost any modern physician will admit that it is ridiculous for one who is ignorant of the fundamental principles of physiology to undertake to cure another; in fact, that it is not only ridiculous, but criminal as well. The error of Molière was not in holding up to ridicule the physician of his century, but in believing that Nature had forever hidden from human eyes the springs of our existence. He believed, and indeed was always saying, that Nature was the great healer and that in sickness it was necessary to do nothing but to keep quiet. Our natural impatience, our morbid fear of pain, disease and death, made us the natural dupes of the physician. Excellent advice, perhaps, for his own time. Were it not for the universal ignorance of the time and the evident good faith of the then physicians, one might be tempted to assert that it would have been better for France and all the worse for her enemies had Louis XIV banished the bleeders and the antimonialists of his kingdom instead of the Huguenots.

Molière believed that he had portrayed the physician of all ages. In reality he painted only the physician of the XVII century, and French at that. France had no Harvey, no Sydenham, and Molière did not recognize the revolution already begun by Harvey before he had penned his first line, revolution that was destined to overthrow Galen and the faculty, probe the secrets of Nature and thus make it possible for one man to cure another, which was to strip the physician of his ridiculous attire, rid him of his barren pedantry, his pompous gibberish and specious verbiage. And yet, there is little doubt but that Molière aided this same revolution by holding up to ridicule a system of medicine based on a primitive and absurd anatomy, physiology and pathology.

That you have only to speak with a gown and cap, and any gibberish becomes learning and any nonsense sense, is a truth as old as the art of medicine itself, as ancient as man himself, and probably as eternal. No author has illustrated this truth half so well as Molière. It furnishes the theme of two delightful little farces, *Le Médecin Volant* and *Le Médecin Malgré Lui*, and of one comedy, *L'Amour Médecin*.

In the *Médecin Volant*, the patient is a young girl who, in order to escape a marriage to the man of her father's choice, feigns illness. The lover, to gain access to the closely-guarded object of his passion, dresses up his valet, a clumsy ignorant lout, in the conventional attire of the physician, and the mock doctor is introduced to the credulous parent as a man of extraordinary learning and skill. Sganarelle, the "Flying Physician," like all charlatans, blows his horn loudly. He is "the greatest, ablest and most learned physician in the whole vegetable, sensitive and mineral faculty, and possesses peculiar talents and secrets beyond the ken of other physicians, who, compared with himself, are but abortions of doctors"; and he proceeds to impress the father of the patient with his learning. Here is a specimen of the gibberish that passes for learning in the latter's eyes, because it comes from one who wears the cap and gown.

"Salamalec, salamalec. Rodriquez, have you a heart?
Signor, si, signor, no. *Per omnia secula seculorum.*"

Sganarelle cannot even write, and he betrays his ignorance when, desiring to write a prescription, he inquires if any one present can write. But his ready wit, so characteristic of the successful charlatan, and the utter blindness of the dupe. saves him; for, seeing his mistake, he feigns hurry and rush of practice. The ruse of the lovers is completely successful. Sganarelle orders plenty of fresh air for Lucinde who, once out of sight of an unsuspecting father, elopes with the man of her choice.

In the course of the comedy, Molière, by a master stroke of satire, introduces a lawyer to Sganarelle and makes him pay his compliment, couched in impeccable Latin and ornamented with the appropriate aphorisms of Hippocrates, to the medical profession and to the fakir who wears its livery. The ass's ears are only too apparent in Sganarelle. The lawyer, however, sees nothing but the professional attire. His friend Gorgibus has extolled the learning of the fakir. But, perhaps after all, the lawyer is not the dupe he appears to be. He may have recognized in the mock physician a possible client. The defense of Sganarelle, arrested for illegal practice, suggests itself. How could he be guilty of practicing medicine when

he had prescribed neither bleeding, nor purgative, nor enema, had written no prescription, prescribed no drug or medicine, but merely a walk in the garden, and fresh air? He had not even exacted a fee, for the money placed in his palm by Gorgibus when it was behind his back was simply a present. No relation of physician and patient had existed, for the illness of Lucinde was feigned. Sganarelle had not violated the medical law, for it was intended only to apply to those who bled and purged their patients or prescribed drugs. Sganarelle had only prescribed a walk in the garden, and fresh air. He was not a physician, but a naturopath. A defense altogether modern, it might be said. In reality, it is as old as Hippocrates and Galen, though probably not so successful with the ancients as with the moderns.

The *Médecin Malgré Lui* is a drunken faggot binder, his only license being the beating he receives at the hand of the lover, who, in order to elude the vigilance of the father of the young girl he wishes to marry, dresses him up in the cap and gown of a physician, and passes him off as a man of skill. Sganarelle, the physician in spite of himself, is superior in intelligence and education, and also in roguery, to his namesake the flying physician. He went as far as the sixth grade at school and once worked for a physician. Géronte, his dupe, is also the superior of the victim of the flying physician.

It is difficult to say in which of the two comedies the fraud is more palpable and the credulity deeper, for, in both, the bounds of credulity seem to be almost exceeded; if, indeed, human credulity has either circumference or center. The coarseness and vulgarity, the gibberish and nonsense of the physician in spite of himself are palpable enough. They *sautent aux yeux*, as the French say; yet he passes for a physician of rare merit. He wears the professional cap and gown and has been introduced to his dupe as a man of renown.

Sganarelle invokes Hippocrates and Galen and has a smattering of Latin, bad as it may be. This last possession is sufficient to stamp him as a prodigy. Lincoln says in one of his letters that, in his youth, if a man who knew a few words of Latin came into his part of the country, the wilds of Kentucky, he was immediately set down as a wizard. Molière makes the country people flock to Sganarelle. In Don Juan, in which the first reference to the subject of medicine occurs, we find Sganarelle, the clownish valet of Don Juan, disguising himself in the attire of a physician, the better to escape his pursuers, and being forced to prescribe for the country folk. What more complete disguise could have been invented than an attire which commanded the respect of all mankind? The valet of Don Juan tells his master that he prescribes the first thing that comes into his head. The Physician in Spite of Himself, consulted by a peasant whose wife is ill with the dropsy, picks up a piece of cheese and gives it to him; and, when the peasant refuses to take it, Sganarelle declares that the cheese is a specific composed of gold, coral, pearls and other precious things, at which the peasant eagerly seizes it. Géronte, the dupe of Sganarelle, the mock physician, swallows any kind of nonsense. The cap and gown of the quack lull his suspicions to sleep. But let us look at the nonsense and the gibberish that pass for reason and sense. Sganarelle begins by citing Hippocrates and Galen, but in the most absurd manner.

Sgan: (In a physician's gown with a very pointed cap) Hippocrates says—that we should both put our hats on.

Géronte: Hippocrates says that?

Sgan: Yes.

Géronte: In which chapter, if you please?

Sgan: In his chapter—on hats.

Géronte: Since Hippocrates says so, we must obey.

Sganarelle discourses and reasons after the fashion of the physicians, but gets terribly mixed in the peccant humors and their exhalations. His pathology is fearfully embarrassed, but he saves himself by taking refuge in a flood of hog Latin. His anatomy is still worse, for he places the heart on the right and the liver on the left; but, when Géronte protests at his singular mistake, Sganarelle calms him with the assurance that *nous avons changé tout cela.* "The heart was formerly on the left, the liver on the right side, but we have changed all that, and we now-a-days practice the medical art on an entirely new system."

Géronte: I did not know that and I pray you pardon my ignorance.

Sganarelle: There is no harm done; and you are not obliged to be so clever as we are.

Sganarelle prescribes no drug, smells no urine, inspects no stool. He gives Lucinde, who feigns dumbness, bread soaked with wine, and, pressed for an explanation by her father, who demands reasons for diagnosis, prognosis and therapeutics, replies:

Sgan.: Do you not see that they give nothing else to parrots, and that, by eating it, they learn to speak.

Géronte: That is true. Oh, the great man! Quick, plenty of bread and wine.

In order to facilitate an elopement, Léandre, the lover, dresses up as an apothecary and, when he regrets that he does not know half a dozen big medical words, Sganarelle insists that the dress is enough and points to his own renown in the neighborhood. Thanks to the cap and gown, the lovers elope.

In the sparkling piece of comedy and satire, *L'Amour Médecin,* the patient is again a young girl kept under lock and key by a doting and credulous father. The mock physician is the suitor himself. Lucinde has fainted repeatedly in the arms of her conniving nurse, who declares that she will not live out the day. Her anxious father sends post-haste for four physicians, who disagree, quarrel and give him but little hope. The lover disguises himself as a physician, gains admittance to the house and diagnoses Lucinde's complaint as the result of a disordered imagination and an inordinate desire for matrimony, a diagnosis eminently satisfactory to her father. The mock physician poses, of course, as a doctor of renown. He cures by means of words, signs, tokens and rings, and promises to cure Lucinde of matrimony on the brain by humoring her imagination, taking her at her foible and making her believe him her suitor, a capital ruse and an immense joke in the eyes of her father. Valère, by means of his clever system of therapeutics, declares his undying love for Lucinde, bestows a ring and actually makes her deluded father send for a notary, before whom a marriage contract is drawn up and signed. Musicians and dancers then appear, for the alleged purpose of dispelling the patient's gloom, in reality, however, to celebrate the nuptials. The chorus sings Molière's contempt for physic. In the midst of the festivities, bride and groom depart, leaving the enraged father to realize how completely duped he has been by the simple device of a physician's cap and gown worn by a clever, but unwelcome, suitor.

Purgon has changed. He no longer, as of yore, speaks gibberish and nonsense, but, knowing the springs of the human machine, is able to diagnose and cure disease; and he no longer wears the long-trailing gown and pointed cap immortalized by Molière. He is still wedded to his profession, but has largely divorced himself from drugs and does his utmost to cure Argan of the habit. Like Molière, his great critic, Purgon now prescribes the comedy, laughter and the sports. But Argan, the imaginary invalid, and Gorgibus and Géronte, the wealthy bourgeois, are forever the same. Despite the prodigious progress of the medical art and the ever widening gulf that separates the licensed practitioner and the fakir, despite the eternal warnings of Purgon, who stands between them and the thousand and one charlatans, professional and lay, who prey on them, like so many harpies, to the ruin of their health and purse, any gibberish still passes in their eyes for learning and any nonsense for sense.

The Sganarelle of Molière speaks with gown and cap. To-day, Sganarelle, even without these trappings, numbers his dupes by the thousands. The dupes of Molière seem to have emigrated to the United States. They are worth millions of dollars annually to the great American "patent-medicine" Trust and its criminal ally, the newspaper.

We need to be delivered from the medical Tartuffe; for, in respect to medicine, the great mass of the people is still as ignorant and credulous as the dupes of Sganarelle. And the remedy is not the comedy, but the sword of the state. It is not sufficient to operate on the minds of men, after the fashion of Molière, Paine, Jefferson and other philosophers. It is necessary to operate on the bodies of the charlatan and his allies. In the immortal comedy of Molière, no amount of

reason or persuasion suffices to deliver Argan from Tartuffe, the religious hypocrite and impostor, who despoils him. It is the virtuous prince, the enemy of fraud, that we need, the heavy hand of the law and the stern face of the magistrate.

Clinical Notes

REPORT OF TWO CASES OF EXOPHTHALMIC GOITER IN MEN.

D. A. VANDERHOOF, B.L., M.D.
BYRON, ILL.

CASE 1.—C. M., a man, aged 47; was born in northern Illinois.

History.—His family history contains nothing of special interest. The man is a carpenter and has been a hard worker all his life. He is the father of 14 children, 13 of whom are living. They are all healthy and in good physical condition. The patient has always been of a rather nervous temperament, and says that this condition has been growing worse during the last five years, although he managed to keep up his work until the fall of 1904. During the last few years he has also been troubled with muscular rheumatism in his limbs, badly at times, although this seemed to depend to a great extent on atmospheric conditions. Otherwise he has always been normal both physically and mentally as far as is known.

Examination.—He came under my observation during January, 1905. He said that for some time past he had been "doctoring" for nervousness, but had been steadily growing worse. His weight in January, 1904, was 180 pounds; at the time I examined him first he weighed 111 pounds. He was emaciated in appearance, and his gait was quick and jerky. There was no exophthalmos present, and both lateral lobes of the thyroid gland were so slightly enlarged that they were not noticeable except when the head was thrown back. Vision was normal. Tachycardia was very prominent, the pulse varying between 140 and 160; the arteries of the neck throbbed forcibly and pulsation of the abdominal aorta was also very marked. Capillary pulse could be plainly seen. The tremor in this case was so marked that it was almost impossible for the man to drink without spilling the contents of a cup, although only partly filled. His appetite was exceedingly good, as a usual thing; bowels were slightly constipated. At this time he was complaining of hot flushes and profuse perspiration, especially after retiring for the night. The perspiration was so profuse some nights that in the morning it became necessary to change all the bedding. Expectoration was frequent and frothy; a slight hacking cough was also present. Albumin and sugar were both absent from the urine.

Treatment.—I put him on a solution of ammonia, citrate of iron and sodium bromid, three times a day. I also gave him strychnin gr. ¼, four times a day. Over the goiter itself I used an ointment consisting of red mercuric iodid gr. vi, potassium iodid gr. xxx, olive oil dram i, wool fat (lanolin) ounce i, which was applied freely with friction. A galvanic current was used daily. The above treatment I continued for three weeks, hoping that I could get the man in condition for an operation. At the end of this time his condition was only slightly improved, so I stopped the strychnin and put him on thyroidectin, 5-grain capsules, one capsule three times a day. I also continued the use of the other medicines. An ice-bag was also used over the pericardium night and day. For about a week I noticed no improvement, but at the end of this time slight changes were noticeable. The tachycardia began slowly to disappear, and at the end of about two months his pulse ranged from 95 to 110. The tremor became less noticeable, but never entirely disappeared. The forcible throbbing of the arteries of the neck also disappeared to a great extent. The flushes of heat and profuse perspiration entirely disappeared, although during the last few months they have been present occasionally. The enlarged gland has slowly decreased in size till it no longer can be seen. The thyroidectin was then discontinued and the patient put on general tonics. About July 1 he wanted to go to work again, but on trying it found himself too weak; the fine tremor of his hands was still present. Arrhythmia developed shortly after his being about. Some days he would feel very well and be up around the house, but suddenly his pulse would become irregular and it would be necessary for him to lie down; even then it would be difficult for him to breathe. I again put him on strychnin, iron and digitalis, and after Oct. 1, 1905, he did not complain of the above condition again.

Result.—At present he feels very well so long as he does not work, but as soon as he tries to work he becomes tired and nervous. This condition may entirely disappear in time.

CASE 2.—M., a man, aged 36; family history negative.

Personal History.—There is nothing in his personal history of interest up to the present except that he has always been of a very nervous temperament.

Examination.—I first saw him during the winter of 1905. He appeared to be well nourished, although he claims to have lost considerable flesh during the last few weeks. His pulse averaged 120. Pulsation of the carotids, abdominal aorta and capillaries was present, and he said it was impossible for him to sleep at night because of the hard beating of his heart. The thyroid gland was greatly enlarged and hard. There was no exophthalmos. The von Graefe sign was absent. He had been perspiring profusely of late, and thought this had weakened him considerably. He complained of indigestion a great deal. The urine and blood were negative, as also the abdominal and thoracic organs.

Treatment.—I put him on thyroidectin, gr. xv a day, with strychnin sulphate gr. 1/30, three times a day. His improvement was very rapid and in two months he was able to work as hard as ever.

Result.—The pulse at present is only slightly above normal. The thyroid gland is almost normal in size and the man feels very well indeed. The profuse perspiration has also entirely disappeared, he sleeps well and his appetite is normal.

THE ACCESSORY NASAL SINUSES AND PNEUMOCOCCUS INFECTIONS.

A PRELIMINARY COMMUNICATION.

SAMUEL T. DARLING, M.D.
Pathologist, Ancon Hospital.
ANCON, ISTHMUS OF PANAMA.

This communication contains some of the results of an investigation which is being conducted to determine the relation of inflammations of the accessory nasal sinuses to pneumococcus infections.

Up to this date, July 21, 1906, the accessory sinuses have been examined with regard to this point in 52 autopsies, 37 of which were pneumococcus infections as follows: Lobar pneumonia, 22; acute pericarditis, 1; acute meningitis, 9; pneumococcus septicemia, 5. The remaining 15 cases were controls.

It has been found that 92 per cent. of all pneumococcus infections coming to autopsy show in a very marked degree more or less typical pneumococcus inflammation of one or more of the accessory nasal sinuses. The inflammation is generally intense. It is fibrino-purulent in character, fibrin and mononuclear cells being abundant. Pneumococci are always present and in numbers depending on the duration of the process. A point of great importance is the age of the sinus affection which has been appreciably greater than that of the lung or meningeal lesion.

Ninety-one per cent. of the lobar pneumonia cases showed a sinusitis.

All cases of acute pneumococcus meningitis presented an inflammation of one or more of the sinuses, and in every one the middle ears and mastoid cells were normal.

In the pneumococcus septicemia group 80 per cent. were found to be associated with a sinusitis.

TABLE 1.—PNEUMOCOCCUS INFECTIONS OF THE ACCESSORY NASAL SINUSES.

Number.	Diagnosis.	Date of Autopsy.	Maxillary Sinus. R.	Maxillary Sinus. L.	Ethmoidal Cells. R.	Ethmoidal Cells. L.	Sphenoidal Sinus. R.	Sphenoidal Sinus. L.	Frontal Sinus. R.	Frontal Sinus. L.	Meninges.	Middle Ear and Mastoid Cells.	Lungs.
464.	Lobar pneumouia	July 1.	†	0	†	0	0	0	0	4	Normal	Not examined	Lobar pneumonia.
468.	Lobar pneumonia	July 3.	†	†	0	0	0	†	0	†	Normal	Normal	Lobar pneumonia.
469.	Lobar pneumonia	July 3.	0	†	0	0	0	0	0	0	Normal	Normal	Lobar pneumonia.
472.	Lobar pneu., compl. parotitis, right	July 4.	†	0	0	0	†	0	0	0	Normal	Normal	Lobar pneumonia.
473.	Lobar pneu., compl. malarial fever, e. a.	July 5.	†	0	**	**	0	0	0	0	Normal	Not examined	Lobar pneumonia.
476.	Lobar pneumonia	July 7.	0	0	0	0	0	0	0	0	Normal	Not examined	Lobar pneumonia.
478.	Lobar pneumonia. compl. unclnariasis	July 9.	†	†	0	0	0	0	0	0	Normal	Not examined	Lobar pneumonia.
480.	Lobar pneumonia	July 11.	0	†	*	*	*	*	*	*	*	*	Lobar pneumonia.
481.	Lobar pneu., compl. malarial fever, e. a.	July 11.	0	0	0	0	0	0	0	0	Normal	Not examined	Lobar pneumonia.
486.	Lobar pneumonia	July 13.	†	0	0	0	0	0	0	†	Normal	Not examined	Lobar pneumonia.
487.	Lobar pneumonia	July 13.	†	0	†	†	†	†	0	0	Normal	Not examined	Lobar pneumonia.
488.	Lobar pneumonia	July 13.	†	†	†	†	†	†	0	0	Normal	Not examined	Lobar pneumonia.
493.	Lobar pneumonia, dental carles, osteltis, see note	July 16.	†	0	0	0	0	0	0	0	Normal	Not examined	Lobar pneumonia.
495.	Lobar pneumonia, acute pericarditis	July 17.	†	†	0	0	0	0	0	0	Normal	Not examined	Lobar pneumonia.
497.	Lobar pneumonia	July 17.	0	0	0	0	†	†	0	0	Normal	Not examined	Lobar pneumonia.
498.	Lobar pneumonia, aortlc insufficlency	July 17.	0	†	0	0	0	0	0	0	Normal	Not examined	Lobar pneumonia.
499.	Lobar pneumonia	July 18.	†	†	†	†	†	†	0	0	Normal	Not examined	Lobar pneumonia.
500.	Lobar pneumonia	July 18.	0	0	0	†	0	0	0	0	Normal	Not examined	Lobar pneumonia.
503.	Lobar pneumonia	July 19.	†	†	†	†	†	†	†	†	Normal	Not examined	Lobar pneumonia.
504.	Lobar pneumonia	July 19.	†	0	0	0	†	0	0	0	Normal	Not examined	Lobar pneumonia.
505.	Lobar pneumonia, acute pericarditis	July 19.	0	†	0	0	†	†	0	0	Normal	Not examined	Lobar pneumonia.
508.	Lobar pneumonia	July 20.	0	†	0	0	0	0	0	0	Normal	Not examined	Lobar pneumonia.
344.	Acute purulent cerebrospinal Menlngitis (pneumococcus)	March 12,	0	†	**	**	**	**	**	**	Menlngitis	Normal	Normal.
386.	Acute purulent cerebrospinal meningitis (pneumococcus)	May 3.	†	†	**	**	**	**	**	**	Menlngitis	Normal	Bronchopneumonia.
388.	Acute purulent cerebrospinal meningitis (pneumococcus)	May 5.	0	†	**	**	**	**	**	**	Menlngitis	Normal	Bronchopneumonia.
406.	Acute purulent cerebrospinal meningitis (pneumococcus)	May 18.	†	†	**	**	**	**	**	**	Menlngitis	Normal	Bronchopneumonia.
446.	Acute purulent cerebrospinal meningitis (pneumococcus)	June 17.	†	†	0	0	†	†	0	0	Menlngitis	Normal	Bronchopneumonia.
449.	Acute purulent cerebrospinal meningitis (pneumococcus)	June 19.	†	0	0	0	0	0	†	0	Meningitis	Normal	Bronchopneumonia.
461.	Acute purulent cerebrospinal meningitis (pneumococcus)	June 28.	†	†	0	0	†	0	0	0	Menlngitis	Normal	Bronchopneumonia.
471.	Acute purulent cerebrospinal meningitis (pneumococcus)	July 4.	†	†	0	0	†	†	†	†	Meningitis	Normal	Bronchopneumonia.
475.	Acute purulent cerebrospinal meningitis (pneumococcus)	July 7.	0	0	0	†	0	0	0	0	Meningitis	Normal	Bronchopneumonia.
506.	Acute fibrino-purulent perlcarditis (pneumococcus)	July 19.	†	†	†	†	†	†	†	†	Normal	Not examined	Bronchopneumonia.
383.	Puruient arthritis, acute pur. menin-gitis (pneumococcus)	April 29.	†	†	**	**	**	**	**	**	Meningitis	Normal	Normal.
433.	Acute pur. meningitis, acute rachitis (pneumococcus)	June 11.	†	†	0	0	†	†	0	0	Meningitis	Normal	Bronchopneumonia.
433.	Acute pur. meningitis, acute orchitis tonitis (pneumococcus)	June 13.	†	†	0	0	†	†	0	0	Menlngitis	Normal	Cirrhosis of lung.
466.	Acute pur. menin., acute pur. arthritis lobar pneu., pleuritis (pneumococcus)	July 2.	†	†	†	†	†	†	†	†	Menlngitis	Normal	Lobar pneumonia.
482.	Meningitis, arthritis, endocarditis of tricuspid valve (pneumococcus)	July 11.	0	0	0	0	0	0	0	0	Meningitis	Not examined	Lobar pneumonia.

The sign † indicates a pneumococcus sinusitis.
The sign 0 indicates a normal sinus.

* Head section not made.
** Not examined.

TABLE 2.—CONDITIONS OBSERVED IN CONTROLS.

Number.	Diagnosis.	Dato of Autopsy.	Maxillary Sinus. R.	Maxillary Sinus. L.	Ethmoidal Cells. R.	Ethmoidal Cells. L.	Sphenoidal Sinus. R.	Sphenoidal Sinus. L.	Frontal Sinus. R.	Frontal Sinus. L.	Meninges.	Middle Ear and Mastoid Cells.	Lungs.
470.	Anemia, chronic malaria, puruient arthritis (staphylococcus)	July 3.	0	0	0	0	0	0	0	0	Normal	Not examined	Bronchopneumonia.
474.	Enterocolitis, anemia, chronic malaria	July 5.	†	†	0	0	0	0	0	†	Normal	Not examined	Bronchopneumonia.
477.	Amebic dysentery	July 6.	0	0	0	0	0	0	0	0	Normal	Not examined	Normal.
479.	Malarial fever, e. a.	July 9.	†	†	0	†	0	0	0	†	Normal	Not examined	Normal.
483.	Anemia brouchopueu., chronic malaria	July 12.	0	0	0	0	0	0	0	0	Normal	Not examined	Bronchopneumonia.
485.	Epithelioma of tongue	July 13.	0	0	0	0	0	0	0	0	Normal	Not examined	Normal.
489.	Mastoiditis, suppurative encephalitis	July 14.	0	0	0	0	0	0	0	0	Pachymeningitis	Mastoiditis	Bronchopneumonia.
490.	Malarial fever, e. a.	July 14.	†	†	†	†	†	†	0	0	Normal	Not examined	Normal.
491.	Amebic dysentery	July 15.	0	0	*	*	*	*	*	*	*	*	Bronchopneumonia.
494.	Bronchopneumonia	July 17.	0	0	0	0	0	0	0	0	Normal	Not examined	Bronchopneumonia.
496.	Acute nephritis	July 17.	0	0	0	0	0	0	0	0	Normal	Not examined	Normal.
507.	Malarial fever, e. a.	July 19.	0	0	0	0	0	0	0	0	Normal	Not examined	Edema.
509.	Typhoid fever	July 20.	†	†	0	†	0	0	0	0	Normal	Not examined	Capil. bronchitis.
510.	Chronic dysentery	July 21.	0	0	0	0	0	0	0	0	Normal	Not examined	Vesic. emphysema.
511.	Amebic abscess of brain	July 21.	0	0	0	0	0	0	0	0	Normal	Not examined	Bronchopneumonia.

The sign † indicates a pneumococcus sinusitis.
The sign 0 indicates a normal sinus.

* Head section not made.

The case of acute pericarditis is of interest because all the sinuses were involved, yet the meninges were normal and the lungs contained only small patches of bronchopneumonia.

The controls were all other than pneumococcus infections just as they came to autopsy; and of these, 28 per cent. had an acute inflammation of the sinuses.

I believe that the portal of entry of the pneumococcus is in most instances an accessory nasal sinus, the mucous membrane of which is probably fitted for the reception of the pneumococcus by an antecedent influenza or rhinitis, instances of infection from a carious tooth being rare.

On some of the cases a few comments will be of interest:

473.—This was a case of malarial fever, e. a., under treatment and developing lobar pneumonia during the 48 hours befor death. At autopsy, from inspection and examination of smears, the stage was found to be that of red hepatization, whereas the character of the inflammation in the maxillary sinus was that of an older process.

482.—Pneumococcus endocarditis of tricuspid valve.

483.—Accessory median frontal sinus.

489.—Encephalitis following mastoiditis, in which the accessory nasal sinuses were not involved by extension.

490.—The fluid in the sinuses was hemorrhagic and fibrinous —not purulent.

493.—A tooth infection—caries of right upper bicuspids, abscess, osteitis, and purulent inflammation of right maxillary sinus, the only one involved.

506.—Accessory median frontal sinus. All of the sinuses were involved. There was no meningitis or lobar pneumonia, but an acute fibrinopurulent "primary" pericarditis.

A more detailed account of this work will be published later.

I wish to express my thanks to Col. W. C. Gorgas, U. S. A., Chief Sanitary Officer, for his kind permission to publish this communication.

AN ACCURATE AND RELIABLE THERMOREGULATOR.

A. ROBIN, M.D.
WILMINGTON, DEL.

The multiplicity of thermoregulators on the market is a sufficient proof that none of them is thoroughly satisfactory. A vexatious experience of several years with several instruments resulted in the adoption of the following device which proved entirely satisfactory:

DESCRIPTION.

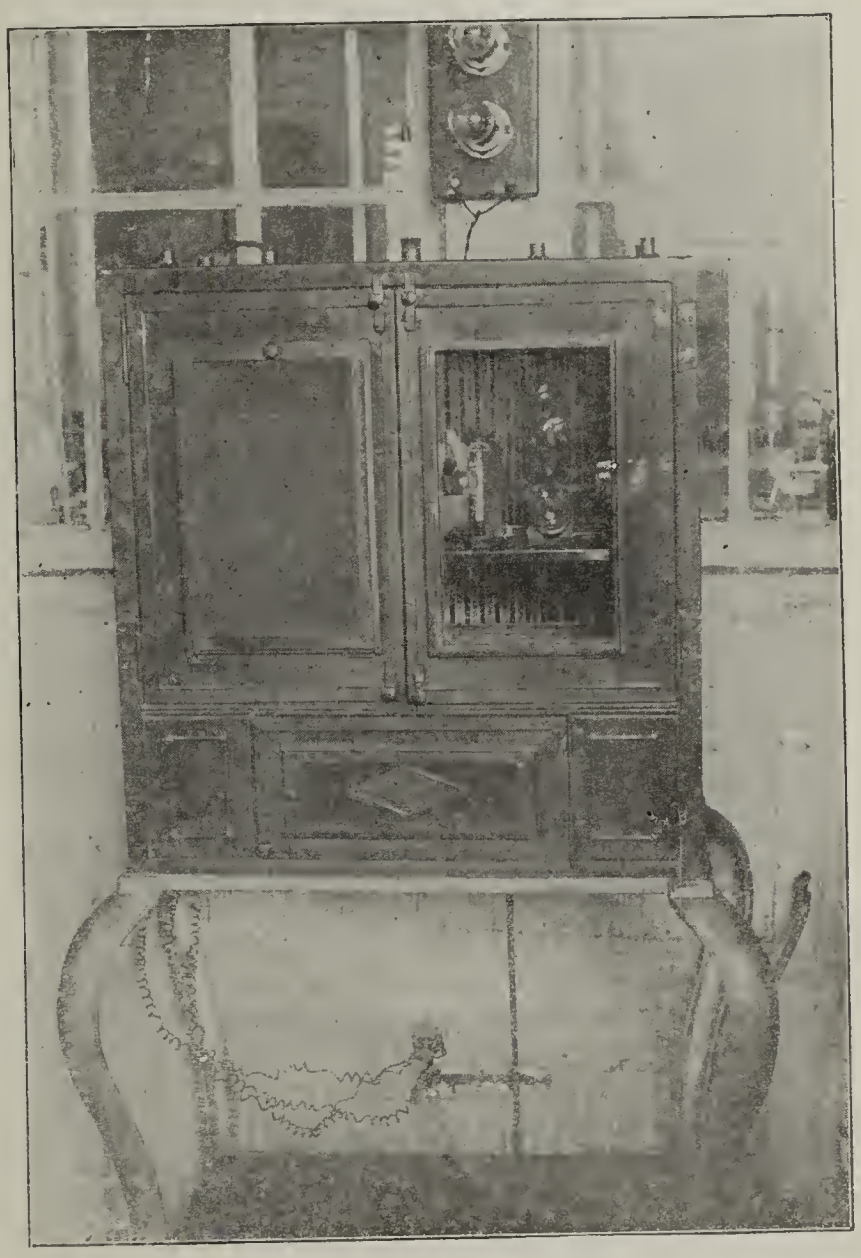
This apparatus consists of an automatic burner, the same as is used in lighting residences, and thermostat.

Automatic Burner.—This consists of two electro-magnets which control a small valve. In ordinary usage the magnet opening the valve is brought in action by a push-button which, at the same time, operates a spark coil. As the gas issues it is lighted by the spark. Another push-button operates the magnet which closes the valve and extinguishes the light. To obviate the necessity of a spark coil, I bent one of the springs which operates the valve so that when the latter is closed the gas is not shut off completely, and a small flame is left burning.

Thermostat.—For over two years I used a thermostat which consists of a metal frame carrying an expanding bar made up of a strip of hard rubber and one of brass firmly bound together. One end of the bar is pivoted while the other has attached to it a brass wire with a flattened point. The latter travels between two platinum contact points, establishing the circuit either on the dark or light side, according to whether the bar expands when the temperature passes beyond a certain point, or contracts when the temperature is lowered. This form of thermostat is furnished by Bausch and Lomb with their electric thermoregulator for oil lamps. The motive power is furnished either by batteries or, what is much more convenient, if electric light is available, is to reduce the street current by two lamps (one 16 and one 8 candle-power) and connect the thermostat to the reduced current, as shown in the illustration.

While the arrangement described worked satisfactorily in so far as the burner is concerned, the thermostat did not. Now and then it would catch and fail to make the contact; or the contact points would become encrusted and fail to establish the circuit.

Recently I obtained from the Electric Heat Regulating Co., Minneapolis, their thermostat which they use in connection with



a heat-regulating device and which consists of a round steel spring carrying a steel blade. The fore end of the latter travels between two contact points, the contact being made on the light or dark side, according to the expansion or contraction of the spring. The adjustment of this device is very satisfactory, and the working of the thermostat in connection with the burner has proved perfect. The temperature of the incubator has been maintained between 37.5 and 38 C. with a constancy which far exceeds any regulator I had before used.

I am satisfied that in the method of regulating the temperature of an incubator described above I have an arrangement which for simplicity and accuracy will find favor with laboratory workers.

Brutality for Humanitarian Purposes.—The El Paso *Times* states that the students of the medical school at Guadalajara, Mexico, have been granted permission by the city council to give four bull fights in the local arena. The proceeds are to be devoted to the purchase of some needed instruments for the city hospital and to the establishment of a medical library for the use of the students.

New and Non-Official Remedies

THE FOLLOWING ARTICLES HAVE BEEN TENTATIVELY ACCEPTED BY THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR INCLUSION IN THE PROPOSED ANNUAL, "NEW AND NON-OFFICIAL REMEDIES." THEIR ACCEPTANCE HAS BEEN BASED LARGELY ON EVIDENCE SUPPLIED BY THE MANUFACTURER OR HIS AGENT, BUT TO SOME EXTENT ON INVESTIGATION MADE BY OR UNDER THE DIRECTION OF THE COUNCIL. CRITICISMS AND CORRECTIONS ARE ASKED FOR TO AID IN THE REVISION OF THE MATTER BEFORE FINAL ACCEPTANCE AND PUBLICATION IN BOOK FORM.

THE COUNCIL DESIRES PHYSICIANS TO UNDERSTAND THAT THE ACCEPTANCE OF AN ARTICLE DOES NOT NECESSARILY MEAN A RECOMMENDATION, BUT THAT SO FAR AS KNOWN IT COMPLIES WITH THE RULES ADOPTED BY THE COUNCIL.

W. A. PUCKNER, SECRETARY.

(*Continued from page 1489.*)

NOVOCAINE.

Novocaine, $C_6H_4.NH_2(COO.C_2H_4.N(C_2H_5)_2,HCl) = C_{13}H_{21}O_2N_2Cl$, is the monhydrochloride of para-aminobenzoyldiethylaminoethanol.

Novocaine crystallizes from alcohol in fine, colorless needles, which melt at 156° C. (312.8° F.). It is soluble in an equal weight of water, but requires 30 parts of alcohol. From the aqueous solution, which is neutral, alkali hydroxides and carbonates precipitate the free base in the form of a colorless oil, which soon congeals to a crystalline mass, but solution of sodium bicarbonate is miscible with solutions of novocaine without producing either precipitation or turbidity. The free base crystallizes from diluted alcohol with 2 molecules of water, but from ether or lignoin in the form of anhydrous shining prisms, which melt at 58° to 60° C. (136.4° to 140° F.), while the hydrated base melts at 51° C. (123.8° F.).

The aqueous solution of the salt may be heated to boiling without decomposition, and remains perfectly clear when kept for days in loosely stoppered vials. It gives precipitates even in very dilute solutions with the usual alkaloidal reagents, such as postassium-mercuric iodide, picric acid, potassium iodide, etc.

It is incompatible with alkalies and their carbonates and the alkaloidal reagents.

Actions and Uses.—It is a local anesthetic similar to cocaine, but said to be far less toxic than any of the cocaine substitutes. When injected subcutaneously it is said to exert a prompt and powerful anesthetic action, but the effect is not sustained. This may be remedied by the simultaneous injection of suprarenal alkaloid. Novocaine is not irritant.

It is recommended in all cases in which cocaine is indicated.

Dosage.—For infiltration anesthesia, solutions of 0.25 Gm. (4 grains) novocaine in 100 or 50 Gm. (3.2 or 1.6 ounces) physiologic salt solution, with or without 5 or 10 drops of suprarenal alkaloid solution (1-1000); for instillations and injections, solutions of 0.1 Gm. (15.4 grains) novocaine in 10 or 5 Gm. (150 or 75 grains) salt solution, with or without 10 drops of suprarenal alkaloid solution (1:1000). In ophthalmology, 1 to 5 to 10 per cent. solution and in rhino-laryngology 5 to 20 per cent. solutions are recommended, with the addition of 6 to 8 drops of suprarenal alkaloid solution (1:1000) to each 10 Cc. (160 minims). Internally, owing to its feeble toxicity, it may be given in doses up to 0.5 Gm. (7½ grains) to adults.

Manufactured by Farbwerke vorm. Melster. Lucius & Bruening, Hoechst a. M. (Victor Koechl & Co., New York).

ORTHOFORM-NEW.

META-AMIDO-PARA-OXYBENZOATE OF METHYL.

Orthoform-new, $C_6H_3.(COO.CH_3)(NH_2)(OH)$, $1:3:4 = C_8H_9O_3N$, is the methyl ester of meta-amido-para-oxybenzoic acid.

It is prepared by the nitration of para-oxybenzoate of methyl and reduction of the nitro-product obtained.

It occurs in a fine, white, crystalline powder, neutral in reaction, and melting at 141° to 143° C. (285.8° to 289.4° F.), odorless and tasteless. It is scarcely soluble in water, but soluble in 5 or 6 parts of alcohol and in 50 parts of ether. It is decomposed by boiling with water or by warming with alkalies or their carbonates, into methyl alcohol and paroxybenzoic acid. When crystallized from chloroform it sometimes assumes the form of white crystals melting at 110° to 111° C. (230° to 231.8° F.) returning on melting to the ordinary form.

The filtrate obtained after shaking a small portion with water produces a fugitive color with ferric chloride and should not give a reaction with silver nitrate. A solution of 0.1 Gm. in 2 Cc. of water by the aid of hydrochloric acid is colored yellowish red on addition of sodium nitrite and then deposits a yellow precipitate, deepening to red on exposure to the air.

It is decomposed by heating with water; it is incompatible with alkalies and their carbonates.

Actions and Uses.—Orthoform-new is a local anesthetic, resembling cocaine in its local action, but not penetrating the tissues on account of its insolubility. It has practically no action on the unbroken skin and produces no irritation except slight corrosion about the place of application. It is somewhat antiseptic and practically non-toxic in the usual doses.

It is used internally to relieve the pain of gastric ulcer. Since it acts only on ulcerated surfaces, the relief of pain has been assumed to be evidence of the existence of an open ulcer. It has been applied locally as an analgesic to wounds of every description. It has been used in dentistry, in nasal catarrh, hay fever, etc.

Dosage.—Internally, 0.5 to 1 Gm. (8 to 15 grains) in emulsion; locally, in substance as a dusting powder or mixed with milk sugar for insufflation, dissolved in ether and mixed with oil for pencilings, or as salve with wool fat (lanolin), etc.

Manufactured by Farbwerke vorm. Meister, Lucius & Bruening, Hoechst a. M. (Victor Koechl & Co., New York). U. S. patents Nos. 610,348 and 625,158.

ORTHOFORM-NEW HYDROCHLORIDE.

Orthoform-new hydrochloride $C_8H_9O_3N.HCl$, is the hydrochloride of meta-amido-para-oxybenzoic methyl ester.

It is a white, crystalline powder, having an indefinite melting point and an acid reaction. It is soluble in 10 parts of water. Its reactions are the same as those of orthoform-new, except that it gives a reaction for chlorides with silver nitrate and has an acid reaction; 3.65 Gm. dissolved in 50 Cc. of alcohol require not less than 17.8 Cc. nor more than 18 Cc. of normal solution of sodium hydroxide to produce a neutral liquid.

Its incompatibilities are the same as those of orthoform-new.

Actions and Uses.—The actions, uses and dosage of this compound are similar to those of orthoform-new, which see.

Manufactured by Farbwerke vorm. Meister, Lucius & Bruening, Hoechst a. M. (Victor Koechl & Co., New York).

OVOFERRIN.

FERRI VITELLINUM SYNTHETICUM.

Ovoferrin is a solution containing 5 per cent. of an artificial proteid-product in which iron is present in the so-called "organic" or "masked" form (a form which does not give the iron-test directly). The solution also contains 10 per cent. of alcohol and some aromatics.

Ovoferrin is prepared by modifying serum-albumin by electrolysis, producing a proteid which is classed by the manufacturers as a vitellin, and introducing ferric hydrate into this proteid by heating under pressure. The "vitellin" constituent of this preparation should not be confounded with the well-known vitellin of the yolk of eggs.

The solution has a reddish-brown color, little odor, and a flat, slightly aromatic and alcoholic taste.

The solution does not give a blue color on the addition of potassium ferrocyanide solution; a blue tint develops slowly if an equal volume of 5 per cent. hydrochloric acid is added to the mixture; a deep blue color develops at once if this mixture is boiled (difference from egg yolk).

The solution is not precipitated by boiling, but gives precipitates with the alkalies, with which it is incompatible. It is also precipitated on half saturation with ammonium sulphate. It is not precipitated by acids.

Actions and Uses.—Ovoferrin is not appreciably affected by the gastric juice, a 0.5 per cent. solution of hydrochloric acid liberating its iron very slowly and in-

completely. The product ranks with the other forms of artificially masked iron, which are devoid of the local action of the soluble inorganic iron salts, and, according to some authorities, are more readily absorbed and utilized.

Dosage.—8 to 16 Cc. (2 to 4 fluidrams) corresponding to from 0.03 to 0.06 Gm. (½ to 1 grain) three times a day.

Manufactured by Barnes & Hille, Philadelphia. U. S. trademark.

OXAPHOR.

Oxaphor is a 50 per cent. solution of oxycamphor, $C_8H_{14}{<}^{CHOH}_{CO} = C_{10}H_{16}O_2$, a derivative of camphor in which a hydrogen atom has been replaced by a hydroxyl group.

Oxycamphor is prepared by reducing camphor quinone, $C_8H_{14}(CO)_2$ by means of zinc dust and acids, extracting the oxycamphor from the liquid product of the reaction with an immiscible solvent and purifying it by distillation with steam.

Oxycamphor is a white crystalline powder, neutral in reaction, melting at 203° to 205° C. (397.4° to 401° F.). It is soluble in about 50 parts of cold water, more soluble in warm water, and readily soluble in all organic solvents except petroleum benzin, in which it is less soluble, but from which it crystallizes in feathery aggregations. On prolonged keeping it is prone to undergo decomposition, but it keeps permanently in alcoholic solution. It volatilizes gradually at ordinary temperature and readily with steam.

Oxycamphor, being decomposed on prolonged exposure to the air, is marketed only in the form of the 50 per cent. alcoholic solution under the name of "oxaphor."

Oxaphor should be completely soluble in alcohol and in benzene, forming clear solutions. Its filtered aqueous solution after acidulation with nitric acid should not afford a precipitate with silver nitrate or barium chloride. When incinerated it should yield no weighable residue.

Actions and Uses.—Oxaphor is a depressant to the respiratory center, but is said to have no effect on circulation and secretion.

It is recommended as a substitute for morphine in respiratory disorders, chiefly in cardiac dyspnea and asthma. It is said to have been used with advantage in renal affections, in emphysema, bronchitis, etc. Freedom from undesirable side-effects is claimed as an advantage over morphine.

Dosage.—2 to 3 Gm. (30 to 45 grains) of oxaphor in a little water, wine, syrup or other desirable adjuvant.

Manufactured by Farbwerke, vorm. Meister, Lucius & Bruening, Hoechst a. M. (Victor Koechl & Co., New York). U. S. patent No. 610,361.

PHENACETIN.

A name applied to Acetphenetidinum, U. S. P.

Manufactured by Farbenfabriken, vorm. Friedr. Bayer & Co., Elberfeld, Germany (Continental Color & Chemical Co., New York). U. S. patent No. 400,086 (expired); U. S. trademark Nos. 16,392 and 18,637.

PHENOCOLL HYDROCHLORIDE.

AMIDOACETPHENETIDIN HYDROCHLORIDE. GLYCOCOLL-PARAPHENETIDIN HYDROCHLORIDE. PHENAMINE.

Phenocoll hydrochloride, $C_6H_4.OC_2H_5NH(CH_2NH_2.CO)HCl = C_{10}H_{14}O_2N_2.HCl$, is the hydrochloride of a synthetic base produced by the combination of phenetidin (paraamidophenetol) and glycocoll (amidoacetic acid). Phenocoll, $C_6H_4.OC_2H_5.NH(CH_2CH_2.CO)$, differs from acetphenitidin (phenacetin), $C_6H_4.OC_2H_5.NH(CH_3.CO)$, only in that one hydrogen atom in the acetyl group has been replaced by the NH_2 group.

It is prepared by the action of chloracetylchloride on phenetidin, treating the product of the reaction with ammonia, neutralizing the amidoacetphenetidin (phenocoll) so produced with hydrochloric acid, and crystallization.

It is a white, microcrystalline powder, soluble in 16 parts of water at the ordinary temperature, more soluble in hot water, from which it crystallizes in cubes, while from hot alcoholic solution it crystallizes in needles. It is barely soluble in chloroform, ether or benzene (benzol). The free base (phenocoll) obtained by precipitating the aqueous solution with fixed alkalies or their carbonates forms white, matted needles, containing one molecule of water. In its hydrated condition it melts at 95° C. (203° F.), while the anhydrous base melts at 100.5° C. (212.9° F.). It is stable and not chemically affected by acids or alkalies unless subjected to prolonged boiling with these reagents, by which phenocoll is split into phenetidin and glycocoll.

It should produce a clear solution with 30 parts of water, a turbidity indicating the presence of di- or tri-phenocoll, and the solution should not produce a red color with ferric chloride, showing absence of free phenetidin. No ammonia should be evolved on the addition of sodium hydroxide to the warm solution, and the precipitated base should be of a pure white color.

Phenocoll hydrochloride is incompatible with soluble hydroxides or carbonates.

Actions and Uses.—Phenocoll hydrochloride is similar to acetphenetidin (phenacetin) in its effects and acts as an antineuralgic and antipyretic. It is claimed by some observers to be less depressing than other coal tar antipyretics and is said to be prompt in its antipyretic action. It has been asserted to have an antiperiodic action and to be efficient as a substitute for quinine in malaria and free from unpleasant by-effects. In somewhat larger doses than are usually employed it is said to have a beneficial action in rheumatic fever.

Dosage.—0.3 to 1.3 Gm. (5 to 20 grains) in powder, dissolved in water before taking; hypodermically, in 0.25 to 0.5 Gm. (4 to 8 grains) doses.

Manufactured by Chemische Fabrik auf Actien, vorm. E. Schering, Berlin (Schering & Glatz, New York). U. S. patent No. 543,214.

PHENOCOLL SALICYLATE.

Phenocoll salicylate, $C_6H_4.OC_2H_5.NH(CH_2NH_2.CO).C_6H_4.OH.COOH = C_{17}H_{20}O_5N_2$, is the salicylate of the synthetic base phenocoll (see phenocoll hydrochloride).

It is prepared by neutralizing a hot aqueous solution of salicylic acid with phenocoll (obtained as described under phenocoll hydrochloride) and cooling the solution.

It forms fine, white, crystalline needles, having a sweetish taste, sparingly soluble in cold water (1:200), readily soluble in hot water. It gives a violet reaction with ferric chloride.

It is incompatible with soluble hydroxides and carbonates and with bodies which are incompatible with the salicylates in general.

Actions and Uses.—It combines the therapeutic action of phenocoll (antipyretic, analgesic, see phenocoll hydrochloride) with those of salicylic acid (antiseptic, antirheumatic).

It is recommended in rheumatism, gout, chorea, pleuritis and fevers, especially in influenza.

Dosage.—1 to 2 Gm. (15 to 30 grains).

ICHTHALBIN.

A Correction.—In THE JOURNAL, Oct. 27, 1906, page 1378, under Ichthalbin, the paragraph on "actions and uses" belongs to Ichthoform. The paragraph should read: Its actions and uses are the same as those of ichthyol, with the asserted advantage of freedom from such side effects as nausea, eructations, etc. It is recommended for the same purposes as ichthyol.

(*To be continued.*)

Use of Saponin in Mineral Water.—The toxic character of saponin added to mineral water to increase the froth was the subject of debate at the recent meeting of the Association of German Mineral Water Manufacturers (*Pharmazeutische Zeitung*, Sept. 22, 1906). While this substance has been used for twenty-five years without objection from a sanitary standpoint, last year the police chemists suddenly announced that it is injurious to health and must no longer be added to drinks. Later animal experiments indicated that its use is not injurious. The association appropriated about $240 for an investigation to determine the question.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

103 Dearborn Avenue . . . . Chicago, Ill.

Cable Address . . . "Medic, Chicago"

Subscription price.....Five dollars per annum in advance

[*For other information see second page following reading matter.*]

SATURDAY, NOVEMBER 10, 1906.

THE EXPERIMENTAL PRODUCTION OF ATYPICAL EPITHELIAL PROLIFERATION IN RELATION TO CARCINOMA.

In view of the rather meager results so far obtained by the efforts to produce epithelial proliferation through external irritation, Bernhard Fischer[1] hit on the idea of trying to induce by experiment chronic inflammatory changes in the cutis without injury of a direct nature to the overlying epidermis. Perchance changes so induced in the cutis might lead in some way to epithelial proliferation, an idea that clearly is the outgrowth of the view held by Ribbert, in whose institute Fischer's work was done, of the great importance of the inflammatory infiltration about carcinomas in their genesis.

Accordingly, various substances were injected very carefully into the tissues of a rabbit's ear, but without any especially noteworthy results until olive oil mixed with the fat-staining dye called "Scharlach R" was used. As the oil fills the interstices of the tissue the epithelium of the ear is lifted away from the cartilage; in a few days mitoses appear and the epithelial layers increase in thickness, processes extend downward, epithelial pearls are formed, and eventually a picture is produced that morphologically recalls the structure of flat-celled carcinoma of the skin. Epithelial down growths may perforate the cartilage, and in one instance growth was noted in a large lymph vessel.

Inasmuch as these striking changes were produced only by olive oil with "Scharlach R" ("scarlet oil") it follows that the inflammatory changes caused by its injection in themselves can not be regarded as the cause of the epithelial proliferation. On the contrary, the proliferation must be traced to the special effect of the "scarlet oil" on the epithelial cells, and many details in the anatomic picture favor this view, and especially the fact that the direction and the extent of the epithelial growth follow very closely the distribution of the oil. Of course, other substances may have the same effect also. The important fact brought to light in these experiments is that "scarlet oil" appears to exercise a specific attraction or chemotaxis on cutaneous epithelial cells in the rabbit. Whether the same effect obtains generally in mammals, including man, remains to be seen.

1. Münch. med. Wochenschr., 1906, vol. liii, p. 2042.

While in no case did these experiments give rise to an actual carcinoma, the demonstration that substances which by special action cause epithelial proliferation are available for experimentation must prove of great value in the study of cancer, and it does not seem to be saying too much to predict that Fischer's work will have a decided and stimulating influence on the investigation of malignant tumors.

Fischer employs his results in constructing an ingenious hypothesis of the origin of malignant tumors. Starting with the existence of a "tumor matrix," be it of embryonal or postembryonal origin, composed of cells that naturally would differ somewhat from the other cells of the organ in their chemical activities, he assumes that unrestrained proliferation may be set in motion on the advent of some specific substance or *attraxin* which acts on the cells of the matrix only and not necessarily on other cells of the affected organ or body. The obvious necessity to assume a large number of specific chemotactic substances need not appear insurmountable in view of the great multiplicity of specific substances known already to exist in the serum, thanks to the investigations of immunologists during recent years. He points out that it is also conceivable that groups of cells which have been placed under unusual or abnormal conditions for some time may so change their chemical peculiarities that substances normally present in the body might exert special attraction on them. In this case one would expect the resulting tumors to be transplantable to other animals of the same species. In this case Fischer's theoretical consideration appears to coincide in a general way with Ehrlich's conclusions from his study of transplantable tumors in mice, viz., that the tumor cells acquire a special and increasing avidity for certain substances circulating in the blood. We hope that the ideas here briefly indicated may prove fruitful working hypotheses and that the experimental production of atypical epithelial hyperplasia actually opens a new route for attack on the problem of the cause of cancer.

THE NEW YORK WATER SUPPLY: AN OBJECT LESSON TO SANITARIANS.

The need for expert supervision and control over municipal water supplies has perhaps never been more forcibly illustrated than in the series of documents published by the Merchants' Association of New York City. It has long been a source of wonder to European visitors that a matter so important to the public health, and so momentous to the welfare of a community as the public water supply, should be left to any degree in the hands of greedy contractors or irresponsible and perhaps treacherous public officials. The plight in which the city of New York finds itself furnishes a strong argument to those who are urging a larger measure of foresight and expert control in municipal affairs. It has been pointed out in the last few years by engineers

of eminent authority that New York is in almost constant danger of a water famine. In one of the recent reports of the Merchants' Association it is stated that "the existing storage is insufficient to carry the city over a protracted dry season unless the present rate of consumption be materially reduced. In 1899 and 1900 the city was dependent for 255 days on its stored water. At the present rate of consumption in case of continued drought the stored supply would be exhausted in 245 days. Before a new supply is available it is estimated that the draft on the storage during the dry season will have so increased as to exhaust it in 175 days."

At present the city of New York has eighty-two distinct sources of water supply, but this is quite insufficient. The work of procuring an additional quantity of water has already been entered on, but has met many grievous and unnecessary delays. . . . "by trifling with the work at Jerome Park reservoir, we have been tempting Providence for several years. The city under a special act of the legislature agreed to pay the contractor $500,000 more than the contract price on the basis of an eight-hour day to finish the work by Sept. 1, 1904 (full performance of which was due under the original contract on Nov. 1, 1902), but the work is not yet done—in fact, only the westerly of the two reservoirs is completed, and that but recently." When completed, it is stated that the city's water system will have cost more than $280,000,000. As a whole, the finished New York system will be one of the largest public works ever undertaken by any community in ancient or modern times.

There is one point brought out in the recent discussion of the New York situation to which attention should be directed. It is shown that the imminent danger of water shortage is due in large part to a waste of water through thievery, defective plumbing and carelessness, which is clearly preventable. The average daily consumption of water in New York, as in nearly all other large American cities, is at least three or four times as great as in European cities of the same class which are as cleanly kept and in which manufacturing industries dependent on abundant water supply are as numerous as in the American municipalities referred to. When an engineering authority computes the needless waste in New York City at from 50 to 75 gallons a day for each inhabitant, an amount greater than the whole per capita consumption in most German cities, it is plain that the situation is serious. This extravagant waste of water has a direct sanitary, as well as economic importance.

The necessity for some sanitary supervision over a great public supply is too obvious to require argument. The pollution of water on the various watersheds must be prevented, industrial nuisances abated, local systems of sewerage maintained, local filter plants established, and a rigorous sanitary patrol of the watersheds kept up unceasingly. The larger the amount of water to be provided, the more extended must be the area to be supervised and the more imperious the necessity for constant vigilance. In other words, a needless increase in the quantity of water to be supplied to a given community throws a heavy burden on those responsible for the sanitary quality of the supply and increases enormously the danger of a breakdown in sanitary efficiency. Any measure, then, that tends to diminish that large fraction of the per capita water consumption in American cities which is pure waste deserves to receive the hearty support of all interested in municipal sanitation. The sanitary quality of a large water supply can undoubtedly be improved by reducing the amount of waste, and the efforts of the Merchants' Association of New York in this direction are worthy of general imitation.

THE ETIOLOGY OF CHOREA.

Chorea, as one of the most frequent nervous diseases of childhood, must always command interest, and this is increased by the mystery regarding its relation to rheumatism and its rather obscure pathology. While it is true that from time to time distinct brain lesions have been described, and while it is also true that certain writers have even regarded it as rheumatism of the brain, no such direct evidence as that of Poynton and Holmes[1] has hitherto been adduced. It will be remembered that Poynton has been working on the bacteriology of rheumatic fever for some years, and may justly be regarded as an authority on this subject. The view which he and his collaborator take of chorea is that it is in most cases rheumatic, and that it is directly due to an infection of the brain and meninges with the *Diplococcus rheumaticus*.

The evidence on which this hypothesis is based (Poynton frankly states that it is a hypothesis) is, we think, rather striking. It consists in the demonstration of the *Diplococcus rheumaticus* in the cerebral tissues of three cases of chorea, two of them ordinary rheumatic cases, the third a case of chorea gravidarum. In the latter case there was no rheumatism, but there was an associated acute endocarditis from which the same organism was obtained. In association with the micro-organisms were definite cerebral lesions, partly vascular, in the form of infiltration of the perivascular lymph spaces, thrombosis of vessels and areas of necrosis, and partly cellular, in the form of chromatolytic changes in the brain cells.

The authors regard chorea, then, as due to the toxins of the diplococcus acting on the nerve cells, an action which they compare to that produced by strychnin or tetanus toxin. The fact that in chorea the symptoms are mainly motor, while the degenerations are not confined to the motor areas, they regard as, so to speak, accidental. As they point out, symptoms other than motor ones may be observed, particularly the mental peculiarities of the disease, which, as is well known, may amount to

1. Lancet, Oct. 13, 1906, p. 982; abstracted in THE JOURNAL, Nov. 10, 1906, p. 1599.

actual insanity. They think that the toxin is of a rheumatic nature not only on account of the bacterial findings, but also on account of the frequent association of the two diseases and the resemblances in their natural history such as their tendency to relapse, their mode of onset, and their association with secondary lesions common to both. They are not as yet prepared to say that all cases of chorea are rheumatic. The chorea of pregnancy is also generally rheumatic, statistics showing that in a large proportion of cases the patients give a history of previous attacks of articular rheumatism.

While these researches are in many ways convincing, they do not prove the rheumatic origin of chorea. If it were admitted on all sides that rheumatism is due to the *Diplococcus rheumaticus* they might be considered to do so. But this is far from being the case. The results of cultures in acute articular rheumatism have been far from concordant. In many cases cultures have been sterile. These researches do seem to show that chorea is definitely associated with the presence of micro-organisms in the brain and meninges, and with definite anatomic lesions which are probably due to them, and this in itself is of great interest. Before it is definitely decided that these organisms are the true causal agent, the etiology of rheumatism must be cleared up, and so far this has not been done to the satisfaction of even the majority of those who are competent to judge.

A DANGER IN ORGANOTHERAPY.

A very interesting development of our knowledge of the effect of the various preparations of the suprarenal gland has been the confirmation from a number of observers in different countries of the fact that the use of considerable quantities, in animals at least, produces arterial degeneration. It is pointed out as a triumph of experimental pathology that at last we are in the position to be able to produce degeneration of arteries at will for purposes of study. It is rather disquieting news, however, for those who have been prescribing the remedy in considerable doses for some time and still more for those who have advised its employment over prolonged periods for the treatment of nasal conditions. The use of various preparations of the suprarenal gland in powder form for local applications in the nose has not been confined to physicians' hands; patients have been given powder blowers and have been counseled to use the substance rather freely at intervals of a few hours in order to have that freedom of nasal respiration, the absence of which in enlargement of the turbinates and in various conditions of hyperemia of the nasal mucous membrane is a source of so much discomfort.

We are not sure how much of the powder or of certain extractives may be absorbed into the system as the result of this application. Observation has shown, however, that there is a certain increase of blood pressure from fifteen minutes to a half hour after the application and that occasionally also there is some increase in the rapidity of the heart action. The latter effect is probably only secondary to the increase of blood pressure. It is easy to understand that such effects if frequently repeated over prolonged periods would almost surely lead to the development of precocious changes in the arteries if not in the heart. Repeated doses would not produce the acute degenerations that are seen in animals from massive doses, but such use of the substance can scarcely be expected entirely to preclude the danger of gradually progressive changes in the direction of pathologic conditions. In a word, not enough is yet known with regard to the physiologic action of suprarenal substance or its extracts to justify us in advising its employment as a routine remedy for any length of time.

This is a typical example of the dangers that are involved in the application of the very limited knowledge we possess at the present time as to the ultimate action of most of the organo-therapeutic remedies. We know that they are often extremely active substances, sometimes very helpful in their immediate effects. Beyond this, however, our knowledge does not go. It could easily happen that pathologic processes—the real source of which would remain latent until the coincidence of a number of cases occurring under similar conditions would arouse suspicion—might unwittingly be initiated by their use. It would be sad, indeed, if our modern scientific medicine should have any such rude awakening from its dream of therapeutic progress as this would occasion. It at least behooves us to be reasonably careful in the application of such remedies and especially not to hand over the employment of them too freely to the public under such circumstances that they will be used over prolonged periods without proper safeguards and the careful observation of a trained medical mind.

NEWSPAPERS AND QUACKS.

Condemnation of the charlatan by medical men is often viewed with suspicion by the layman and subjects the physician to the unjust charge of jealousy and self-seeking. No such suspicion, however, can rest on the layman who shows up these fraudulent practitioners. Copies of the *Cleveland News* come to our desk, telling of a very interesting investigation made by a reporter for the paper, Charles F. Stuart, among "eminent specialists" of that city. He declares: "I have known some murderers, a few burglars, some pickpockets and a scattering assortment of other criminals, and until recently I held that the thief who robs the children's fresh-air-fund contribution box holds the record for combined cowardice and meanness in the art of theft. Since then, however, I have visited that colony of graft called 'quackdom.' Now I feel like taking off my hat to the fresh air fund sneak and telling him that he has not only an equal, but a superior." Being in perfect physical condition, Mr. Stuart first secured a thorough

examination by reputable physieians and obtained from them eertificates that he was in a normal eondition and in excellent health. He then went to some of the quaeks of Cleveland, who found him afflieted with heart trouble, nervous prostration, kidney disease, bladder trouble, liver complaint, stomach trouble, etc. The reporter, writing in a lay publication, has to veil what he means by "etc." Almost every quack assured him that he was the victim of eertain unmentionable diseases, evidently, he suggests, to secure a hold on him and to induce seereey and thus to prevent exposure of their lies. He seeured medicines from many of these quaeks and publishes their pictures and tells what they claim they could do for him, thus making a showing that certainly ought to be of inestimable value to the people of Cleveland, afflicted as that city is with these parasites. In our miscellany department this week we quote further from these articles. The *News* eertainly is doing good work and its example might well be followed elsewhere.

PHYSICIANS AND POPULARITY IN GERMANY.

Some time ago when the niches in the Hall of Fame were to be filled, there was a certain amount of surprise, among the medical profession at least, that no physicians were ineluded in the list of the ehosen. Many of us thought that Benjamin Rush, at least, ought to have had his niche. In eontrast to this, notice the result of the recent popular vote in Germany as to the twelve greatest men in the fatherland. Third in the list stood the name of Robert Koeh, and eleventh that of Ernst von Behring. This does not indicate that Ameriean physicians have never accomplished anything, but, rather that the American people, taking them on an average, do not have the same knowledge of the general affairs of the world as the German. This statement will perhaps bear modifying, for the Americans are great newspaper readers. The fault probably lies with the newspaper editors, so many of whom are unable to distinguish real medical progress and achievement from the self-advertising announcements by quackish members of the regular profession, or even from the "remarkable discoveries" heralded in the advertising eolumns. When we consider that the South, which benefited immeasurably by his discovery, only contributed a few hundred dollars toward the fund to perpetuate the name of Walter Reed, and that this was mostly eontributed by physicians, we get some idea of popular knowledge of medical discoveries in this eountry. Let us hope that this condition will not always continue.

THE BLOOD CHANGES IN MUMPS.

There are few affections with which mumps is likely to be confounded, but at times, especially at an early stage of the disease, and when a definite diagnosis is at once required, a ready means of recognition is much to be desired. It has been shown that characteristic changes in the blood take plaee even during the first days of an attack of mumps, and this fact may be utilized praetieally as a means of diagnosis. The number of leucocytes is, as a rule, increased, although the leueocytosis may not be marked. There is a noteworthy inerease in the number of lymphocytes and a somewhat proportionate diminution in the number of polymorphonuelear neutrophiles. Observations yielding parallel results have been made by Dr. Ira S. Wile,[1] who has found the lymphoeytosis, both relative and absolute, constant, appearing on the first day of the disease and persisting until the glandular swelling has subsided. The degree of lymphocytosis appears to bear some relation to the severity of the attack, for it is more marked when the affeetion is bilateral than when only one side is involved. The phenomenon is most marked at puberty, and it becomes progressively less pronounced with advancing years. In this connection it should be borne in mind that the number of lymphocytes is normally high in early life, but after the age of one year it does not attain the figures observed in the presence of mumps. In the same degree as the number of lymphocytes is inereased in the course of this disease the number of polymorphonuclear neutrophiles is diminished. In the presenee of complications, however, such as orchitis, the number of polymorphonuclear neutrophiles undergoes an increase, although there may be no absolute leucoeytosis. The eosinophiles are slightly diminished at the beginning, but their number becomes normal or increased during convalescenee. The basophiles remain unchanged. There is no secondary anemia. Examination of the blood is especially valuable in the diagnosis of mumps from the condition with which it is most likely to be eonfounded, namely, eervieal adenitis. In the latter, however, the leueoeytosis is generally quite marked, and the polymorphonuclear neutrophiles, and not the lymphocytes, are increased.

A GOOD LEGISLATIVE RECORD IN MASSACHUSETTS.

Regardless of party affiliation, the physicians of Massachusetts seem to be well pleased with the record of the recent state administration. A committee of physicians prepared a circular of commendation and it has received the endorsement of hundreds of physicians from all over the state. In it, attention is called to the achievements of the state administration in increasing and strengthening the statutory safeguards erected for the protection of health and physical well-being of the citizens of Massachusetts. In our news department this week we quote from this eircular the portion which itemizes the enactments referred to. The circular particularly praises Governor Guild, who has just been re-elected to another term, for the "enlightened and active interest" which he has exerted in the unusual number of important measures that have been placed on the statute books of Massachusetts this year and for his "breadth of knowledge and keenness of interest" in the preservation of the public health in general and of the personal welfare of every eitizen. We eongratulate Massachusetts on this excellent record in publie health affairs and we are glad the profession has not been slow to express itself.

---

1. Centrbl. f. Bakt., 1906, vol. xxxi, p. 669.

Medical News

ARKANSAS.

Personal.—Dr. Anderson Watkins, city physician and superintendent of the city hospital of Little Rock, will, it is reported, retire at the end of his present term and resume private practice.——Dr. Ollie Oberholtzer, Little Rock, has decided to become a medical missionary and will sail for India about the first of December.

Crusade Against Tuberculosis.—The Fort Smith Board of Health has inaugurated a crusade against the spread of consumption and has issued a circular to physicians, professional nurses, clergymen, teachers, the daily press and employers of men, detailing briefly the facts regarding tuberculosis and the best methods of its prevention.

Hospital Notes.—The judge of Sebastian County has authorized the purchase of 25 acres in the eastern portion of Fort Smith for a poor farm, on which a detention hospital will be erected.——The site for the Kansas City Southern Railway Hospital, Mena, has been selected and work will be commenced at an early date.——The contract has been let for building the hospital at Pine Bluff, to be conducted by the Ladies' Hospital Association. The building will cost about $10,000, and its erection has been made possible by a bequest of the late Major W. H. Davis, Althetmer, who donated the site and a considerable amount of the money required.

CALIFORNIA.

Hospital News.—The board of public works has notified the Los Angeles board of health that the new isolation hospital, erected at a cost of $56,000, is completed and ready for use.——A hospital is about to be erected for the Mammoth Company at Kennet.——Plans for a hospital for Santa Clara County, to cost $50,000, were adopted by the board of supervisors, October 2.

Health Association Meeting.—The California Public Health Association held its fall meeting at Alum Rock Springs, San José, October 12. The chief topic of discussion at the meeting was the mineral springs of California. Dr. Robert Crees, Paso Robles, read a paper on "The Use and Abuse of Mineral Springs," and Dr. Philip Mills Jones, San Francisco, editor of the *California State Journal of Medicine*, described the different kinds of springs and their qualities. In the general discussion which followed it was suggested that the city of San José place placards at each of the 18 different springs in Alum Rock Park, telling of its individual qualities and how the waters would best be used.

CONNECTICUT.

Hospital Note.—The funds for the erection of a new Catholic Hospital, Waterbury, now amount to $33,000. The site has been purchased, plans are practically completed, and the construction of the building will soon commence.

War Against Diphtheria.—Dr. Jos. H. Townsend, New Haven, secretary of the State Board of Health, in his monthly report for September, urges the adoption of energetic means of stamping out the spread of diphtheria, which he believes will be epidemic this winter.

September Deaths.—The State Board of Health reports that during September 1,344 deaths occurred, 312 less than in August and 144 more than in September, 1905, and 155 more than the average number of deaths for the month during the five years preceding. The death rate was equivalent to an annual rate of 16.0 per 1,000, and the deaths from infectious diseases were 205, or 15 per cent. of the total mortality. The chief death causes were: Diarrheal diseases, 183; diseases of the nervous system, 133; heart diseases, 105; consumption, 89; accidents and violence, 76; pneumonia, 46; typhoid fever, 40; diphtheria, 31, and whooping cough, 24.

DISTRICT OF COLUMBIA.

New Army Hospital.—The bids for the construction of the Walter Reed Army General Hospital varied from $195,025 to $232,715.

Typhoid Fever.—During the week ended October 27 there were 50 cases of typhoid fever reported to the health office and on that day there were 267 patients under treatment.

Cocain Peddlers.—The health department and police of Washington are trying to break up the practice of selling cocain in that city. Recently two cocain venders were arrested and convicted, the second one being fined $200 and sentenced to six months' imprisonment.

Tuberculosis Hospital.—Congress has made an appropriation of $100,000 for a hospital for tuberculous patients. A bill is now pending requiring the placarding of houses in which tuberculosis exists and requiring also that patients be taken to the tuberculosis hospital, and that houses in which tuberculous patients have resided be fumigated under the supervision of the health authorities.

Death and Disease.—The District health department reports 114 deaths during the week ended October 13, an increase of 17 over the preceding week and of 19 as compared with the corresponding week of 1905. Of the deaths, 7 were infants under one year of age. The chief death causes were: Consumption, 20; pneumonia, 9; cerebral hemorrhage, diarrhea, heart disease and kidney disease, each 8; typhoid fever, 7, and meningitis and brain disease, each 3. Diphtheria shows an increase and typhoid fever a decrease as compared with the preceding week.

GEORGIA.

Donation to College.—Andrew Carnegie has given an additional $15,000 to the Atlanta College of Physicians and Surgeons to complete the building fund.

Hospital Notes.—The new Griffin Hospital is now open for reception of patients.——The need of a hospital at Fitzgerald has caused Dr. Dudley B. Ware and other citizens to subscribe stock to buy land and equip a hospital building to contain 20 rooms.

IDAHO.

Typhoid.—Typhoid is reported to be epidemic in Valley Twelve cases have developed and eight of the patients have been sent to the Laclede Hospital.

Personal.—Dr. John Boeck, Boise, was thrown from his carriage in a collision recently and fractured his right clavicle.——Dr. Charles E. Sears, Wallace, who was operated on October 17 for appendicitis, is reported to be improving.

Hospital News.—The Coeur d'Alène Hospital Company has found it necessary to enlarge the accommodations of the institution and has commenced an addition to cost about $2.500. which will double its present capacity.——Plans have been completed for a hospital to be erected in Wallace, by Drs. Mowcrey and J. E. St. Jaen, to cost about $7,000.

Northern Idaho District Society.—At the meeting of the Northern Idaho District Medical Society, October 4, held in Lewiston, a motion prevailed allowing the withdrawal of Kootenai and Shoshone counties, which are to be organized into a separate district. New by-laws in harmony with those of the state society were read, and the following officers were elected: President, Dr. Charles W. Shaff; vice-president. Dr. John F. Hurlbut, and secretary-treasurer, Dr. Frank L. Hinkley, all of Lewiston.

ILLINOIS.

Epidemics.—Smallpox is reported to be prevalent at Wyoming, and at Walnut, Bureau County; typhoid fever at Morris. and diphtheria near Onarga, at Olney, Batestown, Hillery, and at Oakland. At the latter place the public schools have been closed.

Hydropathic Hospital.—The superintendent of the Illinois Northern Hospital for the Insane, Elgin, has outlined plans for a hydropathic hospital in connection with that institution. which have received the approval of the governor. The building is to have a capacity for about 20 patients.

Conference of Charities Election.—At the recent meeting of the Illinois State Conference of Charities, Dr. Frank P. Norbury, Jacksonville, was elected president; Dr. William H. C. Smith, Godfrey, a member of the committee on children; Dr. Vaclav A. Podstata, Elgin, chairman, and Drs. Henry B. Carriel and Josephine Milligan, Jacksonville, and Hugh T. Patrick, Chicago, members of the committee on etiology of dependents; and Dr. William A. Nason, Algonquin, member of the committee on public care of poor.

District Society Election.—At the annual meeting of the Sixth (Western) District Medical Society, held at Jacksonville, October 26, the following officers were elected: Dr. Thomas J. Pitner, Jacksonville, president; Drs. Robert J. Christy, Quincy, and Harry R. Lemen, Alton, vice-presidents: Dr. William P. Duncan, Jacksonville, secretary-treasurer, and Drs. John W. Hairgrove, Jacksonville; Henry W. Hand, Whitehall, and Waldo Fisher, Alton, directors. It was decided to hold the 1907 meeting in Quincy.

Chicago.

New Hospital Home.—The People's Hospital is about to move into its new home at Twenty-third Street and Archer Avenue, erected at a cost of $40,000. The hospital will continue to be under the charge of Dr. J. I. Gary.

Summer Hospital Closes.—The Chicago *Tribune* Summer Hospital closed its second season October 15, after a service of 16 weeks to the convalescent poor of the city. During this time the hospital cared for 372 patients, most of whom were children.

Urologists Elect.—At the annual meeting of the Chicago Urological Association Dr. Louis E. Schmidt was elected president; Dr. J. Allen Paton, vice-president; Dr. Budd C. Corbus, secretary; Dr. William T. Belfield, councilor, and Dr. Henry G. Anthony, alternate.

IOWA.

Sues Medical Society.—Alleging that the State Board of Medical Examiners has deprived him of his certificate to practice without giving him an opportunity to appear in his own defense, Anthony White, Taylor County, has instituted an action against the board in the district court. The certificate is claimed to have been revoked without a hearing.

Diphtheria.—On account of the prevalence of diphtheria in Pleasant Valley the public schools have been closed.——On account of the possibility of an outbreak in the schools of Des Moines, the public health authorities have caused several of the school buildings to be fumigated. More than 20 cases are reported and every precaution is being taken to prevent its spread.

KANSAS.

Diphtheria Closes Schools.—Owing to the prevalence of diphtheria in Kingman, the city schools were closed October 18 for one week and church services, Sunday schools and entertainments mere interdicted.

Hospital News.—The Sisters of Charity have secured a site on South Broadway, Leavenworth, for their new hospital.——The Arkansas City Lodge of Elks has voted to furnish a room in the new Arkansas City Hospital and one in the South End Arkansas City Hospital.

Personal.—Dr. Elwood Armstrong, Greenleaf, has been confined to his house for three weeks with severe phlegmon of the hand, but is now improving.——Dr. Archibald McDonald, Fort Scott, is reported to be in a critical condition.——Dr. Peter Dockler, Onaga, celebrated his one hundred and first birthday, October 5.

Communicable Diseases.—Tuberculosis, typhoid fever and diphtheria are on the increase in the state, according to the report of the board of health for September, as compared with the same month of 1905. The increases are respectively: 12 cases of consumption and 3 deaths; 24 cases of typhoid fever and 3 deaths, and 35 cases of diphtheria and 11 deaths. Diphtheria was noted in 32 counties. In Emporia 20 cases of diphtheria have been quarantined to date and two of the public schools have been closed. In Lawrence the diphtheria situation is improving. The high school and the seventh and eighth grades of the public schools have been reopened but the lower grades will remain closed for the time being. The public schools of Kingman were opened October 25 after having been closed a week on account of diphtheria.

KENTUCKY.

Physicians' Buttons.—The physicians in Louisville have been supplied with buttons, the wearing of which admits the bearer within the fire lines.

Epidemic Diseases.—Scarlet fever and diphtheria are reported to be epidemic in Elizabethtown. Several deaths are said to have occurred and all the schools have been closed.

New Dispensary.—The Kentucky Anti-Tuberculosis Association, at its meeting in Louisvile, October 26, arranged to establish a dispensary equipped with a visiting nurse, under the supervision of the committee.

Impersonated Physician.—A barber of Louisville was recently fined $19 and placed under bond of $300 for 90 days, on account of having impersonated a physician, made a physical examination of a patient and given a prescription.

Personal.—Dr. Henry A. Shelby, Mayfield, has been appointed physician of Graves County.——Dr. John D. Carpenter has been appointed assistant to the chair of clinical medicine, diseases of the chest, and medical chemistry in the University of Louisvile, Medical Department.

Ouchterlony's Will.—In the settlement of the estate of the late Dr. John A. Ouchterlony, provision was made, as has already been stated in THE JOURNAL, for a tuberculosis hospital, which will probably be attached to St. Elizabeth's Hospital, and will be under the management of the Sisters of Charity of Nazareth. The testator also bequeathed $1,000 to Dr. Charles G. Lucas and $1,000 to Dr. Oscar W. Doyle, both of Louisville.

Fight for Pure Milk.—The health officer of Louisville, Dr. Maverell K. Allen, is enlisting the aid of commercial organizations in the fight which his department is making for the passage of the pure milk ordinance, which will prohibit feeding swill to cows, and will assist in giving Louisville a clean and healthful milk supply.

Kentucky Valley Physicians Meet.—The annual meeting of the Kentucky Valley Medical Association was held at Campton, October 26. The following officers were elected: Dr. James H. Stamper, Campton, president; Dr. Cornelius Marcum, Miller's Creek, Estill County, vice-president, and Dr. Littlepage, Beattyville, secretary-treasurer. The next meeting of the association will be held in Torrent, in June, 1907.

LOUISIANA.

Campaign Against Impure Milk.—In face of threats and lawsuit, the city health officer, Dr. William P. O'Reilly, is persisting in his campaign for pure food, with special reference to the milk supply of New Orleans, a great deal of which is said still to be under standard.

Medical College Opens.—The Tulane University of Louisiana, Medical Department, New Orleans, opened for its annual session, October 22. The only change in the medical faculty was the resignation of Dr. Allan C. Eustis, instructor in physics and assistant demonstrator of chemistry, who is succeeded by Dr. A. H. Lett, formerly of the University of Alabama.

Quarantine Withdrawn.—By proclamation of the governor, under date of October 17, on request of the State Board of Health, the proclamation of quarantine issued February 26, was revoked, annulled and withdrawn, except in so far as refers and applies to ports and places infected or suspected of being infected with the bubonic plague and Asiatic cholera; this proclamation to take effect November 1. The surgeon general of the United States Public Health and Marine-Hospital Service concurred in the action of the board of health regarding quarantine with the exception of Ceiba, where suspicious cases are said still to exist.

Hospital Reports.—During the first year the Woman's Dispensary, New Orleans, treated more than 1,000 patients. The only requisite for treatment is that the patient is too poor to pay. The medical staff is composed of Drs. Sara Tew Mayo, Clara T. Glenk, Susanna Otis, Elizabeth Bass, Cora M. Bass, Clotilde C. C. Jauquet and Edith Loeber.——The executive committee of the New Orleans Eye, Ear, Nose and Throat Hospital reports 542 admissions during September, 3,231 consultations, 80 operations and 46 emergency cases.——At a meeting of the board of the Touro Medical Infirmary, October 4, the superintendent reported that during September 94 patients were admitted, 98 discharged and 5 died, and that on October 1 there were 60 patients in the hospital. The 2,802 free consultations at the outdoor clinic were distributed as follows: Surgical, 3,633; gynecologic, 184; eye, 1,090; ear, nose and throat, 408; children, 82; internal medicine, 290; digestive diseases, 45; nervous and mental diseases, 26; skin diseases, 36; genitourinary diseases, 34, and dental, 44.

MAINE.

Quarantine Station.—Plans have been approved for the new quarantine station at the north end of House Island, Portland, which will cost $25,000.

Typhoid Fever.—Because of the prevalence of typhoid fever in the towns north of Bangor, especially in Oldtown, where there are at least 15 cases, the Bangor physicians are advising special precautions to avoid an epidemic in that city.

New Wing for State Hospital.—The hospital trustees have recommended the construction of a new wing for the Eastern Maine Hospital, Bangor, to cost from $125,000 to $150,000. The trustees also recommended an appropriation of $2,500 to $3,000 to cover the needed improvements in the Summer Hospital for the Insane, Chase Island.

Medical Club Organized.—At a meeting of the physicians of Westbrook, the organization of the Medical Club of Westbrook was effected and the following officers were elected: President, Dr. Jacob L. Horr; secretary-treasurer, Dr. Louis L. Hills; and committee on by-laws, Drs. Albert H. Burroughs, George K. Woodman and Louis L. Hills.

Malpractice Suit.—We are informed that in the suit for malpractice by C. T. Ripley against Dr. Henry D. Worth, East Corinth, for $5,000, for alleged malpractice in treating a fracture of the plaintiff's leg, the jury decided in favor of the plaintiff, October 13, and damages of $1.00 were assessed against the defendant. The defendant claimed that the plaintiff had removed a plaster cast from the leg on his own responsibility and before the proper time.

MARYLAND.

The Criminally Insane.—Dr. Joseph C. Clark, superintendent of the Springfield Hospital for the Insane, has called on the lunacy commission for coöperation in preventing the commitment of the criminally insane to the state insane hospitals. The modern outdoor treatment allows the patient the utmost liberty and operates with good results, but if the insane with criminal propensities are added, it will be necessary to protect the patients against the criminally insane and also to protect the latter against themselves. The system would thus be disorganized. He quoted statistics to show that insanity was increasing. The institution at Springfield has 730 patients, who are engaged in outdoor employment on the farm, and 225 were added during the past year, several of the criminal insane class.

Honors for Dr. Hurd.—Dr. Henry M. Hurd, superintendent of the Johns Hopkins Hospital, was given a dinner by his colleagues at the Merchants' Club, November 1. He sailed for Europe November 5, on a year's leave of absence, and will devote several months to medical research. A lifesize portrait, by Chase, was presented to the board of directors of the hospital by the medical staff. Dr. William H. Welch presided at the dinner and made the presentation speech, dwelling feelingly and affectionately on Dr. Hurd's services to the hospital. The picture was received by Judge Harlan on behalf of the board. Dr. Hurd made fitting reply. Drs. Ira Remsen and Daniel C. Gilman also spoke. The portrait will be hung in the library. The menu contained a facsimile of it and its cover represented one of the *Johns Hopkins Hospital Reports*, of which Dr. Hurd is editor. There were 141 subscribers, from all parts of the country and even from abroad, to the dinner and picture. The committee of arrangements included Drs. J. M. T. Finney, H. M. Thomas, W. W. Russell, Thomas S. Cullen, R. H. Follis, T. B. Futcher, R. I. Cole and J. M. Slemons.

MASSACHUSETTS.

Can Not Explain Scarlet Fever Contagion.—Brookline has had a series of about 15 cases of scarlet fever, all occurring on the route of one milkman. Most careful examination of the employés, however, failed to show the source of the infection.

Personal.—Dr. Charles P. Sylvester of Boston has gone to Florida for a month's vacation.——Dr. Eugene A. Darling has been elected president, and Dr. John T. H. Nichols, treasurer, of the Cambridge Antituberculosis Association.

Diphtheria.—Diphtheria is reported to be epidemic in Worcester. On October 22, 52 families were under quarantine. The number of new cases for the week was 42, and since August 300 cases have been reported.

Wins Inspector's Post.—Dr. Alfred F. Downing of Cambridge has been appointed physical inspector for the state civil service commission, winning from 25 competitors in the examination held Oct. 17, 1906. Dr. Downing practices in Watertown, is a graduate of Harvard, the Harvard Medical School and of the Boston City Hospital.

Another Leper Found.—A man from Hyde Park, admitted to the Massachusetts General Hospital, Boston, for treatment for a skin disease, was considered a suspicious case, was isolated at Gallups Island, Boston Harbor, and later, when the disease was proved, was sent to the State Hospital for Leprosy on Penikese Island, Buzzards Bay.

To Check Public Spitting.—Beginning October 24, the police commissioner of Boston gave notice that he would strictly enforce the law against spitting on the sidewalks or floors of any city or town hall, any public library or museum, in any church or theater, in any lecture or music hall, in any ferryboat or steamboat, in any railway car or station, waiting-room or sidewalk connected therewith. The violation of this ordinance is punishable by a fine not to exceed $20.

Valuable Medical Library.—The medical books are being transferred from the Boston Public Library to the Medical Library on the Fenway. A card catalogue has also been made. A considerable number of medical journals, the property of the city, have been for some time at the library. The Cambridge Public Library has deposited its collection of medical books in the Medical Library, and other libraries in Boston are understood to have made similar arrangements. The title, under these circumstances, is vested in the original owner, with the right of recall at any time.

Cost of Leper Colony.—For the five lepers kept at the Isolation Colony on Penikese Island Buzzards Bay, for the first 14 months, the expense to the state was $49,043, the greater portion of which is to be considered as initial expense, including the purchase of the island, the building of cottages, etc. Dr. J. F. Lewis, superintendent of the Board of Charities of the State Adult Poor, estimates that an anual appropriation of $5,000 will be adequate for further expenses. He considers the first year of the experiment a success and claims that the plan is more economical than the old system of caring for lepers in scattered portions of the commonwealth.

Aid to Consumptives.—The tuberculosis camp maintained on the top of Parker Hill, Roxbury, since May 23, closed October 31. The average attendance each day this year was 50, as against 31 in 1905: July, 53; August, 58; September, 54; October, 45. One hundred and seventy-nine patients have been treated and have made a net gain of over 500 pounds. One man gained 44 pounds. Very few lost in weight. At the close 58 were provided for in various ways: the Good Samaritan Hospital, the Holy Ghost Hospital, and some to Rutland. Dr. Joseph H. Saunders has been the physician in charge. The charity is part of the work of the Association for the Relief and Control of Tuberculosis.

Personal.—Drs. Julius S. Clarke, Ernest S. Jack and W. M. Townsend have been elected members of the board of Melrose Hospital.——At the annual meeting of the trustees of the Massachusetts Charity Eye and Ear Infirmary, Boston, October 24, Dr. George B. Shattuck was elected president of the board of managers.——At the annual meeting of the Neighborhood Medical Club, composed of physicians of South Boston, Roxbury, Dorchester and Brookline, October 18, the guest of honor was Dr. John H. Sherman, South Boston, one of the oldest physicians of the state, who was presented with a silk umbrella.——Dr. Fred E. Jones, Quiney, has been nominated by the governor as medical examiner for Norfolk County.——Dr. Stephen A. Mahady, Hinsdale, has gone to Baltimore, and after a course of five months' study, will leave for Europe.

Elections.—The West Brookfield Medical Club held its annual meeting, October 17, as the guest of Dr. Alexander McNeish, Leicester. The following officers were elected: President, Dr. Emerson A. Ludden, North Brookfield; vice-president, Dr. Albert G. Blodgett, Ware; secretary, Dr. Charles A. Blake, West Brookfield; treasurer, Dr. F. W. Coles, and executive committee, Drs. Maurice W. Pearson, Ware; Olney W. Phelps, Warren, and Frederick J. Sanborn, Spencer.——At the annual meeting of the alumni of the College of Physicians and Surgeons of Boston, October 26, the following officers were elected: President, Dr. Procter K. Browne, East Milton; vice-president, Dr. Edward L. D. Turner, Boston; secretary and treasurer, A. B. Drake, Boston, and executive committee, Drs. Aaron H. Thomasson, Mary P. Putnam and Katherine A. Fenelon.

Typhoid Unusually Prevalent.—There are probably more than 1,000 cases of typhoid fever in the state. Serious outbreaks are reported in Arlington, Boston, Brookline, Brockton, Cambridge, Chelsea, Douglas, Easton, Everett, Fall River, Haverhill, Hyde Park, Lawrence, Lowell, Lynn, Malden, Marlboro, Medford, Monson, Natick, Needham, New Bedford, Newton, North Adams, Northampton, Oxford, Provincetown, Rockland, Salem, Somerville, Springfield, Waltham and Westfield. Thirty-five new cases and 5 deaths are reported in Boston for the week ending November 3. We have mentioned the infected milk source in Lynn, Needham, Natick and Wellesley. Another source has been found in Lynn, e. g., the spring water which is largely distributed to the factories. One supply coming from Moose Hill, Swampscott, has been analyzed by the State Board of Health and found unfit for drinking purposes and its sale is forbidden.

Praise Governor and Legislature.—For the first time on record the leading physicians of the state have signed a nonpartisan endorsement of the good work done by a governor and legislature along public-health lines. Editorial reference to this is made in this issue. Some of the specific acts to be credited to this year's administration of state affairs are as follows:

An act (Chapter 502) providing for medical inspection of all children in the public schools, for the exclusion of those suffering from infectious diseases; for annual or more frequent tests of sight and hearing, to the end that those suffering from all physical or mental defects thereof shall be guarded from injury, and shall receive the full benefit of the school work and secure the best educational results.

An act (Chap. 386), regulating the sale of "patent medicines" containing alcohol, opium, morphin, heroin or chloral hydrate, absolutely prohibiting the sale of those which contain cocain or its salts or alpha or beta eucain, and forbidding the sale of these latter drugs except on the written prescription of a registered physician, dentist or veterinary surgeon.

An act (Chap. 508), based on an inaugural recommendation, establishing a school for feeble-minded children, with a physician as superintendent and assistant physicians, one of whom shall be a

woman, which school shall be under the supervision of the State Board of Insanity and shall receive, maintain and educate indigent feeble-minded persons gratuitously, and others on equitable terms.

An act (Chap. 158), to prohibit the pollution of the Charles River within the boundaries of the metropolitan parks district by unpurified sewage, and another (Chap. 360), of the same purport concerning the Neponset River.

An act (Chap. 365), designed to lighten the possible burden of maintaining pest houses in each city and town by permitting any two or more adjoining cities or towns to establish and maintain such hospitals in common.

An act (Chap. 116), to prevent the misuse of milk cans and jars and to prohibit the shipment of cans containing offensive material to the producers of milk. This act has already done much to keep from public sale milk polluted by bacterial contamination, and thus to protect infant life to some extent from its chief cause of mortality, cholera infantum.

A resolve (Chap. 59), providing for an investigation of what unwholesome changes, if any, occur in the flesh of undrawn poultry.

A resolve (Chap. 96), providing for an investigation of barber shops and regulating and supervising their business in the interest of the public health.

MICHIGAN.

Personal.—Dr. George E. Sanford, Saline, has gone to the Harper Hospital, Detroit, for treatment.——Dr. and Mrs. Raymond D. Sleight, Battle Creek, have started for Europe.——Dr. Charles G. Jenkins, Lansing, has been elected a member of the local board of education.——Dr. Robert W. Alton, Portland, will spend the winter in New Mexico.

State Board Meeting.—At the quarterly meeting of the State Board of Health, held in Lansing October 12, the two questions pre-eminently before the conference were the matters of enforcement of the law as regards undertakers and embalmers and reciprocity in licensure of embalmers. The conference recommended the adoption of a plan that a person holding a license as embalmer in one state and desiring to practice embalming in another state, may procure a license from that other state by filing with the secretary of the board of health in the state where he desires to practice, a certified copy of the examination papers on which he received his license in his own state, and by securing from the secretary of his own state board of health a certificate to the effect that he is of good standing in his own state.

MINNESOTA.

Donations.—In response to the annual call for donations from St. Luke's Hospital, Duluth, about $3,000 in cash, in addition to generous supplies, was received.

Personal.—Dr. E. F. Murphy has been appointed first assistant city physician and Dr. David B. Hilger, second assistant city physician, of St. Paul.——Dr. Franklin R. Wright, Minneapolis, returned from Europe, October 12.

Hospital Notes.—The new Immanuel Lutheran Hospital, Mankato, was dedicated October 31, with impressive ceremonies.——The new Asbury Hospital, Minneapolis, with a capacity for 90 patients, was formally opened October 5, and is now in full operation.

Red River Valley Meeting.—At the quarterly meeting of the Red River Valley Medical Society, held in Crookston, Dr. Jacob S. Kjelland, Crookston, was elected president; Dr. J. Calvin Cummings, St. Hilaire, vice-president, and Dr. Herbert H. Hodgson, Crookston, secretary-treasurer.

Epidemics.—On account of an epidemic of diphtheria, the public schools of Rochester have been closed, Sunday schools and public meetings discontinued, and the public library has been shut up until further notice.——There are now reported to be about 20 cases of diphtheria in Duluth, the largest number at any one time in the city for several years.——An epidemic of ringworm has broken out in the schools of Fergus Falls.

Councilor District Meeting.—A joint meeting of the various component societies of the first councilor district, comprising the Park River Medical Society, Red River Valley Medical Society, Western Central Medical Society and the Clay-Becker Medical Society, was held in Moorhead, September 24. Mayor C. A. Nye delivered an address of welcome and read a paper on "Some Points in Medical Jurisprudence." A number of interesting papers were presented and the proceedings were closed by a banquet at which 50 physicians were present.

MISSOURI.

Contagious Diseases.—Two houses, near Independence, have been placed under quarantine on account of four cases of smallpox.——Diphtheria is reported to be epidemic in Oregon.

Car Hits Ambulance.—A St. Louis street car ran into a City Dispensary ambulance, October 7, causing the horses to run away, injuring Dr. E. Taake, the ambulance physician, and causing a collision with another ambulance, in which the driver was hurt.

Society Gives Banquet.—Jackson County Medical Society gave a banquet at the Coates House, Kansas City, October 18, in celebration of the twenty-fifth anniversary of its organization. Dr. Edward H. Thrailkill, the president, acted as toastmaster, and toasts were responded to by twelve members of the society.

NEW JERSEY.

Hospital Receives $5,000.—A woman brought to the Somerville Hospital after sustaining severe injuries in an automobile accident October 14, has presented the hospital with a check for $5,000.

Medical Inspection in Atlantic City.—The report submitted by Medical Inspector, Dr. Edward Guion, emphasizes the importance and necessity for a regular examining corps of physicians and trained nurses in the public schools of the city. Nearly 1,000 of the pupils examined were found not to have been vaccinated, and 425 were found to be suffering with various forms of eye disease.

NEW YORK.

Poisoned by Candy.—More than 50 children in West New Rochelle have been ill as the result of eating colored candy known as "jaw breakers," and one child has died. In every case the symptoms were the same, and the health department and police are making investigations.

Central New York Physicians Meet.—The Medical Association of Central New York held its annual meeting in Syracuse, October 17, at which the following officers were elected: President, Dr. William B. Jones, Rochester; vice-presidents, Drs. Carlton C. Frederick, Buffalo, and Paschal M. Dowd, Oswego; secretary, Dr. Clarence A. Greenleaf, Canoga, and treasurer, Dr. William M. Brown, Rochester.

Northern Association Meeting.—The Medical Association of Northern New York held its annual meeting in Malone October 9. Dr. E. S. McClellan, Saranac Lake, the president, delivered the opening address. The following officers were elected: Dr. William C. Smith, Winthrop, president; Dr. Percival F. Dalphin, Malone, vice-president; Dr. Alfred G. Wilding, Malone, secretary, and Dr. George H. Oliver, Malone, treasurer.

Examination of School Children.—The report of Dr. Joseph C. Palmer, chief medical examiner of schools in Syracuse, shows that during the first week in October, 119 schools were examined and 8,928 children examined, 47 of whom were excluded; 2 on account of scarlet fever, 3 on account of contagious skin diseases, 15 on account of skin diseases, 18 on account of pediculosis, 2 on account of whooping cough and 3 on account of mumps.

Rabies Prevalent.—Babylon, Long Island, has been considerably alarmed over the prevalence of rabies among the dogs in that section. The board of health convened in special session and passed stringent resolutions requiring all dog owners to keep their dogs under close watch; unless this order is obeyed the dogs will be shot. In New York City also the unusually large number of cases continues, 30 cases having been treated within a month. Cures have been effected in all cases that have been treated.

Loeb Home Opened.—After a year's preparation the Solomon and Betty Loeb Memorial Home for Convalescents, a short distance from Tarrytown, has been formally opened. The home consists of a central administration building, a cottage for male and one for female adults, and a children's building. The institution is non-sectarian and payment is asked of no one in straitened circumstances. A city office has been opened, where applications will be received and physicians, hospitals and philanthropic societies are requested to send desirable patients.

Hospital News.—Dr. Eugene H. Carpenter, Oneida, is about to erect a three-story hospital building in that city.——A free dispensary for Troy has been incorporated for the aid of the poor of the city who are in need of free medical treatment. Drs. Charles F. Kivlin and John H. Reid are the attending surgeons; Drs. Edward L. Lyons and Charles F. Archambeault, attending physicians; Dr. Thomas F. Judge, diseases of skin and clinician; Drs. Burton S. Booth and Frank M. Sulzman, diseases of the eye, ear, nose and throat, and Dr. Frank T. Stannard, genitourinary diseases.——Dr. James H. Glass, Utica, gave a reception, October 5, in honor of the nurses and physicians connected with the Faxton Hospital, at Graefenberg farm.——The new Ellis Hospital, Schenectady, was opened for inspection, October 12. The patients were transferred from the old building October 15.

New York City.

Typhoid on Ward's Island.—There has been a slight epidemic of typhoid fever in the Manhattan State Hospital for the Insane, on Ward's Island. The disease is now decreasing, as there are at present only 24 patients in the hospital.

Lectures on Consumption.—The board of education will give free public lectures on tuberculosis to adults in coöperation with the committee on the prevention of tuberculosis of the Charity Organization Society. Drs. Addison W. Baird, John B. Huber and S. Adolphus Knopf will be the lecturers.

Lectures on Diseases of the Skin.—It has been announced that Dr. L. Duncan Bulkley will give an eighth series of lectures on diseases of the skin at the New York Skin and Cancer Hospital on Wednesday afternoons, commencing November 7, which will be free to the medical profession.

City Tuberculosis Hospital.—The $225,000 which the board of health asked from the city for the purpose of building a hospital for the care of incipient tuberculosis at Otisville, N. Y., has been appropriated. The shacks for the patients will cost $80,000; the dining room and kitchen, $20,000; a barn for 40 cows, $18,000, and a power plant, $30,000.

Physicians Not to be Summoned to the Dead.—An order has been issued by the commissioner of police that when a dead body is found policemen will not send for an ambulance to have the body pronounced dead, but will immediately notify the coroner. Hitherto, according to the regulations, no man was ever considered dead until so pronounced by a surgeon.

Infirmary Election.—The seventeenth annual meeting of the Long Island Throat Hospital and Eye Infirmary, Brooklyn, was held October 2. During the year 2,296 cases were treated, 1,083 prescriptions were given and 387 operations performed. The following officers were elected: Dr. Charles T. Schondelmeier, president, and Drs. Rashid S. Baddour and D. Morris Woolley, trustees.

Milk Boycott on Staten Island.—Unless the board of health of the Northfield section of Staten Island extends the time allowed for the renovation of certain dairies, a great number of independent dealers in Staten Island will be forced out of business. The cost of rebuilding dairies in compliance with the law would be so great that the dealers are considering the advisability of going out of business.

Contagious Diseases.—There were reported to the sanitary bureau for the week ending October 27, 336 cases of tuberculosis, with 159 deaths; 238 cases of diphtheria, with 25 deaths; 127 cases of typhoid fever, with 27 deaths; 90 cases of scarlet fever, with 3 deaths; 51 cases of measles; 38 cases of whooping-cough, with 6 deaths; 11 cases of cerebrospinal meningitis, with 5 deaths, and 42 cases of varicella, making a total of 933 cases, with 225 deaths.

The Spread of Trachoma.—The menacing spread of this affection among the school children of Manhattan and Brooklyn continues and, according to the board of health, there is pressing need in New York City for at least two more hospitals where this disease can be treated. It is estimated that in some parts of the city as many as 75 per cent. of the school children are affected by trachoma, while in Brooklyn about 25 per cent. were affected, and there is need of at least one more hospital in that borough.

NORTH CAROLINA.

New Building Opened.—The new chemical building of the University of North Carolina, Chapel Hill, adds greatly to the facilities of the medical school. In the new building will be located the laboratories of pathology, bacteriology and physiology.

To Check Liquor Frauds.—The Cumberland County Medical Society, at a recent meeting, decided unanimously to petition the legislature to repeal section 4 of the prohibition law for Cumberland County, which permits the sale of whisky in drug stores on physicians' prescriptions. This extreme position appears to be the outcome of the disposition of "prohibition drinkers" who are willing to make free use of the kindly weakness of local practitioners to procure their daily drink.

OREGON.

Want Medical Library.—A committee was appointed by the Lane County Medical Society to negotiate for the establishment of a medical department at the public library, Eugene.

Leprosy Diagnosed.—Drs. Ralph C. and Ray W. Matson have decided that the diseased Chinaman who was taken from his home on Chapman Street, Portland, to the county poor farm, is afflicted with leprosy.

PENNSYLVANIA.

Typhoid in Pittsburg.—The report of the bureau of health shows that during the month of October 634 cases of typhoid fever, with 34 deaths, were reported in Pittsburg.

For Criminal Insane.—The commission has selected the site for the State Hospital for the Criminal Insane, at Far View, in Wayne County. The state has made an appropriation of $150,000 for this purpose.

Sold Unlabeled Poison.—R. H. M. McKenzie, a druggist of Pittsburg, and Frank Fleckenstein, his clerk, who were tried recently on the charge of selling bichlorid of mercury tablets without labeling the box containing the poison, were found guilty, and McKenzie is also reported to have been found guilty of selling the tablets for an illegal purpose.

Impure Milk on Pullman Cars.—Under the direction of Dr. B. H. Warren, dairy and food commissioner, the examination is made of food served in dining cars on all railroads leaving Pittsburg. As a result of this investigation 32 charges are to be brought against the Pullman Parlor Car Company. In each of these cases the specific charge wil be the use of formaldehyd in the milk and cream served in the dining service.

Typhoid Fever.—The health authorities report 25 cases of typhoid fever in the state, and state that the outbreak has been traced to an infected milk supply.——The Pittsburg board of health reports that the 30 cases of typhoid fever, which were reported during September in the Twenty-first ward, were due to infected water from one spring.——Cambridge Springs reports 10 cases of typhoid fever.——Pittsburg officials say that the increase in daily reports of typhoid fever, which amounted on October 12 to 35 cases, is due to neglect of the hospitals to promptly report the cases. Up to October 18, 325 cases had been reported in Pittsburg.——Typhoid fever has made its appearance in Summit Hill, where 7 cases are reported.——Two patients at the State Hospital for the Insane, Norristown, are reported to be ill with typhoid fever.

Philadelphia.

Addition to Hospital.—The contract has been let for the construction of a six-story addition to the Medico-Chirurgical Hospital, Eighteenth and Cherry Streets, to cost $80,000.

Hospital Bed for Teachers.—The public school teachers of Philadelphia have contributed $5,000 to endow a private room in Jefferson Hospital, to be known as the Lewis Elkin Memorial Room, which is to be at the free disposal of teachers needing medical or surgical treatment.

Results from Antitoxin.—The records of the Municipal Hospital show that not a fatal case of diphtheria has occurred where diphtheria antitoxin was injected during the first day of the disease. In cases where the injections were performed during the second day the average death rate was 4 to 5 per cent. Injections given on the third day had a death rate of from 13 to 17 per cent.

Personal.—Dr. David B. Birney, who was thrown from his carriage on October 13, was operated on October 22 for injuries sustained therefrom.——Dr. and Mrs. Alexander W. Biddle have returned from Japan.——Dr. Edward B. Meigs will spend the winter at Jena, Germany.——Dr. Robert Laigner of Paris is a guest of Dr. John L. Borsch. Dr. Laigner was for several years chief of Prof. De Wecker's clinic in Paris.——Dr. and Mrs. Frank H. Getchell have returned from Europe.

Mayor Plans New Hospital.—Mayor Weaver has planned to purchase ground for the erection of a hospital for the city's indigent insane patients, and an ordinance will be presented to the finance committee appropriating $261,000 for the purchase of 870 acres of ground in Byberry, in the Thirty-fifth Ward. The purchase of this property is recommended by the mayor, director of the health department, Dr. W. M. Late Coplin, and Drs. Charles K. Mills and F. X. Dercum. In his message the mayor states that in the Blockley insane department at the present time there are over 1,900 insane patients. The money for the construction of the institution is to come out of the proposed permanent loan of $13,500,000. It is the purpose of the authorities to erect buildings here and have at the same time ample ground for the inmates to till the soil, to be employed in other manual occupations, and thus bring in revenue which will help in their maintenance.

WEST VIRGINIA.

Hospital Completed.—The new hospital at Charleston has been completed and equipped. It has accommodations for 20 patients and is under the charge of Dr. Frederick S. Thomas.

Leper Not Cremated.—It is reported that Raschid, the Assyrian leper, was not cremated at Elkins. Lime was deposited in and around the grave, and the shanty he occupied was burned down.

Society Passes Resolutions.—At the meeting of the County Medical Society of Barbour, Randolph and Tucker counties, held in Philippi, October 3, the following resolutions were adopted:

WHEREAS, The growth and development of the organized profession in the past five years has made possible certain lines of activity heretofore out of the question; and

WHEREAS, The work undertaken by the various county and state associations, as well as by the American Medical Association, is in the interest of the public health and well-being; and

WHEREAS, Certain journals owned by private interests and conducted for personal profit have seen fit to attack and criticise the official journals of the organized profession for the work which was being carried on; therefore, be it

Resolved, That we, the members of the County Medical Society of Barbour, Randolph and Tucker Counties, do hereby express our approval and commendation of the position taken by THE JOURNAL of the American Medical Association regarding the advertising and sale of nostrums; and be it further

Resolved, That we hereby express our unqualified approval of the work of the American Medical Association, of the Board of Trustees and the officers of the Association and our confidence in them; and that we especially approve of and endorse the business foresight shown by the Board of Trustees in accumulating a surplus for financial emergencies and future expansion; and be it further

Resolved, That we hereby express our approval of the work of the Council on Pharmacy and Chemistry and urge that it continue its investigation into proprietary and secret preparations in order that the profession may be enlightened and the public benefited by the results of their labor; and be it further

Resolved, That we express the hope that the time will soon come when the American Medical Association will be in position to publish a large part of the medical books used by physicians; and be it further

Resolved, That we hereby express our unqualified disapproval and condemnation of the action of certain medical colleges in advertising for students in other than medical journals; and be it further

Resolved, That we hereby express our disapproval of the action of certai manufacturing pharmacists who have placed the facili- of certain manufacturing pharmacists who have placed the facilities of their plants at the disposal of quacks and vendors of nostrums; and be it further

Resolved, That a copy of these resolutions be sent to the *Journal of the West Virginia State Medical Association* and to THE JOURNAL of the American Medical Association.

WISCONSIN.

Pre-Medical Course.—Beginning with the present year, students of the pre-medical course of the Wisconsin State University, Madison, will take their first two years of work in the university. This has been made possible by the establishment of a department of physiology, of which Dr. Joseph Erlanger, formerly of Johns Hopkins School, Baltimore, is to be the head. A new course in physiologic chemistry has also been added under the charge of Prof. D. C. Bradley of Yale Medical School, and it is planned in the near future to establish departments of pharmacology and pathology. The department of anatomy is thoroughly equipped and under the charge of Professor Bardeen.

Hospital Items.—The contract has been let for the construction of the new Lutheran Hospital, Eau Claire.——Work on the new Montgomery Hospital is progressing. The structure will be four stories in height and modeled after the Augustana Hospital, Chicago.——The Scandinavian-American Hospital Company, Stoughton, has been dissolved, it is reported, and a site has ben purchased in Chippewa Falls for a new hospital, with accommodations for 40 patients, which will be ready for occupancy January 1.——Dr. and Mrs. Frederick Layton, Milwaukee, have donated to the Milwaukee Hospital a home for those suffering from chronic diseases, to be erected at an expense of about $30,000.

GENERAL.

New Electrotherapeutic Officers.—At the recent sixteenth annual meeting of the American Electrotherapeutic Association at Philadelphia, the following officers were elected: President, Dr. Morris Weil Brinkmann, New York; vice-presidents, Drs. J. D. Gibson, Denver, and M. K. Kassabian, Philadelphia; secretary, Dr. A. C. Geyser, New York; treasurer, Dr. Richard Joseph Nunn, Savannah, Ga.; executive council, Drs. William Benham Snow, Fred H. Morse and Francis B. Bishop.

Yellow Fever in Cuba.—Dr. von Ezdorf of the United States Public Health and Marine-Hospital Service reports that 7 new cases and one death from yellow fever occurred in Havana during the week ending October 16. The sanitary forces in Havana are to be increased. It is proposed to have 50 inspectors for oiling and under each inspector 4 men to do oiling of breeding places for mosquitoes. Fumigation of houses is now being more generally done with sulphur. Since the case and death from yellow fever which occurred at Cruces on Sept. 18, 1906, 3 other cases have have been reported from there as follows: One on October 8, patient died October 10; 1, October 13, found at Cienfuegos; 1, October 13, confirmed at Cruces. The chief quarantine officer for the island of Cuba directed a circular letter to all quarantine officers on the island, in which he recommends that an inspection of all vessels in the harbor be made daily; that in case a non-immune be found to have a fever such case be isolated and measure taken to destroy mosquitoes aboard the vessel. Three new cases of yellow fever (confirmed) occurred in Havana October 19.

CANADA.

Typhoid Fever in Ontario.—Twenty-five cases of typhoid fever are reported in New Toronto, a suburb of Toronto. The Ontario board of health has been called to deal with an epidemic of typhoid fever at Sudbury. The situation at the Canadian Soo is also said to be serious.

Typhoid and Tuberculosis at Saskatchewan.—Dr. Moore, secretary of the Canadian Association for the Prevention of Tuberculosis, has held a number of meetings in Saskatchewan in the interests of that association. The department of agriculture, which handles the health matters of the province, has assisted Dr. Moore and at many of the meetings their health officer, Dr. Seymour, has also delivered addresses on both typhoid fever and tuberculosis. The department has issued a small folder on the two subjects for general distribution.

The Deportation of Insane.—The dominion immigration act provides the authority for provinces deporting insane who have lived therein for less than two years. Ontario, under the supervision of its inspector of asylums, is carrying out this work in a systematic way. It is estimated that the province saves about $2,000 on each insane person deported, as in Ontario the cost per annum of maintaining a patient is $135 and the average life of one in the asylum 13 years. A transportation company must bear the expense of deporting those whom it brought in.

Hospital News.—A new sanatorium for consumptives to cost $27,000 is to be added to the establishments of the National Sanitarium Association at Weston, near Toronto. Two prominent citizens of Toronto have each contributed $10,000 of this amont for cottages.——The sixteenth annual meeting of the Foundling Hospital, Montreal, was held during the week ending October 20. Dr. Evans was re-elected secretary of the medical board.——The total number of patients treated in the Winnipeg General Hospital during the week ending October 20 was 365, 213 being men, 117 women and 25 children.

Personal.—Dr. R. E. McKechnie has returned home to Vancouver after spending two months in hospitals of eastern Canada and the United States.——Drs. J. F. W. Ross and Adam H. Wright, Toronto, have returned from attendance on the American Association of Obstetricians and Gynecologists, and from fraternal visits to Drs. L. S. McMurtry and Horace Grant of Louisville, Ky.——Dr. H. P. H. Galloway, formerly of Toronto but latterly of Winnipeg, has been appointed lecturer in orthopedic surgery in Manitoba Medical College.——Dr. W. W. Boyce, Bellevile, Ont., has been appointed physician to the Institute for the Blind at Belleville.——Prof. J. George Adami, McGill University, Montreal, advocates the daily compulsory inspection of school children in that city, in order to detect incipient tuberculosis.——Dr. C. B. Coughlin, Peterboro, Ont., a newly appointed member of the Ontario board of health, has been appointed principal of the Institute for the Blind at Belleville, Ont.

FOREIGN.

Late Research on Syphilis.—Many of the men who have thrown new light on syphilis during the last twelvemonth gathered at Berne in September for the Ninth German Congress of Dermatology, and reported the results of their latest researches. Hoffmann, whose name was associated with Schaudinn's in the discovery of the *Spirochaeta pallida*, proclaimed that there can be no question as to the etiologic importance of this spirochete in syphilis, as it has been found by innumerable observers in syphilitic lesions and nowhere except in syphilis. Its delicacy and numerous twists distinguish it from other spirochetes, but the refringens has flagella as well as the pallida. He advocates systematic examination for the pallida as much as for the gonococcus. Neisser reported that only the primary sore and glandular involvement were observed on the lower monkeys inoculated with syphilis, while the higher ones developed the exanthem. Inoculations were positive with substance from the sclerosis and papule, sometimes also with blood, but never with sperm and milk. Inoculations from the spleen, marrow, glands and testicles all resulted positively.

The practical results of his extensive research are, to date, merely the use of serum in diagnosis in the clinic. The findings have been positive in 77 per cent. of 213 patients. Excision of the primary sore was successful in preventing infection in some instances, as late as after eight hours, but in others it failed, even when done within 10 minutes of the infection. He has found that rabbits are also susceptible to syphilis. In regard to preventive treatment, Metchnikoff affirmed anew his belief that inunction with a 30 per cent. calomel salve would prevent infection, citing the successful prophylaxis by this means of the medical student Maisonneuve and of Pirquet's patient. Neisser stated that occasionally infection was prevented after inoculation of monkeys by treating with 2 per 1,000 bichlorid or concentrated carbolic acid solution, but failure was the rule. General skepticism prevailed on this subject. Metchnikoff reported also that 20 passages of syphilitie virus through the rhesus rendered it harmless for the chimpanzee. Finger's communication on the subject of the susceptibility of syphilities to renewed infection confirmed the lack of infection when the virus was merely inoculated on the incised skin. The results, however, were strikingly different when the virus was implanted in a pocket in the skin. The inoculations resulted positively in 89 per cent. of the cases of primary syphilis; in 60 per cent. of existing secondary syphilis, and in 85 per cent. of the cases of existing tertiary syphilis.

German Ophthalmologic Congress.—The twenty-third congress was held at Heidelberg in August, and the Graefe medal was awarded to Ewald Hering of Leipsic, the physiologist, for his researches on the physiology of vision and color and light perception. The Graefe medal was awarded first to von Helmholtz and then to T. Leber, Hering being the third recipient and, like the others, not an ophthalmologist. The relations between trauma and parenchymatous keratitis were discussed from opposite points of view, the subject being left undecided. Holth of Christiania called attention to the fine results sometimes attained in treatment of glaucoma when the supposed mishap of a fistula in the iris followed. He suggests the systematic making of a fistula into the iris in treatment of glaucoma, and has tried it in the clinic, with highly satisfactory results. Several speakers warned against trusting too blindly to Schirmer's intensive mercurial treatment of infected injuries of the eyes. It has saved many otherwise doomed eyes, but is not a certain preventive of sympathetie ophthalmia, and too conservative measures may result disastrously. It was reported that experimental research on the application of Bier's artificial hyperemia in treatment of eye affections did not give very encouraging results. Onodi of Budapest discussed the close anatomic connection between the nose and the eye, showing that a nasal affection with involvement of the sinuses could easily spread to the eye, and even a contralateral affection of the optic nerve is possible with a unilateral rhinologic affection.

Malaria Prophylaxis in Ceylon.—Ceylon's 4,000,000 inhabitants, according to the *Lancet*, maintain a fair standard of health, to which happy condition a climate almost unsurpassed for variety does much to contribute. Malarial fever is one of the scourges of the island, and last year the Northwestern and Sabaragamuwa provinces suffered in this respect more than usual. The experiment of administering quinin regularly as a prophylactic, already tried with some success on the prisoners in Mahara and Mutwal jails, was extended to an area in the Northwestern province. Of 232 villagers who were treated with quinin 36 (or 15.5 per cent.) suffered from malaria, while of 210 boutique-keepers and 24 villagers who were not treated with quinin 140 (or 66 per cent.) of the former and 12 (or 50 per cent.) of the latter suffered from malaria. The number of people in the village was 466. Commenting on the matter in an introductory note to the report on Ceylon, issued by the colonial office, the governor, Sir Henry A. Blake, states that he has arranged with the principal civil medical officer to extend this experiment to all malarial districts during the present year by grouping the villages and sending to each group an itinerant dispenser, who will administer quinin at regular intervals during the malarial season, while all schools will be similarly treated. The result of the experiment can not fail to be interesting, he declares, and he hopes that it will be satisfactory.

International Medical Association of Mexico.—The second annual meeting of this association is to be held in the City of Mexico, November 14 to 17. Eight sections have been arranged, including one for life insurance and one for obstetrics. The program is printed both in Spanish and English, and the addresses are in either language. R. D. Robinson of Torreon, Coahuila, is president of the organization, and W. R. Jamieson of the same place is secretary and treasurer. Communications are announced on "Conservatism in Surgery," by R. H. L. Bibb of Saltillo; "Treatment of Gas Burns," by Hill Rowe of Las Esperanzas; "Burns," by H. Payne of Sabinas; "Rubber in the Fenestrating of Compound Fractures," by H. Crouse, El Paso; "Pneumonia," by S. H. Hodgson of Bridgeport, Ala.; "Ichthyol in Erysipelas," W. C. Fallebert, Celaya; "Eyestrain," and "Principles of Feeding in Enteric Fevers," by the president; "Technic of Urethral Dilatation," F. C. Valentine, New York, and "A Few of Nature's Cures," by C. E. Husk, Santa Barbara, Ch.

Boas' Retirement.—The *Deutsche med. Wochschr.* states that I. Boas has handed over his private polyclinie to his assistants, Elsner and Ury, and now retires from further connection with it, giving up his classes. To commemorate his 20 years of work in the polyclinic, since he founded it in 1886, he has collected the 126 articles and monographs written by himself and his assistants and pupils, and has published them in two volumes, entitled "Gesammelte Beiträge aus dem Gebiete der Physiologie, Pathologie und Therapie der Verdauung." In the course of these 20 years he has published four manuals on the diseases of the stomach and intestine, and he has trained about a thousand pupils. His work has been done exclusively on private initiative, without aid or support from any official institutions. Our exchange adds that this record should certainly give Boas more satisfaction than the empty title of professor which the authorities have always denied him.

Tenth Annual Medical Congress of Roumania.—This congress was held at Bucharest recently with about 200 physicians in attendance. It was organized by the national medical association of the country, and the public authorities were well represented. Leonte, the president of the congress, referred to the 32 new hospitals recently erected by the king in the rural districts, and to the modification of the pension law extending its privileges to medical men occupying official government positions. The scientific work being done by some of the Roumanian physicians, especially Marinesco and others at Bucharest, is of the highest order.

Will Blacklist Authors of Write-ups.—The blacklist which the German Medical Press Association proposes to get up is to contain the names of authors who contribute "write-ups" for pay, and of those who publish an article, even though its style is changed slightly for the occasion, in more than one journal without the knowledge of the publishers. The association asks that such articles be not referred to in any way by the medical press.

Additions to a Glasgow Infirmary.—The Western Infirmary, Glasgow, appeals for funds for a further extension in addition to the new wing which was recently opened and which accommodates 70 patients. There are reported to be over 500 patients waiting admission.

French Investigator in Java, Siam and Burma.—Dr. de Beurmann, in charge of a service at the Saint Louis Hospital, Paris, has been commissioned by the French government to proceed to the Orient to study syphilis and leprosy.

LONDON LETTER.

(From Our Regular Correspondent.)

London, Oct. 20, 1906.

Mr. Jonathan Hutchinson and the Outbreak of Leprosy in Switzerland.

Mr. Jonathan Hutchinson's indefatigable industry in endeavoring to convince people of the truth of his well-known fish hypothesis of the causation of leprosy is once more in evidence. To his recent journeys of investigation in Africa and India he has now added a short visit to the Rhone Valley to investigate an outbreak of leprosy there. The result of his inquiry has been to confirm prognostication which he expressed previously in the *Times*. He finds that in the villages in which the disease is present cured fish of poor quality is imported and eaten in considerable quantities. It is consumed not by the well-to-do, but by the peasants. It is imported to add something savory to the vegetable diet of the fast days, especially of Lent. He hopes soon to be able to supply custom-house statistics as to the quantity of cured fish imported into the Valais. He already knows that it is large and of two qualities—high class and coarse—and that the latter makes up the bulk and entirely goes to the peasants. It consists chiefly of herrings, but "stock fish"—that is, dried cod, tunny or some large fish cut up into blocks—are also used. Another fact which he regards as ominous was disclosed: The fish comes only in the winter and spring months, because it will not keep in warm weather. There is every reason to believe that the development of railroads has much increased the supply. That the supply on the present scale is recent may

be inferred from the fact that it is not known of except on the spot. Mr. Hutchinson was assured in the most positive terms before reaching Leuk that there was no fish eating by the Swiss peasantry. They were said to be too poor to buy the imported article, while the fresh fish of the streams are too valuable for the peasantry to think of eating them. He was told it would be useless to seek fish eaters in the mountains. His informants were leading physicians in the cities and high officials who believed themselves well informed. Not until he got to Leuk itself had he any hint as to the reality. When he got there it was with the belief that it was hopeless to expect to obtain any direct evidence in support of the fish hypothesis of leprosy. In India a precisely parallel experience repeatedly fell to his lot. When the custom-house officials in Berne, at his request, for the first time, attempted to estimate the quantity of fish destined for the Valais, they were astonished. There are no cases of leprosy in the town of Leuk itself, but in two or three of the adjacent villages. All were comparatively recent, none of more than five or six years' duration. The little village of Guttet, in which the cases of leprosy have recently been recognized, is on the mountain side, nearly a two hours' climb above the town of Leuk, and contains about 200 inhabitants. The chalets are neat and comfortable. There was not the slightest reason for suggesting that either poverty or neglect of cleanliness had taken any share in producing the disease. It is doubtful how long leprosy has existed there. Its medical recognition dates back only ten years. But the two families in which alone it occurred until quite recently may have had cases nearly half a century ago. At any rate, none of the more remote cases has survived. Of the present 4 cases one patient is not related to either of the families concerned and a fourth had no connection with the village. On the supposition that the disease has been present in two families in Guttet for 50 years without spreading to others, the facts are much better explained by the hypothesis of commensal communication than that of contagion in the proper sense. It has been suggested that the cases are a survival from the middle ages. Mr. Hutchinson agrees with Prof. Jadassohn, who has twice at the request of the Swiss government, examined the facts, that this is a most improbable supposition. Mr. Hutchinson thinks that in consequence of the use of decomposing fish the Swiss Catholic cantons are incurring the danger of leprosy.

Plague Investigations in India.

The commission appointed by the government to investigate plague in India has issued a highly important series of reports. Apart from the comparatively rare pneumonic form, ordinary plague is found not to be particularly infectious, and man-to-man infection plays no important part in the spread of epidemics. Plague, nevertheless, may be introduced into a new locality by the agency of man and the agent need not be a sufferer from the disease. Definite localities, such as huts or rooms, in which plague has occurred among rats and men during an epidemic, are highly infectious. Persons living or sleeping in such places are liable to contract the disease, although similar close attendance on a plague case in a hospital or temporary camp is seldom dangerous. The infection clings to the described localities, and with such tenacity that persons returning to them a month, or in some cases as much as 48 days, after they have been evacuated have promptly contracted the disease. Plague can exist and spread under a great variety of climatic conditions, but when once it has become endemic it exhibits a marked seasonal prevalence. Bombay, for instance, is never free from plague, but the incidence is relatively small from June to December. In January and February the number of cases rises, at first slowly, then rapidly, and reaches a maximum in March and April, to fall again rapidly in the latter half of April and in May. During the first named period the number of cases a month may be from 50 to 500, but during the height of the epidemics it may range from 4,000 to 7,000. In other parts of India the yearly outbreaks have shown similar periods of prevalence during particular months, with complete or almost complete disappearance at other times, but the months of prevalance in different localities are not always the same. In the great majority of instances the outbreak of plague among men is associated with and generally preceded by, an epidemic among rats. There are the strongest reasons for regarding the epizoötic as being the most important cause of the epidemic spread of the disease. As to the part played by the flea in conveying the disease from rats to man, most important experiments have been made which include a careful anatomic examination of the suctorial apparatus of the flea. It appears that the insect, after making and enlarging its skin puncture, injects its saliva into the wound through one channel of its proboscis and withdraws blood through another. As in the case of the leech, the injection of saliva presumably prevents coagulation of the blood with which it mingles, and may afford a means of injecting the bacilli of plague, although these have not yet been detected in the salivary glands. The rat flea of India, unlike that of Europe, feeds readily on human beings. Guinea-pigs allowed to run free in plague-infected houses attracted a large number of fleas, mostly rat fleas, and 29 per cent. of them died of plague. The same results followed in houses which had been disinfected in the ordinary manner. Fleas transferred from plague-infected rats found dead or dying in houses transmitted plague to healthy animals. Caged animals were placed in plague houses in pairs, completely protected from soil and contact infection, and equally exposed to aerial infection, but one of each pair was protected from fleas and the other not. None of the protected animals contracted plague and several of the unprotected ones died from it. Among the fleas arrested and caught by the protective apparatus a certain proportion were found to contain in their stomachs abundant bacilli identical with plague bacilli. Another series of experiments showed that plague bacilli suffered no diminution of virulence in passing through the bodies of several successive rats, but that many of the Bombay rats are, comparatively at least, insusceptible to the plague virus, possibly because they have recovered from the disease. The blood of infected rats was found to contain an enormous number of plague bacilli, as many as 100,000,000 per c.c. being found before death. Finally, the existence of what is described as chronic plague was demonstrated in rats caught in previously infected localities during periods of general subsidence of the disease, showing that plague in an unsuspected form may linger in the rat population and may again spring into virulence among them under the operation of unknown causes. The whole of the experimental work appears to have been conducted with great skill. Evidently the government of India is sparing no effort to cope with the disease.

Medical Supervision of Children.

At the second meeting of the newly founded British Child Study Association an important discussion took place on "The Medical Supervision of School Children." Dr. Macnamara, M.P., presided, and said that he considered the necessity of bringing the trained nurse and physician into direct touch with the child in the slum school of inconceivably more importance than the problem of the religious formulary to be imparted. The present education bill takes a most admirable step, he said, in providing for the compulsory medical inspection of children on admission to a public elementary school. These views were confirmed by the other speakers.

Sanatoriums for Postal Workers.

The postal branch of the National Association for the Establishment and Maintenance of Sanatoriums for Workers Suffering from Tuberculosis has held a conference. The association is building a sanatorium at Benenden, Kent, where an estate of 252 acres has been acquired. Fifty-two beds have been taken by various societies of workers. The object of the conference was to consider the proposed rules of the postal branch of the National Association. The postmaster general has consented that subscriptions be collected by means of deductions from salary. The number of subscribers has now reached 32,000. Twenty-five beds have been engaged in the projected sanatorium at an annual cost of $8,000. The income of the society provides ample funds for this purpose and leaves a good surplus for cases of emergency.

The Prevalence of Dysentery in Asylums.

The report for 1905 on asylums contains a most disheartening account of the prevalence of dysentery in these institutions. The disease shows no signs of diminution. In 1905 there were under treatment no fewer than 1,106 cases, of which 247 were fatal.

Naso-sinusal Heredity.—Bichaton (*Rev. Hebd. Laryngologie* xxvii, No. 25, June 23, 1906), reports five observations of sinusal disease with history of similar conditions in parents, and holds that they can not be considered as simple coincidents of heredity. They seem to him to indicate a special transmitted tendency to inflammations of the sinusal mucosa which not only renders the subjects specially liable to such inflammations, but also renders their lesions less amenable to treatment. Two of his cases were specially striking as regards this latter point.

Correspondence

Interstate Reciprocity and Frauds in Medical Schools.

Detroit, Oct. 20, 1906.

To the Editor:—Owing to the importance of the subject involved, it seems necessary for me to reply briefly to the communication of Mr. William C. Tait, attorney for the California State Board of Medical Examiners, which appeared in The Journal, October 6. Dr. Dudley Tait, his brother, and a member of the above board, in The Journal, September 1, called attention to a phase of interstate reciprocity involving fraudulent or defective diplomas, and assumed in the administration of medical reciprocity that all diplomas, including fraudulent and defective ones, were received as *prima facie* evidence (more properly, final evidence) of qualification. In my reply, September 15, it was shown conclusively that the administration method employed in reciprocity in going behind the certificate presented for endorsement, should make absolutely impossible the acceptance of a fraudulent or even a defective diploma in reciprocity.

So far, so good. But Mr. Tait, the lawyer, replies for Dr. Tait, the board member, and attorney-like, attempts to cloud the issue by extending the question of fraud and defect to the administration acts of members of state medical boards, and explains at length the method adopted in California to prevent unfairness and dishonesty on the part of the members in their duties as an examining board. In this connection he admits that the method employed in reciprocity, of going behind the certificate to prevent fraud and to eliminate defects in so far as medical diplomas are concerned, is a sound one, but suggests that the process of investigation should be extended to the official acts of state board members.

This suggestion of Mr. Tait is begging the question. The main object of medical reciprocity is the "elimination of the repetition of the tests of qualification." If the methods and reputation of a medical faculty were such that it would be advisable to have the examination questions and answers submitted to a board as a basis for recognition, then it were better not to recognize the college. And if likewise, the methods and standing of a state medical board were such that the questions and answers should also be submitted as a method in the administration of a reciprocity agreement, it were also better not to have reciprocity with such a state. It certainly would not be an equitable method to require from the board members evidence of honesty, competency and fairness, and not require from the faculty evidence of a like nature. Mr. Tait limits his suggestion to the members of the State Board of Medical Examiners.

Mr. Tait also discusses the reciprocity clause of the California statute. He states:

> It may interest the profession to know that the reciprocity clause of the California statute was before the Supreme Court of that state in the case, ex parte Gerimo, decided on in 1904. Counsel of Gerimo, an ex-judge of the court, attacked the law on the ground of the alleged unconstitutionality of the clause in question. Dr. Harison himself has pronounced against the constitutionality of the particular clause, assigning as his reason that it fails to recognize the so-called rights of practitioners licensed without examination under the former legislation of other states. This objection was directed by the ex-judge against the entire act. The Supreme Court, however, brushed the objection aside, holding that the reciprocity provisions were not an integral part of the statute; that they might be unconstitutional without impairing the validity of the remainder of the act, in which event, the court declared, the effect would be to subject all applicants to the examination. Of course, if Dr. Harison is right in his contentions that the provision for reciprocity is unconstitutional, then all hope for reciprocity between California and her sister states is, under present conditions, gone, for certainly the board of examiners can not, at the instance of the enthusiastic apostles of that system, make the statute constitutional.

It is to be noted that the court did not pronounce the clause in question constitutional or unconstitutional. It was contended that the clause was unconstitutional, and therefore impaired the validity of the whole act. The court held, however, that the clause might be unconstitutional without invalidating the act itself. There was no necessity for the court going further in the matter in this particular case; but if the question of constitutionality of the reciprocity clause had been the direct issue, the court could have eliminated the restricted interpretation put on it by the California medical board, and therefore could have extended the intent of its meaning, purging it of the present retroactive quality given it by the board. I have never contended that the clause itself was unconstitutional, but rather that the interpretation given it was unconstitutional.

Mr. Tait states that California has never favored medical reciprocity from the fact that she considers absolute reciprocity a surrender to state sovereignty, and individual or restricted reciprocity too hard work and involving too much conscientious fulfillment; and so, therefore, he agrees with Dr. Harvey's "dangerous tendencies and doubtful advantages of reciprocity." The hard work and conscientious fulfillment kind of reciprocity is the method in force in some twenty-five states against which Mr. Tait and his friends, including Dr. Harvey, are directing their shafts. Mr. Tait accuses me personally of not reporting to his board, as invited, the fraudulent diplomas presented to my board. Since receiving the invitation to report, I have not had a fraudulent diploma presented. I wrote of rejecting defective diplomas—defective from the point of view that they did not fulfill the required standard. If the California board lives up to the standard of the Association of American Medical Colleges, it also should have received defective diplomas as distinguished from fraudulent diplomas.

On the presentation of a fraudulent diploma, I should consider it my duty not only to furnish the several medical boards in the United States with a record of such diplomas, but I should also furnish the directory department of The Journal with like information. And in this connection, I would suggest that all information concerning applicants likely to be of interest to other boards, should be sent to the directory department of The Journal, as it has volunteered, without expense to the boards, to keep a card index covering such matter and to furnish all such information to the boards on request.

Before accepting an applicant from another state, especially when such an applicant has been in practice, a routine inquiry should be sent to the directory department, as well as to the secretary of the state board of which the applicant is a licentiate. This applies to ordinary registrations as well as to registrations involving reciprocity. B. D. Harison.

Treatment of Paroxysmal Tachycardia.

Baltimore, Oct. 29, 1906.

To the Editor:—I should like to correct some false impressions that might be caused by your review (Oct. 27, 1906, page 1417, paragraph 58) of my article on "Paroxysmal Tachycardia." In the review it appears that "Hirschfelder reports a case of paroxysmal tachycardia in which the patient's condition was improved very much by the administration of *2 mg. atropin* within two hours. The drug was used in *5-minim doses of the tincture*, repeated once or twice at half-hour intervals."

The statement appearing in the original article (*Bulletin of the Johns Hopkins Hospital*, vol. 17, p. 339) was, however, that, in order to determine whether or not the vagi were in tonic activity *between attacks*, the patient was given (between attacks) 2 mg. atropin to paralyze the vagus endings. This, however, failed to bring on an attack or even increase the pulse rate; indicating: First, that in this patient the vagi were not in tonic activity; seondly, that something more than paralysis of the vagi was necessary to bring on an attack.

Even the stimulation of the accelerators produced by mild exercise while the vagi were still paralyzed by the atropin did not bring on an attack. So that, the mechanism underlying the paroxysms of tachycardia could not be definitely determined—but attention was called to the fact that "all the means that have been used successfully to suppress the attacks—viz.: ice bag to the heart, deep inspiration, galvanism to the vagus nerve in the neck, digitalin, pressure on the vagus—depend for their efficacy on the direct or reflex stimulation of the vagus. As might be expected from the uncertainty of their stimulating power, the results of these methods have been uncertain and variable. The one drug which exerts the purest and most certain action in stimulating the vagus, viz., aconite, so far as I learn, has not been used.

"Our patient has no further attacks from March 15 to his departure from the hospital on March 25, and as no other cases

of paroxysmal tachycardia have been available, the use of this drug" (*aconite*, emphatically not *atropin*) "in small doses (5 minims of the 1900 pharmacopeial tincture once or twice at half-hour intervals) can, therefore, only be suggested for the present."

ARTHUR D. HIRSCHFELDER.

Bad English.

PHILADELPHIA, Oct. 30, 1906.

To the Editor:—May I call attention to two very common instances of faulty English which I am constantly meeting in letters, in print, and in conversation? One is the assertion that "the patient had no temperature." I presume that the writer does not mean that the patient's temperature was zero, but that he had no rise of temperature beyond the normal. Certainly a temperature of 98.4 F. is universal in the well. Any rise above that should never be called "temperature," but a "rise of temperature," or "no increase of temperature." If temperature falls below 98.4, to 97 or 96 F., how would those who speak of any rise above 98.4 F. as "temperature" designate such a fall—"less than 'no temperature'"?

The other instance is really an atrocious misuse of the language. I constantly hear it used orally. In a recent letter occurred the phrase, "since my case, I have seen two others operated;" and in a single number of an admirable, well-known medical journal occur the phrases "the first case to be diagnosed or operated in P———," "three further cases have been observed and operated here," and two other similar transgressions.

May I call attention also to a confusion of two similar terms? "Tubercular" and "tuberculous" are constantly used interchangeably. At the last tuberculosis congress in Washington I proposed to the executive committee that we should recognize definitely in all our publications a distinction between the two words as follows: *Tuberculous* shall be used only of those lesions caused by the tubercle bacillus. *Tubercular* shall be used in describing those lesions which resemble tubercles, but which are not caused by the tubercle bacillus, for instance, tubercular syphilid, etc. This suggestion was adopted and the proposed usage approved.

I hope that editors will do us the favor of correcting such errors.

W. W. KEEN.

[We wish Dr. Keen had included in his condemnation the expression: "Three cases recovered and one died."—ED.]

Miscellany

EXPOSURE OF QUACKS.

How the Fake Doctors of Cleveland Extort Money and Deceive Patients.

Representing the *Cleveland News*, Mr. Charles S. Stuart has been carrying on an investigation of quacks and quackery in Cleveland, Ohio. The *News* began this investigation to protect the people of that vicinity by giving publicity to the processes by which these quacks extort money from patients, and to bring to the public a realization of the terrible menace to the young and ill-informed in the advertisements put forth by these "eminent specialists" and published in newspapers accessible to every member of the family. The ultimate object is to rid Cleveland of quackery. The results of Mr. Stuart's investigation have been published in the *Cleveland News* for several weeks past.

PRACTICE UNDER ASSUMED NAMES.

One of the first cases investigated by Mr. Stuart is that of Dr. Charles A. Duff. In the *Cleveland News*, October 15, Mr. Stuart says: "He is not Dr. Charles A. Duff. He is a medical college graduate, but practices medicine under an assumed name. In reality he is Dr. Carey Sargeant Ferris, and had the postal authorities known of his true identity, probably his mail would have been stopped long ago. . . . His certificate giving him the privilege to practice in Cuyahoga County is No. 6379 in the Probate Court clerk's office. The records say that he was graduated from Miami Medical College of Cincinnati April 1, 1892. It was a sad day for the public. In October, 1896, he was licensed by the state to practice medicine in Ohio. He was recorded in Cuyahoga County May 29, 1903. He also is recorded as a practicing physician in Hamilton and Montgomery counties. This record gives him the name of Carey S. Ferris." Shortly after his graduation "Ferris went to Toledo as the employé of a fake medical concern. He received something like $15.00 a week. Then he went to Ft. Wayne, Ind., as an employé of the State Medical Institution, which was conducted by L. A. Morlan. He (Morlan) came to Cleveland and brought C. Sargeant Ferris with him. C. Sargeant Ferris was a high sounding name. It looked good when Morlan purchased it from Ferris at $40.00 a week. . . . It was then the C. Sargeant Ferris Medical Company. . . . Ferris was at first in charge of the correspondence, . . . that is to say, when a poor victim wrote in, Ferris' duty was to size up the letter and mark it with hints of the kind to lure the dupe on." Mr. Stuart states that the picture of the supposed Duff which daily appears in the papers is that of a Dr. Duff in Rochester, N. Y.

SOME QUACKS POSE AS REPUTABLE PHYSICIANS AT THEIR HOMES.

The next case investigated by Mr. Stuart was that of Dr. Emil J. Rose. He says: "In his offices, 158 Superior street, he is Dr. Justin, French specialist. At his home in the Bolton Apartments, Bolton avenue, he is Dr. E. J. Rose. On the Cuyahoga County Medical Register he is Dr. Emil Justin Rose. This is a pretty and artful manipulation of names and gives Rose an opportunity to pose and practice in the neighborhood of his home as a reputable physician and smoothly to take the money away from poor dupes urged into his net by disgraceful advertising in his downtown offices." Mr. Stuart continues, "the standing of Rose with the rest of medical frauds is a peculiar one. He is said to be the stingiest of them all. He does not even employ an assistant in his offices, though he is reputed to get a prize portion of the 'suckers' some newspapers send to 'quackdom.' It hurts him, so it is said, to part with a penny. With some others it is 'easy come, easy go.'"

"Dr. 'Erwin' is another of the chiefs of 'quackdom' who is ashamed to reveal his true identity in the indecent advertisements he flaunts before the public. He is Dr. Alexander Erwin Mintie, and for years he has resided at 107 Brookfield street under that name. In the city directory he appears as Alexander E. Mintie, perhaps a further attempt to conceal from the public at large the fact that at 211 Superior street he is Dr. Erwin. I said that Dr. Mintie is ashamed to reveal his identity in his advertising. He frankly admitted this fact to me Wednesday morning."

VICTIMS TOLD THAT THEY HAVE PRIVATE DISEASES.

"Since the *News* first turned the limelight on the Cleveland leeches who call themselves doctors, and placed the fraud brand on them, I have had opportunity to learn something of the little, inner tragedies of life which follow the visit to the office of Dr. Quack. By letter, postal card, telephone and personal visit the stories of the victims of the quacks come to me. Most of these are given in confidence. I said in Article I that the greatest fortification behind which these doctors hide is the shame which they force on their patients. When a patient leaves the office of Dr. Quack it is practically an assured fact that he will speak to no one of what he has been told. It would bring blushes to the cheeks of even the most brazen. For that reason I can say that I am only surprised at the number who have volunteered to come boldly to the front and tell of their experiences."

Mr. Stuart continues. "Dr. Carey Sargeant Ferris, representing himself as Dr. Charles A. Duff, gave me a guarantee to cure me of 'Prostatic Nephritis,' a disease unknown to medical science. Dr. Charles A. Duff now emphatically advertises that he treats all patients personally, which is true, since the real owner of the Duff office, in the face of the *News'* exposé, brought Duff post haste to the office to take charge. Duff advertises that he has competent assistants to assist him. It is admitted that one of these assistants now is Carey Sargeant

Ferris, practically a self-confessed fraud. Dr. Duff advertises that should he take the whole burden of treatment on his own shoulders he would break down under the strain of overwork. But Duff has been working here only since the *News* exposed the office which bears his name. Duff advertises honest treatment and quick cure, but in my case his impersonator decided it would take weeks to cure me of ailments of which reputable doctors said I was free. Duff wants to know if it is not better to trust him with a case in which he makes a specialty than the family physician, and he is given his answer."

A REFORMED QUACK CONFESSES HIS BUSINESS PRINCIPLES.

In the Cleveland *News*, October 22, is published an article which is said to be written by a reformed quack. He says, "Here are a few brief and essential axioms of the business. Get the money. Get it all. Everybody and anybody is in bad physical condition on the first visit to your office. There is no exception to this rule. At times it is wise to cure a person of one ailment, but never fail to find another of serious nature before establishing the cure of the first. This policy is a great money-getter. Nobody is ever completely cured of everything. Bleed the sucker until he dies or until he will absolutely no longer be coerced into your office. Always be busy in your private office when the victim comes in, for five or ten minutes waiting in the reception room both impresses and frightens the patient. Be fairly affable in greeting. Learn as soon as possible how much 'cash' the sucker has and in what capacity he earns a living, or, in a word, how much he can afford to pay. Then multiply this amount by two. Always let the light shine full on the face of the patient and keep your own in the shadow. While so situated paint graphically the horrors of the various ailments with which you tell him he is afflicted. Keep this up until you see a flash of fear on his face. Then dilate further on the horrible character and inevitable termination should he not treat with you of the disease which brought the fear to his eyes. Now is the time to get the money. Get the fee for professional services all cash or as soon as possible, and then soak it to him for the medicines. Don't be afraid to say that you can cure everything and anything, and give a 'legal' guarantee for the same. Lastly, never bring your heart to the office with you. It is not a money-getter."

Association News

NEW MEMBERS

Of the American Medical Association for the Month of October, 1906.

ALABAMA.

Carraway, C. N., Pratt City.
Casey, E. S., Birmingham.
Donald, T. C., Bessemer.
Farley, A. J., Leeds.
Moore, Zadoe, Lamison.
Morgan, J. R., Shelby Springs.
Sankey, H. J., Nauvoo.
Sibley, B. D., Birmingham.
Treadwell, H. P., Hartford.

ARIZONA.

Swetman, C. R. K., Prescott.
Wiley, H. D., Metcalf.

ARKANSAS.

Chastain, J. S., Prescott.
Furbish, L. P., Laeonia.
Johnston, Wm., Hardy.
Smith, E. D., Gilham.

CALIFORNIA.

Eklund, O. E., San Francisco.
Fisher, A. L., San Francisco.
Hamilton, Jos., Fruitvale.
Hulbert, R. G., San Diego.
Morrison, M. A., Fowler.
Norton, Thomas, San Luis Obispo.
Pounds, T. C., San Bernardino.
Smalley, C. A., Los Angeles.
Smith, W. O., Alameda.
Snook, John, Berkeley.
Stafford, A. M., Corona.
Van Denburgh, J., San Francisco.
Waldeyer, Wilhelm, San Francisco.

COLORADO.

Albl, Rudolph, Denver.
Friedman, Emanuel, Denver.
Geiger-Yont, Kate E., Denver.
John, G. H., Denver.
Johnston, W. W., Wray.
Kennedy, J. D., Denver.
McDonnell, J. J., Pueblo.
Morrison, C. S., Colorado City.
Robinson, W. W., Loveland.
Rupert, J. K., Alamosa.
Slopansky, F. R., Denver.
Strong, J. A., Sterling.
Tennant, C. E., Denver.

CONNECTICUT.

Berclnsky, David, New Haven.
Coops, F. H., Bridgeport.
Page, C. I., Litchfield.

CUBA.

Barney, F. M., Fisherman's Point.

DELAWARE.

Crawford, G. G., Wilmington.
Gray, O. J., Wilmington.
Harmonson, C. G., Clayton.
Jones, G. Frank, Georgetown.
Palmer, D. D., Bridgeville.
Riley, T. G., Harrington.
Virdin, Frank, Kenton.

DISTRICT COLUMBIA.

Baker, Frank, Washington.
Donnally, H. H., Washington.
Hamilton, R. A., Washington.
Jones, Louise T., Washington.
Schneider, F. A., Washington.

GEORGIA.

Aycock, W. H., Molena.
Campbell, W. H., Chipley.
Evans, W. W., Millen.
Grubbs, L. F., Sylvester.
Head, M. M., Zebulon.
Miller, W. A., Marietta.
Redding, D. C. D., Warthen.

IDAHO.

Robinson, J. W., McCammon.

ILLINOIS.

Asbury, I. M., McLeansboro.
Bak, E. W., Chicago.
Barr, C. H., Dwight.
Behrendt, Alexander, Chicago.
Blech, G. M., Chicago.
Brown, M. R., Chicago.
Butterfield, E. H., Ottawa.
Carroll, C. L., Taylorville.
Dewey, Grace, Jacksonville.
Harlan, J. D., Fairfield.
Holmboe, A., Chicago.
Hutchinson, Robt., Capron.
Koehler, Gottfried, Chicago.
Lindley, A. M., Urbana.
Lyon, C. M., McLeansboro.
McCall, T. E., Vienna.
McDowell, W. D., Chicago.
McGrath, W. W., Savanna.
Miller, R. C., Shannon.
Moore, W. H., Dixon.
Morton, D. F., Taylorville.
Parker, C. A., Chicago.
Shapiro, H. B., Chicago.
Struzynski, L. M., Joliet.
Taylor, J. L., Springfield.
Thompson, H. L., Harrisburg.
Threadgill, J. M., New Douglas.
Wagner, T. H., Joliet.
Wedge, D. C., Ipava.
Woodside, E. E., Johnston City.

INDIANA.

Barnes, G. O., Seymour.
Bond, M. L., Aurora.
Broughton, F. K., Wolcottville.
Cady, N. W., Logansport.
Conger, C. W., Indianapolis.
Cronk, C. F., Wolcott.
Eshleman, L. H., Marion.
Fleming, H. G., New Point.
Grubb, A. G., Mongo.
Holmes, E. S., Aurora.
Johnson, J. E., Marion.
Kamman, G. H., Seymour.
Kelly, L. H., Hammond.
Kirkpatrick, A. M., Columbus.
Malone, B. Elizabeth, La Porte.
Martin, P. F., Indianapolis.
Nierman, H. G., Ft. Wayne.
Pate, J. R., Milan.
Pearson, J. R., Bedford.
Root, W. W., Parker.
Sensenich, R. L., Wakarusa.
Shrum, Riley, Bedford.
Smith, L. F. J., Wabash.
Spencer, M. J., Indianapolis.
Spurgeon, W. A., Muncie.
Tepe, G. W., Evansville.
Thorner, Moses, Indianapolis.
Venzey, W. M., Avilla.
Yager, E. J., Otterbein.

INDIAN TERRITORY.

Puckett, Carl, Pryor Creek.

IOWA.

Bailey, J. W., Nevada.
Baldwin, L. A., Elliott.
Bickley, C. G., Waterloo.
Bowen, F. S., Woodburn.
Craig, J. W., Lohrville.
Crawford, J. L., Cedar Rapids.
Fenton, W. J., Mystic.
Frantz, C. P., Burlington.
Gilmore, J. E., Monticello.
Hobson, A. J., Hampton.
Johnson, A. P., Sigourney.
Kessell, J. E., Riverton.
Mahood, W. R., Sioux City.
Martin, J. W., Colfax.
Messenger, W. E., Prescott.
O'Donoghue, J. H., Storm Lake.
Plonske, C. J., Bancroft.
Sparks, F. R., Clarinda.
Tait, T. Eliot, Creston.
Tinley, Mary L., Council Bluffs.
Uran, J. A., Holland.
Wilson, H. P., Mediapolis.

KANSAS.

Bowen, W. F., Topeka.
Brown, T. O., Reading.
Campbell, W. B., Troy.
Carver, H. F., Cireleville.
Cave, T. R., Manhattan.
Davidson, C. L., Waverly.
Davis, A. C., Hamlin.
Egan, Belinda E., Waverly.
Emerson, F. G., Wellington.
Farr, W. A., Miltonvale.
Hall, James, Miltonvale.
Hindman, J. H., Humboldt.
Iles, U. G., Seneca.
Lewis, A. B., Hamilton.
Liggett, E. E., Oswego.
Moffitt, C. J., Manhattan.
Nelson, C. R., Washington.
Powers, J. H., Little River.
Simmons, J. W., Culver.
Tourigny, Edward, Aurora.
Van Voorhis, V. C., Robinson.

KENTUCKY.

Chase, H. S., Junction City.
Davis, M. S., Lexington.
Bell, J. E., Casky.
Moore, P. A., Clinton.
Pusey, H. M., Louisville.
Rominger, Louis, Louisville.
Shafer, J. J., Louisville.
Sheppard, W. E., Taylorsville.
Stewart, H. B., Spring Grove.
Stone, J. E., Herndon.
Wesley, J. T., Middleburg.

LOUISIANA.

Moore, P. A., New Orleans.

MAINE.

Cragin, C. L., Portland.
Hitchcock, H. E., Portland.
Small, F. E., Biddeford.
Tibbetts, R. R., Bethel.
Willis, J. L. M., Eliot.
Withan, A. N., Westbrook.

MARYLAND.

Abercrombie, R. T., Baltimore.
Cobey, J. C., Frostburg.
Hayward, E. H., Baltimore.
Lacy, J. W., Lisbon.
Mattfeldt, C. L., Catonsville.
Morris, L. W., Salisbury.
Riley, J. L., Snow Hill.

MASSACHUSETTS.

Bartlett, C. S., Gardner.
Bartley, J. J., Lawrence.
Cusick, L. F., Boston.
Hess, P. W., Winthrop.
Hubbard, G. W., South Hadley.
Noyes, W. N., Salem.
Palmer, G. M., Boston.
Stone, M. C., Fitchburg.
Sturnick, Max, Roxbury.

MICHIGAN.

Baert, G. H., Grand Rapids.
Breitenbach, O. C., Escanaba.
Carriel, H. T., Marquette.
Dodds, J. C., Detroit.
Dougher, E. J., Midland.
Dryden, M. V., Battle Creek.
Foust, E. H., Marshall.
Handy, J. W., Flint.
Hagadorn, J. W., Lansing.
Hanna, S. C., Detroit.
MacIntyre, D. R., Ishpeming.
Montford, Willard, Ithaca.
Parker, J. O., Owosso.
Roach, J. J., Bennington.
Robertson, C. G., Sandusky.
Sarber, H. O., Rockford.
Seeley, A. L., Mayville.
Vandeventer, V. H., Ishpeming.
Wilcox, Getrude L., St. Louis.
Yale, A. E. W., Bay Port.

MINNESOTA.

Holst, C. F., Little Falsl.
Musgrave, Sam'l, Jr., Minneapolis.
Nessa, N. J., Brewster.
Rains, J. M., Willmar.

MISSISSIPPI.

Boatner, F. P., Myrtle.
Montgomery, W. R., Cornersville.
Steger, J. O., Columbus.

MISSOURI.

Adams, Noah, Kansas City.
Althans, Carl, St. Louis.
Amerman, I. W., Nevada.
Arnett, A., Novelty.
Bishop, W. T., Hughesville.
Brandenburger, L. A., St. Louis.
Brown, L. S., Edina.
Chaffin, W. F., Raymore.
Clark, H. M., Platte City.
Cordry, H. V., Boonville.
Connolly, P. D., St. Louis.
Dixon, J. C. B., West Plains.
Ehrhardt, R. T., St. Louis.
Foster, T. W., Butler.
Gish, G. J. P., Minden Mines
Gish, J. S., Liberal.
Gossow, A. A., St. Charles.
Graham, I. E., St. Louis.
Grim, E. A., Kirksville.
Grim, E. C., Kirksville.
Guhman, M. G., St. Louis.
Hallam, J. C., St. Louis.

Hardy, W. F., St. Louis.
Hartmann, J. A., St. Louis.
Hays, B. W., Jackson.
Hempelmann, L. H., St. Louis.
Hoeffer, J. P., St. Louis.
Hoffmann, Phil., St. Louis.
Howard, A. P., St. Louis.
King, W. E., Kansas City.
Klein, S., St. Louis.
Klokke, W. E., St. Louis.
Lancaster, H. W., Rich Hill.
Lewis, Chas., St. Louis.
Mankopf, B. E., New Haven.
Martin, J. Ross, Merwin.
Mattox, W. P., Sullivan.
McLemore, Tipton, Nevada.
Montgomery, J. S., Milan.
Mudd, J. R., St. Charles.
Nichols, D. J., West Plains.
Parker, C. W., St. Louis.
Pipkin, W. D., Excello.
Pitman, John, Kirkwood.
Polgnie, F. P., St. Louis.
Pollard, H. M., Shelbina.
Rohlfing, L. C., St. Louis.
Shoemaker, W. A., St. Louis.
Songer, H. E., Jamesport.
Steckman, P. M., Plattsburg.
Streutker, C. E. F., St. Louis.
Terrill, S. J., Meta.
Welch, W. A., Callao.

MONTANA.

Bruning, L. C., Miles City.
McCall, S. H., Missoula.

NEBRASKA.

Eigler, C. O., North Bend.
Marnell, F. S., Nebraska City.
Weir, E. A., Hastings.

NEVADA.

Cope, P. F., Goldfield.
Jones, McMillan, Carlin.
Scrvoss, G. L., Fairview.

NEW HAMPSHIRE.

Morrill, S. G., Concord.

NEW JERSEY.

Alexander, W. G., Orange.
Carman, F. F., Montclair.
Mills, A. M., Newark.
Vaughan, H., Morristown.
Sprague, E. W., Newark.

NEW YORK.

Allen, D. B., Saugertles.
Auzal, E. W., New York.
Bailey, F. C., Adams Center.
Baldwin, Evelyn, Rochester.
Barnes, J. A., Troy.
Basch, Seymour, New York.
Beckary, A. M., New York.
Beilby, G. E., Albany.
Beers, M. I., Middletown.
Berg, H. W., New York City.
Best, C. S., Middleburg.
Borst, Nelson, Poughkeepsie.
Bourne, C. W., Hamburg.
Bradley, C. C., New York City.
Branan, J. H., Albany.
Bowen, C. R., Almond.
Breckwedel, H. B., New York.
Brill, N. E., New York.
Brooks, P. B., Norwich.
Brown, F. T., New York.
Cannon, G., Watertown.
Chase, B. F., East Syracuse.
Clark, J. Bayard, New York.
Conant, J. B., Amsterdam.
Culbert, W. L., New York.
Cunningham, T. H., Glens Falls.
Davies, R. C., Granville.
Dawes, S. L., Albany.
Deely, G. E., Brooklyn.
De Wattoff, D. Boris, New York.
Dolley, S. R. A., Rochester.
Dowd, J. Henry, Buffalo.
Dudley, R B., Clinton.
Eddy, E. E., Redwood.
Eddy, J. W., Oswego.
Fairbairn, H. A., Brooklyn.
Falkenburg, A. E., Whitehall.
Farrar, J. N., New York.
Fedde, B. A., Brooklyn.
Finerty, J. J., Buffalo.
Forbes, George, Astoria, L. I.
Forsyth, E. A., Buffalo.
Fuller, E. D., Utica.
Gilmore, R., Schenectady.
Gibson, C. L., New York.
Gilbert, Archibald, Amsterdam.
Goodfellow, E. H., Gloversville.
Gordon, O. A., Brooklyn.
Gribbon, H. A., Poughkeepsie.
Guillemont, Frank, Niagara Falls.
Guyer, F. N., Albany.
Hallock, S. F., New York.
Harris, J. T., Tonawanda.
Haupt, Louis, New York.
Hayden, J. R., New York.
Heitzmann, Louis, New York.
Hermance, E. M., Yonkers.
Hoffman, C. R., Glens Falls.
Hollinger, Wm., Newburgh.
Hun, Henry, Albany.
Ilston, B. F., Jamestown.
Jackson, J. H., Dansville.
Jameson, C. N., Rochester.
Jameson, Thomas, Rochester.
Jewett, Charles, Brooklyn.
Jones, O. E., Rochester.
Kasper, Gerard, Brooklyn.
Kidd, P. E., Brooklyn.
Kinghorn, H., McL., Saranac Lake.
Kirkpatrick, R. A., Troy.
Klein, H. O., New York.
Lewis, F. A., Auburn.
Loewe, Jacques, Brooklyn.
Ludlum, W. D., Brooklyn.
MacDonald, C. F., New York.
Mason, F. C., Massena.
McBrien, F. R., Niagara Falls.
McCastline, W. H., New York.
McCullagh, S., New York.
McDowell, N. D., Rochester.
McGarrahan, J. F., Cohoes.
McNamara, S. J., Brooklyn.
Mehl, W. M., Buffalo.
Menzie, R. J., Caledonia.
Meyers, George, New York.
Middleton, John, Buffalo.
Morris, E. J., Brooklyn.
Morrison, D. A., Buffalo.
Morse, H. A., Batavia.
Mott, Valentine, Woodbury.
Middleton, J. I., New York.
Miller, J. H., Niagara Falls.
Murphy, D. A., Gloversville.
Myers, T. H., New York.
Neal, G. A., Alabama.
Nellis, W. J., Albany.
Niesley, C. M., Manhasset.
Page, S. E., Ithaca.
Palmer, M. B., Rochester.
Pashley, Samuel, Hartford.
Phelps, R. H., Norwich.
Randel, W. A., New York.
Reese, R. G., New York.
Reichers, G. H., Brooklyn.
Reilly, E. A., Elmira.
Reinhardt, H. M., Buffalo.
Reitz, Charles, Rochester.
Robinson, J. A., Elmira.
Rochester, Haydon, Rochester.
Rood, M. G., Syracuse.
Ross, C. M., New Brighton.
Scrimgeour, Robert, Brooklyn.
Shelley, H. J., Middletown.
Siegel, Ferdinad, Brooklyn.
Skiuner, C. R., Copake.
Skinner, W. W., Geneva.
Smith, G. F., Falconer.
Stadlinger, H. E., Buffalo.
Strong, A. E., Mt. Vernon.
Thomson, A. N., Brooklyn.
Torney, G. H., Jr., Utica.
Trick, H. R., Buffalo.
Tuthill, R. K., Poughkeepsie.
Van Hoesen, Louis, Hudson.
Van Wagner, L. C., New Berlin.
Vedder, J. D., Johnstown.
Walton, J. S., Amsterdam.
Ward, S. B., Albany.
Warner, H. M., Hempstead.
Warren, N. A., Yonkers.
Waterman, J. S., Brooklyn.
Wilcox, R. A., Phoenix.

NORTH CAROLINA.

Allen, R. L., Waynesville.
Ashmore, W. F., Anderson.
Baird, J. H., Mars Hill.
Bass, H. H., Henderson.
Bradsher, W. A., Roxboro.
Sage, J. W., Burlington.
Weaver, W. J., Marshall.
Whittington, W. W., Snow Hill.

NORTH DAKOTA.

Arneberg, J. G., Leeds.
Young, V. A., Hankinson.

OHIO.

Baldwin, Henry, Jr., Springfield.
Bedinger, D. W., Bellbrook.
Blackburn, M. E., Columbus.
Blanchard, F. G., Woodville.
Breck, Theo., Breckville.
Brown, G. N., Hebron.
Burns, F. M., Cincinnati.
Carr, A. H., Reading.
Childester, C. W., Delaware.
Fennel, O. W., Cincinnati.
Follett, A. K., Granville.
Fraunfelter, C. E., Canton.
French, G. R., Garrettsville.
Gamble, R. V., New London.
Gates, E. S., Cincinnati.
Gray, Dan, Ironton.
Hardwick, R., Cincinnati.
Hocker, Elizabeth, Cincinnati.
Hull, J. W., Toledo.
Larimore, F. B., Port Washington.
Lindsay, F. T., Xenia.
Lummis, G. D., Middletown.
McBride, Julia L., Mansfield.
McGavran, S. B., Cadiz.
McLaughlin, C. C., Dunkirk.
Montgomery, C. W., Sycamore.
Moodie, E. L., Chatham.
Nichols, G. R., Wapakoneta.
Parant, W. H., Lima.
Philo, D. W., Woodville.
Pickett, F. S., Cleveland.
Primrose, I. P. Nelsonville.
Pucklitsch, E. O., Cincinnati.
Robinson, P. B., Put-in-Bay.
Rutter, H. C., Columbus.
Sealover, W. F., Zanesville.
Semans, W. M., Delaware.
Souther, C. T., Cincinnati.
Stall, A. H., Barberton.
Taylor, W. C., Springfield.
Topie, A. C., St. Bernard.
Wheelock, L. A., Cleveland.
Weller, V. B., Ostrander.
White, U. P., Athens.
Williams, D. R., Columbus.
Zeller, C. W., Defiance.
Zinsmaster, L. B., Massillon.

OKLAHOMA.

Edwards, R. T., Oklahoma City.
Myers, D. A., Lawton.

OREGON.

Nichols, H. S., Portland.

PENNSYLVANIA.

Arnold, J. F., Williamsburg.
Becker, H. M., Suubury.
Billings, F. F., Pittsburg.
Brady, S. H., Lost Creek.
Brown, P. A., New Kensington.
Burg, S. S., Northumberland.
Burgwin, C. W., Parkers Landing.
Campbell, C. F., Sunbury.
Clark, B. F. R., Narberth.
Clark, W. B., Butler.
Cressinger, J. B., Sunbury.
Dechert, H. W., Orwigsburg.
Deichler, L. W., Philadelphia.
Deunis, A. L., Conneautville.
Dickensheid, E. H., Allentown.
Dickson, J. R., Gettysburg.
Easton, J. S., Pittsburg.
Gilligan, J. P., Wilkesbarre.
Gordon, J. W., Clearfield.
Griffith, D. H., Pittsburg.
Groff, G. G., Lewisburg.
Grove, L. V., West Sunbury.
Hammers, J. S., Indiana.
Hill, R. L., Glenfield.
Holmes, E. Burvill, Philadelphia.
Hunt, J. S., Easton.
Jenks, H. H., Philadelphia.
Johnson, H. D., Cheltenham.
Kennedy, L. T., Pottsville.
Klopp, E. L., Philadelphia.
Knorr, L. R., Pittsburg.
Kobler, H. B., Philadelphia.
Lindley, C. M., Washington.
Loughridge, S. S., Philadelphia.
Mackiuney, W. H., Philadelphia.
Marsh, W. G., Watsontown.
McCorkle, W. P., Sheridanville.
McMaster, G. C., Beechview.
Miller, M. B., Philadelphia.
Nason, F. T., McKeesport.
Norris, J. F., Johnstown.
Petty, O. H., Philadelphia.
Piper, E. N., New Kensington.
Ressler, G. W., Ashland.
Saunders, R. R., Philadelphia.
Schildecker, C. B., Pittsburg.
Seidel, C. T. W., Transfer.
Sherrer, H. S., Bangor.
Smith, P. F., Uniontown.
Sprowls, W. W., Houston.
Stanton, C. C., Sharpsburg.
Steck, C. T., Berwick.
Terry, G. H. B., Wyalusing.
Thomas, E. W., Philadelphia.
Walton, L. S., Pittsburg.
Willetts, E. W., Pittsburg.
Womer, W. A., New Castle.

SOUTH CAROLINA.

Bates, L. B., St. Mathews.
Briggs, D. K., Blackville.
Carpenter, E .W., Greenville.
Dreher, T. H., St. Mathews.
Ellison, P. G., Newberry.
Hall, H. T., Aiken.
Jeffords, T. A., Orangeburg.
La Borde, Oscar, Columbia.
McCreary, J. A., Williston.
Moore, R. L., Columbia.
Merrall, S. A., Trenton.
Nesbitt, J. N., Gaffney.
Oliver, J. M., Orangeburg.
Pou, W. L., St. Mathews.
Rice, H. W., Columbia.
Simons, E. W., Summerville.
Sosnowski, J. C., Charleston.
Taylor, J. H., Columbia.
Thompson, J. L., Columbia.
Townsend, J. B., Anderson.
Walter, G. H., Orangeburg.
Wheeler, J. S., Prosperity.
Wyche, C. T., Prosperity.

SOUTH DAKOTA.

Billion, T. J., Sioux Falls.
Clough, A. E., Madison.
Herman, J. D., Coude.
Langly, C. S., Lake Andes.
Schwendener, J. E., Bryant.

TENNESSEE.

Daniel, W. H., McEwen.
Guerin, H. C., Dickson.
Hawkins, W. H., Greeneville.
High, B. J., Stonewall.
Nash, W. S., Knoxville.
Williamson, G. L., Jackson.

TEXAS.

Allen, J. I., Cass.
Bedford, J. D., Honey Grove.
Blassingame, A. A., Denison.
Campbell, N. W., Willspoint.
Carson, J. W., Comanche.
Cochran, E. G., Greenville.
Collier, E. S., Willspoint.
Decker, C. M., San Antonio.
Easterling, A. H., Athens.
Elliott, O. C., Waco.
Ellis, I. D., Troy.
Gullette, J. F., Pflugerville.
Hendrick, J. P., Huntsville.
Kinney, Terry, San Marcos.
La Rue, R. L., Athens.
MacGregor, W. W., Laredo.
McClure, R. Q., Gilmer.
McPherson, D. B., Lougview.
Moseley, E. M., Rusk.
Perkins, W. F., Tolar.
Reifel, J. W., Houston.
Savage, H. B., Honey Grove.
Van Ness, J. M., Prairie Lee.
White, F. S., Terrill.
Zielinski, A. J., Schulenburg.

UTAH.

Tyndale, W. R., Salt Lake City.

VERMONT.

Bean, J. H., Jeffersonville.
Cobb, G. N., White River Jct.

VIRGINIA.

Angle, S. B., Olney.
Claud, E. H., Portsmouth.
De Cormis, J. L., Acomac C. H.
Downey, F. C., Edinburg.
Everett, J. C., Nelly's Ford.
Fox, A. C., Waynesboro.
Glover, Perkins, Arvonia.
Martin, Roger, Raphine.
Nichols, R. A., Richmond.
Piper, W. L., Richmond.
Randolph, R. C., Boyce.
Rucker, M. P., Manchester.
Skinuer, C. L., Rectortown.
Smallwood, J. P., West End.
Tompkins, G. J., Lynchburg.

WASHINGTON.

Cowan, C. B., Seattle.
Fell, G. E., North Yakima.
Fifield, Ella J., Tacoma.
Hixon, E. F., Vancouver.
West, E. S., North Yakima.
Zener, C. R., La Center.

WEST VIRGINIA.

Amick, W. D., Glenalum.
Guthrie, J. A., Huntington.
Heslep, W. A., St. Albans.
Ladwig, Worthington, Lost Creek.
McCauley, W. H., Sutton.
Oesterling, H. E., Wheeling.
Tooley, G. W., Huntington.
Wheeler, B. B., McKendree.
Whitescarver, J. S., Grafton.
Willlams, J. P., War Eagle.

WISCONSIN.

Beyer, A. G., Milwaukee.
Edsall, F. H., Madison.
Evans, E. P., South Milwaukee.
Habhegger, C. J., Watertown.
Helsing, A. F., Menominie.
Holmberg, Le Roy J., Cashton.
Knauf, G. E., Sheboygan.
Nicholson, W. G., Green Bay.
Niles, W. L., New York.
Nixon, R. T. A., Brookfield.
Oberton, C. A., Union Grove.
Yanke, A. E., Milwaukee.
Zierath, W. F., Sheboygan.

WYOMING.

Snyder, O. K., Cheyenne.

Marriages

F. M. BELL, M.D., to Miss Laura Miles, both of Grant, Neb., November 7.

HARRY K. GORSUCH, M.D., to Mrs. Alline Mosby, at Baltimore, October 20.

A. J. RUDOLF, M.D., to Miss Jennie Perrizo, both of Delavan, Minn., October 24.

J. HENRY ORFF, M.D., to Miss Viola M. Darrah, both of Reading, Pa., October 18.

LEONARD A. RICHARDSON, M.D., to Miss Nora R. Hand, both of Baltimore, October 24.

WILLIAM C. HEINTZ, M.D., to Miss Laura L. Buchsieb, both of Columbus, Ohio, October 25.

BRUCE D. HART, M.D., Churubusco, Ind., to Miss Nina Merrill, of Prophetstown, Ill., October 18.

FRANK A. MILLER, M.D., Gowen, I. T., to Miss Maudean Lewis, at Mena, Ark., October 17.

W. C. VAN NUYS, M.D., New Castle, Ind., to Miss Margaret Sword, at Reading, Kan., October 24.

W. JAMES HOWELLS, M.D., to Miss Mary Gertrude Bannon, both of Spokane, Wash., October 24.

JAMES M. SELISKAR, M.D., Cleveland, Ohio, to Miss Frederica Cline of Medina, Ohio, October 24.

ALFRED WOODHOUSE, M.D., Trenton, N. J., to Miss Helen L. Prince of Elizabeth, N. J., October 27.

CARLETON G. CRISLER, M.D., Cincinnati, to Miss Elizabeth Cropper of Bullittsville, Ky., October 26.

JOHN D. HUNTER, M.D., Kansas City, Mo., to Miss Rena Richards of Fort Scott, Kan., October 24.

DAVID DALE, M.D., Bellefonte, Pa., to Miss Anna Dunlop McPherson of Gettysburg, Pa., October 24.

WILLIAM H. WEIR, M.D., Cleveland, Ohio, to Miss Roslyn Campbell of Yorkshire, England, October 6.

BROOKE M. ANSPACH, M.D., Philadelphia, to Miss Martha McCormick of Williamsport, Pa., November 1.

ARTHUR GORDON DOTY, M.D., to Miss Ruth Margaret Mac Ritchie, both of Hillsdale, Mich., October 25.

LEO J. CRUM, M.D., Kalamazoo, Mich., to Miss Minnie Shorr of Cleveland, Ohio, at Kalamazoo, October 24.

WILLIAM BOYD HIGHT, M.D., Queen City, Mo., to Miss Winnetka Murphey of Des Moines, Iowa, October 16.

JOHN THOMAS O'MARA, M.D., Baltimore, to Miss Josephine Euphrasia Larkin, at Pelham, N. Y., October 10.

FOSTER WAN BURKE, M.D., Laclede, Mo., to Miss Georgia Eunice Maxey of Kansas City, Mo., October 20.

JOHN A. CECONI, M.D., to Miss Louise E. Roster, both of Boston, at Dorchester Lower Mills, Mass., October 25.

MICHAEL FRANK BARRETT, M.D., Brockton, Mass., to Miss Louise Grant of Boston, at Hingham, Mass., October 24.

MAURICE E. STAYER, M.D., Woodbury, Pa., to Miss Maude Gardner of Rockwod, Pa., at Cumberland, Md., October 24.

JOHN JOSEPH LIGHT, M.D., Lebanon, Pa., to Miss Sara Ada Bomberger of South Lebanon Township, at Reading, Pa., October 29.

Deaths

John C. Shrader, M.D. College of Physicians and Surgeons, Keokuk, Iowa, 1865; Long Island College Hospital, Brooklyn, N. Y., 1870; one of the organizers of the State University of Iowa, College of Medicine, Iowa City; formerly dean and emeritus professor of obstetrics, gynecology, clinical gynecology and diseases of children in that institution; formerly vice-president and member of the executive committee of the American Public Health Association; formerly president of the Iowa State Board of Health and State Board of Medical Examiners; a member of the Iowa State Association of Railway Surgeons; a member and once president of the Iowa State Medical Society; a member of the American Association for the Advancement of Science, Cedar Valley, Eastern Iowa and Capital District Medical Society, British Medical Association, Western Association of Obstetricians and Gynecologists, and Association of State and Provincial Boards of Health; for two terms state senator; major and surgeon of the Twenty-second Iowa Volunteer Infantry throughout the Civil War; commissioner of insanity for Johnson County, died at his home in Iowa City, after a long illness, October 30, aged 76.

Isaac C. Walker, M.D. Cincinnati College of Medicine and Surgery, 1858; professor of diseases of the mind and nervous system in the Medical College of Indiana, Indianapolis, for 35 years; emeritus professor for three years, and in 1880 dean of the college; some-time president of the Indianapolis Medical Society; president of the Marion County Medical Society; a member of the Tri-State Medical Society, Indiana State Medical Society; a member of the Indianapolis city council for two years and its president for one year; an active and successful practitioner and forceful teacher, died at his home in Indianapolis, October 28, aged 79.

Octavius A. Crenshaw, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1844; medical director of the Army of Western Virginia during the Civil War, and head physician of the White Sulphur Springs Hospital and Chimborazo Park Hospital, Richmond; one of the oldest and most distinguished practitioners of Richmond, Va., died at his home in that city, October 22, after an illness of only one week, aged 84. The medical profession of the city met with the Richmond Academy of Medicine and Surgery, October 23, to take suitable action regarding the death of Dr. Crenshaw.

Henry Ashley Root, M.D. Cleveland Medical College, Medical Department of Western Reserve Medical College, 1866; a member of the American Medical Association, Ohio State Medical Society, Lucas County Medical Society, and for many years president of the Toledo Medical Society; for 21 years a member of the pension board, and for 25 years chief of the medical staff of St. Vincent's Hospital, Toledo, died at his home in that city, October 24, after an illness of more than a year, aged 64.

Joseph W. Cooper, M.D. Jefferson Medical College, Philadelphia, 1884; a member of the American Medical Association and Eastern Ohio Medical Association; for many years medical examiner for the Pennsylvania Company and the Carnegie Steel Company, at Bellaire, Ohio, and one of the most prominent physicians of that city, died October 28, at the Wheeling (W. Va.) Hospital, from tuberculosis.

James L. Johnston, M.D. University of Michigan, Department of Medicine and Surgery, Ann Arbor, 1863; a member of the hospital corps of the Army during the Civil War; president of the local pension examining board from 1884 to 1898; a member of the Eaton and Berry County Medical Society, died at his home in Chester, Mich., September 14, from cerebral hemorrhage, after an invalidism of 14 years, aged 70.

Frederick R. Hudson, M.D. Homeopathic Hospital College, Cleveland, 1882; formerly assistant surgeon, Second Infantry, N. G., N. Y.; a member of the Association of Military Surgeons of the United States; of Hoosick Falls, N. Y., died at the Hudson River State Hospital for the Insane, Poughkeepsie, after an illness of three years, October 25, aged 50.

Thomas Stevenson, M.D. Bellevue Hospital Medical College, New York City, 1888; a member of the New York County Medical Society; surgeon to the nose and throat department of the Bloomingdale Clinic, died suddenly at the home of his brother, in New York City, from pneumonia, October 27, aged 41.

Frederick W. Fanning, M.D. University of Michigan College of Medicine and Surgery, Ann Arbor, 1867; for a number of years local surgeon of the Wabash Railway Company at Butler, Ind., died at his home in that city, October 26, from paralysis, after an illness of several months, aged 65.

Vernon D. Rood, M.D. University of Vermont, Medical Department, Burlington, 1867; a member of the San Diego County Medical Society, and a veteran of the Civil War, died at his home in San Diego, Cal., October 26, from septicemia, supervening on diabetic gangrene, aged 68.

Benjamin H. Masterman, M.D. Medical College of Ohio, Cincinnati, 1880; health officer of Montgomery County, Kansas; a veteran of the Civil War; for 12 years a member of the district pension board, died at his home in Independence, Kan., October 25, aged 60.

Thomas J. Mullaney, M.D. Rush Medical Colege, Chicago, 1903; formerly interne in St. Joseph's Hospital, Chicago, died in the Presbyterian Hospital, Waterloo, Iowa, October 23, from septic endocarditis, after an illness of two months, aged 29.

John Barnett Matthews, St. John's Medical Society, 1865; of Zebulon, Ga.; for a number of years clerk of the Pike County Superior Court, died in Atlanta, May 4, two months after an operation for disease of the prostate gland, aged 66.

Scott Mendenhall, M.D. Atlanta College of Physicians and Surgeons, 1905; formerly of Jacksonville, Fla., died from the effects of an overdose of morphine, supposed to have been taken with suicidal intent, October 26, aged 25.

J. H. Dewberry, M.D. Jefferson Medical College, Philadelphia, 1857; a retired practitioner and prominent business man of Birmingham, Ala., died at his home in that city, October 26, after an illness of two weeks, aged 72.

Isaac W. Clinger, M.D. Physio-Medical College of Ohio, Cincinnati, 1877; a veteran of the Civil War, died at his home in Springfield, Ohio, from cerebral hemorrhage, October 25, after an illness of one week, aged 58.

Andrew C. Lyngar, M.D. Missouri Medical College, St. Louis, 1876; a veteran of the Civil War, and for 25 years a practitioner of Opolis, Kan., died at his home in Pittsburg, Kan., from heart disease, October 24, aged 61.

James B. Shemwell, M.D. Eclectic Medical Institute, Cincinnati, 1889, died at his home near Pitman's Ferry, Ark., October 23, from heart disease, following an attack of bilious fever, after an illnes of 10 days, aged 52.

J. L. McCorkle, M.D. University of Louisville, Medical Department, 1879; of Little Rock, Ark., died in the Pulaski County Hospital, Little Rock, October 26, after an illness of two weeks, aged 54.

William R. McKinley, M.D. Medical College of Georgia, Augusta, 1904; formerly assistant surgeon at Fort Stanton, N. M., died at the Augusta City Hospital, October 24, after an illness of several months, aged 26.

Addison W. Ball, M.D. Medical College of Indiana, Indianapolis, 1883; of Indianapolis, died at the Indianapolis City Hospital, October 22, from cerebral hemorrhage, after a long illness, aged 57.

James William Howard, M.D. Willamette University, Medical Department, Salem, Ore., 1876; of Missoula, Mont., died recently and was buried in the Missoula Valley cemetery, October 23.

Ruel Dwight Rice, M.D. Eclectic Medical Institute, Cincinnati, 1846; surgeon in the Army throughout the Civil War, died at his home in Alameda, Cal., October 22, aged 86.

Fleming G. Tarver, M.D. New York University, New York City, 1872, died at his home in Augusta, Ga., October 25, after a long period of invalidism.

Joseph W. Simrock, M.D. University of Bonn, Germany, 1863; a laryngologist of New York City, died in Grindelwald, Switzerland, recently.

Clinton Colegrove, M.D. University of Buffalo, Medical Department, 1850, died at his home in Holland, N. Y., October 19, aged 79.

Edward H. Anderson, M.D. Cleveland Homeopathic Medical College, 1894, died at his home in Cleveland, October 23, aged 52.

W. L. Dean, M.D. Atlanta (Ga.) Medical College, 1878; of Woodstock, Ga., died in Atlanta, October 23, after a long illness.

Deaths Abroad.

P. Merklen, M.D., lecturer on diseases of the heart and hospital physician at Paris, died October 13, aged about 50. He was a frequent contributor to the French medical press, most of his works being on affections of the heart, kidneys and skin.

J. Weinlechner, M.D., professor of surgery at Vienna until 1901, when he reached the age limit, died suddenly September 30, while hunting, aged 78,

---

The Public Service

Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending Nov. 3, 1906:

Palmer, Fred. W., asst.-surgeon, granted an extension of ten days to his leave of absence.

Lewis, William F., asst.-surgeon, ordered to Washington, D. C., for examination for promotion.

Davidson, Wilson T., asst.-surgeon, granted leave of absence for two months.

Duncan, William A., asst.-surgeon, left Fort Logan, Colo., on leave of absence for one month.

Talbott, Edward M., asst.-surgeon, left Fort Leavenworth, Kans., for duty in the field with 3d Squadron, 10th Cavalry, from Fort Robinson, Neb.

Hoff, John Van R., asst.-surgeon-general, left Headquarters, Department of the Missouri, Omaha, en route to Manila, P. I., for duty.

Miller, Reuben B., Ragan, Charles A., Eastman, Wm. R., Hall, James F., Metcalfe, R. F., Rich, Edwin W., Boyer, Perry L., Phalen, James M., asst.-surgeons, advanced from the grade of first lieutenant to that of captain from Oct. 30, 1906.

Edger, Benjamin J., Jr., asst.-surgeon, assigned to duty at Fort Reno, Oklahoma.

Cox, Walter, asst.-surgeon, relieved from duty at Fort Reno, Oklahoma, and ordered to Fort Sill, Oklahoma, for duty.

Hammond, Wm. G., dental surgeon, granted leave of absence for one month.

Jarrett, Arthur R., contract surgeon, ordered from Fort Totten, N. Y., to Fort Wood, N. Y., for temporary duty.

Kennedy, James S., contract surgeon, returned to Fort Omaha, Neb., from leave of absence.

Merrick, John N., contract surgeon, granted an extension of one month to his leave of absence.

Stuckey, Harrison W., contract surgeon, left Fort Snelling, Minn., on leave of absence for one month.

Pinquard, Joseph, contract surgeon, ordered to Fort Robinson, Neb., for temporary duty.

Hayes, Melville A., contract surgeon, ordered from Fort Casey, Wash., to Fort Stevens, Ore., for temporary duty.

Harmon, Daniel W., contract surgeon, ordered from Nashville, Tenn., to Fort Hancock, N. J., for duty.

Carpenter, Alden, dental surgeon, relieved from duty at Vancouver Barracks, Wash., and ordered to Havana, Cuba, for duty.

Rebert, Michael A., contract surgeon, returned from West Point, N. Y., to duty at Fort Totten, N. Y.

Gregory, Verdo B., contract surgeon, arrived at San Francisco, Cal., on leave of absence for three months.

Cutliffe, William O., contract surgeon, granted an extension of 14 days to his leave of absence.

Wall, Francis M., contract surgeon, granted leave of absence for two months.

Navy Changes.

Changes in the Medical Corps, U. S. Navy, for the week ending Nov. 3, 1906:

Byrnes, J. C., medical inspector, commissioned a medical inspector in the Navy from Oct. 7, 1906.

Fitts, H. B., surgeon, detached *Lawton* to *Buffalo.*

Leach, P., surgeon, detached *Indiana;* to home and wait orders.

Lumsden, G. P., surgeon, detached *Minneapolis,* when placed out of commission; to home and wait orders.

Moore, J. M., surgeon, detached *Newark* when placed out of commission; to *Indiana.*

Iden, J. H., P. A. surgeon, detached *Newark* when placed out of commission; to home and wait orders.

Curtis, L. W., surgeon, to *Connecticut.*

Odell, H. E., P. A. surgeon, detached *Wisconsin* when placed out of commission; to home and wait orders.

Strine, H. F., P. A. surgeon, detached Naval Hospital, N. Y.; to duty at Naval Hospital, Newport, R. I.

Zalesky, W. J., asst.-surgeon, detached *Newport* when placed out of commission; to duty at the Naval Hospital, Portsmouth, N. H.

Mears, J. B., asst.-surgeon, detached *Minneapolis* when placed out of commission; to home and wait orders.

Farwell, W. G., asst.-surgeon, orders to *Connecticut* revoked.

Parker, E. G., surgeon, to Naval Hospital, New York.

Grove, W. B., surgeon, detached duty at the Naval Hospital, Boston; granted leave of absence for twenty days; thence to *Iowa.*

Bogan, F. M., P. A. surgeon, discharged treatment at Naval Hospital, Washington, and granted leave of absence for three months.

Payne, J. H., Jr., P. A. surgeon, to duty with Marine Recruiting Party, Atlanta, Ga.

Ely, C. F., asst.-surgeon, to duty at the Navy Recruiting Station, Buffalo, N. Y.

Hart, G. G., acting asst.-surgeon, detached duty at the Navy Recruiting Station, Buffalo; to duty at the Navy Recruiting Station, Providence.

Bucher, W. H., surgeon, detached from duty at the Navy Recruiting Station, Providence, and to duty at the Naval Hospital, Boston.

Dessez, Paul, asst.-surgeon, to duty at the Marine Barracks, Washington, D. C.

Field, J. G., surgeon, detached from temporary additional duty at the Marine Barracks, Washington.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended Nov. 2, 1906:

SMALLPOX—UNITED STATES.

California: San Francisco, Oct. 13-20, 1 case.
Illinois: Galesburg, Oct. 13-27, 15 cases.
Missouri: St. Joseph, Oct. 6-13, 2 cases.
New York: New York, Oct. 13-20, 2 cases.
Texas: Houston, Oct. 13-20, 1 case.
Wisconsin: Appleton, Oct. 13-27, 2 cases.

SMALLPOX—FOREIGN.

Brazil: Bahia, Sept. 15-22, 1 case; Pernambuco, Sept. 1-30, 11 deaths; Rio de Janeiro, Sept. 16-30, 5 cases.
Chile: Antofagasta, Aug. 29-Sept. 12, 18 cases, 2 deaths; Coquimbo, Aug. 24, present.
Columbia: Cartagena, Sept. 8-29, 5 cases.
France: Paris, Oct. 6-13, 3 cases.
India: Calcutta, Sept. 8-15, 3 deaths; Madras, Sept. 8-14, 1 death; Sept. 22-28, 1 death.
Russia: St. Petersburg, Sept. 15-29, 5 cases, 1 death.
Spain: Barcelona, Oct. 1-10, 8 cases; Cadiz, Sept. 1-30, 7 cases.

YELLOW FEVER.

Brazil: Rio de Janeiro, Sept. 23-30, 1 case, 1 death.
Costa Rica: Limon, Oct. 12, 1 case (imported from Cartagena on S. S. *Prince Waldemar.*)
Cuba: Cruces, vicinity of, Oct. 24, 1 death: Havana, Oct. 26-30, 5 cases.
Mexico: Merida: Oct. 7-13, 2 cases.

CHOLERA—INSULAR.

Phlippine Islands: Manila, Sept. 2-9, 27 cases, 24 deaths; Provinces, Sept. 2-9, 189 cases, 146 deaths.

CHOLERA—FOREIGN.

China: Shanghai, Sept. 15-22, 1 case.
India: Calcutta, Sept. 8-15, 15 deaths; Madras, Sept. 8-14, 131 deaths.

PLAGUE.

Brazil: Pernambuco, Sept. 1-30, 14 deaths; Rio de Janeiro, Sept. 16-30, 19 cases, 5 deaths; Sao Paulo, Sept. 16-23, 1 death.
Egypt: Alexandria, Sept. 29-Oct. 11, 8 cases, 4 deaths; Suez, 13 cases, 10 deaths.
India: Calcutta, Sept. 8-15, 8 deaths.
Turkey: Adalia, Sept. 20-23, 3 cases.
Peru: Lembayeque, Sept. 11, 1 death; Lima, Sept. 5, 1 case; Trujillo, Sept. 5, 3 cases.

Society Proceedings

COMING MEETINGS.

Southern Surg. and Gyn. Assn., Baltimore, Dec. 11-13.
American Public Health Assn., Mexico City, Dec. 3-7.

MEDICAL SOCIETY OF THE COUNTY OF NEW YORK.

Regular Meeting, held October 22, 1906.

Dr. Floyd M. Crandall in the Chair.

A National Anti-Quackery Society.

Champe S. Andrews, Esq., counsel of the society, after reviewing the work done during the past year and the great assistance that had been rendered the legal department by the United States Postoffice Department, through Postoffice Inspector William H. Snow, and by the police department of New York through Police Commissioner Col. Theodore A. Bingham, took up a consideration of the proposed national society for the preservation of the public health and morals. For a number of years the legal department has called attention to the fact that its work was reaching only a small part of the field it should cover in the interests of public health. Among the suggestions offered was one that included the formation of a new society, to have its branches in every state in the Union and in every city of any size in the country, these local branches to carry on the work against quackery, charlatanism and kindred subjects.

In a lecture delivered in Philadelphia last March, Mr. Andrews took occasion to elaborate on the necessity of forming a national society composed not only of physicians but of men and women in every walk of life interested in the suppression of quacks and quackery. This has been worked out, and has been approved by the Young Men's Christian Association of New York City; the New York Academy of Medicine; American Medical Association; Cardinal Gibbons of Baltimore; National Women's Christian Temperance Union; education department of the state of New York; Philadelphia County Medical Society; Medical Jurisprudence Society of Philadelphia; Medicolegal Society of Philadelphna; Association of Neighborhood Workers in New York City; American Public-Health Association; Dickens Fellowship, New York branch; American Society of Sanitary and Moral Prophylaxis; Emanuel Sisterhood of Personal Service; National Association for the Study and Prevention of Tuberculosis; the state's attorney of Baltimore; the Salvation Army; the Epworth League of the Methodist Episcopal Church; Luther Burbank; Julius M. Mayer, attorney general of the state of New York, and W. M. L. Coplin, director of public health of Philadelphia. The letters from these sources endorsing the movement were then printed in one pamphlet, together with the proposed form of resolution authorizing the appointment of delegates to the conference to be held November 15, Hudson Theater, New York City. Since that time over 100 societies have joined in the movement, and delegates are now being appointed from every section of the United States from every sort of public service society. Mr. Andrews said that it seemed safe to say that if the national society about to be formed availed itself of the materials lying on every side, waiting to be used against quacks and quackery, impure foods, adulteration of drugs, and similar evils, then its success will be phenomenal and terror would seize the camps of these miserable charlatans who for so many years have preyed unmolested on the ignorance and credulity of the people of this country.

Acute Pancreatitis: Report of Five Cases.

Dr. John F. Erdmann reported five cases; three were hemorrhagic (in one of these the pancreas was almost completely destroyed without slough formation), and two resulted from abscess formation. None of these cases was accompanied by the discharge of any slough, although sloughing was one of the terminations of an acute inflammation of this viscus. The gall bladder was drained twice, each time for large numbers of stones. In one of the remaining cases it was palpated and inspected without being drained. In the remaining two cases it was not seen, owing to the pus collection being well to the left. The cholecystotomy patient died, while two of the remaining patients recovered, and the third died two weeks after from exhaustion and multiple abscesses. In conclusion Dr. Erdmann called attention to some of the pronounced symptoms, the marked pain at the onset, the sharp intoxication in some of these cases, the dyspnea and lividity seen in many, the constant backache. He emphasized the importance of early exploration when a given set of symptoms manifested themselves.

Officers Elected.

President, Floyd M. Crandall; vice-presidents, H. Seymour Houghten and William Hallock Park; secretary, John Van Doren Young; assistant secretary, J. Milton Mabbott; treasurer, Charles H. Richardson.

MEDICAL SOCIETY OF CITY HOSPITAL ALUMNI OF ST. LOUIS.

Meeting held Oct. 18, 1906.

Physician and Pharmacist.

Dr. Louis H. Behrens welcomed the members of the pharmacal profession who were present, stating that as far as he knew, this was the first time in the United States that the medical profession had asked the pharmacists to discuss with them the great faults that have crept into both professions in their relationship to one another. He said that both professions have taken on fads and charlatanism and bewailed the decline of the expert pharmacist who has nothing to do in filling prescriptions but pour proprietary medicines from one bottle to another.

As for the medical profession, instead of using the remedies that have made medicine what it is to-day, it is using proprietaries of unknown and uncertain composition. Take acetanilid, for instance. Those loudest in denouncing it are prescribing proprietaries having acetanilid for their main ingredient. Some time ago there was a "cola craze." The profession was "cola mad." Now in the druggists' windows are seen immense advertisements with professional men's endorsements. The reliable iron preparations have been dropped for the numerous albumin compounds of iron with their picturesque "blood counts." He called attention to the gullibility the profession displayed in using a product alleged to be made from the waters of a celebrated German spring; nothing but Glauber's salts.

What is the cause, he asked, of this failing on the part of the two professions? Some lay it at the door of the doctor and others at the door of the pharmacist. Certain it is, that in the modern drug store, there has been an improvement and an enlargement of the soda fountains, of the cigar department, a steady increase in the size of the patent medicine department, while the dispensing department, devoted to the compounding of physicians prescriptions, is usually found in the most poorly lighted, poorly ventilated, and the dirtiest part of the pharmacy. An untidy prescription department means inferior drugs and substitution. It is here that recklessness is manifested and potent drugs become inert. There are physicians who still believe that some diseases are amenable to treatment with the proper drugs, and that the scalpel is not always necessary.

The U. S. Pharmacopeia.

Dr. H. M. Whelpley, secretary of the U. S. P. Commission, reviewed the history of this book. Pharmacopeia, according to its Greek origin, means a work directing the preparation of

medicine and such was its meaning when the word was coined, but times have changed and the word to-day means a "book issued by some recognized authority for the purpose of furnishing physicians and pharmacists with a list of drugs and their methods of preparation." It differs from other books in that it is issued by some authority legally commissioned to establish a list of drugs of certain strength and purity. In 1618, the London Pharmacopeia was issued with the stamp of authority of the city of London. In 1639, Paris issued one, and in 1699 Edinburgh followed suit. France, in 1818, issued the first national pharmacopeia and the United States issued a national work in 1820. The first pharmacopeia issued in America was not a national work, being issued prior to the Revolutionary War as a list for a military hospital in Pennsylvania. It contained 84 formulæ for internal and 16 for external use. The writer of this book states that the list of drugs would have been larger had there been a more plentiful supply of files in the hospital to hold them.

There are now twenty-three national pharmacopeias. With a few exceptions, those countries not having one of their own, recognize one of some other country. Central America, Liberia, Costa Rica, Cuba, Philippines and Porto Rico recognize the U. S. Pharmacopeia. Costa Rica adopted the U. S. Pharmacopeia in spite of the fact that most of her pharmacists do not read the English language.

Dr. Whelpley spoke of the great advantage of an international pharmacopeia, but did not believe that this ideal could ever be realized because of the uncompromising stand taken by the various revisionists of the several countries regarding certain drugs in their respective countries and the methods of preparation. Yet a step was taken in this direction in Brussels, several years ago, by the calling of a conference to agree on a list of remedies to be used throughout the civilized world. This conference decided on the strength of potent tinctures and the arsenic preparations. The U. S. Pharmacopeia has adopted the recommendations of this conference.

The original U. S. Pharmacopeia was printed in parallel columns of Latin and English, but the edition of 1840 dropped the Latin. The eighth revision is being translated into Spanish for the benefit of Costa Rica and our island possessions.

As to the nature of Pharmacopeial revision, in foreign countries it is issued by the Government. In the United States, it is established by a body of pharmacists. Conventions are held every ten years, and a committee is appointed to follow rules laid down by the general convention. At the present time, twenty-six men compose the committee. Twelve of these men hold the degree of M.D. Only five of them are practising physicians. A board of trustees looks after the edition and sale of the book. Since this method has been adopted, the price of the book has been lowered from $4.00 to $2.50, even though the book has been growing larger. The profits which come from the sale of the book are used in defraying the expenses of the revision. The last convention was held in 1900. The next will be held in 1910. The revised Pharmacopeia is published and on sale from one to five years after the convention is held.

The convention of 1850 was the first in which the pharmacist took a hand in the compilation of the Pharmacopeia. In 1860 the members of congress who were graduates of regular medical colleges were invited to take part in the convention, but this has not been followed. In 1910 the convention will admit three delegates from each organization which was represented at the 1900 convention. It will also accept delegates from medical and pharmacal colleges and state medical institutions. They will also accept three delegates from the American Medical Association, the American Pharmaceutical Association, and the American Chemical Association, also three from the United States Public Health and Marine-Hospital-Service.

The Pharmacopeia establishes the strength, purity and method of preparation of drugs, gives working formulæ and states the average dose of medicine used internally. It does not treat of the therapeutic action of drugs, which is taken up by commentaries such as the dispensary. There are three dispensatories, the United States, the National and the American, as well as Remmington's and Caspari's. These commentaries are private enterprises.

The legal importance of the eighth revision of the Pharmacopeia is recognized by the recently enacted pure food law. Some of the state laws recognize it and some of the state boards recognize it. Some of the state laws mention the Pharmacopeia and the number will increase when the pure food law goes into effect on Jan. 1, 1907. A peculiar condition exists in Illinois, where the law designates recognition for the seventh revision, while the eighth is now the authority. The law is consequently a dead letter until this is changed. The Chinese Pharmacopeia was written in 1558 and has not been revised since.

The eighth revision of the U. S. Pharmacopeia contains twenty-eight classes of preparations, offering in all 958 preparations. The Pharmacopeia originated at the hands of physicians. Gradually pharmacists have taken an increased interest and physicians a decreased interest in it. The attitude of the American Medical Association attests to a renewed interest in the Pharmacopeia. The fact that some of the commercial drug houses are issuing epitomes of this work is an index of the pulse of the times. Missouri is particularly at fault because only one physician from this state registered at the last convention, and he did not take any part in the work.

The National Formulary.

PROF. FRANCIS HEMM of the St. Louis College of Pharmacy said that at the time when the American Medical Association took up the proprietary medicine question he asked the pharmaceutical profession to join hands with the medical men in adjusting this question. The pharmaceutical society is busy taking steps to meet with the doctors. Circular letters are now being addressed to the medical men of St. Louis inviting them to a meeting to take up these matters.

He gave a review of the history of the National Formulary. The present third revision of this book contains forty-eight different classes of preparations consisting of palatable combinations. He requested physicians to prescribe National Formulary preparations under their Latin names to prevent the passing of prescriptions from one to another, also to prevent the patient from reading the prescription, and to allow the pharmacist to get his proper remuneration. The majority of people, he said, do not appreciate the fact that the educated pharmacist is a professional man and is entitled to his just remuneration

The Prescribing of Proprietary Remedies.

DR. J. C. FALK said that the majority of physicians do not know where to draw the line in the prescribing of proprietary medicines. He described the methods of the average manufacturer in foisting on the profession unknown and uncertain preparations. This tendency of using these proprietaries can be counteracted by a better knowledge of prescription writing and consequently a better teaching of this subject in the medical colleges. The use of proprietaries depends on two forces: first, the negative force within the physician, that he has not the proper knowledge of prescription writing; second, the positive force from without on account of the influence of the proprietary medicine manufacturer and his agents.

Dr. Falk described the plight of the young doctor called to attend his first case, his dilemma in the presence of the suspicious patient, his inability to write a prescription until there floats before his disordered intellect the name of some well-known proprietary warranted to cure, his haste to write it down as a prescription, and thus the habit is formed. The remedy for this evil lies in better teaching.

DR. W. G. MOORE spoke of the good work done by the American Medical Association in fighting the nostrum evil, by *Collier's Weekly* and the *Ladies' Home Journal* in fighting the "patent medicine" evil. He said that he had heard from druggists that since this crusade the "patent medicine" business is dropping off and that the druggist is glad to get rid of the "patent medicine" business entirely because it does not appeal to the better class.

DR. BRANSFORD LEWIS said that in New York City, on Nov. 15, 1906, there will be called a conference directed against the "patent medicine" evil, a conference presided over and directed by the laity, with professional men participating but not directing.

Section Discussions

DIAGNOSIS OF TUBERCULOSIS IN INFANTS.

EDWIN E. GRAHAM, M.D.

(*Concluded from page 1557.*)

DISCUSSION.

DR. W. P. NORTHRUP, New York City, said that in 125 autopsies he made an analysis on the question of the portal of entry and collected 13 cases in which the only tubercle in the whole body was in the lymph nodes clustered about the bronchial bifurcation. With reference to prompt recovery from influenza, whooping-cough, measles and pertussis, he always inquires whether the patients have had these diseases, and if so, whether they have made complete recoveries without having a dragging fever or lumps in the neck. Dr. Northrup said that he had found typhoid fever rather unusual except in an epidemic. In all cases of doubt of an irregular fever of moderate degree, with very little loss of flesh, if the patient has had the four diseases mentioned with slow recovery, the diagnosis of tuberculosis is the most probable one.

DR. J. W. VANDERSLICE, Chicago, said that in diagnosis there are two points which, although not always of value, suggest tuberculosis. One is the accentuation of the second pulmonic, especially when there is a localized cog-wheel respiration. Recognizing a limited area of cog-wheel respiration has enabled him to make a diagnosis of tuberculosis earlier than any other one symptom he can recall.

DR. ARTHUR W. FAIRBANKS, Boston, said that in the differential diagnosis of typhoid fever and tuberculosis in the adult there is a condition which he thinks applies also in children, viz., the difference in the relation between the pulse and temperature in the two diseases. In tuberculosis the pulse is out of proportion in rapidity compared with the temperature. There is often a temperature of from 100 to 101, a pulse of 125 to 130 in the adult. Still more is it with the child. In typhoid fever the conditions are exactly opposite, the temperature running higher, the pulse lower. He was not fully sure of this last point in connection with typhoid in childhood, and spoke negatively of it, at Portland, last summer, but Dr. Morse said he had seen it in a large number of cases in children. On looking over a large number of charts Dr. Fairbanks found that it does apply in children, though not to the same degree as in the adult. In tuberculosis the rapidity of the pulse is out of proportion to the height of the temperature; in typhoid the pulse runs much below the temperature, and may even be normal.

DR. C. G. KERLEY, New York City, said that in the long indefinite temperatures sometimes seen in children, and difficult of explanation, it is wise, if they have had measles, grippe, or any of the infectious diseases, not to lose sight of the fact that the ear may possibly be the seat of the temperature. He had frequently seen cases of otitis or mastoiditis with no other manifestation than this low indefinite fever from ten days to three weeks.

DR. T. J. ELTERICH, Pittsburg, said that too often the diagnosis of typhoid fever is made in children suffering from a pronounced temperature, when latent tuberculosis is present. The cases described by Dr. Kerley of temperature continuing for several days and weeks in middle ear troubles are exceedingly common. At the Allegheny General Hospital, in children suffering from any acute or chronic diseases, the ears are carefully examined by an expert, and it is surprising to find the great number of patients who are suffering from middle ear affection in whom the diagnosis has been made of tuberculosis, typhoid fever, etc. A few years ago he say a child having a pronounced temperature for two or three weeks, which was regarded as typhoid fever, and ascites following diagnosis of cirrhosis of the liver was made by the attending physician. Later this child was stricken with tuberculous meningitis and died within a few days, the latter diagnosis being confirmed by autopsy.

DR. WILLIAM J. BUTLER, Chicago, said that it is chiefly in infants and very young children that difficulties of differential diagnosis are met with. So long as the tuberculin test is not popular for infants, there is only one absolutely certain method of differentiation in infants, and that is by post-mortem. The mere death of the infant, however, does not confirm the fact that it had tuberculosis, as such infants are far more likely the victims of bronchopneumonia. Temperature and pulse rate can hardly be relied on so far as the differentiation between typhoid fever, and tuberculosis or bronchopneumonia in children is concerned, because it is a matter of general observation that pulse rate and temperature in children do not conform to rules that will apply to the adult. Dr. Northrup's points are of greatest value in arriving at a diagnosis of tuberculosis: that is, in patients with a previous history, whether of measles, pertussis, etc., in whom continuous fever, rapid emaciation and pulmonary symptoms with little local findings persist. If there is anything that confuses one at times in the diagnosis of tuberculosis in infants, it is the decided disproportion between the clinical manifestations and the pulmonary signs present. Too frequently in advanced tuberculosis in infants and very young children clinical manifestations may be severe and the local pulmonary findings may be very scant. Especially is this so when the process has not resulted in a decided pulmonary involvement in the way of a bronchopneumonia, but in a disseminated miliary tuberculosis which not only attacks the lungs but also generalizes itself.

DR. E. E. GRAHAM said that his experience has been that the low pulse and high temperature of typhoid fever does apply in children, but not to the same extent as in the adult. In the child the pulse does not keep as low as in the adult. While the condition is of some aid, it is not of the same aid as it would be in the adult.

FOREIGN BODIES IN THE BRONCHI.

EMIL MAYER, M.D.

(*Concluded from page 1555.*)

DISCUSSION.

DR. E. FLETCHER INGALS, Chicago, agreed with Dr. Mayer so far as operation is concerned. He would not, however, insist on operations, even though he felt that they were the best. It is better to tell the friends the chances and leave them to decide, without insisting too strongly. They have to decide finally any way, and an operation be insisted on and the friends refuse it, and the patient coughs the object out after a little, the surgeon is placed in an unnecessarily awkward position. If an operation be insisted on and the patient dies, the surgeon is again in an awkward position which it is not necessary to take. The same end is accomplished by explaining the conditions and chances to the friends and telling them what is thought best. That has been Dr. Ingals' practice. It does not always work out satisfactorily because friends sometimes have very queer views. Dr. Ingals has removed many foreign bodies from the trachea by means of a straight and bent forceps and several from the bronchi by tracheotomy. Much credit, he said, is due to Killian for his presentation of the results of bronchoscopy. It is an operation that will add greatly to the laryngologist's usefulness in saving patients suffering from these accidents. As to upper and lower bronchoscopy, the upper is much more difficult and requires more time, yet there are some cases in which it would be the operation of choice. The method Dr. Ingals finally adopted for introducing the tube has proved satisfactory in that the tube can be rapidly introduced, generally in not more than three-quarters of a minute. Before he adopted this plan he had much difficulty in introducing the tube; it took three-quarters of an hour in one case. After the tube is in place it can not be manipulated nearly so easily as a shorter tube from the trachea. Lower bronchoscopy would be very much easier, probably in the majority of cases. Keeping the patient under an anesthetic as long as is necessary in upper bronchoscopy must sometimes be a detriment. There are some cases in which tracheotomy alone kills the patient, and Dr. Ingals has thought this a strong argument in favor of upper bronchoscopy; but having recently worked on a pa-

tient for an hour without removing the foreign body, although he found it, and having repeatedly seen how easy it is to lose a foreign body after having found it, and how hard it is to find it again, he is inclined to think that in most cases it would be better to do tracheotomy, as it would shorten the operation and probably lessen the danger. However, there will be a certain number of cases in which upper bronchoscopy should be tried first. Those in which the foreign body had been a long time in the bronchus would be most likely to yield good results. As a rule, these patients have not been operated on because of fear of the operation by the patient or the friends, whereas consent might be obtained to upper bronchoscopy. In children less than 3 years of age upper bronchoscopy would seldom be satisfactory because of the smallness of the tube that must be used. In some children five or six years of age it works well. In one little one of fourteen months in which a tracheotomy was done for fear that the tube could not pass through the glottis, Dr. Ingals removed the foreign body with great ease. The tracheotomy had been done perfectly, yet three hours after the operation the child gradually sank, grew weaker and died—from what cause could not be said. In another case in which he did an upper bronchoscopy the foreign body was removed without great difficulty, though a little longer time was taken than in the other case. The child appeared well after the operation, but in six hours sank and died, with symptoms like those just given. He can not understand why these children should have died, because there was much less difficulty in removing the foreign body than in others that got well. Perhaps the local application of cocain or adrenalin had something to do with the result, the drug having been applied so close to the vagus nerve. Possibly it was secondary shock of which surgeons speak. Possibly it was the long use of the anesthetic. Although Dr. Ingals used chloroform, the amount given was not great because much of the time it was not necessary for the patient to be deeply anesthetized. He did not think that a local anesthetic alone would be satisfactory, although he believed that it has been found sufficient by Killian in some of his cases.

DR. ALGERNON COOLIDGE, JR., Boston said that bronchoscopy for removal of foreign bodies is still in its infancy. There is no question about the value of the operation, but as yet it is not known what the mortality is, and in many cases it is not known whether the upper or lower passage is the best to adopt. As far as he has been able to ascertain, if a foreign body is inhaled about 70 per cent. of the patients will ultimately recover without operation. When the method of removal consisted generally in tracheotomy followed by fishing down into the bronchi with forceps or hooks about 25 per cent. of the patients died. Until enough cases are reported of removal of a foreign body through upper or lower bronchoscopy to make a comparison, its full value will not be appreciated. There can be no doubt that this is a life-saving advance and that the danger of inhaling a foreign body has been much reduced. As to the choice between upper and lower bronchoscopy, he thinks it will be some time before this can be definitely stated. It must be different with different operators. Upper bronchoscopy requires special skill and special apparatus. Unless the special apparatus is on hand it is a waste of time and source of danger to the patient, that is, if some time is spent in an attempt to do upper bronchoscopy and it is finally abandoned for tracheotomy, the patient may suffer in consequence of the attempt. Upper bronchoscopy, in a certain number of cases, assists in the diagnosis. In Germany tubes are passed through the larynx and trachea into the bronchi as a routine measure in many clinics. It seems to be an operation free from danger, and many cases are reported in which the diagnosis was made positive by this method. It would seem that with proper instruments and skilled technic it is justifiable to pass a bronchoscope for making a diagnosis. A requisite for upper bronchoscopy is suitable light. There is no use in trying to look down a tube 35 c.c. long, of small caliber, with defective light. That alone may be a reason for choosing the tracheal path. An ordinary head mirror is generally insufficient to look down a long tube of small caliber. The next absolutely essential instrument to have on hand is something with which to take the foreign body out after the tube is in.

The absence of a proper extracting instrument for upper bronchoscopy might easily be sufficient cause for choosing the lower route. Upper bronchoscopy is not an operation of emergency, it is an operation of the specialist, and for a specially equipped specialist. The lower operation is one by which the general surgeon will be able to save the lives of many patients. One thing the general surgeon must appreciate is that having done tracheotomy, a straight short tube, a urethroscope or cystoscope can be passed into the tracheal wound, turned at right angles and passed down to the lung. Lack of appreciation of this fact induced surgeons for decades to fish down with forceps, in the dark, often not getting the body after all. After tracheotomy is done a short probe can be pushed down to the bifurcation and can even be pushed well into a bronchus. That is the whole foundation of lower bronchoscopy. This knowledge will enable the general surgeon, by choosing a cystoscope of proper size, with forceps, to take foreign bodies out of the bronchi in the vast majority of cases.

DR. S. H. LARGE, Cleveland, Ohio asked Dr. Mayer if he used a perforated tube, for if the seed blocked the right bronchus the patient could not breathe unless a perforated tube was used. He called attention to Dr. Crile's idea in working on the throat, i. e., giving a preliminary dose of atropin and morphin before the operation. Dr. Large uses the direct method, and if unsuccessful, resorts to the indirect method. The light he uses, and he has tried them all, is the electroscope. After passing the tube down he uses a Klar reflector, and by it can get any focus and also a very strong light. He uses the sitting position for diagnosis, then if he operates, the horizontal position, but in children always the recumbent position. He asked Dr. Mayer whether he uses ether or chloroform. There are cases, he said, in which the *x*-ray does not show the foreign body, on account of the shadow of the vertebræ or the smallness of the body.

DR. SIDNEY YANKAUER, New York City, said that any condition, in which 35 per cent. of patients die, justifies urging surgical interference to save life. It is impossible to tell in which class the individual case is placed. In a case in which he removed a foreign body, the child was in apparently good condition, and not very cyanotic. Although it was only two hours until the foreign body was removed, being all that time impacted in the right bronchus, respiration in the right lung had entirely ceased and there was contraction of the intercostal space on the right side. The passage of the bronchoscope through the larynx can be facilitated in this way: Instead of introducing the guide first and looking for the laryngeal opening, then introducing the tube, the long tube is inserted into the guide and the two passed together. The guide acts as a lever and the top of the guide being placed on the posterior surface of the epiglottis the entire larynx is raised in an anterior direction by means of the guide. As soon as the larynx is brought into view through the long tube, and, as soon as inspiration takes place, when the glottis is open, the tube can be pushed through without difficulty. Of course, it is more difficult to look through the long tube than through the guide, and it is therefore harder to find the aperture of the larynx, but any one who does bronchoscopy must become accustomed to looking through the long tube. Whether upper or lower bronchoscopy should be done depends somewhat on the nature of the foreign body. If it is of such a color and shape that it can be easily seen and grasped, the upper method is more favorable. If, however, the body is of such a nature that its color corresponds with the color of the mucous membrane, or its shape such that there is difficulty in grasping it and holding it, then it is better to go through the trachea and to use the shorter and wider tube. In one case in which the upper tube had been passed, owing to the fact that a narrow tube had been used, the tube slipped past the foreign body. The latter became lost between the bronchoscope and the wall of the bronchus. The tube was pushed down to the bottom of the bronchus, but the foreign body was not found. The color of this body was very similar to the mucous membrane.

If a foreign body has lain in the trachea for months, the tracheal mucous membrane becomes ulcerated, the body becomes incrusted with lime salts, and under these circumstances it seems to be more difficult to find it. It may be imbedded in an abscess and covered with pus. Under these circumstances the attempt to remove it by the passage of a long tube would seem to be less favorable than to do a tracheotomy, using the shorter, wider and more manageable tube. In young persons, Dr. Yankauer believes that, in the majority of cases, it is advisable to do tracheotomy and lower bronchoscopy. The prolongation of anesthesia from attempts to pass the upper tube is particularly dangerous because there is more or less inflammation of the lung following inhalation of a foreign body. Lower bronchoscopy makes it easier and quicker for the operator to find a foreign body and to remove it, and the traumatism of a tracheotomy is not so great as the traumatism resulting from unsuccessful attempts carried on for a long time to introduce a tube through the natural passages.

DR. F. S. CROSSFIELD, Hartford, Conn., said that the subject is one that necessitates the reporting of all cases of the kind, with the technic in operating, in order that all advantage may be taken of the successes of others. In those cases in which the symptoms are not urgent he thinks it advisable, always, to wait. If the symptoms are urgent it is not worth while to bother with anything but the lower operation. Do tracheotomy, go directly in, see the object and remove it at once. It is not worth while to try the x-ray, because almost all foreign bodies will not show. A case occurred in his practice recently. A child swallowed a kernel of red corn; it passed through the larynx and trachea, producing a severe cough at once. The child was taken to the hospital. The foreign body was supposed to be in the larynx, as there was loss of voice. It could not be found in the larynx, however, and the child was placed in a ward. The next day the left lung was entirely occluded; there was no respiration whatever. An immediate operation was deemed necessary, but first by irritating the larynx an attempt was made to produce a spasm and severe cough. This was a success. The patient was immediately tipped backward over the edge of the bed and the cough expelled the corn.

DR. B. R. SHURLY, Detroit, Mich., said that in view of the fact that the use of the bronchoscope is to be classified as a possible emergency operation, all the larger places should certainly be equipped with the necessary instruments for this operation when required. It should be classed in much the same way as the operation of intubation. Dr. Shurly has been through the difficulties of trying to learn to use the bronchoscope and he found a great deal of value in using the instrument on a dog at first.

DR. EMIL MAYER, New York City, said that whether an operation should be insisted on or not, that depends to a great extent on the case. In illustration of the value of such experiences, he said that the history of his connection with bronchoscopy dates back to the time when Dr. Ingals and Dr. Coolidge presented specimens of foreign body in the bronchi that had been removed from little Chicagoans and Bostonians, and it seemed to him that little New Yorkers would surely have something of the same kind. When he returned home the only bronchoscopic instruments in the city were in the possession of Dr. Gleitsmann. Dr. Mayer's assistant, Dr. Yankauer, made a temporary set and whenever they had any spare time they did bronchoscopy on the bodies at Mt. Sinai Hospital. Within a few weeks after working on these bodies the first case of a foreign body in the bronchi came to them. The rapid introduction of the tube will come eventually. The method of experimenting on the dog has the advantage of giving a knowledge of the mucous membrane. With the hot breath coming into his face and the mucus pouring into the tube, as it does, the surgeon can get nothing like it with the dog. The laryngeal image of the dog, if it has received a good dose of morphin to keep it quiet, is one of the easiest things possible to get. A view of the larynx can be obtained, a tube can be introduced and direct bronchoscopy can be done without difficulty. Dr. Mayer invariably uses ether, never chloroform. Dr. Mayer considers the Klar reflector perhaps the best so far as illumination is concerned; it is superior to the Kierstein, which gets very hot. He thinks that the introduction of the guide and the tube at the same time is not so easy as it might seem. The guide is short, has a handle and the tube is long and has a handle, and the surgeon is very far away, which adds to the difficulty. To sum up, he said, the main point is that bronchoscopy is one of the most recent advances in special work. The number of cases heretofore recorded have been recorded by the fewest men. He said that he believes it safe to say that in this country not one dozen men have reported experience with bronchoscopy, and it is only to record his experience, his failure in one case and success with the others, that he has presented the subject. Regarding the case that ended fatally, had he seen the case and decided for himself whether the patient should wait or not, he is confident he could have saved the life. It is only by knowing other men's experiences and comparing results that a maturer understanding of this still new subject can be reached.

Medical Organization

Mississippi.

TRI-COUNTY (PIKE, LEVISON AND COPIAH) MEDICAL SOCIETY.—More than 30 physicians representing the physicians of Pike, Levison and Copiah counties met in Brookhaven, July 18, and organized a Tri-County Medical Society with the following officers: Dr. Dudley W. Jones, Fernwood, president; Drs. James A. Rowan, Wesson; James W. Bennett, Brookhaven, and C. H. Bates, Sykes, vice-presidents, and Dr. William H. Frizell, Brookhaven, secretary and treasurer.

TATE COUNTY MEDICAL ASSOCIATION.—The physicians of Tate County met at Senatobia and organized a county association with the following officers: Dr. Montgomery C. Ellis, Senatobia, president; Dr. John M. Phillips, Strayhorn, vice-president, and Dr. W. D. Potter, Senatobia, secretary and treasurer.

Montana.

TRI-COUNTY (ROSEBUD, DAWSON, CUSTER) MEDICAL ASSOCIATION.—The physicians of Rosebud, Dawson and Custer counties met at Miles City and formed a society on the standard plan, with the following officers: President, Dr. Wyman W. Andrus, Miles City, Custer County; vice-president, Dr. Hathaway, Glendive, Dawson County, and secretary and treasurer, Dr. Henry J. Huene, Forsyth, Rosebud County.

Missouri.

SULLIVAN COUNTY MEDICAL SOCIETY.—The physicians of Sullivan County met at Milan, June 26, and reorganized the county society with the following officers: President, Dr. William L. M. Witter, and secretary and treasurer, Dr. John S. Montgomery, both of Milan.

Nebraska.

FURNAS COUNTY MEDICAL SOCIETY.—At a meeting of physicians of the county, held in Arapahoe, the medical society was reorganized and the following officers were elected: President, Dr. Clarence C. Green, Beaver City; vice-president, Dr. Arthur B. Hardin, Arapahoe, and secretary and treasurer, Dr. L. Wallace Rork, Oxford.

New York.

YATES COUNTY MEDICAL SOCIETY.—The Yates County Medical Society has recently been organized at Penn Yan on the standard plan, with the following officers: President, Dr. Charles M. Van Dyke, Himrod; vice-president, Dr. Cyrus C. Harvey, Dundee; secretary, Dr. Harry S. Tuthill, Penn Yan, and treasurer, Dr. Charles E. Doubleday, Penn Yan.

Indian Territory.

TWENTY-THIRD DISTRICT MEDICAL ASSOCIATION.—A meeting for the organization of this society was held in Coalgate, when the councilor for the central district, Dr. Eliphalet N. Wright, Olney, organized a society on the standard plan, with the following officers: President, Dr. Thomas J. Long, Atoka; vice-president, Dr. M. P. Skeen, Wapanuck, and secretary and treasurer, Dr. Leonard S. Wilbouer, Olney.

Pennsylvania.

FULTON COUNTY MEDICAL SOCIETY.—The organization of this society was effected at a meeting held in McConnellsburg with the assistance of Dr. Thomas M. Livingston, Colum-

bia, councilor for the fourth and fifth districts, and the following officers were elected: President, Dr. William L. McKibben, McConnellsburg; vice-president, Dr. James S. Swartzwelder, Needmore; secretary, Dr. George M. Robinson, McConnellsburg; treasurer, Dr. John W. Mosser, McConnellsburg, and censors, Drs. Harry C. McClain, Hustontown, and Samuel S. Hoop, Andover.

Virginia.

SOUTH PIEDMONT MEDICAL ASSOCIATION.—A physicians' society was recently organized at South Boston, with the following officers: Dr. S. T. Anderson Kent, Ingram, president; Drs. Henry B. Melvin, Houston; William L. Robinson, Danville, and William R. Gregory, Keesville, vice-presidents; Dr. George A. Stover, South Boston, secretary, and Dr. James L. Kent, Lynchburg, treasurer.

Medical Education and State Boards of Registration.

COMING EXAMINATIONS.

MAINE Board of Registration in Medicine, Portland, November 13. Secretary, Wm. J. Maybury, Saco.

CONNECTICUT Medical Examining Board, City Hall, New Haven, November 13-14. Secretary, Charles A. Tuttle, New Haven.

MASSACHUSETTS Board of Registration in Medicine, State House, Boston, November 13-14. Secretary, Edwin B. Harvey, State House, Boston.

WEST VIRGINIA State Board of Health, The Frederick, Huntington, November 13-15. Secretary, H. A. Barbee, Point Pleasant.

MISSOURI State Board of Health, Kansas City, November 26-28. Secretary, J. A. B. Adcock, Warrensburg.

NEW MEXICO State Board of Health, Santa Fe, December 3. Secretary, Dr. B. D. Black, Las Vegas.

PENNSYLVANIA State Medical Examining Board, Industrial Hall, Philadelphia, December 4-7. Secretary, Dr. Joseph E. Willetts, Pittsburg.

WYOMING Board of Medical Examiners, State Capitol, Cheyenne, December 5. Secretary, Dr. S. B. Miller, Laramie.

DELAWARE State Medical Society Examining Board, Dover, December 6, and by the Homeopathic Board at Wilmington on same date. Secretary of the Medical Council, Dr. P. W. Tomlinson, Wilmington.

OHIO State Board of Medical Registration and Examination, Columbus, December 11-13. Secretary, Dr. Geo. H. Matson, Columbus.

IOWA State Board of Medical Examiners, Office of State Board of Health, Des Moines, December 11-13. Secretary, Dr. J. F. Kennedy, Des Moincs.

VIRGINIA Medical Examining Board, Richmond, December 11-14. Secretary, Dr. R. S. Martin, Stuart.

MARYLAND Board of Medical Examiners, 847 N. Eutaw St., Baltimore, December 12. Secretary, Dr. J. McP. Scott, Hagerstown.

OKLAHOMA Board of Medical Examiners, Guthrie, December 26. Secretary, Dr. J. W. Baker, Enid.

Maryland June Report.—Dr. J. M. Scott, Secretary of the Board of Medical Examiners of Maryland, reports the written examination held at Baltimore, June 20-23, 1906. The number of subjects examined in was 9; total number of questions asked, 54; percentage required to pass, 75. Ninety-six candidates were examined, of whom 77 pased and 19 failed.

The following questions were asked:

ANATOMY.

1. Describe the upper extremity of the femur. 2. Describe briefly the elbow joint. 3. Name the accessory sinuses of the nose. 4. Describe the collateral circulation after a ligation of the external iliac artery. 5. Name and give location of the salivary glands and state just where their ducts empty. 6. Describe the portal system of veins.

SURGERY.

1. What are the general principles governing the treatment of fractures at or near joints? 2. What conditions require and what is the usual method of performing (a) thoracentesis (b) resection of ribs. 3. Give the treatment of a sprain of the ankle joint. 4. (a) Give the differential diagnosis between chancre, chancroid and herpes preputialis; (b) Give in detail the proper treatment of each. 5. Stating your reasons, give what you consider, to be the most suitable suture material for (a) anastomosis of the intestines, (b) uniting the peritoneum, (c) muscles of the abdomen, (d) closing skin. 6. Give the treatment of severe shock after severe injury or after a major surgical operation.

PATHOLOGY.

1. Define the following terms: Coccus, bacillus, spirillum, anaërobe, facultative anaërobe. Name one anaërobeic organism. 2. Name the pathogenic cocci. Give the morphology and method of staining of each and name the varieties usually found in the following diseases: Furunculosis, tonsilitis, puruient saipingitis. 3. De-

(*Continued on page 1590.*)

The following colleges were represented:

PASSED.

	Year of Graduation.	Anatomy.	Surgery.	Pathology.	Obstetrics.	Practice.	Chemistry.	Mat. Medica.	Therapeutics.	Physiology.	Average.
Geo. Washington Univ.	1905	71	85	64	100	80	90	79	87	93	85
Geo. Washiugton Univ.	1906	87	78	78	90	86	75	75	75	82	80
Geo. Washington Univ.	1906	75	85	60	85	78	75	65	69	83	75
Geo. Washington Univ.	1906	78	80	85	85	86	84	88	85	88	84
Univ. of Maryland...	1906	90	95	90	100	79	85	83	88	95	89
Univ. of Maryland...	1906	80	90	66	85	82	76	78	88	81	80
Univ. of Maryland...	1906	81	90	77	85	85	20	83	93	87	77
Univ. of Maryland...	1906	88	95	92	100	88	40	68	92	92	84
Univ. of Maryland...	1906	93	90	92	100	88	86	86	92	98	91
Univ. of Maryland...	1906	78	95	78	90	87	58	79	84	97	82
Univ. of Maryland...	1906	79	95	85	100	86	88	78	82	97	87
Univ. of Maryland...	1906	91	98	96	100	89	93	94	93	95	94
Univ. of Maryland...	1906	77	85	88	90	77	77	85	88	84	83
Univ. of Maryland...	1906	73	85	83	80	75	84	78	85	90	82
Univ. of Maryland...	1906	78	90	70	90	75	52	84	76	80	77
Univ of Maryland...	1906	90	92	87	100	81	81	78	85	90	87
Univ. of Maryland...	1906	94	90	80	90	78	84	87	90	97	87
Univ. of Maryland...	1906	76	80	69	100	83	68	83	78	80	79
Univ. of Maryland...	1906	91	94	94	85	89	88	69	73	83	85
Univ. of Maryland...	1906	80	95	68	90	83	71	93	94	85	84
Univ. of Maryland...	1906	88	92	88	90	80	78	88	90	81	87
Univ. of Maryland...	1906	88	90	57	80	75	48	80	82	75	75
Univ. of Maryland...	1906	79	95	76	100	69	49	79	87	60	77
Univ. of Maryland...	1906	88	80	78	90	83	45	72	90	81	78
Univ. of Maryland...	1906	69	80	78	90	70	45	79	83	81	75
Univ. of Maryland...	1906	79	90	76	65	80	50	78	82	75	75
Uuiv. of Maryland...	1906	80	90	88	75	76	91	90	92	91	83
Univ. of Maryland...	1906	70	75	75	90	75	51	79	85	75	75
Univ. of Maryland...	1906	78	80	81	95	75	75	77	82	87	78
Univ. of Maryland...	1906	87	98	85	100	78	85	85	92	100	90
Univ. of Maryland...	1906	90	85	94	85	88	60	76	95	85	84
Univ. of Maryland...	1906	89	90	78	90	84	75	85	90	80	83
Univ. of Maryland...	1906	89	90	90	100	93	80	88	95	85	90
Univ. of Maryland...	1906	80	85	53	90	90	30	79	93	75	75
Univ. of Maryland...	1906	92	95	97	100	85	75	91	88	95	90
Univ. of Maryland...	1906	87	95	95	75	91	85	74	77	97	86
Univ. of Maryland...	1906	74	95	81	95	75	78	89	92	87	85
Univ. of Maryland...	1905	56	90	76	90	75	59	74	87	68	75
J. Hopkins Med. Sch'l	1906	83	90	94	85	92	95	84	90	90	89
J. Hopkins Med. Sch'l	1906	78	90	92	100	90	76	92	88	96	89
J. Hopkins Med. Sch'l	1906	91	95	84	85	83	76	82	85	89	85
J. Hopkins Med. Sch'l	1906	90	95	96	100	93	94	92	95	100	95
J. Hopkins Med. Sch'l	1906	92	80	89	84	84	94	90	90	96	88
J. Hopkins Med. Sch'l	1906	66	85	97	75	92	91	80	95	95	86
J. Hopkins Med. Sch'l	1906	92	96	97	90	92	96	89	97	96	93
J. Hopkins Med. Sch'l	1906	89	85	98	90	93	96	87	90	98	80
J. Hopkins Med. Sch'l	1906	88	100	92	90	90	80	90	92	100	91
J. Hopkins Med. Sch'l	1906	91	95	90	80	90	94	95	95	96	91
J. Hopkins Med. Sch'l	1906	79	95	98	95	92	84	87	93	98	91
J. Hopkins Med. Sch'l	1906	81	95	96	90	97	89	87	95	98	92
J. Hopkins Med. Sch'l	1906	96	95	96	90	93	50	85	85	95	83
J. Hopkins Med. Sch'l	1906	91	100	96	84	85	65	68	93	96	86
J. Hopkins Med. Sch'l	1906	92	90	91	90	99	85	93	92	95	91
J. Hopkins Med. Sch'l	1899	89	95	96	95	97	91	87	90	100	93
Baltimore Med. Coll..	1906	75	80	57	90	79	49	90	80	75	75
Baltimore Med. Coll..	1906	89	90	62	95	77	60	81	78	100	81
Baltimore Med. Coll..	1906	56	90	92	90	81	50	73	92	95	79
Baltimore Med. Coll..	1906	97	98	88	90	89	75	73	95	100	89
Baltimore Med. Coll..	1906	84	80	75	90	75	60	70	93	85	79
Baltimore Med. Coll..	1906	76	90	84	80	82	25	60	85	93	75
Baltimore Med. Coll..	1906	73	80	89	90	83	45	77	86	97	80
Baltimore Med. Coll..	1906	96	90	98	100	97	85	81	94	100	93
Baltimore Med. Coll..	1906	88	90	91	90	90	90	92	88	87	89
Baltimore Med. Coll..	1906	84	95	99	100	95	95	97	97	98	94
Baltimore Med. Coll..	1906	81	90	93	85	78	88	71	80	98	84
Baltimore Med. Coll..	1906	75	85	75	90	87	64	92	93	93	83
Baltimore Med. Coll..	1906	67	75	69	90	77	50	80	78	70	75
Coll. of P. & S., Balt.	1906	90	95	93	80	80	30	76	92	90	80
Coll. of P. & S., Balt.	1906	75	80	77	85	79	79	89	75	88	80
Coll. of P. & S., Balt.	1906	87	75	68	80	81	60	75	77	90	77
Coll. of P. & S., Balt.	1906	91	90	82	90	89	93	93	90	100	90
Coll. of P. & S., Balt.	1906	91	90	86	80	88	50	68	81	83	79
Jefferson Med. Coll...	1904	75	90	75	85	79	76	93	80	77	81
Jefferson Med. Coll...	1906	87	95	75	90	88	75	90	75	88	85
University of Virginia	1906	68	98	75	85	86	75	80	90	78	81
Univ. of Leinberg, Aus.	1902	88	100	92	80	90	98	82	90	95	90
Maryland Med. Coll..	1906	71	85	61	90	81	77	82	85	66	77

FAILED.

Univ. of Maryland...	1906	82	95	62	85	75	34	65	77	75	72
Univ. of Maryland...	1906	62	90	57	95	75	33	71	69	90	71
Univ. of Maryland...	1906	58	85	71	85	75	48	71	77	85	72
Univ. of Maryland...	1906	75	85	28	75	75	19	74	77	67	63
Univ. of Maryland...	1906	61	75	67	90	70	48	68	82	70	70
Maryland Med. Coll..	1906	48	50	59	75	77	25	87	67	84	63
Maryland Med. Coll..	1906	39	72	32	80	75	20	77	80	68	60
Maryland Med. Coll..	1906	22	40	26	80	49	12	45	46	81	44
Maryland Med. Coll..	1906	73	65	68	75	61	58	83	80	75	70
Coll. of P. & S., Balt.	1906	50	70	54	75	67	38	69	67	63	61
Coll. of P. & S., Balt.	1906	39	75	37	95	69	65	75	85	75	68
Baltimore Med. Coll..	1906	30	70	56	90	77	38	77	75	80	65
Baltimore Med. Coll..	1906	50	80	27	75	66	58	87	80	66	65
Baltimore Med. Coll..	1906	81	70	53	85	84	30	68	79	90	71
Baltimore Med. Coll..	1906	55	75	55	75	65	20	62	65	60	58
Long Is. Coll. Hosp...	1905	72	85	30	75	63	65	31	75	69	62
Jefferson Med. Coll..	1906	68	75	52	80	81	76	79	81	63	72
Jefferson Med. Coll..	1906	63	75	56	90	77	42	69	77	68	68
Jefferson Med. Coll..	1906	65	80	59	80	76	45	78	78	79	71

scribe in detail the process of cavity formation in a case of tuberculosis of the lungs. Give the morphology of and describe in detail the method of staining of the tubercle bacillus. Name two other bacilli with similar staining properties. 4. Describe the pathologic changes as regards the urinary tract one would expect to find in a case of hypertrophy of the prostate of long standing. 5. Describe macroscopically the changes one would expect to find in the appendix and surrounding structures in a case of catarrhal and one of gangrenous appendicitis, respectively. 6. Give a gross and microscopic description of a cross section of a myomatous uterus. In what other localities is this species most frequently found?

OBSTETRICS AND GYNECOLOGY.

1. Describe the preliminary arrangements and preparation for an approaching accouchement. 2. What is your treatment for a case of placenta prævia about the eighth month of pregnancy? 3. Give diagnosis of a pregnancy at the third month. 4. Describe the mechanism of a podalic version and mention the points of danger to the fetus. 5. Describe a complete abdominal hysterectomy. 6. Describe some conditions of the uterus which may be relieved by an amputation of the cervix.

PRACTICE.

1. Define: (a) Tachycardia, (b) leukemia, (c) cretinism, (d) hydrothorax, (e) ascaris lumbricoides. 2. Name symptoms of: (a) Ulcer of stomach, (b) acute nephritis, (c) scarlatina. 3. What means would you employ in the diagnosis of diseases of the lungs, stomach and kidney? 4. Name some of the sequelæ of typhoid fever. Name some causes of intestinal obstruction. 5. Give treatment of diabetes mellitus and of laryngeal diphtheria. 6. Give diagnosis and treatment of tetanus.

CHEMISTRY.

1. Define the terms: Element, compound, mixture, and explain the use of the suffixes: Ous, ani, ic. 2. State the chemical composition of atmospheric air. What is the difference between expired and inspired air and explain how this is brought about? 3. State the properties of good drinking water. What are its most dangerous impurities and why? and describe the methods in use for its purification. 4. Give the chemical definition of a simple ether. Give the chemical constitution and the physical and chemical properties of sulphuric ether. Is this term a correct one and why? 5. What chemically are the vegetable alkaloids? State their general characteristics and give the effect of solvents on them and their salts. 6. Suppose a specimen of urine of normal specific gravity and of either neutral or faintly acid reaction shows on boiling a precipitate. What substances may this indicate and how are they to be differentiated?

MATERIA MEDICA.

1. Give the composition of compound cathartic pills, black wash, and Dover's powder. 2. Give the official Latin title of paragoric; name all its constituents and give the amount of the principal drug in one ounce of the mixture. 3. What is the official name of calomel; what drugs are incompatible with it and why? 4. Give the botanical name and official preparations of digitalis, with dose of each. 5. Name the official vegetable acids. 6. Give the source of acetanilid, caffein, and salol.

THERAPEUTICS.

1. Give the general rule for calculating doses for children. 2. What are the modes of administration of medicines? How does dosage vary in each with that of the mouth? 3. What are the physiologic effects and medicinal uses of the preparations of belladonna? 4. Give the therapeutic uses of the iodids. How are they best administered? 5. What are antipyretics? Describe general use of and how administered. 6. Name the official digestive ferments; give their physiologic action and therapeutic uses.

PHYSIOLOGY.

1. Describe the circulation of the blood. 2. What is coagulation of the blood? (a) Give some of the theories of coagulation and state how it may be hastened or retarded. (b) What is intravascular clotting? How may it be caused and why does it not take place under ordinary circumstances? 3. What is meant by the heat-regulating mechanism of the body? Explain the maintenance of a constant body temperature. 4. Describe the physiologic function of the kidneys. 5. Describe the mechanism of respiration, both normal and forced. 6. Describe the phenomena and give some of the theories of sleep.

The General Medical Council of Great Britain: Its Powers and Its Work.

In the *Lancet*, Oct. 6, 1906, Dr. Donald MacAllister describes the functions of the General Medical Council of Great Britain. The council, he says, is in fact neither a parliament for making professional laws nor a union for protecting professional interests. When the council was created, nearly 50 years ago, the declared purpose of the legislature was simply to conserve the interests of the public by enabling it to distinguish between qualified and unqualified practitioners. The instrument which parliament set up for the purpose of marking this distinction is the "Medical Register," the keeping of which is entrusted to the council. On the register are placed the names of those who have passed certain tests of professional fitness. These are called registered practitioners, and these alone the law declares to be duly or legally qualified. Thus the two great functions which the council in the public interest discharges are, first, to prevent the unfit from gaining access to the register, and, second, to remove the unworthy. It is a council on education and a board of registration.

Although it is a council on education, it neither teaches nor examines. It can not lay down a code or curriculum compulsory on all medical students. Its statutory powers are strictly limited. It can order the visitation and inspection of the various examinations held by universities and corporations in the United Kingdom for the purpose of testing candidates for their respective medical degrees or diplomas. It can require from these bodies information concerning the course of study and the age of candidates which they prescribe. If from the inspection of the examinations or the information supplied as to the curricula the council comes to the conclusion that either are insufficient, it has no power to disallow them or to order that they shall be amended. It forwards its report to the body concerned, takes note of any observations the body may make thereon, and if it is still convinced that the training or the test is insufficient, it brings the question before the privy council.

In this and in other matters the council is in close administrative relation with the privy council, a government body. If the medical council neglects its duty in anything, the privy council may formally direct that the duty shall be performed and in default may itself perform it. The privy council has power to supplement as well as to supersede. It can do what the medical council is unable to do. If it sees fit it can declare that an insufficient diploma shall no longer be recognized as legally registrable; and, if circumstances alter, it can rehabilitate the diploma and make it valid again.

Although its positive legal powers are thus limited, yet in practice they have proved to be more efficient than they seem in theory. By a gradual process of evolution and the exercise of moral pressure they have come to be quite adequate for the purpose.

The medical council is also a board of registration. By successive judicial decisions it has been laid down that in its procedure the council, sitting as a tribunal, must as nearly as possible follow the forms and rules customary in other courts. It has no authority to compel the attendance of witnesses, to administer oaths, or to call for the production of documents. It has only one judgment to give when a charge is proved to its satisfaction, namely, guilty of infamous conduct in a professional respect, and only one sentence when judgment is given, namely, erasure from the register. From this sentence and judgment, given after proper inquiry and without malice, the High Court of Justice has pronounced that there is no appeal.

The council is a court of professional discipline. Practices which 40 or 50 years ago were so common and so lightly regarded that they excited little notice and less reprehension but are now repugnant to the general sense of the profession are sternly repressed by the council. For instance, respecting the professional offense of "covering," the council sent out a warning notice. All qualified practitioners were notified that the abuse of their qualifications whereby an unqualified person was enabled to treat patients as if he were qualified, under "cover" of his employer, was in its nature fraudulent and dangerous to the public, and that such an offense rendered them liable to be judged guilty of infamous conduct.

More recently the practice of issuing objectionable advertisements or of employing or sanctioning the employment of canvassers with the object of procuring patients, was brought before the council in connection with particular flagrant cases. Each case had to be dealt with on its own merits. Sometimes the case was fought, in others the accused practitioner preferred to discontinue the practice complained of and submitted himself to the clemency of the council. A warning notice was issued, pointing out the public detriment, and professional discredit attaching to unworthy methods of attracting practice. Notice was given that practitioners who employed them, or sanctioned their employment, were liable to the penalty of erasure from the register. Thus it will be seen that even with its apparently limited powers as a court, and notwithstanding the apparent inadequacy of the statutes which govern it, the council does in fact formulate, and by formulation makes explicit, fresh applications of the law to the growing complexity of modern conditions.

The constitution of the council has had much to do with the effectiveness of this body. Each of 24 licensing bodies appoints a member of the medical council. Five members are appointed directly by the sovereign, on the advice of the privy council, and five members more are appointed by direct election, under a universal suffrage, by the registered practitioners resident within the kingdom. The total number of members is 34. Of these, 14 only are required by law to be medical practitioners. The sovereign and the universities may appoint laymen, if they choose, but they have not done so. It was proposed at one time that the sovereign appoint lay members of the House of Lords, as being persons of knowledge and experience of public affairs who are independent of transi-

tory politics, they would increase the administrative efficiency of the council, correct its tendency to professional bias, and be always at hand to bring forward in parliament measures of medical importance. However, the constitution of the council makes it a most excellent council of medical education. Its members are not delegates of constituent bodies and sections, but members of the council. Each member represents the council in his own faculty, and not vice versa.

From the point of view of the council as a corporate entity, it is also of inestimable advantage that each of its constituent bodies is represented on it. Its members are so many envoys from the universities and corporations. Each is in immediate touch with his governing body; he is by hypothesis in good standing and influence there, or he would not have been chosen. While he is an envoy of the body, he becomes in turn an envoy of the council to the body. From his own knowledge of the course of the discussion, the arguments used, the examples proposed for imitation, he is in a position to explain and commend the council's decision to his colleagues at home. He can make clear the scope and bearing of resolutions which are not always self-explanatory.

The preliminary education and registration of students is a matter of statute.

Therapeutics

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulæ and outlines of treatment are answered in these columns.]

Laryngitis.

In the treatment of acute laryngitis Grayson states that general measures are of value in combating the trouble, such as intestinal evacuation by means of small doses of calomel followed by a saline purge. The patient's room should be moistened by the addition of steam. If there be a rise in temperature a vascular depressant combined with a diaphoretic is recommended. He advises for this purpose drop doses of the tincture of aconite given frequently. The cough may be quieted and the secretion of the larynx increased by a combination similar to the following:

℞. Morphinæ sulph.
Antimonii, āā ..... gr. 1/25 | 0024
Ammon. chloridi ..... gr. ii | 12
Pulv. ipecacuanhæ ..... gr. ⅛ | 008

M. Fiat capsula. Sig.: One such capsule every four hours.

The use of the voice must be absolutely prohibited and the diet restricted to the simplest foods.

The local treatment, according to Grayson, should consist of very mild and soothing applications such as Dobell's solution and a warm sedative inhalation given two or three times a day. This may be prepared by adding a teaspoonful of the compound tincture of benzoin to a pint of hot water and inhaling the steam through a cone. The water should not be boiling, according to Grayson, but is best prepared by adding one part of cool water—60 F.—to two parts of boiling water. If the cough is frequent and accompanied by much pain, he recommends that one or two drops of chloroform or a teaspoonful of paregoric be added to the benzoin. After two days of the foregoing treatment it is recommended that an astringent spray be employed. For this purpose he advises the following combination:

℞. Aluminis ..... gr. x | 65
Aquæ ..... f℥i 30 |

M. Sig.: To be sprayed into the larynx.

Later in the course of the disease inhalations containing oleum eucalypti or oleum pini sylvestris may be employed.

The following combinations are recommended by Hare in the treatment of acute laryngitis:

℞. Menthol ..... gr. iii | 20
Petrolati liq. ..... f℥i 30 |

M. Sig.: To be used as a spray, at the same time instructing the patient to inhale.

A watery spray should never be employed in the treatment of the acute cases of laryngitis, as it sometimes tends to aggravate the condition. If the laryngeal irritation, however, has been brought on by the inhalation of particles of dust, he recommends the following combination as a spray:

℞. Sodii chloridi ..... gr. xv | 1
Acidi borici ..... gr. x | 65
Sodii boratis ..... gr. x | 65
Aquæ rosæ ..... f℥iii 90 |

M. Sig.: To be used as a spray.

The external treatment in severe cases consists in the application of a mustard plaster or other forms of heat over the larynx, at the same time advising a hot mustard foot bath and a warm drink just previous to retiring.

The internal treatment, according to the author, consists in obtaining proper elimination from the bowels by means of calomel, followed by a saline if constipation be present, and in the administration of full doses of aconite and sodium bromid as follows:

℞. Tinct. aconiti ..... m. xii-xxiv | 75-1.65
Sodii bromidi ..... 3ii 8 |
Aquæ menth. pip. q. s. ad ..... f℥iii 90 |

M. Sig.: One dessertspoonful every four hours. Or:

℞. Potass. bromidi ..... 3iv 15 |
Tinct. aconiti ..... m. xii | 75

M. Fiat chartulæ No. xii. Sig.: One powder every four hours in water.

The foregoing may be continued until convalescence occurs, as it tends to soothe inflamed surfaces by allaying the arterial disturbance.

In some cases he recommends the application of the tincture of iodin to the larynx and episternal notch. In children this may be substituted by applying the following combination:

℞. Olei succini (amber) ..... f3iv 15 |
Olei olivæ ..... f3xii 45 |

M. Fiat linimentum. Sig.: Apply locally.

The *Cyclopedia of Medicine* recommends the following combination internally in the treatment of acute laryngitis:

℞. Tinct. aconiti ..... m. x | 65
Tinct. belladonnæ ..... f3ss 2 |
Glycerini ..... f3ii 8 |
Sol. potass. citratis q. s. ad ..... f℥ii 60 |

M. Sig.: Two teaspoonfuls every three hours in water.

Locally, small pieces of ice may be dissolved in the mouth and cold applied externally. For this purpose Leiter's coil is recommended. As a sedative inhalation the following is advised:

℞. Menthol ..... gr. ii | 12
Spts. chloroformi ..... f3ss 2 |
Tinct. benzoini co. q. s. ad ..... f℥ii 60 |

M. Sig.: Two teaspoonfuls to a pint of hot water and inhale every two hours.

Acute laryngitis in children is best relieved by the administration of the syrup of ipecac dram ½ (2.00) every fifteen minutes until vomiting takes place and the throat may be swabbed with the glycerite of tannin.

Some authors recommend a combination similar to the following:

℞. Liq. morph. hydrochlor (1 p. c.)
Vini antimonialis, āā ..... f℥i 4 |
Liq. ammon. acetatis ..... f℥i 30 |
Aquæ camphoræ q. s. ad ..... f℥v 150 |

M. Sig.: From a dessertspoonful to a tablespoonful every four hours.

In children the following may be used:

℞. Apomorphinæ hydrochlor ..... gr. 1/3 | 002
Acidi hydrochlor. dil ..... m. iii | 18
Syrupi senegæ ..... 3v 18 | 5
Aquæ q. s. ad ..... ℥iss 45 |

M. Sig.: One teaspoonful every hour.

THE LARYNGITIS OF VOCALISTS.

In cases of subacute laryngitis of vocalists Yeo recommends the following outline of treatment:

1. An aperient.
2. A laryngeal spray of a 1 per cent. solution of cocain.
3. The following combination as a lozenge:

℞. Morphinæ sulph.
Cocainæ hydrochlor, āā ..... gr. 1/150 | 0004
Tinct. aconiti ..... m. 1/6 | 01
Pulv. altheæ rad ..... gr. ss | 03

M. Fiat lozenge. Sig.: One such lozenge to be taken into the mouth frequently.

4. As a preparation for a vocal effort after the acute symptoms have subsided gr. 1/60 (.001) of strychnin after meals.

SIMPLE CHRONIC LARYNGITIS.

In cases of simple chronic laryngitis the following combination is recommended:

℞.	Eucalyptol	gr. iii	20
	Spiritus camphoræ	f℥iv	15
	Tinct. benzoini co. q. s. ad	f℥ii	60

M. Sig.: Two teaspoonfuls to a pint of hot water and inhaled at bedtime and on arising.

After the morning inhalation it is recommended that the patient remain indoors for an hour or two. Locally it is advised that silver nitrate be applied as follows:

℞.	Argenti nitratis	gr. v-x	30-.65
	Aquæ	f℥ss	15

M. Sig.: Apply locally to the enlarged follicles of the pharynx.

As a lozenge to be dissolved in the mouth the following is recommended:

℞.	Pulv. guaiaci	℥ii	8
	Olei caryophylli	m. ii	12
	Olei limonis	m. v	30
	Pulv. acaciæ	℥ss	2
	Pulv. sacchari	℥i	4
	Confectio rosæ q. s.		

M. Fiat lozenges No. xxx. Sig.: One lozenge to be dissolved in the mouth every four hours.

As an inhalation or spray in chronic laryngitis Yeo recommends the following combination:

℞.	Acidi tannici	gr. xv	1
	Spts. vini rectif	f℥iiss	10
	Aquæ q. s. ad	℥ii	60

M. Sig.: To be used locally as an inhalation or a spray.

Or:

℞.	Olei pini sylvestris	℥ii-iii	8-12
	Magnesiæ carb.	℥i-iss	4-6
	Aquæ q. s. ad	℥iii	90

M. Sig.: One teaspoonful to be added to a pint of water at 150 F. and inhaled for five minutes two or three times a day.

As a gargle for hoarseness from fatigue of the voice the following combination is advised:

℞.	Acidi tannici	℥i	4
	Glyceriti boroglycerini	℥ii	8
	Tincturæ capsici	f℥iss	6
	Aquæ rosæ q. s. ad	f℥x	300

M. Fiat gargar. Sig.: To be used frequently as a gargle.

Gonorrheal Rheumatism.

W. J. Robinson, in an abstract in *Merck's Archives*, states that if after getting rid of the gonococcus there is evidence of involvement of the joints, the following combination is recommended as a local application:

℞.	Acidi salicylici	℥i	4
	Mentholis	gr. xv	1
	Guaiacolis	℥ss	2
	Alcoholis	f℥i	30

M. Sig.: To be painted over the affected areas with a camel's hair brush and the parts covered with cotton and oil silk.

Or, as a liniment, the following:

℞.	Methyl salicylatis	℥ii	8
	Guaiacolis	℥i	4
	Olei veratrinæ		
	Linimenti camphoræ, āā	f℥i	4
	Linimenti belladonnæ	f℥i	30

M. Sig.: Rub in well and cover with cotton and oil silk or muslin.

As an ointment the following composition:

℞.	Chloralis hydratis	℥i	4
	Camphoræ		
	Mentholis, āā	℥ss	2
	Acidi salicylici		
	Guaiacolis, āā	℥i	4
	Atropinæ	gr. ii	12
	Petrolati	℥i	30
	Lanolini q. s. ad	℥ii	60

M. Sig.: Apply externally.

Medicolegal

Liability of Charitable Hospital for Negligence—Failure of Hospital or Individual to Warn Nurse of Patient Having Contagious Disease—Duty as Employer.

The Supreme Court of New Hampshire says, in Hewett vs. Woman's Hospital Aid Association, that a charitable institution has certain duties to perform toward those with whom it is associated, which it can not violate with impunity, in the absence of some express exemption of a legislative character, is not debatable. The sanctity of its general trust fund or property does not make that result necessary, or, on grounds of public policy, desirable. The liability of charitable corporations in actions of tort (for wrongful act or negligence) is frequently enforced. If the language of some courts is broad enough to deny the liability of charitable corporations in all actions of tort, it cannot be regarded as a discriminating statement of the law on the subject.

The duties of the defendant to the plaintiff when she was employed to nurse a diphtheria patient had their inception in the contract of employment. She was engaged to do a necessary part of the work of maintaining a hospital for the sick. For this labor she was paid. If she was an apprentice receiving small remuneration in money, in consideration of the instruction and experience she received in practical nursing, she was none the less an employé of the defendant. An apprentice learning a trade occupies the position of a servant with reference to his employer, and obviously the latter's duty to inform him of the dangers of his occupation is greater than in the case of an experienced workman. While performing the necessary work of nursing in the institution, the plaintiff was not, like a patient, the recipient of the defendant's charity. She was doing the defendant's proper work, under its direction, and for its benefit in the discharge of its assumed duties. She was as much an employé of the hospital in respect to this particular work as she would have been if she had been a graduate nurse receiving full nurse's pay. The fact that, at the time she was employed, she represented herself to be older that she was did not relieve the defendant of its ordinary duty to her as its servant. Her apparent youthfulness, general intelligence, and practical experience in nursing were facts for the consideration of the jury on the question of the degree of care the defendant was bound to exercise.

If the plaintiff had been employed by an individual to attend a member of his family afflicted with smallpox, of which he had knowledge, but of which he did not inform her, and she took the disease without fault on her part, and suffered damage therefrom, it would not be seriously denied that he was guilty of actionable negligence in not informing her of the danger to which he exposed her. It was his duty arising from his employment of her, or from the contractual relation of master and servant existing between them, to warn her of the danger incident to the service which he knew, or under the circumstances ought to have known, and of which he knew she was ignorant, though in the exercise of ordinary care. And this duty is a nondelegable one. To say that a similar duty was not imposed on the defendant for the benefit and protection of the plaintiff, because it is a charitable corporation, is to relieve such corporations from the reasonable obligation of exercising the care ordinarily required of, or contractually assumed by, men in general in the prosecution of their legitimate business. The necessity for such an exceptional holding is not apparent. Since the property of the defendant is held for the general purpose of maintaining a hospital, without other specific limitation, it is no more exempt from being appropriated to the payment of damages occasioned by the negligence of the hospital than is the property of an individual, which he holds for commericial or charitable purposes, for the consequences of his negligence.

In conducting the affairs of a hospital, its officers and agents are as liable to commit acts of negligence as are the officers and agents of a railroad or other business corporation. Men in general are not uniformly careful. Experience shows that negligence—the failure to exercise ordinary care—is to be expected when men engage in industrial pursuits. It may, not

inappropriately, be said to be neeessarily ineidental in the accomplishment of most practical results through the ageney of man. The donors of the defendant's property for hospital purposes were not ignorant of this faet, and are presumed to have given the trust property knowing that it might be required for the liquidation of elaims in tort, as well as for elaims in contract, incurred in earrying out the purposes of the corporation. Indeed, its conceded authority to contract for the employment of nurses and other neeessary agents would seem to inelude power to respond in damages for all breaches of such contracts, one essential or incidental element of which is its duty to exercise care as well as its duty to pay stipulated compensation. No conditions were imposed on the defendant, either by its eharter or by the donors of its property, by which the contracts of employment it was obliged to make with its servants should have a different effect from that usually given to such eontraets, or that the relations between it and its employés should be legally different from those usually subsisting between master and servant. There is, therefore, no substantial reason for holding that it did not owe the duty to the plaintiff of warning her of the dangers of her employment, under the law as applied to the ordinary relation of master and servant.

The evidenee tended to show that one of the patients whom the plaintiff nursed had a form of diphtheria, that a eulture taken from this patient and examined by a bacteriologist contained diphtheria baeilli, and that the physician in eharge of the patient, and who was also the manager of the hospital, was duly informed of the result of the examination. If the jury found these facts to be true, they were warranted in the conclusion that the hospital had notice of the eontagious character of the patient's disease, and that it was its duty, aeting as ordinarily prudent men would have acted under the same eireumstanees, to diselose the danger to the nurse, who was ignorant of its existence. The court ean not say that a reasonable doubt in the mind of the physician, in her diagnosis of the patient's disease, as to its true eharacter, would justify her, who, as the representative of the hospital, was bound to exercise reasonable care for the plaintiff's safety, in omitting to inform her that the disease might be of a diphtheritic eharacter. The hospital might be bound to warn her before the physieian had reached a satisfactory diagnosis.

Liability for Performance of Unauthorized Operation.

The Supreme Court of Minnesota rendered a decision last year in the malpraetiee case of Mohr vs. Williams whieh was reported at considerable length in the Medieolegal Department, on page 573, of THE JOURNAL of August 19, 1905. It was then held, among other things, that, in the absenee of consent, express or implied, the defendant had no authority to perform an operation on the plaintiff's left ear, and that, if the operation was performed without either express or implied authority, it was wrongfully and unlawfully done, and in law constituted assault and battery, in whieh case the amount of reeoverable damages would depend on the charaeter and extent of the injury inflicted, considering the nature of the malady intended to be cured, the benefieial nature of the operation, and the good faith of the defendant. A verdict for $14,322.50 was obtained, but, on the ground that this was exeessive, the Supreme Court granted a new trial.

This new trial resulted in a verdict for the plaintiff for $3,500, but the trial court granted a motion for judgment in the defendant's favor, notwithstanding the verdict, apparently on the grouud that the evidence eonelusively proved that an emergeney existed whieh ealled for immediate treatment, and that the operation was justified on that ground, eonceding no consent had been given, either expressly or by implication. But the Supreme Court, on the case being again appealed to it, holds that it was error to order judgment for the defendant notwithstanding the verdict, as the evidence did not eonelusively show that the defendant, an ear specialist, had authority, express or implied, to operate on the left ear of his patient, and that no damage resulted. At the same time, it is of opinion that the defendant should have an opportunity to have the trial court pass on a motion he made for a new trial on the ground that the verdiet was excessive, etc.

Furthermore, on this seeond appeal to it, the Supreme Court says that from an examination of the reeord it is again of opinion that the evidenee did not eonclusively establish the fact that the left ear was in such serious eondition as to eall for an immediate operation. If the patient plaeed herself in the defendant's care for general ear treatment, why did he not in the first instance make a thorough examination of the left, as well as the right, ear? was a pertinent inquiry. He testified that he found an obstruetion in the left ear whieh in itself was unnatural, and yet he did nothing to aseertain the real condition for nearly three weeks thereafter. If the eritical condition discovered at the time of the operation was sueh as to be reasonably antieipated, then the long delay without attention or treatment was not readily explained, and was suggestive of inattention and negligence, and had some bearing on the subsequent conduet of the defendant and his explanation of what occurred.

The physieian referred to in the first report as being present when the operation of ossieuleetomy on the left ear was performed, and designated as the plaintiff's family physieian, the Supreme Court now says the reeord disclosed was not her physieian, but had treated her sister, and was asked to be present at the operation simply to guard against the effeets of the anesthetic. There was no evidence in the reeord to justify the eonclusion that he had any authority to eonsult with the defendant and speak for the patient as to what might be neeessary to do. But the eourt does not mean by this that the faet that he was consulted and expressed an opinion might not be given weight in determining the real eondition of the left ear, and the good faith of the defendant in operating.

Current Medical Literature

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

Medical Record, New York.

October 27.

1 *Hospital Reform in a New Light. H. S. Stark, New York.
2 Choice of Cow's Milk. J. A. Gilbert, Portland, Ore.
3 *Remarks on Cesarean Section. P. F. Martin, Indianapolis.
4 *Joint Affections of Hemophilia. J. G. Sheldon, Kansas City, Mo.
5 *Mortality from Lobar Pneumonia in High Altitudes. I. W. Brewer, U. S. Army.

1. **Hospital Reform in a New Light.**—Stark states that the treatment of the siek poor alone should not elaim the attention of hospitals supported by the city or state. These institutions should become eenters for the medical edueation of the masses. Here the people ought to be able to reeeive instruetion in rules which govern health and prevent disease. Provision should be made for delivering lectures during the winter months. If this work were taken up, the house staffs of the hospitals should be inereased; the staff of visiting physicians might well be augmented also. The medical and surgical work in the hospitals should not be centralized in the hands of a few. Stark suggests that members of a staff who have served eontinuously in one eapaeity for a specified number of years be retired from active praetice.

3. **Case of Cesarean Section.**—Martin describes a case of eelampsia oeeurring in a patient with a markedly contraeted pelvis. In this eelamptie attack there was absenee of the usual aeeompanying renal elements. There was no evidenee of organic lesion other than increased tension of the pulse, with aeeentuated seeond aortic sound, a low exeretion of urea, and a slight rise of temperature. The pelvie and fetal measurements were such that a natural termination of labor was impossible. The mother and child are both in good health.

4. **Joint Affections of Hemophilia.**—Sheldon says that the importanee of diagnosing these joint affeetions ean not be overestimated. König has divided the symptoms of these cases into three stages: 1, Those in which intra-artieular hemorhage is the only change; 2, after repeated hemorrhages have resulted in marked articular and periartieular changes, and have limited joint motion, and, 3, when the proeess has resulted in ankylosis. The early symptoms are the most important. In the primary attack, the joint, with or without the

history of a slight injury, suddenly becomes painful, swollen, hyperemic and tender. There is extreme pain, but not marked tenderness. There is evidence of fluid in the joint cavity. As a rule there is a rise of temperature. The symptoms subside in about a week, only to recur again. The joint should be aspirated by a small needle. Nothing can be done for the old cases.

5. **Mortality from Lobar Pneumonia in High Altitudes.**—Brewer presents a summary of the statistics obtained at three military hospitals in Arizona and New Mexico. Fort Huachuca is situated in the southeastern part of Arizona, at an elevation of 5,042 feet above the sea. Its annual mean temperature is 60 degrees. Fort Grant is about 60 miles north, with practically the same climate. Fort Wingate is in the western part of New Mexico, at an elevation of 6,822 feet. The mean annual temperature is 61 degrees. The records cover the period from 1884 to 1904. In all there were 61 cases of lobar pneumonia treated, with a mortality of 18 per cent., while for the army at large for the same period the mortality was 17.4 per cent. These statistics seem to show that elevation has little to do with the mortality from lobar pneumonia. Comparing the stations themselves, the mortality is found to vary inversely with the altitude.

New York Medical Journal.

October 27.

6 *Indications for Surgical Intervention in Diseases of the Stomach. J. A. Blake, New York.
7 *Sclerosis of the Coronary Arteries. H. Brooks, New York.
8 American Aborigines from a Hygienic Standpoint. A. L. Benedict, Buffalo.
9 *Present Treatment of Diphtheria by the Medical Profession. W. S. Cornell, Philadelphia.
11 Mandragora. An Historical Sketch. A. R. Kennedy, Phila- of Tuberculosis. S. G. Bonney, Denver, Colo.
11 Mandragora, An Historical Sketch. A. R. Kennedy, Philadelphia.
12 Comparison of Results in Blood Counting Between the Einhorn-Laporte and Thoma-Zeiss Methods. E. V. Murphy, Newport, R. I. and G. T. Strodl, New York.
13 Typical Case of Tabes Dorsalis in a Negress. W. G. Bowers, Philadelphia.

6. **Surgical Intervention in Diseases of Stomach.**—Blake, in reviewing the indications for surgical intervention in diseases of the stomach, says that it is a mistake, at least in the present status of gastric surgery, to consider surgery a cure-all in diseases of the stomach. In fact, he continues, gastric surgery is more likely to be hindered than advanced by an improper selection of cases through a mistaken idea or comprehension of its possibilities. He believes that operation should not be refused in any case where there is a chance for benefit, particularly when drainage of the stomach is interfered with. The main, although not the only, indication for surgical interference in diseases of the stomach is evidence that it is improperly performing its motor functions, that is, emptying itself.

7. **Sclerosis of Coronary Arteries.**—Brooks found coronary disease present in such a degree as seriously to affect the nutrition of the heart muscle and nerves in 270 out of 1,000 consecutive autopsies. Of the cases in this series which showed arterial disease, 195 of the 250 males showed thickening of the coronaries, while of the 126 women, 75 showed the same change. One of the patients was a boy 15 years old. Senility, *per se*, was concerned in the etiology of the 270 cases but 16 times. The average age of the patients was about 45 years. The history of the abuse of alcohol was obtained in 107 cases. Nephritis was present in 35 cases; syphilis in 30 cases; tuberculosis in 20 cases; cancer in 4; diabetes in 6, and rheumatism and myelitis 3 times each. Of those conditions aside from nephritis which cause hyperarterial tension, Graves' disease appeared twice, acromegalia seven times, plumbism twice, and the excessive use of tobacco nine times. Obesity was a factor in four instances.

Brooks found that the most frequent type of coronary sclerosis is an endarteritis in which proliferative changes take place in the sub-endothelial layer of the intima. True acute arteritis is rare in the coronary arteries. Certain cases of coronary disease appear to show primarily pathologic changes of the adventitia in greatest degree. Of Brooks' 270 cases all but 15 showed lesions of the myocardium apparent to the unaided eye. Two hundred and fifteen cases presented changes in the heart muscle of sufficiently severe disease to be noted as contributory to the cause of death. The most frequent lesion presented was fatty heart. Atrophy of the heart was found in 64 instances; fibrosis of the myocardium in 24 instances; well-marked cardiac hypertrophy in 35 instances, and acute dilatation in 20 instances. Aneurism and cardiac rupture were found as direct results of disease in the coronary vessels in two instances each. Brooks is convinced that in many cases diagnosticated as pseudo-angina pectoris are in reality coronary sclerosis in which the spasmodic contractions of the vessels is less marked than in manifest angina pectoris. In 152 cases in which a diagnosis of arteriosclerosis of the peripheral arteries was made, the coronary arteries were found seriously diseased 116 times. After considerable experience Brooks thinks he is justified in assuming that the presence of coronary sclerosis of a greater or less degree in many cases in which the blood pressure is above 180 mm., and particularly in those in which otherwise unexplained paroxysmal increase in the blood pressure is found, especially when intervening periods of low blood pressure are demonstrable.

The treatment is hygienic, eliminative and symptomatic. Of the drugs commonly used Brooks prefers potassium iodid, in from 5 to 15-grain doses three times daily; strontium bromid, in from 7 to 14-grain doses once or twice daily; chloral hydrate; morphin; amyl nitrate; nitroglycerin; digitalis; strophanthus, and ergot. The indications for each are discussed in full.

9. **Treatment of Diphtheria.**—Cornell analyses the treatment employed in 616 cases of diphtheria as reported to the Philadelphia bureau of health. Of this number 458 cases were treated with antitoxin. Cornell commends this treatment.

10. **Advanced Tuberculosis.**—Bonney reports 10 cases in justification of the belief that a permanent arrest of the tuberculous infections is sometimes possible, even in those cases which may be regarded at first as utterly hopeless. No special methods of treatment were employed other than those familiar to every physician of experience in the management of pulmonary tuberculosis.

Boston Medical and Surgical Journal.

October 25.

14 Classical Symptoms of Hysteria. P. Janet, Paris.
15 Epidemic Cerebrospinal Meningitis, A study of Its Etiology, Diagnosis and Epidemiology, Based Chiefly on the Cases Occurring in Worcester, Mass. E. L. Hunt, Worcester, Mass.
16 Routine Treatment of Syphilis with Intramuscular Injections of Mercury Salicylate. W. H. Palmer, Providence, R. I.
17 *External Eye Inflammations of Doubtful Origin. H. G. Langworthy, Dubuque, Ia.

17. **Inflammation of Eye.**—Langworthy reports two cases, one a bilateral orbital cellulitis and exophthalmus of obscure origin, simulating a cavernous sinus thrombosis and double frontal involvement. It is presumed that the infecting organism was the pneumococcus. The other case was one of acute bilateral edema of the eyelids of unknown etiology. The case seemed to be one of angioneurotic edema or a double frontal sinusitis.

St. Louis Medical Review.

October 20.

18 Realdus Columbus of Cremona. L. C. Boislinlere, St. Louis.

Lancet-Clinic, Cincinnati.

October 27.

19 Vaginal Tampon: Some Points of Practical Interest. C. T. Souther, Cincinnati.
20 Intracranial Cephalhematoma. E. S. M'Kee, Cincinnati.

The Ophthalmic Record, Chicago.

September.

21 Septic Infection Following Ophthalmia Neonatorum. S. Stephenson. London, England.
22 *Fergus Operation for Ptosis. H. W. Woodruff, Joliet, Ill.
23 Case of Hypermetropia of 21 Diopters Simulating Myopia. E. Stieren, Pittsburg, Pa.
24 *Another Successful Magnet Operation, but with an Unusual Termination. H. B. Young, Burlington, Ia.
25 Epithelioma of the Orbit. R. H. Johnston, Baltimore.
26 Dislocation of Lachrymal Gland. T. W. Crowder, Sherman, Texas.
27 Recent Advances in Ophthalmologic Therapeutics. W. B. Marple, New York.
28 *Pseudo-Optic Neuritis. T. Faith, Chicago.
29 New Integral or Fused Bifocal Lenses. H. V. Würdemann, Milwaukee.
30 Papilloma of the Plica Semilunaris. R. H. Johnston, Baltimore.

22. **Fergus Operation for Ptosis.**—Woodruff has performed this operation three times with most excellent results. There are no visible scars and the operation is more easily performed. It is really an advancement operation, the only external excision being in the brow.

24. **Magnet Operation.**—In the case reported by Young a scale of iron was removed from the eye with the giant magnet. One week after the operation the patient, a man, became violent. He died on the sixth day of his frenzy without having regained consciousness, death apparently being due to exhaustion, for neither pulse, temperature, nor any other symptom was characteristic of the structural lesion. The postmortem findings were negative.

28. **Pseudo-Optic Neuritis.**—Faith reports one case and concludes that the diagnosis may be settled on the following points: 1. The absence of changes in the retina surrounding the papilla, together with normal visual fields. 2. The absence of variations in the appearance of the disk or retinal vessels from time to time. 3. The absence of decreasing changes in the central visual acuity from time to time.

The American Journal of the Medical Sciences, Philadelphia.

October.

31 *Experience with the Simpler Methods of Psychotherapy and Reëducation. L. F. Barker, Baltimore.
32 *Value of a Study of the Apical Outline in the Diagnosis of Incipient Pulmonary Tuberculosis. C. L. Minor, Asheville, N. C.
33 *Roentgen Rays in the Early Diagnosis of Pulmonary Tuberculosis. W. Lehman and W. C. Voorsanger, San Francisco.
34 Hematologic Studies in Tuberculosis. A. C. Klebs, Dunning, Ills., and H. Klebs, Chicago.
35 *Further Notes on the Serum Diagnosis of Tuberculosis. H. M. Kinghorn and D. C. Twitchell, Saranac Lake, N. Y.
36 *Clinical, Anatomic and Pathologic Comparison of Tuberculous Cavities in the Lungs. H. R. M. Landis, Philadelphia.
37 Statistics of Diet in Sanatoria for Consumptives. I. Fisher, New Haven.
38 *Relative Value of the Home Treatment of Tuberculosis. L. F. Flick. Philadelphia.
39 Etiology, Prognosis and Indications for the Surgical Treatment of Tuberculous Peritonitis. R. Douglas, Nashville, Tenn.
40 *Protection of Infants and Young Children from Tuberculous Infection. J. L. Morse, Boston.
41 Tuberculosis Among the Negroes. T. J. Jones, Hampton, Va.
42 *Tuberculosis Among the Ogiala Sioux Indians. J. R. Walter, Pine Ridge, S. D.
43 *Organic Heart Diseases and Immunity from Pulmonary Tuberculosis. B. Stow, New York City.

31. **Psychotherapy and Re-education.**—Since Oct. 1, 1905, Barker has had a large number of cases—more than 80—in which psychotherapeutic measures were the mainstay. He reports and summarizes 15 cases as follows: 1. Hysterical attacks; headaches; fainting spells with rigidity; no attacks after one week of treatment. 2. Acrophagia; chronic constipation; hot flushes; symptoms disappeared after two weeks of treatment; discharged at the end of one month apparently well. 3. Hysterical crises; choreiform movements; hemianesthesia; tremor; rapid improvement. 4. Hysterical crises; globus; dermatographia; contracted visual fields; rapid improvement. 5. Hysteroneurasthenia; pathologic character; extreme fatigability and irritability; multiple painful sensations; tremor of eyelids; morbid fears; resistance to treatment for several weeks; then rapid improvement; gain of 36 pounds in weight. 6. Neurasthenia; fatigability; incapacity for work; cure. 7. Fixed ideas of unworthiness and impossibility of happiness; despondency; fear of insanity; cure. 8. Hysterical crises; cephalalgias; blepharospasm; rapid improvement. 9. Neurasthenia of two years' duration; hypochondriasis; thoracic pain and oppression; fear of aortic aneurism; rapid cure. 10. Severe cephalalgias of many years' duration; emaciation; nervousness; rapid cure; gain of 30 pounds in weight. 11. Nervous gastropathy of five years' duration; recent exacerbation; fear of gastric ulcer; came to hospital for surgical operation; headaches; vasomotor disturbances; rapid cure; gain of 12 pounds in weight. 12. Insomnia; incapacity for work; fear of insanity; obesity; rapid cure; weight reduced 12 pounds. 13. Enteroneurosis; mucous colitis; nervous incontinence of feces; vasomotor disturbances; rapid improvement; gain of 12 pounds in weight. 14. Neurasthenia; hemorrhoids; anemia; nicotinism; nervous dyspepsia and diarrhea; fatigability; despondency; rapid cure. 15. Nervous gastropathy; epigastralgia; nausea; belching; fear of gastric ulcer; rapid cure. Barker says that the psychotherapeutist should be an honest man and an expert clinician. He should recognize the horrible reality of the misery of the psychoneurotics. He may be more successful in understanding and treating his patients if he has had, himself, at least some little experience with the fatigues and fears of neurasthenia, provided he has made a good recovery. He must be interested in functional disturbances and not simply in anatomic lesions, and he must understand that hysteria and psychasthenia are as much diseases as are pneumonia or gonorrhea, and often incapacitate the sufferer for a much longer period of time. He should be skilled in all the modern refinements of diagnosis, and should exhaust them in the study of his case before beginning his treatment.

32. **Apical Outline in Diagnosis of Incipient Pulmonary Tuberculosis.**—Minor presents his impressions of the diagnostic value of outlining the apices of the lung in pulmonary tuberculosis, based on the marking of such outlines for the past six or more years in all his cases. He found that in early tuberculosis, especially of the apex, but also of lower portions of the lung, careful percussion will very generally demonstrate a dislocation of the inner line outward, and that the inner line, both anteriorly and posteriorly, is likely to be the earliest affected. The posterior inner line changes chiefly or only in its upper two-thirds. The dislocation inward of the outer border generally occurs later, and a change of both inner and outer lines is naturally less common than of the inner or outer alone. In early cases the lines do not approximate at the top, but join their fellows from the rear; in old cases with marked fibroid shrinkage they often run together to an apex before they reach the border of the trapezius. Minor found the diagnostic value of these outlines in earlier cases, and to some extent their prognostic value later, to be considerable; not, of course, when taken alone, but in combination with other things. A slight inward alteration of a border anteriorly and posteriorly carefully verified, will raise to a far higher value ambiguous auscultatory signs. Outward dislocation is neither so early nor quite so easy to determine, but if certainly demonstrated has equal value.

33. **Röntgen Rays in Early Diagnosis of Pulmonary Tuberculosis.**—Lehmann and Voorsanger plead for the use of the *x*-ray as a means of diagnosis in pulmonary tuberculosis. Williams' diaphragmatic sign; the finding of more or less centrally located affections; haziness of the apex or of the whole lung, which anatomically corresponds to thickening of lung tissue, and proof of the existence of peribronchial enlarged glands, are four important points in beginning tuberculosis, often escaping clinical detection, and, if discovered by the *x*-rays, speak almost conclusively for a beginning process in the lungs. They present brief notes of a series of cases selected from a varied material, which show that the clinical and the *x*-ray findings have agreed in the main, but that in the majority of the cases the *x*-rays afforded valuable information as to the extent of the lesions which were often more widespread than the ordinary clinical evidences seemed to suggest. When the diagnosis was in doubt, on account of absence or insufficiency of clinical signs, the *x*-rays showed a peribronchial or bronchial gland affection, the value of which in prognosis, as well as in diagnosis, is of enormous importance. In a few cases, involvement of an apex evident clinically was not recognizable by the *x*-rays, because recent infiltration, though sometimes sufficient to cause clinical signs, may not be sufficiently dense to produce a shadow or haziness on the *x*-ray plate or screen.

35. **Diagnosis of Tuberculosis.**—In the tests performed by Kinghorn and Twitchell, clear, fresh human serum was used, and was obtained either from the lobe of the ear or from a vein in the arm. When agglutination took place in a dilution of 1 to 5 the reaction was considered positive. The time limit given to the test was five hours, not more. The tests were made at room temperature. Agglutination was observed by the naked eye up to five hours. Results were considered positive only in those tubes which showed well-marked flocculi easily visible to the naked eye, and with subsequent sedimen-

tation and clearing. The total number of patients tested was 247. Of these 70 were persons in apparently good health, 155 were patients with pulmonary tuberculosis, 22 were patients with doubtful tuberculosis or with other diseases. Of the 247 patients 212 reacted positively (85.82 per cent.); 35 failed to react (14.18 per cent.). Of the 70 healthy persons 59 reacted positively (84.28 per cent.); 11 failed to react (15.72 per cent.). Of the 155 patients with pulmonary tuberculosis 135 reacted positively (87.09 per cent.); 20 failed to react (12.91 per cent.). Of the 22 patients with suspicious signs of tuberculosis and with other diseases 18 reacted positively; 4 failed. From these investigations Kinghorn and Twitchell conclude that the serum diagnosis of tuberculosis as used by Arloing and Courmont is not a specific sign of the presence of clinical tuberculosis, since healthy and tuberculous serums have practically the same agglutinating property, and that the serum diagnosis of tuberculosis, and especially for the early diagnosis of tuberculosis, is of no value.

36. **Tuberculous Cavities in the Lungs.**—In comparing the clinical with the pathologic findings in 50 cases Landis found that of the 76 cavities present 58 had been recognized, while 18 had escaped notice. The majority of the cavities not recognized were very small; three of them, however, had attained the size of a lemon. In the 58 cavities which were correctly diagnosed, lack of expansion, retraction of the apex, and flattening of the chest wall anteriorly were the rule. Bulging or fulness of the chest wall over the site of the cavity was not met; in those cases in which it could not be elicited the tactile fremitus was exaggerated in 34 instances and diminished in 13. The percussion note had a tympanitic quality in 36, was dull in 16, hyper-resonant in 3, and in 3 instances was of the cracked-pot variety of tympany. The breath sounds were noted as cavernous in 29, amphoric in 19, bronchial in 13, and distant and indefinite in 7. There was an absence of râles in 9. When present they were noted as being fine and moist in 16, consonating in 17, and gurgling in 16. Vocal resonance was exaggerated in 51 instances, and diminished in but 1. Whispering pectoriloquy was present in 53 instances and absent in 5.

In 8 instances cavities were correctly diagnosed as being communicating; this was about one-fourth of those actually of that character. The diagnosis was based on the breath and voice sounds having several points of maximum intensity, in conjunction with a large area of coarse bubbling râles with a metallic quality, and symptoms indicating a rapid destruction of tissue. The physical signs over those cavities (18) which were not recognized were almost invariably dulness, bronchial breathing, increase in vocal and tactile fremitus and absence of whispering pectoriloquy. Most of these cavities were found postmortem to contain thick, creamy pus. In the 10 instances in which cavities were believed to be present, but which at postmortem were not found, consolidated tissue around a bronchus was the source of error in 5. In one case there was no adequate explanation. In 4 cases the error was probably due to transmission of the amphoric breathing and whispering pectoriloquy from a cavity on the opposite side. In these 4 instances the supposed cavities gave signs posteriorly only. Cavities, as a rule, give more marked signs anteriorly. Thus, of the 58 under consideration, the signs were present anteriorly, or anteriorly and posteriorly in 55 instances, while but 3 gave signs posteriorly alone. From this analysis it is evident that any one of the above signs is suggestive of a cavity and that the probability of its existence is increased by the combination of any two or more of them.

38. **Home Treatment of Tuberculosis.**—Flick believes that the treatment of tuberculosis can be better carried on at present in the home of the patient, in those places at least where expert services can be given, than in a health resort. For people living in places where expert services can not be had, it is undoubtedly better to go to a health resort than to remain at home.

40. **Tuberculous Infection in Children.**—Morse states that the separation of children from tuberculous adults is the most simple and rational method of protecting them against contagion. Such separation, however, is often impossible. The only practicable method then is the observation in the best way possible in the individual case of the principles of hygiene and habitation. When a family is in reduced circumstances the public must step in and help. What can be done as to the separation of the children from the patients and as to sanitation depends in each case on the circumstances of the family and the provisions for the care of the tuberculous made by the public. That is to say, protection against tuberculosis is largely a question of money.

42. **Tuberculosis Among Indians.**—According to Walker, tuberculosis among the Indians does not differ in any respect from tuberculosis among white people. The infecting material is the same, and is produced and disseminated in the same way, individuals are infected in the same manner, and the disease runs the same course, produces the same results, and is subject to the same measures, remedial or preventive, as among white people. It does not show any especial affinity for the Indian, nor affect him under any condition in which it would not affect a white man There is no inherent peculiarity of the Indian which renders him more liable to infection with tuberculosis than a white man under like circumstances. Walker thinks that a practical method for suppressing tuberculosis among the Indians would be by the establishment of a sanitary camp, where all that are infected with the disease should be collected and maintained, under competent supervision, until each case terminates.

43. **Heart Disease and Immunity from Pulmonary Tuberculosis.**—The object of Stow's paper is to show that those organic heart lesions accompanied by well-marked pulmonary stasis, thus concentrating in the lungs the immunizing agents of the blood, whatever they may be, are rarely followed by phthisis pulmonalis, or if this previously existed, they exert a salutary effect on it, and the reverse conditions frequently are followed by pulmonary tuberculosis.

Buffalo Medical Journal.
October.

44 *The Use of Local Anesthetics in Operations on the Chest and Abdomen. M. Clinton, Buffalo.
45 Management of Pulmonary Tuberculosis. J. C. Young, Cuba, N. Y.
46 *Vaginal Cesarean Section in the Treatment of Puerperal Convulsions. H. E. Hayd, Buffalo.
47 Eyestrain and Crime. G. M. Gould, Philadelphia.

44. **Local Anesthesia.**—Clinton is of the opinion that certain cases of profound sepsis, notably empyema and local abscess of the abdomen, are more safely attacked under local anesthesia. In order to satisfy his own mind as to the relative importance of the solution used, or the manner of using it, he had a patient prepared for a double herniotomy. With a large syringe and a small needle the skin was infiltrated with plain sterile warm water. Next the fatty tissue was blown up, and then an incision was carried to the external oblique. The patient did not feel any pain. By ballooning up each layer of muscle and fascia with warm water, and massaging it before it was cut it was found that anesthesia was as complete as if a strong cocain solution had been used.

46. **Vaginal Cesarean Section.**—Hayd reports the case of a primipara, aged 23, which he believes demonstrates clearly the wisdom of emptying the uterus as quickly as possible in a bad case of convulsions, and the ease and facility with which the delivery can be accomplished by employing the anterior cervical incision of Dührssen.

Journal of the Michigan State Medical Society, Detroit.
October.

48 *Possibilities and Limitations of Laboratory Diagnosis. J. Sill, Detroit.
49 *Physical Disturbances in Distant Parts of the Body Due to Eye-Strain. J. G. Hulzinga, Grand Rapids.
50 *Treatment of Ununited and Compound Fractures with Bone Pins. A. I. Lawbaugh, Calumet.
51 *Treatment of Fractured Patella. C. S. Oakman, Detroit.
52 Observations on Rheumatism and its Treatment, with the Mineral Baths of Mt. Clemens. R. Leuschner, Mt. Clemens.

48. **Laboratory Diagnosis.**—Sill believes that the laboratory can give to the clinician many aids in making his diagnosis. Examinations of the urine, blood or other fluids, secretions and excretions of the body frequently will swing the weight of the evidence from one side of the balance to the other and determine a doubtful diagnosis. Frequently after a diagnosis is

made exact information gained from the laboratory will be of great value for prognosis or will suggest important modifications of treatment. The laboratory can not, except in a few instances, make diagnoses for the clinician. The more complete is the coöperation between the clinician and the laboratory man, the more information can the worker in the laboratory give the practicing physician, and with increasing opportunity to correlate laboratory findings with clinical conditions will come an increasing ability to determine the significance of pathologic changes in a given case.

49. **Effects of Eyestrain.**—Huizinga reports three cases in which eyestrain caused functional disturbances, but he calls attention to the fact that while eyestrain is a very important factor in the etiology of the vast majority of these disturbances, it is generally only one of several factors, each one of which must receive recognition. Although many of these disturbances can not be relieved without relieving the attending eyestrain, it is equally true that the vast majority of patients also require other treatment in addition to glasses in order to obtain permanent results. He does not think that glasses should receive all the credit for the results obtained.

50. **Bone Pins in Ununited Fractures.**—Lawbaugh uses ivory nails or pins for the purpose of fixation in both compound and ununited fractures whenever such a method is indicated. Two pins are used, unless the bone is small, as in the case of the radius or ulna, and even then two small pins are preferable to a single large one. The pins are placed at an angle with one another so as to brace the fragments. To give additional firmness to the parts, he also places a strong piece of kangaroo tendon around the fragment. This is absorbed, as are the pins, and causes no irritation. He urges the use of bone pins for the following reasons: 1. The parts are held more firmly than by any other method. 2. The ivory pins can be thoroughly sterilized, and are applied with as great or even greater ease than any other material. 3. They cause no irritation and are completely absorbed.

51. **Treatment of Fractured Patella.**—Oakman declares that operation should never be considered under any but ideal conditions, nor in sick or aged patients. In operating in recent cases, absorbable sutures should be applied to the soft parts. For fixation the wire splint should be used first and then plaster-of-Paris. As soon as the plaster splint is applied the patient should begin to use crutches.

New Orleans Medical and Surgical Journal.
October.

53 Confusion Between the Terms Contagion and Infection or the Mosquito Craze. C. Faget, New Orleans.
54 Statistics of Pulmonary Tuberculosis in the Registration Area of the United States for the Fifteen Years from 1890 to 1894, Based on the Returns of the United States Census Bureau. I. W. Brewer, Ft. Huachuca, Ariz.
55 Isolation Hospitals. H. P. Jones, New Orleans.
56 How the Yellow Fever Situation was Handled in Kenner in 1905. S. D. Gustine, Kenner, La.
57 An Epidemic History, with Kindred Remarks. F. R. Bernard, Lake Providence, La.
58 Dengue and Yellow Fever. G. F. Patton, New Orleans.
59 Early Diagnosis and Treatment of Phthisis Pulmonalis. L. Sexton, New Orleans.
60 *Two Cases of Gonorrheal Arthritis. Treated by Bier Hyperemia. C. W. Allen, Crowley, La.

60. **Gonorrheal Arthritis.**—Allen reports two cases of gonorrheal arthritis that were treated successfully by means of the Bier hyperemia method. The bandage usually was applied at noon, just above the knee, and frequently was left on all night. The treatment was continued about 14 days in one case and about 10 days in the other. In the second case the wrist joint was affected.

Bulletin of the American Academy of Medicine, Easton, Pa.
October.

61* How May the Medical and Teaching Profession Coöperate to Improve the Moral, Mental and Physical Condition of the Young. S. A. Knopf, New York.
62 *Duty of the Family Physician in Regard to the Proper Mental and Physical Development of the Children under his Care from Infancy to Adolescence. D. A. Sargent, Cambridge, Mass.
63 *Training of the Mentally and Morally Defective Child. M. P. Groszmann, Plainfield, N. J.
64 *Sanitary Regulation of the School Room with Reference to Vision. C. A. Wood, Chicago.
65 *Coeducation. G. S. Hall, Worcester, Mass.
66 *Advantages or Disadvantages of Coeducation. W. T. Smith, Hanover, N. H.
67 *Dangerous Influences of Overtaxing the Girl's Mind, Particularly at the age of Puberty. A. P. Clarke, Cambridge, Mass.
68 *Id. L. L. Bulkley, New York.

61, 62.—See THE JOURNAL, July 28, 1906, page 301.

63 to 68.—See THE JOURNAL, Aug. 4, 1906, page 383.

Ohio State Medical Journal, Columbus.
October 15.

69 Cancer of the Uterus. J. F. Baldwin, Columbus.
70 Cancer of Cervix; Choice of Operation. M. A. Tate, Cincinnati.
71 Plan of Excision in Cancer of the Head and Neck and an Analysis of 132 Cases. G. W. Crile, Cleveland.
72 Problem in the Etiology of Esophageal Carcinoma. N. W. Brown, Toledo.
73 Lymphatics of Malignancy. S. D. Foster, Toledo.
74 Physiologic and Pathologic Effects of Alcohol and other Narcotics. S. J. Hatfield, Indianapolis, Ind.

Iowa Medical Journal, Des Moines.
October 15.

75 Gastric Neuroses. F. J. Murphy, Sioux City.
76 Infection and Immunity. R. H. Parker, Storm Lake.
77 Chairman's Address, Section of Materia Medica, Iowa State Medical Society. W. C. Post, Maquoketa.
78 Accuracy in Therapeutics. W. F. Waugh, Chicago.
79 Therapeutic Accuracy. A. L. Belt, Gilmore City.
80 Some Thoughts on Autotoxemia. E. E. Fisher, Rodney.
81 Report on Phytolacca Decandra. C. H. Herrmann, Amana.
82 Uric Acid. F. S. Clarke, Le Mars.
83 Injury to Superficial Palmar Arch. H. Sigworth, Anamosa.

American Practitioner and News, Louisville.
October.

84 Croupous Pneumonia. A. M. Barnett, Louisville.
85 Tuberculosis. J. M. Morris, Louisville.
86 Appendicitis. V. A. Voyles, Gotebo, Okla.

Bulletin of the Johns Hopkins Hospital, Baltimore.
November.

87 *The Future of the Medical Profession. C. W. Eliot, Boston.
88 *The Unity of the Medical Sciences. W. H. Welch, Baltimore.
89 The International Congress of Tuberculosis, Paris, 1905. H. B. Jones, Wheeling, W. Va.
90 Governor John Winthrop, Jr., of Connecticut, as a Physician. W. R. Steiner, Baltimore.
91 Advantages of Local Sanatoria in the Treatment of Pulmonary Tuberculosis. D. R. Lyman, Wallingford, Conn.

87, 88.—See THE JOURNAL, Oct. 6, 1906, page 1115.

Woman's Medical Journal, Toledo, Ohio.
October.

92 Observations on some Climate Resorts of Europe. E. H. Root, Chicago.
93 Dissociation of the Personality. J. G. Kiernan, Chicago.
94 The Courts of Sonoratown—The Housing Problem as it is to be Found in Los Angeles. B. B. Stoddard, Los Angeles.

Southern Medicine and Surgery, Chattanooga, Tenn.
October.

95 Pathology and Treatment of Hypertrophied Prostate. W. A. Bryan, Nashville, Tenn.
96 Operative Treatment of Fibroid Tumors of the Uterus. J. M. Maury, Memphis.
97 Life Insurance in its Relation to the Medical Profession. J. L. Crook, Jackson, Tenn
98 Diagnosis and Treatment of Syphilis. J. W. Handly, Nashville.

The Medical Fortnightly, St. Louis.
October 25.

99 Errors in Medicine as a Science. J. Clements, Kansas City.
100 Typical Chauffeur Injury. R. Muhsam, Berlin.
101 Peritoneal Tuberculosis. J. Mc. H. Dean, St. Louis.

Canadian Practitioner and Review, Toronto.
October.

102 Directions for Nurse and House Physician, Burnside Lying-in-Hospital, Toronto.
103 Case of Primary Carcinoma of the Liver. J. G. Fitzgerald, Baltimore.
104 Medical Thoughts, Facts and Fancies. J. S. Sprague, Sterling.
105 Dionin in Diseases of the Eye. R. W. Rutherford, Chatham, Ontario.

Virginia Medical Semi-Monthly, Richmond.
October 12.

106 Posterior Displacements of the Uterus, with a Description of Mayo's Operation. S. McGuire, Richmond.
107 Hyoseyamin and Aconitin in the Treatment of the Fever Accompanying Suppuration. W. H. Birchmore, Brooklyn, N. Y.
108 Mouth-Breathing, its Causes, Effects and Correction. C. M. Sandusky, Jacksonville, Fla.
109 Epilepsy. J. S. DeJarnette, and J. W. Freed, Staunton, Va.
110 Treatment of Malignant Growths by the Roentgen Rays. E. G. Williams, Richmond.
111 Primary Abdominal Pregnancy. E. T. Hargrave, Norfolk, Va.

Texas Medical News, Austin.
October.

112 Diagnosis and Management of Occipitoposterior Position. A. L. Hathcock, Palestine, Texas.
113 Treatment of Typhoid Fever. D. Y. Willbern, Runge, Texas.
114 Medical Coöperation and the Advantages of Medical Organization. J. M. Frazier, Belton, Texas.
115 Chronic Tobacco Poisoning. E. H. Eastman, Hot Springs, Ark.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal.

October 13.

1 Study of Tropical Diseases. K. Macleod.
2 Universities and Medical Education. J. Crichton-Browne.
3 *Pneumococcal Infection During Early Life. H. Ashby.
4 *Osteogenesis Imperfecta. R. W. Lovett and E. H. Nichols.
5 *Abdominal Atony of Rickets, Its Significance and Its Treatment. W. Ewart.
6 *Treatment of Tuberculous Abscess. C. L. Starr.
7 *Rheumatism in Children. A. D. Blackader.
8 *Prevention of Acute Intestinal Diseases of Summer. C. G. Kerley.
9 *Dietetic Treatment of Enterocolitis. J. L. Morse.
10 *Medicinal Treatment of Enterocolitis. L. E. La Fetra.
11 *Study of the Absorption of Fats in Infants. T. P. Shaw and A. L. C. Gilday.
12 Milk Laboratory and Its Relation to Medicine. R. Vincent.
13 Congenital Pyloric Stenosis. E. Cautley.
14 Pyloric Stenosis in Infants. H. J. Stiles.
15 *Case of Pyloric Hypertrophy. C. P. Putnam.
16 Then and Now in Surgery. C. A. Ballance.

3. **Pneumococcal Infection During Early Life.**—Ashby believes that the pneumococcus plays the chief rôle in bronchopneumonia and in the pneumonias which occur as sequelæ of the zymotic diseases, and that a pneumonic infection is not a local disease of the lungs, but that the cocci enter the blood stream, multiply there and are carried to distant organs. A pneumococcic infection involving the lungs primarily is much more apt to spread locally to parts in contact than to affect distant parts by the blood stream. Ashby cites several cases of pneumonia complicated by meningitis. In one of these cases there existed a pneumococcal meningitis, basic and spinal, which ran a subacute course more or less after the fashion of a bronchopneumonia. He says that a greater care of infant life, better nutrition, purer air, and a higher plane of civilization will do more than all else to lower the mortality from pneumonic infection.

4. **Osteogenesis Imperfecta.**—Lovett and Nichols report a case which came to autopsy. The patient, male, weight at birth 8 pounds, was born by an easy labor of about nine hours in duration. The points of interest in the case were in connection with the legs. Both thighs and both legs were broken. The right femur showed evidence of a healed fracture at about its middle. The fracture was united with an angle outward and forward, and on the skin over the thigh on the anterior and outer part of the leg was a small dimple. Union was firm, there was but little callus, and the fracture must have occurred at least three or four weeks before birth. The left femur was broken at the middle, it showed slight crepitus, and was a loose fracture. Both tibias were broken at the junction of the lower and middle third of the leg, the fibulas apparently not being broken. Both tibias, in addition to being broken, were curved forward and slightly outward, and so far as could be judged in the femur, there was a forward and outward bowing there. About six weeks after birth there was noticed a fracture of the left clavicle, and an old callus was found on the right humerus. The baby lived to the age of 10 months and died of some general affection not intimately associated with the fractures. There were in all 10 partial or complete fractures, no one of them occurring after the age of five months.

5. **Abdominal Atony of Rickets.**—In the treatment of this condition Ewart resorts to general massage, friction, the sand bath and the salt-water bath, electricity, massage of the abdomen, and the elastic abdominal belt. His experience with the belt has been most satisfactory. He ascribes the results obtained to the automatic action of the belt; the lateral support which it affords to the weak abdominal wall and through this to every vessel in the splanchnic area; the resulting improved distribution of blood with immediate correction of the apparent oligemia, which is one of the features of it; and, above all, the more effective respiration which quickly corrects the pallor.

6. **Treatment of Tuberculous Abscess.**—Starr's plan is to incise the abscess freely, evacuate its contents, wipe off the wall with 10 per cent. iodoform gauze aided by the curette, clean the cavity as perfectly as possible, using gauze freely to wipe out all débris. The wound is closed with sutures placed as deeply as possible to approximate wide areas of tissue. Pressure is kept up over the abscess to prevent its filling with serum and a firm antiseptic dressing is applied. The result in the majority of cases has been excellent. In only 7 cases was there any breaking down of the wound and a resulting sinus. Starr has abandoned the use of iodoform emulsion on account of the dehydrating action of the glycerin. In 48 of his cases the cavity has remained perfectly closed and aseptic for periods varying from four months to six years. Only 5 of the series of 55 cases required a second evacuation of contents, and one a third.

7. **Rheumatism in Children.**—Of 23 cases seen in private practice by Blackader, 5 afterward developed a tonsillitis, which he regarded as rheumatic in character; 1 a chorea with endocarditis, and 1 an erythema nodosum. Three he associated with a disturbed condition of the digestive tract; 7 he regarded as due to overfatigue of the muscles, and 3 presented evidence of trauma.

8. **Prevention of Acute Intestinal Diseases.**—Education, according to Kerley, is the only means of preventing the acute intestinal disturbances of infants. The mother must be taught how to live, how to care for the baby, how to clothe him and bathe him during the summer. It must be impressed on her that he needs all the fresh air available. She must be educated to the point of knowing what to do when the first sign of intestinal disease threatens. Municipalities, farmers and physicians must be educated so that each may be able to aid in preventing these disturbances.

9. **Dietetic Treatment of Enterocolitis.**—According to Morse, the object to be aimed at in the dietetic treatment of enterocolitis is such an arrangement of the food as will starve the bacteria without starving the baby. The food should be withdrawn for as long a time as the infant can bear starvation, plenty of water being given in the meantime. In choosing a substitute for milk, the attempt should be made to select, if possible, a food on which the bacteria which cause the disease grow with difficulty. Morse uses whey and pasteurized buttermilk. All food given should be very much diluted, It is better to begin with whey mixtures, peptonized mixtures or barley mixtures than with straight modifications. The mixtures must never be highly alcoholized, as this tends to throw the work of digestion off of the stomach on to the intestine.

10. **Medicinal Treatment of Enterocolitis.**—LaFetra advises elimination, through the skin by means of warm baths or sponging, and through the bowel by means of copious, high-colon irrigations with alkaline saline solution; atropin 1/1000 of a grain, every two hours, hypodermically, until physiologic action is obtained; hydrochloric acid; pancreatic extract, and tincture of nux vomica or tannate of quinin for stimulation. Chalk, magnesia, zinc oxid or bismuth are valuable to soothe the inflamed intestinal mucous membrane. Opium in the form of Dover's powder or paregoric may also have to be resorted to in severe cases.

11. **Absorption of Fats in Infants.**—Shaw and Gilday found that about 4 per cent. in nurslings and 5 per cent. in bottle-fed infants of the fat ingested appears in the feces. The fat found in the feces is, to a great extent, fat that has escaped digestion. The fatty compounds in the feces exist as neutral fat, fatty acids and soaps. The fatty acids are usually in excess of the other two constituents. The soaps are relatively increased in artificially-fed infants, in infants with a low percentage of fat in the food, and in infants with diarrhea.

15. **Pyloric Hypertrophy.**—Putnam reports the case of a male infant, three weeks old, in whom the pyloric orifice was dilated with a uterine dilator until it was large enough to admit freely a sound of size French 20. The marked success in this case inclines Putnam to the belief that forceps dilatation with breaking through of the tough tissues may be the best routine way of operating.

The Lancet, London.

October 13.

17 Infective Endocarditis Involving the Pulmonary Valves and Associated with Imperfection of the Interauricular Septum. T. W. Griffith.
18 King's College Hospital—A Retrospect. T. P. Teale.

19 *Contribution to the Pathology of Chorea. F. J. Poynton and G. M. Holmes.
20 The Type in School Books and College Text-books. R. T. Williamson.
21 *Agoraphobia—A Remedy. C. Mercier.
22 *Cerebral Tumor, Giving Rise to Jacksonian Epilepsy and, at a Later Stage, Coma. J. A. C. Macewen.
23 *Prevention of Cancer Regarded as a Practical Question Ripe for Solution. C. B. Keetley.
24 The Workmen's Compensation Bill. A. Benthall.

19. **Pathology of Chorea.**—Poynton and Holmes report 3 additional cases in which a diplococcus was found in the pia mater in cases of chorea that proved fatal. In addition, this organism was demonstrated in the brains in these cases lying in the perivascular spaces and connective tissue. As the result of their study the authors conclude that chorea is a manifestation of acute rheumatism, and that the demonstration of diplococci in each of the three cases is a striking confirmation of the assertion that the *Diplococcus rheumaticus* is the infective agent in acute rheumatism.

21. **Agoraphobia.**—Mercier reports one case which was improved somewhat under ordinary remedies, but was cured finally by a sudden severe shock caused by the elopement of the patient's daughter.

22. **Cerebral Tumor.**—In the case reported by Macewen two granulomata, probably syphilitic, were removed from the left motor area of the brain, involving principally the leg and arm centers. Seven weeks after the operation the patient was in good health, and was bright and intelligent, although he sometimes found difficulty in expressing himself, particularly when excited. The right arm and leg were still deficient in power. The patient had no more fits after the operation.

23. **Prevention of Cancer.**—Keetley lays down the following rules for the prevention of cancer: 1. Sterilize the food. The majority of cancers attack the alimentary canal, and especially the parts where food and feces tarry. 2. The sufficient and regular toilet and protection of the nipples and of the genitalia. It is significant that these organs are especially often polluted by stale secretions and discharges, and are more frequently handled by their owners than any other part of the person usually covered by clothing. 3. Due care of the mouth and teeth. 4. The dressings of discharging malignant sores and tumors should be cured, and especially not to pollute either the fingers or the underlinen. 5. Non-malignant sores and tumors should be cured, and especially not allowed to drift on if chronic. 6. Cancerous and doubtful tumors and ulcers should be excised promptly. 7. Abstinence should be practiced from alcohol, tobacco, and from foods which leave waste products, of which the kidneys, the bowels and the skin can not easily and thoroughly get rid and which thereby provoke and sustain the chronic inflammations and ulcers which so often pave the way for cancer. 8. Physical familiarity should be avoided, except with those who are nearest and dearest to us. 9. Much thought should be given, especially by mistresses and housekeepers, to the service as well as to the cooking of food, with a view to disease prevention. Special attention should be paid to the sterilization of milk and its products, cheese and butter.

Journal of Tropical Medicine, London.

October 1.

25* Nile Boils. F. C. Madden.
26 Three Cases of Infection with Schistosoma Japonicum in Chinese Subjects. O. T. Logan.
27 Hemogregarine of Mammals (H. Balfouri), and Some Notes on Rats. J. B. Cleland.

25. **Nile Boils.**—Under this term Madden describes a particular form of boil peculiar to Egypt which is characterized by the intensity of its inflammation, its extraordinary and early tenderness and pain out of all proportion to its naked eye appearances, its characteristic slough and very scanty serous discharge, its rounded button of hard induration, and its resistance to treatment until it has run its own course.

Journal of the Royal Army Medical Corps, London.

September.

28 Note on the Bacteriology of a Series of Cases of Sore Throat. J. G. McNaught.
29 The Griffith Water Sterilizer. R. H. Firth.
30 Heat as a Means of Purifying Water. P. G. Griffith.
31 Enteric Fever; Is It Invariably a Water-Borne Disease? R. H. Quill.
32 South African Stock Diseases. D. Bruce.
33 Prevalence of Mediterranean Fever Among British Troops in Malta, 1905. (Continued.) A. M. Davies.
34 *Continental Surgical Procedure. F. F. Carroll.
35 The Humor of Indian Sanitation. R. H. Forman.
36 Hints Regarding the Management and Use of X-Ray Apparatus. F. Bruce.
37 *Treatment of Enteric Fever with Typhoid Vaccine. C. Birt.

October.

38 Prevalence of Mediterranean Fever Among British Troops in Malta, 1905. (Concluded.) A. M. Davies.
39 *Phagocytosis of Typhoid Bacteria. W. S. Harrison.
40 Valvular Diseases of the Heart in British Troops, Native Troops, and Prisoners in India, in the Five Years 1895-1899, and in 1902 and 1903. R. R. H. Moore.
41 Incontinence of Urine in the Soldier. S. G. Allen.
42 Kala-Azar. C. Birt and H. R. Bateman.
43 History and Prevalence of Diphtheria in the British Army. F. Smith.
44 *Causation and Prevention of the Spread of Yellow Fever. F. M. Mangin.
45 *Action of Cold or Lukewarm Tea on Bacillus Typhosus. J. G. McNaught.
46 Disposal of the Wounded of Mounted Troops. H. Hathaway.
47 Defects of the Present System of Respiratory Training for the Soldier, with Hints Toward Its Improvement. R. F. E. Austin.
48 Hints Regarding the Management and Use of *X*-ray Apparatus. F. Bruce.

34. **Continental Surgical Procedure.**—In this article Carroll describes the Mosetig-Moorhof method of filling bone cavities with iodoform wax, and the Bier method of employing hyperemia in the treatment of surgical diseases.

37. **Treatment of Enteric Fever with Typhoid Vaccine.**—Birt suggests that 0.02 c.c., or 10,000,000 typhoid bacilli, should be the dose employed for therapeutic inoculation. The amount should be gauged in each case so as to produce as few constitutional and local symptoms as possible. The blood changes which arise after inoculations should be studied by means of opsonic index determination, if possible; but by keeping the daily dose below the limit at which a reaction begins to appear no evil will result from a lack of knowledge of the actual blood condition. The site of the injection should vary; no part should be twice inoculated. Early treatment is insisted on before gross lesions have set in. No cases are reported.

39. **Phagocytosis of Typhoid Bacteria.**—Harrison found that the phagocytes are inactive toward typhoid bacilli, except in the presence of serum, and that normal blood depends for its phagocytic activity toward typhoid bacilli chiefly on an opsonin which differs from the opsonins for staphylococcus in being thermostable. He thinks that in immune blood the phagocytosis of the typhoid bacillus is chiefly encouraged by a thermostabile substance which acts not as an opsonin, but probably by stimulating the white cells.

44. **Yellow Fever.**—Mangin emphasizes the importance of early segregation of every suspicious case of fever, the protection of the patient from the bites of the specific mosquito, and the destruction of infected insects.

45. **Action of Tea on Typhoid Bacillus.**—As the result of an investigation of the action of cold tea on the typhoid bacillus, McNaught found that after four hours' contact the organism diminished greatly in numbers, and that after 20 hours it could not be recovered from cold tea. The tea was prepared by pouring about one liter of boiling water on three heaped-up teaspoonfuls of tea. The tea was allowed to infuse for 10 minutes. McNaught suggests that cold tea may be used as a substitute for water in soldier's water bottles on active service.

Annales de l'Institut Pasteur, Paris.

Last indexed, page 971.

49 (XX, No. 8.) *Origine intestinale de la tuberculose pulmonaire et mécanisme de l'infection tuberculeuse. A. Calmette and C. Guerin (Lille).
50 Etudes sur la morve expérimentale du cobaye (glanders in guinea-pig). Nicolle. (Continued).
51 Etudes sur les trypanosomiases de Berbérie en 1905. E. and Et. Sergent.
52 Action du radium sur le virus rabique. G. Tizzoni and A. Bongiovanni. See abstract on page 547.
53 (No. 9.) Sensibilité des ruminants et des singes au trypanosome de la dourine (susceptibility of ruminants and monkeys). F. Mesnil and J. Rouget.
54 *Le microbe de la coqueluche (of whooping cough). J. Bordet and O. Gengou (Brussels).
55 Epithélioma contagieux des oiseaux (of birds). E. Burnet.
56 Des relations de la fièvre tropicale avec la quarte et la tierce, d'après des observations prises au Sénégal. Thiroux.
57 Etude des corps intra-épithéliaux de Guarnieri. H. Aldershoff and C. M. Broers (Utrecht).

49. **Intestinal Origin of Pulmonary Tuberculosis.**—In this third communication Calmette states emphatically that any errors due to accidental inhalation of the microbes or insoluble particles were most scrupulously guarded against. His technic has been reviewed editorially in The Journal, Oct. 6, 1906, page 1100. The animals were fed once with virulent tubercle bacilli, and the bacilli were refound in the lungs as early as the twenty-fourth hour in the adult animals, but not until the fifth day in the younger ones. The bacilli pass through the intercellular spaces in the intestinal epithelium without leaving a trace of their passage. As soon as they enter the chyle vessels they are incorporated by leucocytes and these transport them to the regional lymph nodes, where they are retained a longer or shorter time in proportion to the youth of the animal. In the very young animals they accumulate in the cortical layer of the lymph node, and, if the amount of bacilli ingested was not very large, they remain there and produce tuberculous lesions. If only a small amount of bacilli are ingested, the lymph nodes retain them, increase in size and allow a few—still incorporated in the leucocytes—to escape into the thoracic duct, and finally the nodes subside to normal size again. Inoculation of these glands in guinea-pigs shows that for a few months they still contain a small number of bacilli. If a considerable quantity of bacilli are ingested, small translucid tubercles appear throughout the lungs, but especially at the apices, on the anterior margins, and the pleural aspect, resembling in every respect fresh glanders tubercles in the horse. After a calf has had the single infecting meal he reacts to tuberculin by the twenty-fifth to the thirtieth day. The tuberculous lesions are then established, but, as a rule, they gradually heal, and after three or four months the tuberculin reaction no longer occurs and inoculation of the fibrous subpleural cicatricial tissue in the small cicatrices left no longer infects a guinea-pig. In adult animals there is no reaction on the part of the regional lymph nodes and the pulmonary lesions become established at once. Calmette is convinced that in the immense majority of cases, with the exception only of those in which bacilli were inhaled directly on some pre-existing lesion of the larynx or trachea, the pleural and pulmonary localizations of tuberculosis result from the arrest in the capillaries of the lungs or pleura of microphagic leucocytes immobilized by the toxic secretions of the bacilli which they have taken up. The same can probably be said also of all the localizations of tuberculosis in the bones, joints, meninges, etc. Glandular tuberculosis, he adds, is of intestinal origin. Its frequency in the young is explained by the special histologic characteristics of the lymphatics at this age. Animals healing spontaneously, so that they cease to react to tuberculin after a few months, are no longer susceptible to infection, and can tolerate ingestion of comparatively large amounts of tubercle bacilli, at least for a certain period. They are thus vaccinated. On the other hand, animals given a second and third infecting meal, before they have entirely recovered from the first infection, never become cured. Their lesions continue always a progressive course. This explains why men and animals so often present entirely healed tuberculous lesions. They became infected, with tuberculosis and had time to have their lesions heal before a second infection occurred, and thus they became vaccinated. Research on this aspect of vaccination is now in progress.

54. **The Microbe of Whooping Cough.**—Bordet and Gengou give an illustrated description of the microbe which they have discovered in whooping cough and to which they ascribe specific etiologic importance. It is not agglutinated by serum from persons who have never had whooping cough or who had it many years before, while it is always agglutinated by serum from children convalescing from whooping cough. Another argument is the intensity in this serum of the sensitizing power, manifested by the fixation of the alexin. In the absence of the whooping cough bacilli, the serum leaves the alexin entirely free. Experiments in the line of an effectual serum treatment or active immunization are now under way.

Bulletin de l'Académie de Médecine, Paris.

Last indexed, page 812.

58 (Year LXX, No. 32.) *La syphilis des honnêtes femmes (wives infected by their husbands). A. Fournier.
59 *Pathogénie et prophylaxie actuelles du paludisme. Kelsch.

58. **Wives Infected with Syphilis by Their Husbands.**—Fournier states that one-fifth of all the syphilitic women whom he has had occasion to treat had been infected by their husbands, and in 218 out of 312 cases by husbands who were syphilitic at the time of their marriage. In 130 out of 151 cases the infection occurred during the first year of married life, and in all but 13, during the first six months. In 142 cases the syphilitic infection in the husband dated in 37 cases from a few weeks to a year; from one to two years in 31, and from two to three years in 30, that is to say, that two-thirds of the men married while they were still in an infecting stage of the disease. Fournier used to believe that three or four years' delay was sufficient to guarantee against infection of the wife, but now he declares that four or five years are necessary, and he says that another quarter century of experience might lead him to lengthen the period still further. In 9 cases the syphilis was transmitted in the second year after the marriage; in 3 in the third year; in 3 in the fourth; in 2 in the fifth; in 3 in the sixth; in 2 in the seventh, and in 1 case each during the eighth and ninth year after marriage. This astonishingly tardy transmission of the disease, he says, confers a new physiognomy on syphilis, demonstrating a tardy secondary syphilis. Recent research has demonstrated that the secondary period is not always restricted to the first three years of the disease, but may develop, with typical secondary symptoms, at the fifth, eighth, tenth, fifteenth or twentieth year, or later still. This tardy secondary syphilis entails tardy secondary contagion if occasion offers.

59. **Pathogenesis and Prophylaxis of Malaria.**—Kelsch does not deny the mosquito theory of the transmission of malarial infection, but he believes that this does not exhaust all the possibilities of transmission of the infection. Experience has too often demonstrated that epidemics of malaria follow extensive turning up of the soil and excessively hot seasons, ingestion of dust-laden food, over exertion, and other faults against hygiene. The distribution of the anopheles, also, does not always correspond to the distribution of malarial foci, and there can be no doubt that the hematozoon finds other ways of access to the body than in mosquito bites. In all his experience with malaria in France he has never known of an instance of the direct transmission of malaria from man to man. Malaria is very prevalent in Madagascar at present, and he ascribes the epidemic to the extensive sanitary works now under way there.

Archiv f. Gynäkologie, Berlin.

Last indexed, page 973.

60 (LXXIX, No. 3.) *Dauererfolge der Ovariotomie (remote results). D. von Velits.
61 *Ueber doppelseitige metastatische Ovarial-Carcinome. M. Stickel.
62 The So-called Causes of Birth.—Die So-gen. Ursachen der Geburt. F. A. Kehrer (Heidelberg).
63 Behandlung des Puerperal-Fiebers mit Paltauf'schem Streptokokken-Serum. O. Burkard.
64 *Ueber die teratoiden Geschwülste des Eierstockes (ovarian tumors). H. Neuhäuser.

60. **Remote Results of Ovariotomy.**—For 15 years von Velits has been making a special study of ovarian tumors, with histologic examination and continued oversight of many of the patients. The total number that came under observation was 149, and operation was performed in 120 cases. He analyzes this material from various standpoints, with illustrations of special features. His experience has shown that cancer in the ovary threatens chiefly the peritoneum. Implantation in the peritoneum can be hastened by increased centrifugal proliferation of the cancer elements with perforation of the tumor wall, or by direct contact of the tumor with the peritoneum when impacted in the pouch of Douglas, or by rupture of a cyst in consequence of torsion of the pedicle, or by flat, inflammatory adhesion, which is the worst of all complications as the cancer grows into the lymphatics in the adhesion membranes. The patient succumbs to the influence of this peritoneal implantation before the cancer has involved the other ovary, the uterus, the broad ligaments or more distant organs. Improvement in the outlook in cases of ovarian cancer can be anticipated in the future only from earlier operations. The absolute and remote proportion of permanent cures in his material was 12.5 per cent. in operations for removal of ovarian cancer. In operations for non-malignant growths the proportion of

permanent cures (after 5 years) is 100 per cent. He found the genuine, solid cancers of the ovary characterized by lesser malignancy than the cystic "papillary" cancers. As these solid cancers generally develop in the comparatively young, the other, sound ovary can be retained without much fear that this conservative treatment will avenge itself by later tumor formation in the retained organ. The tendency to tumor formation in individual cases is unmistakable, and justifies removal of the sound ovary even with non-malignant growths. Years after the removal of an innocent dermoid the other ovary may present a malignant tumor, inoperable when first discovered, as has happened in his experience. Sarcoma in the young is an exception to this rule, as it shows little tendency to develop bilaterally. In one of his cases a pseudo-mucinous cystoma was associated with a large goiter and dermoid cyst. In 5 cases a pseudo-mucinous cystoma was associated with a dermoid cyst.

61. Bilateral Metastatic Ovarian Carcinomata.—Stickel reports 13 cases of metastatic carcinoma in both ovaries. In 9 the primary tumor was in the stomach. In another case the primary tumor was in the ascending colon, and in 3 others in the breast. The patients were 26, 30, 36, 41, 44 or 45 years old except 3 who were 52 or 56. Careful examination of the ovaries should be a preliminary to every operation for removal of a primary cancer of the breast, stomach, gall bladder or intestine. They may be found in metastatic degeneration before any infiltrated retroperitoneal glands can be discovered, and while the abdominal cavity otherwise is still free from metastases. In case of bilateral ovarian cancer, the most diligent search should be made for a primary tumor elsewhere. It may be so small that it can not be detected by palpation, and all diagnostic measures should be brought into play to discover whether a primary growth exists elsewhere in the abdomen.

64. Teratoid Ovarian Tumors.—Neuhäuser reports 2 new cases and reviews 33 others. Early extirpation has given 26.9 per cent. permanent cures in 26 cases. Nearly 43 per cent. of the patients succumbed to a recurrence within a year, and 19.2 per cent died immediately after the operation. It seems that a pregnancy is liable to arouse a hitherto latent teratoid ovarian tumor to rapid growth. Metastasis occurs by way of implantation as well as through the lymphatics and blood, but experience has shown that existing peritoneal metastases are liable to retrogress spontaneously after the laparotomy. It is impossible to tell whether the tumor is malignant or non-malignant, even with the microscope. It may be extremely malignant without showing either carcinomatous or sarcomatous degeneration.

Berliner klinische Wochenschrift.

65 (XLIII, No. 37.) Zur chirurgischen Behandlung des Magengeschwürs (gastric ulcer). L. R. von R. Rydygier.
66 Die Silber Spirochaete. W. Schulze.
67* Ueber Spirochætenbefunde bei Carcinom und bei Syphilis. H. Friedenthal.
68 Ueber die Pollantintherapie des Heufiebers (of hay fever). C. Zarniko.
69 Die diagnostische Bedeutung hypochondrischer Vorstellungen. Rauschke.
70 (No. 38). Ueber drei mit Serum behandelte Fälle von Tetanus traumaticus. J. Kentzler.
71 Ueber den Wert des Komplementablenkungs-Verfahrens in der bakteriologischen Diagnostik (deviation of complement test). C. Moreschi.
72 Ueber Nystagmus toxicus. Th. Weyl.
73 *Zur Pathologie und Therapie der Gallensteinkrankheit (gallstone disease). L. v. Aldor.
74 Zur Kenntnis des congenitalen Myxödems und der Skelett-Wachstumsverhältnisse bei demselben. P. Argutinsky. (Commenced in No. 37.)
75 (No. 39.) Ordinary Hemorrhages from the Kidneys.—Ueber gewöhnliche Nierenblutungen. Casper.
76 *Ueber die Heilung postoperativer Fisteln der Bauchhöhle durch Vaccine-Behandlung nach dem Wrightschen Prinzip. E. M. Weinstein.
77 Klinisches und Experimentelles über Gastroptose. E. Rosenberg.
78 Conception of Neurasthenia.—Ueber den Begriff der Neurasthenie. T. Dunin.

67. Spirochetes in Cancer and in Syphilis.—Friedenthal thinks that too much is being taken for granted in regard to the connection between spirochetes and syphilis. The silver-stained spirochetes are closely simulated by silver-stained scraps of elastic fibers, twisted into spirals by the contracting influence of alcohol, as also by coils of unmedullated nerve tissue. He gives an illustration of deceptive spiral bodies in carcinoma tissue which are merely silver deposited in the form of spiral twists in thickened stretches of protoplasm, without the presence of any parasites.

73. Treatment of Gallstone Affections.—In this condition it is not the presence of gallstones that causes the trouble, von Aldor states, but superposed infection. There can be no cholecystitis without infection. Riedel has calculated that there are two million people in Germany sheltering gallstones, but only one-twentieth ever become conscious of their presence. Autopsy frequently reveals gallstones in persons who were never aware of their presence during life. He has also frequently observed cholecystitis heal, or at least pass into a phase of absolute latency, although no stones were evacuated. Körte has recently published reports of some cases in which the clinical picture of cholelithiasis, was accompanied by the typical pathologic findings of infectious cholecystitis and yet no stones could be discovered in any of the cases. He also had bacteriologic examinations made in seventy-five cases in which he operated, with positive findings in every instance. From these facts von Aldor reasons that a gallstone affection is not due to the migration or impaction of a stone, but rather to the development of an infectious process in the gall bladder, which entails secondarily the impaction of the stone or its migration. He has been making a special study of the feces in his gallstone cases during the last few years, and was able to demonstrate objectively the existence of a catarrhal affection of the small or large intestine or of both in more than half the cases. In all there was a history of sluggish action of the bowels or obstinate constipation. On the other hand, he found evidences of acute intestinal catarrh in less than a dozen instances. The gallstone affection was almost invariably more serious in the cases with the severer intestinal disturbances. These facts explain the apparent efficacy of many of the vaunted gallstone remedies. They contain more or less drastic purgatives, and they give unmistakable relief, although they have the drawbacks of all purgatives in catarrh of the intestines, aggravating the condition in time. The more gallstone patients he has occasion to observe, the more he is convinced that systematic and persevering internal treatment will prove successful in many cases heretofore turned over to the surgeon. The only absolute indications for operative treatment which he recognizes are the rare cases of acute choledochitis acompanied by symptoms of severe inflammation of the gall bladder, and in acute and chronic empyema of the gall bladder. As relative indications he regards the cases of chronically recurring cholecystitis and chronic choledochitis which have proved refractory to months of Carlsbad treatment with repose, also dropsy of the gall bladder causing the patient much disturbance, and, finally, circumstances which forbid the patient's giving up the time to a Carlsbad "cure." The most grateful field for internal treatment is chronic choledochitis without repeated chills and remittent fever, but it requires the greatest patience. A cure is seldom realized in less than 4 or 5 months, but it is possible to avoid an operation by this time. If the patient is under constant medical supervision, the development of serious complications need scarcely be feared. In one case Kehr operated successfully, although the choledochitis had lasted for 12 years. The main point in internal treatment is repose, and this must be absolute until the last trace of the cholecystitis has completely retrogressed. This may occur sometimes in 4 or 5 weeks, in other cases not until after 8 or 10 weeks or still longer. After all traces of swelling of the gall bladder and of the slightest tenderness have vanished, he orders much exercise and copious drinking of Carlsbad water, kept up for a year. Whether to take this Carlsbad "cure" at home or at Carlsbad or elsewhere depends on the patient's circumstances. The efficacy of the water is probably due to its anti-catarrhal action.

76. Treatment of Postoperative Fistula by Vaccines According to Wright's Principle.—Weinstein has been treating at Landau's clinic a number of cases of fistulæ after laparotomies by applying Wright's method of vaccine production with the patient's own individual bacteria from the fistula. In the first three cases the infection was found to be the work of streptococci and in the fourth of streptococci plus the colon bacillus. The operation had been done on account of tuberculous lesions in the last three patients. The first two patients are entirely

healed; the third is nearly healed, but the fecal fistula in the fourth case still persists unhealed, owing to constantly renewed infection. His findings confirm those of Wright in every particular.

Deutsche medizinische Wochenschrift, Berlin and Leipsic.

79 (XXXII, No. 38.) *Laryngotomy in Radical Treatment of Laryngeal Cancer.—Ueber die Radikalop. des Kehlkopfkrebses mittels Kehlkopfspaltung. H. von Bruns (Tübingen).
80 Ueber Neurasthenie und ihre klimatische und baineotherap. Behandlung. E. Romberg (Ib.)
81* Ueber vasomotorische Krampfzustände bei echter Angina pectoris (cramps in peripheral vesseis). H. Curschmann (Ib.)
82* Zur Funktionsprüfung der Arterien (functional tests of separate arteries). P. Müller (Ib.) (Continued.)
83 *Ueber den Kampf wider das Uterus-Carcinom. Döderlein (Ib.)
84 *To Reduce Size of Ovarian Tumors to Aid in Excision.—Ist die Verkleinerung der Ov.-Tumoren zwecks operative Entfernung zulässig? O. Sarwey (Ib.)
85* Lumbal-Anästhesie in der Gynäkologie und Geburtshilfe (and in obstetrics). K. Baisch (Ib.)
86 Ueber die primären tuberculösen Uveal-Erkrankungen. G. Schleich (Ib.)
87 Fall von Pancreas-Fistel nach operierter Pancreatitis hæmorrhagica. W. Schmidt (Stuttgart).
88 Mercury in the Body.—Vorkommen von metallischem Quecksilber im menschlichen Körper. (Id.)

79. Incision of Larynx in Treatment of Laryngeal Cancer.—A surprisingly large proportion of patients with laryngeal cancer are being cured now by the modern radical operation, von Bruns asserts. This progress is not due so much to improved technic as to the improvement in early diagnosing, selection of methods, etc. He adds that the sad fate of the second German emperor stimulated laryngologists and surgeons all over the world to a closer study of laryngeal cancer. The various important points that have been learned are reviewed. Partial removal of the larynx is now generally preferred to total, and incision of the larynx (thyrotomy), as a preliminary to excision of the cancer, is constantly finding new advocates. Bruns has done thyrotomy in 10 cases of laryngeal cancer, and reports 7 recoveries of from 2 to 15 years' duration without a death. Thyrotomy is indicated only in the early stages of internal laryngeal cancer. The voice is altered so little by it that two of his patients, who were teachers, were able to continue teaching. Out of 114 cases reported since 1890, the mortality was 9 per cent., with 22 per cent. recurrences, while in 48 per cent. the patients were cured for at least a year. He concludes with a description of the technic and a denunciation of exclusively endolaryngeal operations for laryngeal cancer.

81. Spasmodic Vasomotor Contraction with True Angina Pectoris.—Curschmann declares that far too little attention has been paid to the underlying or accompanying angina pectoris in cases of peripheral vasomotor cramps. He describes four cases in detail in which the assumption of underlying angina pectoris was confirmed by the course of the cases or autopsy findings. In a fifth case the trouble was of exclusively nervous origin, a purely nervous vasomotor angina pectoris, as Nothnagel described it. Curschmann's four cases show that the entire clinical picture of the latter can develop on the basis of, or as an accompaniment to true angina pectoris. One patient had chronic cardiac insufficiency, true angina pectoris, and angioneurotic vascular cramps in arms, feet and face, with incipient nephritis. The second had chronic insufficiency of the heart, sclerosis of the coronaries, and peripheral vasomotor neurotic disturbances in hands, brain and face, with arthritis. In the third case there was aneurism of the ascending aorta plus angina pectoris, with attacks of amaurosis on the right side.

82. Functional Tests of Arteries.—Müller comments on the way in which the idea is gaining ground that the circulation, in its various parts, is possessed of independent functional capacity. Study of each part separately is liable to afford instructive information, as he shows by specific examples. The reaction induced in the vascular wall under various stimuli, cold, heat, etc., is best studied with the plethysmograph; the findings are not absolutely exact, but they reveal whether the arteries have normal elasticity or not, and whether it is above or below normal. He has been making hundreds of tests on various persons. The principal tests were the application of a smooth piece of ice, 6x10 cm., to the bicipital groove. This brought the ice close to the brachial artery. The heat reflex was elicited by sending hot water through a rubber tube wound around the entire upper arm. The thermometer should show that the heat at the arm reaches 40 C., no higher. This is ensured by sending 10 liters of water at 50 C. through a medium-sized tube in the course of two minutes. At the end of the second minute water at body temperature is sent through the tube, and the arm thus restored to normal temperature. Repeating these tests on the same person several times gave remarkably concordant findings.

83. Uterine Cancer.—Döderlein states that at his clinic in Tübingen the vaginal route has been definitely abandoned.

84. Is It Permissible to Remove Ovarian Tumors in Sections?—Sarwey writes from the same clinic to announce that it is the practice there to reduce the size of an ovarian tumor before attempting to remove it. In 190 cases in which this was done, including 90 verified cystadenomata, no grafting of the tumor occurred in any instance. Experience has shown that the length of the incision is an important factor in the results, and he now operates through a small incision, removing the growth in sections. Vaginal ovariotomy is restricted to cystic and semicystic, small and medium tumors that can be reduced in size and which are uncomplicated, freely movable, and readily accessible from below. A suprapubic transverse incision is suitable also for solid, movable tumors as large as a child's head. Autopsy has shown that cancers, supposed to be result of grafting, always turned out to be primary cancers in the stomach or elsewhere. If the tumor is as large as a man's head or larger, he removes it through the small incision whenever possible, ready to enlarge the incision at need.

85. Spinal Anesthesia in Gynecology and Obstetrics.—Baisch sustains Döderlein in his affirmation that "Bier's invention of spinal anesthesia promises to become the sovereign technic for anesthesia in gynecology." Stovain, novacocain and tropacocain were used indiscriminately in 150 operative cases, including 40 laparotomies of the most serious kind. The original technic has been modified and the scopolamin technic combined with it to avoid certain drawbacks, especially the patients' knowledge of the operation. He insists that the fatalities from respiratory paralysis have all been unquestionably due to overdoses or to gross disregard of indications. The technic of the combined method is simpler than that of ordinary methods, the preliminary subcutaneous injection being made by the nurse, according to Krönig's directions. It seems to be perfectly harmless. Notwithstanding the minute amounts—scopolamin, 0.0006 gm.; morphin, 0.02 gm.; tropacocain, 0.05 gm.; ether, from 5 to 10 gm.—the anesthesia is generally ample for the purpose. This technic is valuable also, he states, in cases of difficult delivery, with or without raising the pelvis.

Monatsschrift f. Geb. u. Gynäkologie, Berlin.

Last indexed, page 1235.

89 (XXIV, No. 3.) Zur Physiologie und Pathologie der Placentation. L. Stolper.
90 *Ueber Gefahren der Pubiotomie und Vorschläge zu deren Verhütung (dangers and means to prevent them). W. Rühl.
91 Bilateral Ankylosis of Hip Joints; Absolute Contracted Pelvis; Severe Nephritis; Supravaginal Amputation at Fifth Month of Pregnancy, Recovery.—Supravaginale Amputation des Uterus gravidus V. mens., etc. A. Sippel.
92 Ueber Plasma- und Decidua-Zellen. K. J. Wedenhake.
93 *Simulated Extrauterine Pregnancy.—Ueber vorgetäuschte Extrauterinschwangerschaft, zugleich ein Beitrag zu den Corpus luteum-Blutungen. C. Weinbrenner.
94 *2 in der Landpraxis mit glücklichem Ausgang erfolgte Kaiserschnitte. (Cesarean section in country practice). K. Franz.
95 *Spinal Anesthesia for Gynecologic Operations.—Die Medullar-Narkose bei gyn. Op. R. Pforte.

90. To Prevent Injury in Pubiotomy.—Rühl advises prophylactic detaching of the bladder wall from the vagina to prevent injury of the bladder in sawing the pubic bone. He makes a small incision in the anterior vault of the vagina, detaches the bladder and pushes it as high up as possible, entirely out of the way of the contemplated operation, holding the organ with a stitch to prevent its lapsing back. This extreme measure is necessary only in case of exceedingly contracted pelvis with preceding inflammation in the small pelvis and very rigid vaginal walls. If a rigid vaginal vault tears as the bones separate, the further extension of the tear may be prevented by vaginoperineal incisions.

93. Simulated Extrauterine Pregnancy.—Weinbrenner relates the details of two cases in which a hemorrhage in a corpus luteum, already in cystic degeneration, burst the walls of the cyst and free hemorrhage into the abdominal cavity followed. In one instance the hyperemia was still further enhanced by

torsion of the pedicle of a cystic ovary. The clinical diagnosis in each case was tubal pregnancy, but the microscope excluded the possibility of a pregnancy.

94. **Cesarean Section in Country Practice.**—Franz reports 2 cases in which Cesarean section was performed under extremely unfavorable conditions but with favorable outcome for both mother and child in each instance. The instruments, etc., were sterilized at the physician's home, and the aseptic operation was performed with the aid of two other physicians, one taking charge of the anesthetic. The principal factor in this favorable result is assumed to be the fact that the birth passages were left undisturbed, and thus there was no fear of imported infection.

95. **Spinal Anesthesia for Gynecologic Operations.**—Pforte reports 50 abdominal and 50 vaginal operations performed under spinal anesthesia at Königsberg. The verdict is favorable. He says that the technic is most excellent for all operations that do not involve the peritoneum, and, even with laparotomies it reduces the amount of chloroform necessary, and eliminates postoperative shock.

Münchener medizinische Wochenschrift.

96 (LIII, No. 31.) *Retention of Sphincter in Removal of Rectal Cancer.—Zur Frage der Erhaltung des Schliessmuskels bei der Exstirpation des Mastdarmkrebses. P. Poppert.
97 Ueber proteolytische Ferment-Wirkungen der Leukozyten. E. Muller and G. Jochmann.
98 Ueber 2 Fälle von zerebraler Hemiplegie im Kindesalter (in children). H. Wichern.
99 *Ein neuer Apparat zur Hyperämie-Behandlung des Kopfes (to induce hyperemia of head). V. Schmieden.
100 Ueber eine bessere Darstellungsart der Spirochæta pallida im Ausstrich (improved smear technic). E. Hoffmann and A. Halle.
101 Gymnastic Treatment of Joint Contracture by General Practitioner.—Wie kann der praktische Arzt die gymnastische Behandlung der Gelenkkontrakturen durchführen? G. Hohmann.
102 Ueber Verlagerung der Trachea bei intrathorazischen Erkrankungen (displacement of trachea). A. Grober.
103 Ueber die Verwendung von Formalin-Lösungen bei der Uhlenhuthschen Blutuntersuchung (technic of biologic blood test). H. Merkel.
104 *Practical Application of Continuous Temperature Register.—Ueber die praktische Verwertung der Dauermessung. E. Oertmann (Wurzen).
105 Die Ortho-Kystoskopie. J. Weinberg.
106 Plastische Röntgen-Bilder. A. E. Stein.
107 *Leaflet to Give to Mothers.—Eine neue Merktafel für Mütter. H. Rosenhaupt.
108 (No. 32.) Zur Frage der teleangiektatischen Granulome. H. Bennecke.
109 *Acute Dilatation of the Stomach and the So-called Arteriomesenteric Intestinal Occlusion.—Ueber akute Magenerweiterung und sogenannten arterio-mesenterialen Darmverschluss. Neck.
110 Behandlung akuter Arthritiden mit intravenösen Kollargol Injektionen. G. Riebold.
111 Zur Behandlung hysterischer Kontrakturen der unteren Extremitäten durch Lumbal-Anästhesie. H. Lohrer.
112 *Neuroses of the Heart and Exophthalmic Goiter.—Herzneurosen und Basedow. M. Fischer.
113 4 Fälle von Epithel-Zysten. L. Klein.
114 Behavior of Typhoid Bacilli in Blood in Respect to Its Bactericidal Action.—Ueber das Verhalten der im Blute der Typhuskranken nachweisbaren Typhusbazillen gegenüber der bakteriziden Wirkung des Blutes. A. Lemierre.
115 Improved Appliance for Suction Therapy.—Ein einfacher und praktischer Apparat für die Biersche Stauung. O. Muck.
116 Die Behandlung der Stiele bei gynäkologischen Operationen (treatment of stumps). L. v. Stubenrauch.
117 (No. 33.) Discussion of Anesthetics.—Die modernen Bestrebungen zur Verminderung der Narkosengefahr. W. Wendel.
118 Die Prognose und Therapie der Cholelithiasis im Lichte der Statistik und Erfahrung. A. Ritter.
119* Der Nachweis des Toxins in dem Blute des Diphtherie-Kranken (toxins in blood). A. Uffenheimer.
120 *Typhoid Bacilli Carriers in an Insane Asylum.—Ueber bemerkenswerte Befunde bei Untersuchungen auf das Vorhandensein von Typhusbazillenträgern in einer Irrenanstalt. A. Nieter and H. Liefmann.
121 Ueber Antagonismus zwischen normalen und immunen bakteriziden Sera. S. Korschun.
122 *Ueber die Beziehungen der Tetanie zum weiblichen Sexualapparat. E. Gross.
123 Silver Acetate to Prevent Ophthalmia Neonatorum.—Ueber die Prophylaxe der Blennorrhoe der Neugeborenen. Thies.
124 Prurigo Following Intestinal Catarrh.—Zur Etiologie der Prurigo. L. Steiner and H. Vorner.

96. **Retention of Sphincter Muscle in Removal of Rectal Cancer.**—Poppert analyzes the literature on this subject, the results compelling him to warn decidedly against sacrificing the sphincter if it can possibly be saved. He reports 17 patients out of 60 permanently cured by resection of a rectal cancer. One patient has had no signs of recurrence during 15 years, and others for 9, 7, etc., to date. Among these cured cases are 8 treated by amputation and 9 by resection. These results proclaim that resection need not be abandoned for amputation. He prefers resection with circular suture of the intestine according to Kraske, without disturbing the sphincter muscle. Other methods are much less certain. The more thorough the preparation, the more cautious and sparing the use of the knife, the more frequently will we be able to cure the patient without burdening him with distressing incontinence.

99. **Apparatus to Induce Hyperemia in the Head.**—Schmieden gives an illustrated description of a glass bell that fits air-tight over head and neck and allows the application of the Bier technic.

104. **Permanent Temperature Record.**—Oertmann presents a maximal thermometer made on the principle of a hemorrhoid pessary, and another combined with a uterine pessary, and one to fasten continuously in the axilla. By this means it is possible to learn the temperature of the body at all times of the day, not merely on a casual, brief examination.

107. **Leaflet to Give to Young Mothers.**—Twelve rules are given on the leaflet, the first four urging the mother to nurse the child and presenting as one argument the conclusions of von Bollinger's investigations, which showed that women who had not nursed their children were more frequently affected with mammary cancer than those who had. Another of the rules states that the mother must not attribute any sickness of the child to its teething. ". . . there is no sickness that comes from teething; if the child is sick, it can be only because it is ailing from some other cause while it is teething." He agrees with Kassowitz that altogether too much etiologic importance is ascribed to teething.

109. **Acute Dilatation of the Stomach.**—Neck remarks that it is of the utmost importance that this condition should be recognized early, as it is generally easily remedied by appropriate treatment, while liable to prove fatal without it. The correct diagnosis was made in only 13 out of 60 cases on record, he says, and then almost always by physicians who had lost patients with similar symptoms and who had been enlightened as to their cause by the autopsy. As a rule, the first symptom is sudden, violent vomiting, accompanied by more or less intense pain in various parts of the distended abdomen. The pulse is small and rapid, but the temperature is normal. The absence of high temperature allows peritonitis to be excluded, as this is usually accompanied by fever. In other respects the symptoms suggest peritonitis, and the peritoneum is liable to become inflamed secondarily. Another differentiating point is an encapsulated collection of fluid in the left side of the abdomen. The stomach tube affords the most reliable information, and evacuation of the contents of the stomach through it is the most important measure in treatment. The pelvis should be raised while the stomach is being emptied and the organ should be rinsed out systematically several times a day at first. It is important to be sure that the stomach sound reaches down into the fluid. In some of the cases that proved fatal after the stomach had been rinsed several times, this result was probably due to the fact that the sound had failed to evacuate all the fluid. No food should be taken by the mouth until the stomach has entirely recuperated. The prognosis is grave unless proper treatment is instituted at once. Out of the 64 cases known, 47 proved fatal. In one of Neck's 4 cases the acute dilatation followed overloading the stomach with fresh fruit; the patient was a young man of 16. In 2 others there was a tendency to kyphoseoliosis since youth, which he thinks had induced a predisposition to ptosis or dilatation of the stomach on slight provocation. In 29 of the total cases on record the acute dilatation of the stomach followed chloroform anesthesia, and in 11 of these cases the operation had not involved the abdomen but was at points remote from it. It is evident that the chloroform must have entered the stomach and injured the muscular and nervous elements so seriously that acute dilatation was the result. It may occur in a stomach apparently entirely healthy, and in robust persons, although in most cases there was some predisposing factor such as debility after an illness, a stomach affection or downward displacement.

112. **Cardiac Neuroses and Exophthalmic Goiter.**—Fischer asserts that exophthalmic goiter occurs much more frequently than is generally recognized, especially the form in which the

exophthalmos and the enlargement of the thyroid are not pronounced enough to attract attention. The affection is generally diagnosed as "neurasthenia," "anemia," or "cardiac neurosis," but is refractory to all the measures ordinarily successful on this diagnosis. The patients are generally women with some disturbance in the genital sphere, either puberty or the menopause, metrorrhagia or amenorrhea. The connection between the thyroid gland and processes in the uterus has long been known. Osteomalacia has recently been attributed to hyperfunctioning of the thyroid. The patients sometimes have gastrointestinal disturbances, attacks of vomiting, diarrhea for months, and the like. Their chief concern, however, is in regard to the heart, whose disturbing or painful palpitations distress them and may induce dyspnea and syncopal conditions. The objective findings range from simple acceleration of the pulse to extensive dilatation of the heart and whistling murmurs. All the patients complain that they are out of order; they feel uncertain, not sure of themselves, sometimes as if they were living in a dream, and all agree that the attacks come on with the greatest irregularity and without appreciable cause. There is no history of nervous antecedents. If in such cases the symptoms persist under internal treatment, and if there is suspicion of enlargement of the thyroid, treatment should be addressed to the thyroid. It is not necessary to call the patient's attention to this blemish, merely prescribing ostensibly for the cardiac neurosis. As a rule it will be found that the gland has always been rather large since youth. Two or three weeks of treatment addressed to neutralizing the toxins elaborated by the thyroid gland produced remarkable improvement in four cases in his experience in the last few months. Rest for body and mind is an important adjuvant.

119. **Toxins in Blood in Diphtheria.**—Uffenheimer has found a toxin in the blood of diphtheria patients at an early stage, and has found it possible to differentiate the disease, by injection of animals, before the bacteriologic test was positive. He injected only a small amount of the toxin, and accepted as a positive response the palpable infiltration of the subcutaneous cellular tissue without waiting for more prominent signs. When the animals were killed later the signs were so pronounced then as to be unmistakable. Out of 14 cases of diphtheria he found the toxin present in 6, dubious in 4, absent in 4. The repeated finding of the toxin in some of the cases imposes the necessity for prompt neutralization with antitoxin, repeating the injections of antitoxin again and again to neutralize the toxin in the blood as it is formed, and also to draw out from the tissues the toxin already anchored in them and to render it harmless. Dönitz has demonstrated that large amounts of the antitoxin are able to attract out of the tissues the toxin already settled in them, and to neutralize it.

120. **Typhoid Bacilli Carriers in an Insane Asylum.**—Nieter states that typhoid and dysentery have been endemic in the asylum in question for several years. There are about 900 inmates, but most of the cases occurred in a pavilion with 250 inmates. Typhoid bacilli were found in the stools of a patient suffering from acute dysentery. Her serum agglutinated the typhoid bacillus at 1 to 100 and the Flexner dysentery bacillus at 1 to 800. At the autopsy of another patient who had succumbed to chronic dysentery, typhoid bacilli were found in the intestines and in pure culture in the gall bladder, which contained gallstones. Typhoid bacilli were agglutinated at 1 to 50, and Flexner bacilli at 1 to 100. Further research revealed 5 more typhoid bacilli carriers, that is, a total of 7 among the 250 insane inmates of the building. In another insane asylum 2 bacilli carriers were found. In both institutions, after isolation of the discovered bacilli carriers, the disease has ceased to be endemic.

122. **Relations Between Tetany and Sexual Apparatus.**—Gross summarizes what has been written on this subject and relates a case from his own experience in which attacks of tetany could be induced by stimulating the puerperal uterus to contract. The patient was a woman of 39; the uterus had been curetted after abortion at the fifth week. In 2 other cases the attacks of tetany occurred during a pregnancy. In both these cases, and in some others in the literature, the coincidence of bilateral incipient cataract is mentioned.

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

DISEASES OF WOMEN. A Handbook for Students and Practitioners. By J. Bland-Sutton, F.R.C.S., Surgeon to the Middlesex Hospital, and Senior Surgeon to the Chelsea Hospital for Women, and A. E. Giles, B.Sc., F.R.C.S., Surgeon to the Chelsea Hospital for Women and Gynecologist to the Tottenham Hospital. Fifth edition, with 129 illustrations. Cloth. Pp. 536. Price, $3.25. New York: Rebman Company, 1906.

ENTERIC FEVER IN INDIA, and in Other Tropical and Sub-Tropical Regions. A Study in Epidemiology and Military Hygiene. By E. Roberts, M.B., D.P.H., Formerly Deputy Sanitary Commissioner, Northwest Provinces; lately Statistical Officer to the Government of India in the Medical and Sanitary Departments, etc. Cloth. Pp. 571. Price, 21s. net. London: Bailliere, Tindall and Cox, 1906.

A TEXT-BOOK OF ELEMENTARY ANALYTICAL CHEMISTRY, Qualitative and Volumetric. By J. H. Long, M.S., Sc.D., Professor of Chemistry and Director of the Chemical Laboratories in the Northwestern University Medical School. Third edition, revised and enlarged. Cloth. Pp. 299. Price, $1.25 net. Philadelphia: P. Blakiston's Son & Co., 1906.

UEBER EIN ZUVERLASSIGES HEILVERFAHREN BEI DER ASIATISCHEN CHOLERA SOWIE BEI SCHWEREN INFEKTIÖSEN BRECHDURCHFALLEN und ueber die Bedeutung des Bolus (Kaolins) bei der Behandlung gewisser Bakterienkrankheiten von Dr. Julius Stumpf. Mit 1 Tafel. Paper. Pp. 62. Price, 1.90 mk. Würzburg, Germany: A. Stuber's Verlag, 1906.

STÖHR'S HISTOLOGY, Arranged on an Embryologic Basis. By F. T. Lewis, Assistant Professor of Embryology at the Harvard Medical School. From the Twelfth German edition, by P. Stöhr. Sixth American Edition, with 450 illustrations. Cloth. Pp. 434. Price, $3.00 net. Philadelphia: P. Blakiston's Son & Co., 1906.

TREATMENT OF SYPHILIS. By A. Fournier, Professor at the Faculty of Medicine, Member of the Academy of Medicine, Physician to the St. Louis Hospital, Paris, English Translation, second edition revised and enlarged by C. F. Marshall, M.D. Cloth. Pp. 528. Price, $5.00. New York: Rebman Company, 1906.

ELEMENTARY MANUAL OF REGIONAL TOPOGRAPHICAL DERMATOLOGY. By R. Sabouraud, Director of the City of Paris Dermatological Laboratory, St. Louis Hospital. English Translation by C. F. Marshall. Cloth. Pp. 570. Price, $5.00. New York: Rebman Company, 1906.

TRANSACTIONS OF THE NEW HAMPSHIRE MEDICAL SOCIETY, at the One Hundred and Fifteenth Anniversary held at Concord, May 17-18, 1906. Cloth. Pp. 256. Concord, N. H.: Ira C. Evans, Printer, 1906.

THE FACE, HAIR AND SCALP, Their Care and Treatment, also Facial and Scalp Massage. By Carl Rosen. Cloth. Pp. 158. Price, $1.00. Chicago: Monarch Book Company.

CONFERENCES OF THE MORAL PHILOSOPHY OF MEDICINE. Prepared by An American Physician. Cloth. Pp. 368. Price, $1.50. New York: Rebman Company, 1906.

GREEN'S ENCYCLOPEDIA AND DICTIONARY OF MEDICINE AND SURGERY. Vol. II. Bre-Ear. Cloth. Pp. 528. London: William Green & Sons.

NEW PATENTS.

Recently granted patents of interest to physicians:

831592. Gynecologic appliance. Joseph H. Baillard, Vancouver, B. C.
831711. Massage device. B. S. Dean, Philadelphia.
831873. Apparatus for purifying natural water. Frank Julian, St. Paul, Minn.
831726. Device for rolling bandages. Louis Long, Buchanan, N. Y.
831728. Anesthetic holding and dispensing apparatus. James R. Maxfield and S. B. Maupin, Grand Saline, Kan.
831733. Sleeping bag. Henry E. Moore, Brookline, Mass.
831623. Inhaler. Frank B. Murphy, Logansport, Ind.
831812. Pasteurizing. Henry E. Weber, Canton, Ohio.
831813. Pasteurizing apparatus. Henry E. Weber, Canton, Ohio.
832032. Stethoscope. C. R. C. Borden, Brookline, Mass.
832201. Dilator. Samuel L. Kistler, Los Angeles, Cal.
832346. Invalid bed support. Eva S. Stewart, Port Arthur, Ont., Canada.
832517. Device for lifting invalids. George B. Wilt, Marion, Ind.
833120. Anatomic brace for the cure of flat foot. G. E. Buell, Rochester, N. Y.
832851. Artificial leg. G. A. Erickson, Minneapolis.
832613. Ankle corset. Gustave Krieger, New York.
832680. Surgeon's operating table. Florus F. Lawrence, Columbus, Ohio.
833136 Surgical implement. Alfred Littauer, Brooklyn.
832618. Dropper. John McNally, Queensland, Australia.
832621. Sticking plaster. Franz L. Piro, Rodelheim, Germany.
833103. Inhaler. Wm. T. Wood, Nashville, Tenn.
833669. Spittoon or sanitary receptacle. J. P. R. de Britto, Rio de Janeiro.
833671. Surgical appliance. F. W. Brown, New York.

The Journal of the American Medical Association

Published under the Auspices of the Board of Trustees.

VOL. XLVII. CHICAGO, ILLINOIS, NOVEMBER 17, 1906. No. 20.

Original Articles

THE UTILIZATION OF THE BROAD LIGAMENTS IN COMPLETE DESCENT OF THE UTERUS, HYSTEROMYOMECTOMY AND REMOVAL OF UTERINE APPENDAGES.*

E. C. DUDLEY, A.M., M.D.
CHICAGO.

END-TO-END APPROXIMATION OF THE BROAD LIGAMENTS IN A NEW OPERATION FOR COMPLETE DESCENT WITHOUT REMOVAL OF THE UTERUS.

In place of vaginal hysterectomy and other operations so often performed for complete descent of the uterus, I propose a new operation, the essential factor of which is the utilization of the broad ligaments as supports of the pelvic floor without removal of the uterus, but before entering on a description of this operation it may be well to outline briefly the mechanism of complete descent and to set forth some of the reasons why the older operations frequently have proved inadequate. In so doing I shall draw freely on my own writings without giving further credit.

I desire at the outset to disclaim any proposition that the uterus is supported and held in place by ligaments alone; it is supported by the whole pelvic floor, of which it is a part. In saying that the broad ligaments are utilized, I mean always that these ligaments and their adjacent structures are utilized.

Mechanism of Descent.—The uterus in its normal position lies transversely across the pelvis, the fundus pointing in a slightly upward anterior direction and the cervix in a slightly downward posterior direction. The long axis of the uterus in this normal direction makes an acute angle with the long axis of the vagina which extends obliquely, not vertically, from the vulva upward and backward in the direction of the hollow of the sacrum. Accordingly, mobile anteversion with some degree of anteflexion is the normal position of the uterus; at any rate, the uterus in its normal range of movements does not deviate, unless temporarily, beyond the limits of a certain normal anteversion and anteflexion.

The practical significance of this acute angle between the axis of the uterus and vagina in the etiology and treatment of descent is very great because the uterus in the act of prolapse usually descends through the vaginal canal in the direction of that canal, i. e., a coincidence of the two axes is a prerequisite to descent. Since an essential condition of descent is a coincidence of the two axes, it follows that one factor at least in the treatment of descent must be to restore the normal angle between the axes.

The mechanism of descent also has an important bearing on the treatment and, therefore, may be mentioned in detail as follows. In labor the anterior wall of the vagina is so depressed, stretched and shortened by the advancing child that during and after the second stage the anterior lip of the cervix uteri may be seen behind the urethra. This location of the cervix, so close to the anterior wall of the pelvis, necessarily involves great stretching of the uterosacral supports which normally hold the cervix uteri and, together with it, the upper extremity of the vagina close to the hollow of the sacrum. This function of the postuterine ligaments having been temporarily impaired, the upper extremity of the vagina is displaced forward so that after delivery the uterus having sufficient space between itself and the sacrum, instead of maintaining its normal anterior position, may fall backward into retroversion and thereby bring its own axis into line with the direction of the vagina.

If the puerperium progress favorably with prompt involution of the pelvic organs and if the relaxed vesicovaginal wall and other parts of the pelvic floor, especially the uterosacral supports and the broad and round ligaments, recover their normal tone, then the whole pelvic floor, including the uterus, resumes its normal relations. But if the enlarged heavy uterus remain in the long axis of the vagina, and especially if the fundus uteri be incarcerated under the promontory of the sacrum with the sacral supports stretched so much and for so long a time that they can not recover their contractile power, and if normal involution of the pelvic organs be arrested, then the descent may not only persist, but may progress with constantly increasing cystocele and rectocele until the entire uterus has extruded through the vulva.

It is most important to remember that complete prolapse of the uterus is only an incident to prolapse of the pelvic floor. The whole mechanism is that of hernia and the condition is hernia for the extruded hernial mass drags after it a peritoneal sac which, hernia-like, contains small intestine. This sac forces its way to the pelvic outlet and extrudes through the vulva, having the inverted vagina for a covering.

The above mechanism would suggest at once shortening of the uterosacral ligaments to draw the cervix uteri back to its normal location near the hollow of the sacrum and shortening the round ligaments to draw the corpus forward so as to restore the normal direction of the uterine axis. These procedures might be curative in cases of retroversion or retroflexion without great descent, but when not only the uterus, but also the whole pelvic floor, are in extreme downward hernial displacement the uterosacral and round ligaments, even though shortened, do not have sufficient power to give permanent support. The strain on them is so great that they are

* Read in the Section on Obstetrics and Diseases of Women of the American Medical Association, at Boston, June, 1906.

apt to stretch out and permit the descent to recur. Adequate sustaining power under the uterus is now essential. Shortening the uterosacral and round ligaments, however, may in some cases be indicated as a supplementary operation.

Frequently the change in the direction of the vagina from the normal oblique to the abnormal vertical is still further increased by injury to the vaginal outlet; the perineum may be torn in any direction and, what is more serious, it may be torn away from its pubic attachments, and in this way may be displaced backward toward the tip of the coccyx; in fact, such displacement is so common as a result of injuries to the perineum as to suggest the propriety of a change in the terminology from laceration to displacement of the perineum. The upper extremity of the vagina being displaced forward and the lower extremity backward, and the direction of the overstretched, dilated vagina now being vertical, the heavy uterus, having its long axis in the same direction as that of the vagina, has all the conditions favorable to progressive descent.

It is clearly most important to appreciate the fact that, since in nearly every case of procidentia the lower extremity of the vagina is displaced backward, with associated subinvolution of the pelvic floor and especially subinvolution or rupture of the perineum or of some other portion of the vaginal outlet, therefore the posterior wall of the vaginal outlet and the perineum must be brought forward to their normal location under the pubes, so as to give support to the anterior vaginal wall; otherwise, whatever the operation on the vaginal walls and broad ligaments, the vagina will fall again, will drag the uterus after it, and the hernial protrusion (cystocele, rectocele and prolapse) will be reproduced.

The treatment, therefore, of procidentia must always include an adequate operation on the perineum, or, more comprehensively speaking, on the posterior wall of the vaginal outlet. The operation must be performed so that it will carry the lower extremity of the vagina forward to the normal location close under the pubes; for in no other way can the normal oblique direction of the vagina be secured.

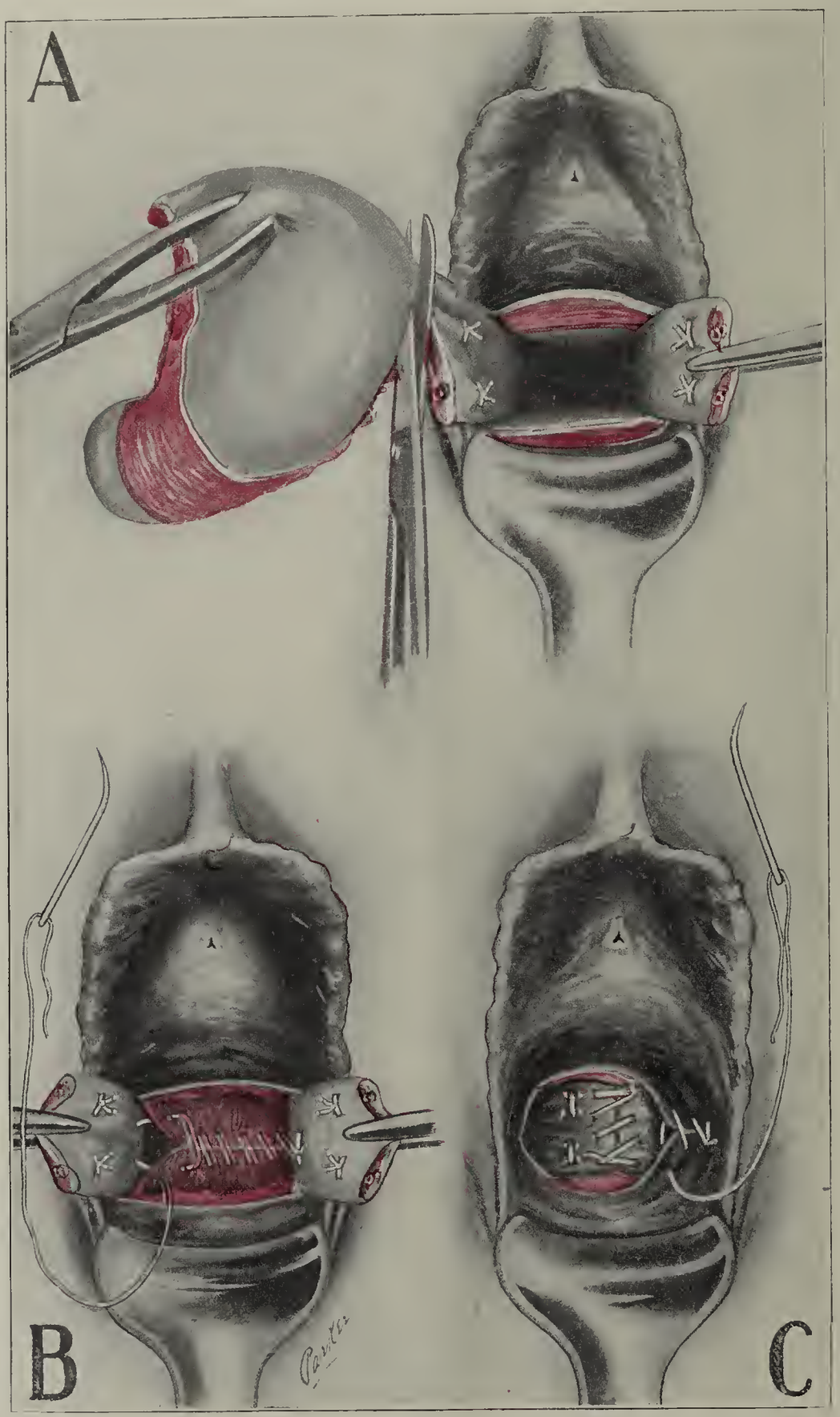


Fig. 1.—VAGINAL HYSTERECTOMY. A. Incisions have been made from the posterior vaginal fornix to the cul-de-sac of Douglas and from the anterior vaginal fornix to the utero-vesical cul-de-sac. The uterine and ovarian arteries in both ligaments have been securely ligated. The left ligament has been cut away from the uterus and is drawn to the vulva and held by forceps. The uterus has been drawn through the vulva and is hanging by a shred to the right ligament from which it is being cut away. The wound made by the removal of the uterus with its peritoneal and vaginal margins shows between the ligaments.

B. The last stitch of a continuous catgut suture is being taken to unite the peritoneal margins of the wound. The line of suture thus made runs from one ligament to the other and at either end includes the ligament. Closure of the peritoneum as here shown is nearly complete.

C. The ends of the broad ligament are shown to be united in front of the peritoneum by means of a continuous catgut suture. Another suture is closing the vaginal margins of the wound by a line of union running across the upper end of the vagina from side to side. When this suture is complete the united broad ligaments will lie between peritoneum and vaginal wall, and must necessarily sustain the rectum, vagina and bladder on the health level.

Reasons for Failure of the Older Operations. — In passing it may be well to mention, for the purpose of condemning it, an operation perhaps more frequently performed than any other for the cure of complete descent, namely, the operation which generally passes under the name of Stoltz. This operation is designed to narrow the vagina, and thus to maintain the uterus somewhere in the pelvis above the constriction. Operations of this class usually consist of the removal of an elliptical piece from the anterior or posterior vaginal wall, or from both, and closing the exposed surfaces by means of purse-string sutures. No effort is made to restore the normal axes of the uterus and vagina. The whole purpose is to make the vagina so narrow that the uterus can not pass through it. Such operations gen-

erally fail, because they leave the uterus and vagina in the same axis and because the restricted vagina can not resist the downward force of the uterus, which almost invariably dilates the vagina a second time and forces its way through with reproduction of the hernia. Moreover, the operation always does permanent harm, because it shortens the vagina, thereby making it draw the cervix away from the sacrum toward the pubes so that the body of the uterus may have room to fall backward to the position of incurable retroversion. We may without discussion perhaps throw out all operations belonging to the Stoltz group. The same may be said of all plastic operations in which the vaginal surfaces are exposed by superficial denudation and brought together by sutures, even though some of these operations are correct in principle so far as they aim to force the cervix uteri backward into the hollow of the sacrum.

The older plastic operations of elytrorrhaphy having been followed so frequently by partial or complete recurrence of the descent, many operators, especially in women who have passed the menopause, substitute the mutilating operation of vaginal hysterectomy for the unsatisfactory operations of superficial elytrorrhaphy. Complete prolapse, being hernia, should be treated, as pointed out by Reynolds and others, according to the established principles of herniotomy by reducing it and then excising the sac in such a way as to expose strong fascial surfaces which should be firmly united by sutures. The absurdity of treating any other hernia by superficial denudation and reefing or tucking in the surfaces by sewing them together must be apparent to anyone.

An efficient operation on the vaginal walls should have for its object, not narrowing the vagina, but restoring the normal direction of it with a double purpose; first, so that the upper extremity, together with the cervix uteri, shall be in its normal location within an inch of the second and third vertebræ, just where the uterosacral ligaments would hold it if their normal tonicity and integrity could be restored; and, second, so that the lower extremity of the vagina shall be brought forward against the pubes. The fulfillment of these two indications by restoring the normal obliquity of the vagina will hold the cervix uteri so far back toward the sacrum that the corpus uteri must be directed forward in its normal anterior position of mobile equilibrium. With these conditions secured, the uterus being at an acute angle with the vagina and having little space posteriorly, can not retrovert and turn the necessary corner which would permit it to prolapse in the direction of the vaginal outlet. To accomplish this, perineorrhaphy already has been declared necessary as a means of forcing the lower end of the vagina toward the pubes.

Before describing the proposed operation I would repeat the fact that the various plastic operations on the vaginal walls (elytrorrhaphy) have proved so unsatisfactory that many surgeons are inclined to abandon them and to adopt the radical measure of vaginal hysterectomy in their place. This operation, however, if performed by the familiar method of ligating the broad ligaments, cutting them from the uterus, and then letting them retract to the sides of the pelvis is inadequate because the ligaments thus retracted can not perform their functions of holding up the pelvic floor; consequently many hysterectomies performed in this way have been followed by a continuance of the downward displacement of the rectum, vagina and bladder, a condition not materially improved by the mere absence of the uterus. In order to utilize the normal supporting power of the ligaments, I devised and in 1902 published an operation by which the severed ligaments were approximated end to end between the peritoneal and vaginal sides of the wound made by the removal of the uterus. I again present the operation unmodified, because I desire to make use of this principle of end-to-end approximation in the new procedure for the surgical treatment of complete descent of the uterus, a description of which will follow. Figure 1 will serve to illustrate the treatment of the broad ligaments by end-to-end approximation in vaginal hysterectomy.

Proposed Operation on the Broad Ligaments and Excision of the Cystocele.—To appreciate the part which the broad ligaments properly may have in a correct operation, it is only necessary to observe the fact that vaginal hysterectomy as above described results in holding up the pelvic floor and with it the rectum, vagina and bladder, because in this operation the broad ligaments are fixed to the vaginal wound. Since the condition of procidentia is hernia not alone of the uterus, but of the rectum, vagina and bladder as well, let us try to hold up the pelvic floor, including the uterus, by similar means, even though the uterus be not removed.

Following the suggestion of Emmet Sims, Reynolds and others who have striven to draw structures in the neighborhood of the lower margins of the ligaments in front of the cervix for the purpose of forcing it back, I found myself stripping the structures more and more from the sides of the uterus and drawing them in front of it, but not until I actually severed a considerable portion of each ligament from the sides of the uterus did I secure the best results. In future operations I shall emphasize that part of the procedure as shown in the drawings more than I have done yet. Figures 2, 3, 4, 5, 6, 7, 8, 9 and 10, with their legends, will illustrate the proposed method of holding up not only the uterus, but also the rectum, vagina and bladder by end-to-end approximation of the broad ligaments and adequate excision of the cystocele, without removal of the uterus.

In addition to approximation of ligaments, it must be borne in mind that other supporting structures also are brought together in front of the cervix uteri, notably the adjacent parametric structures, and if the operation is sufficiently extensive, the round ligaments. In extreme cases it would be well to separate the bladder entirely from the cervix uteri, as would be done in vaginal section, so as to expose the round ligaments. These ligaments then could be brought down in front of the cervix and included in the sutures which are used to approximate the cut ends of the broad ligaments. Such adjustment of the broad and round ligaments, together with the adjacent parametria in front of the cervix, necessarily would give great strength to the pelvic floor.

The question frequently has been asked whether in cutting away the lower halves of the broad ligaments troublesome hemorrhage is not encountered. I should fear such hemorrhage if the ligaments were severed with the uterus in its normal location, but would not fear it with the uterus outside the body. Besides, since a shaving is removed from each side of the uterus, the incision usually would be safely inside the utero-ovarian anastomosis. At any rate, the uterus being outside the body, hemorrhage could be controlled easily if it did occur.

I ask a trial for this operation, in the hope that it will prove more effective than the more superficial elytrorrhaphy, which, in a degree, has been unsatisfactory. At least, it will be less mutilating than the alternative operation, vaginal hysterectomy. (See Figs. 2-10.)

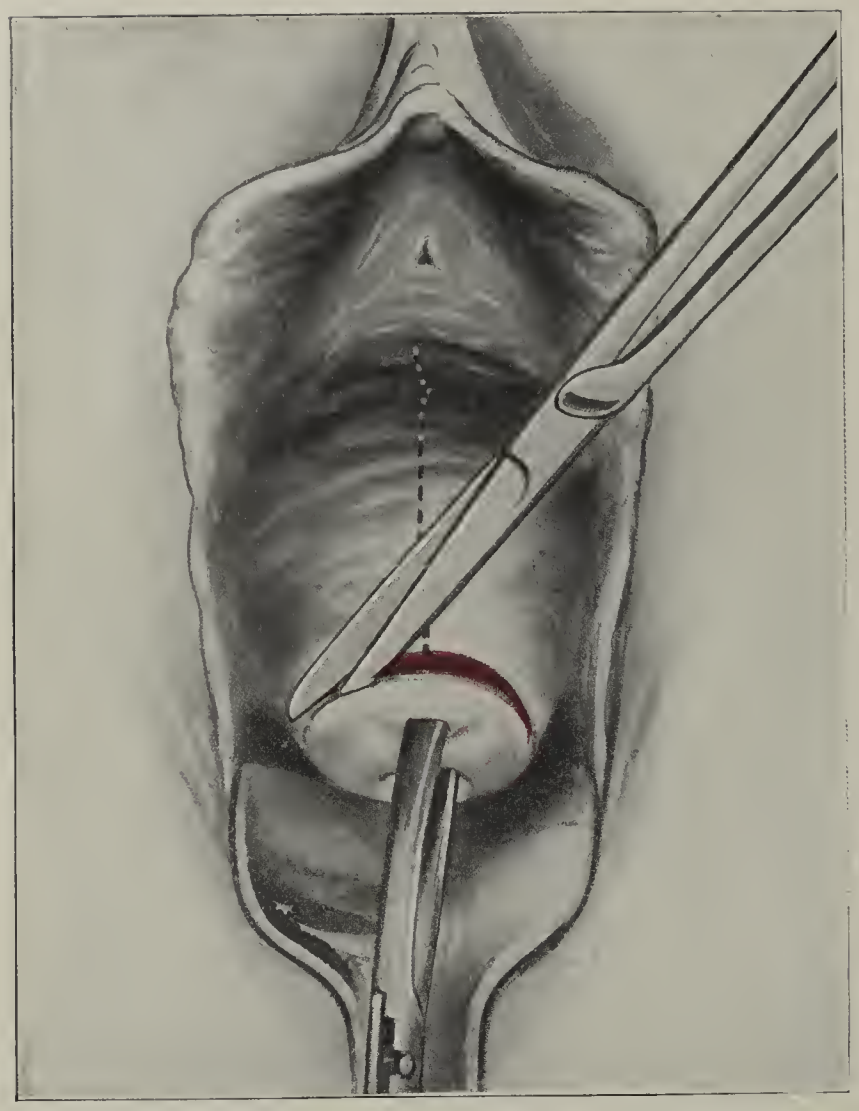


Fig. 2.—Broad Ligament Operation for Complete Descent of the Uterus.—Cervix held steady by flat vulsellum forceps. The bladder lies in front of the prolapsed uterus. The dotted line extending in the median direction on the anterior wall of the cervix from a point at the uterovaginal attachment to the urethrovaginal wall, mark (Figure 4) the direction of an incision to be made by means of sharp pointed scissors through the vaginal layer of the vesicovaginal septum. The incision extending around the anterior half of the cervix at the uterovaginal attachment is made through the vaginal wall to, but not into uterine tissue.

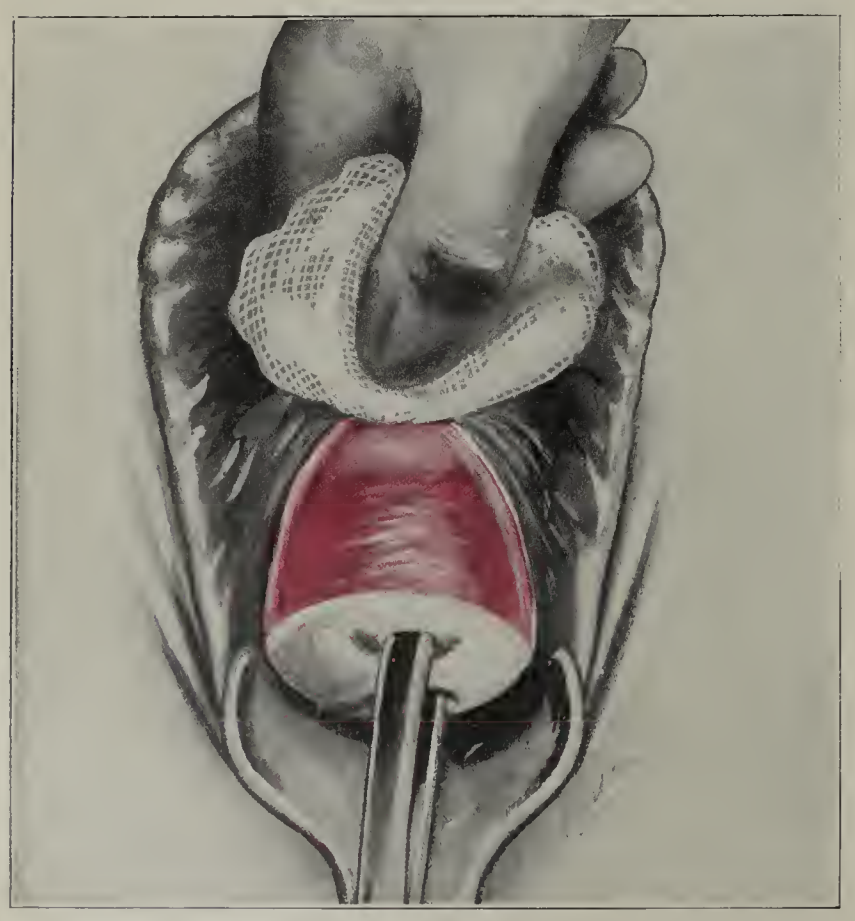


Fig. 3.—Broad Ligament Operation for Complete Descent of the Uterus.—Bladder being stripped from uterus by blunt dissection, which is accomplished readily and quickly by sponge pressure and is continued to the peritoneal reflexion of the vesico-uterine pouch precisely as it would be if the operator were going to open into the peritoneal cavity between the uterus and bladder. Observe here, just beneath the sponge, the translucent peritoneum, which for the present purpose is not usually to be incised.

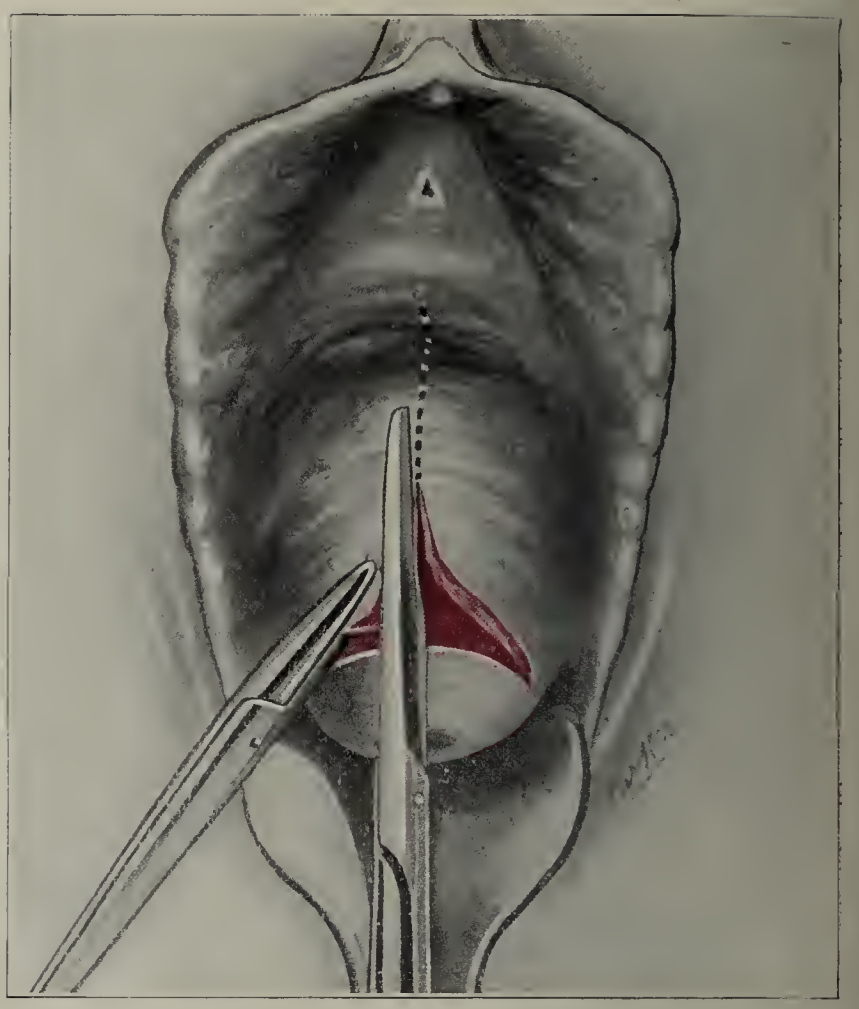


Fig. 4.—Broad Ligament Operation for Complete Descent of the Uterus.—The bladder has been stripped off uterus, and the peritoneum exposed (Figure 3), the vesicovaginal septum is drawn down over the anterior uterine wall by a forceps, and the vaginal layer of the septum is being split on the median line with scissors.

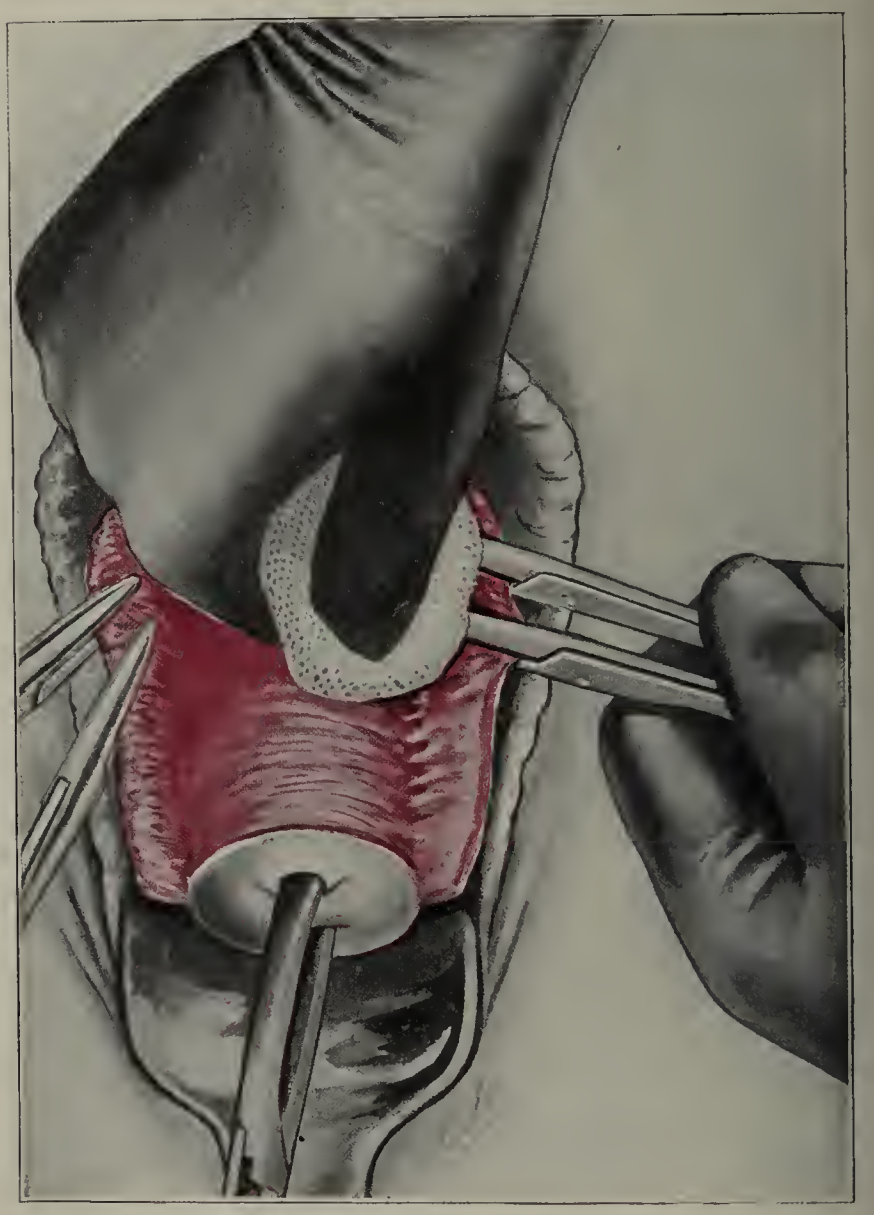


Fig. 5.—Broad Ligament Operation for Complete Descent of the Uterus.—The vaginal layer of the vesicovaginal septum is being stripped away from the bladder wall by the same kind of blunt dissection used in Figure 3. The bladder as it is separated is pushed up out of sight.

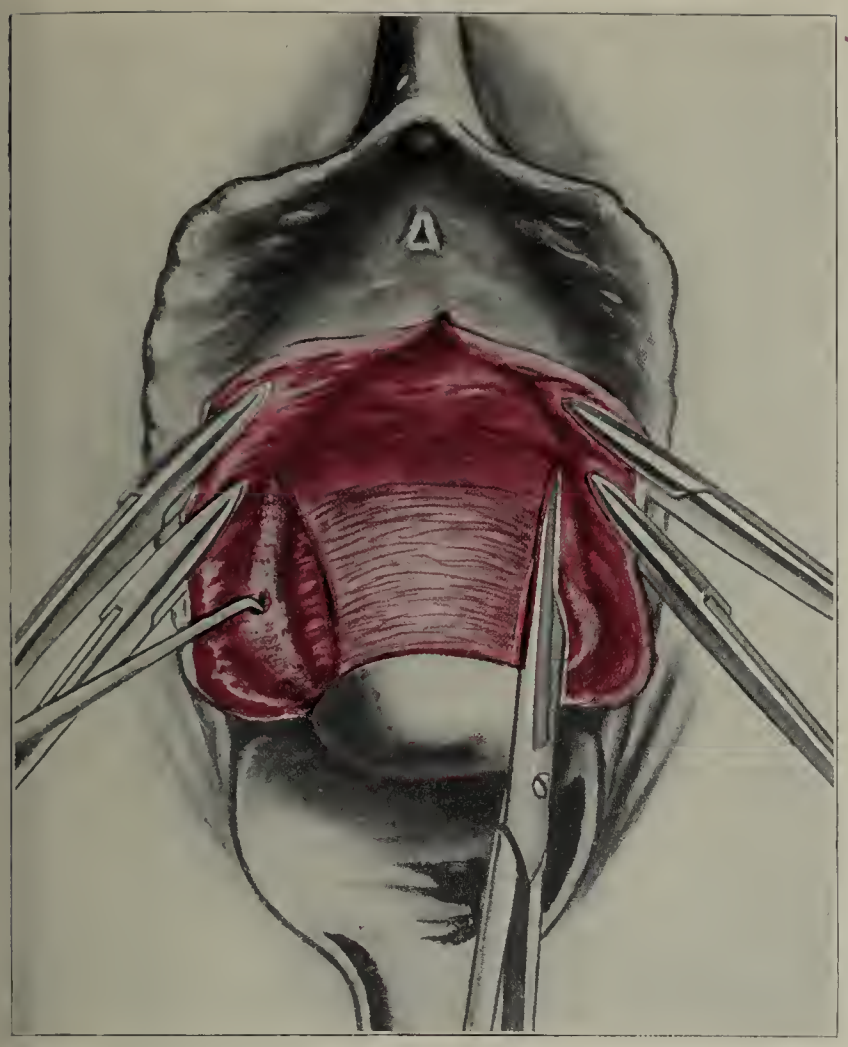


Fig. 6—Broad Ligament Operation for Complete Descent of the Uterus.—The lower two-thirds of each broad ligament, and to avoid wounding the utero-ovarian anastomosis, a thin shaving of the cervix is being cut away with sharp pointed scissors. The right ligament has been severed and the left is being severed. The redundant vaginal layer (cystocele) which has been stripped off from the bladder is held by forceps out of the way to either side.

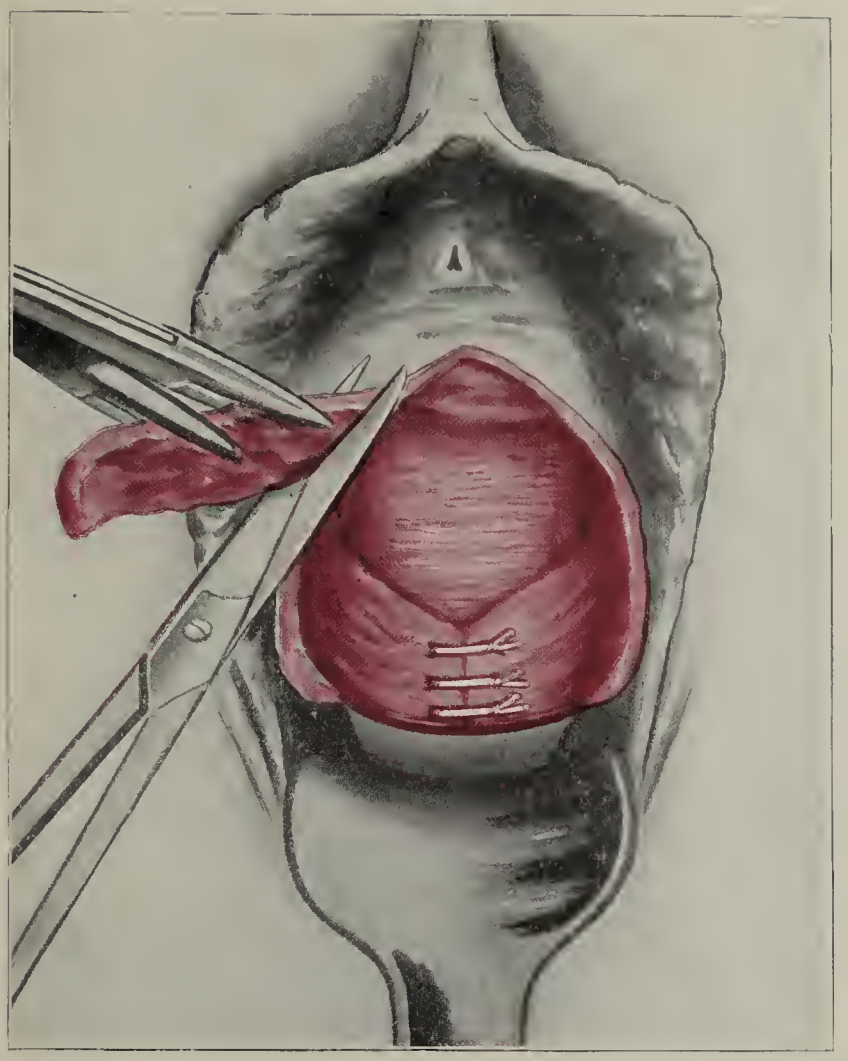


Fig. 8.—Broad Ligament Operation for Complete Descent of the Uterus.—The lower two-thirds of the severed broad ligaments have been united end to end by catgut sutures, thus forcing cervix still further back. The redundant vaginal wall (cystocele) has been cut away on the right and is being cut away on the left.

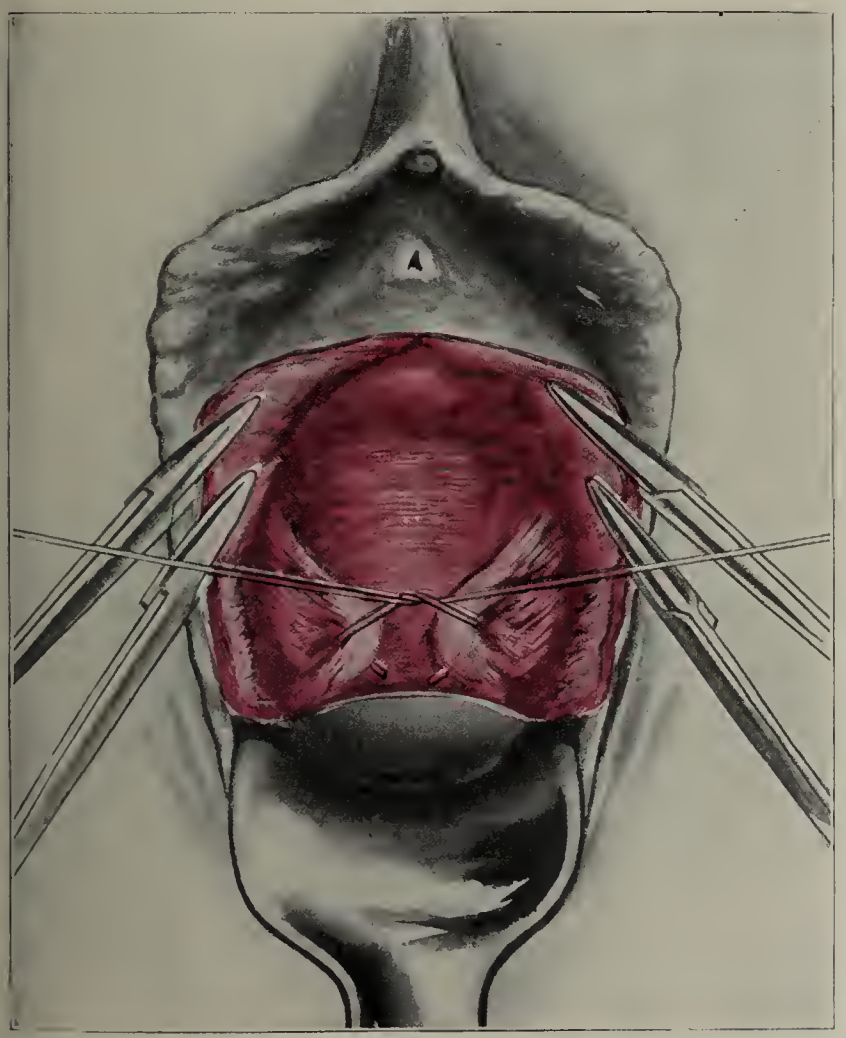


Fig. 7.—Broad Ligament Operation for Complete Descent of the Uterus.—The severed lower two-thirds of the broad ligaments are being approximated end to end by catgut sutures. First suture in place and being drawn tight. These ends as they are drawn together already are forcing the cervix back.

As already explained, the cut ends of these ligaments when united pull down together with them the adjacent parametric structures and in extensive operations also the round ligaments. Too tight tying is apt to strangulate the tissues, cause the sutures to cut out and prevent union. Number one or two chromic catgut ordinarily is used. Silkworm gut is better but difficult to remove.

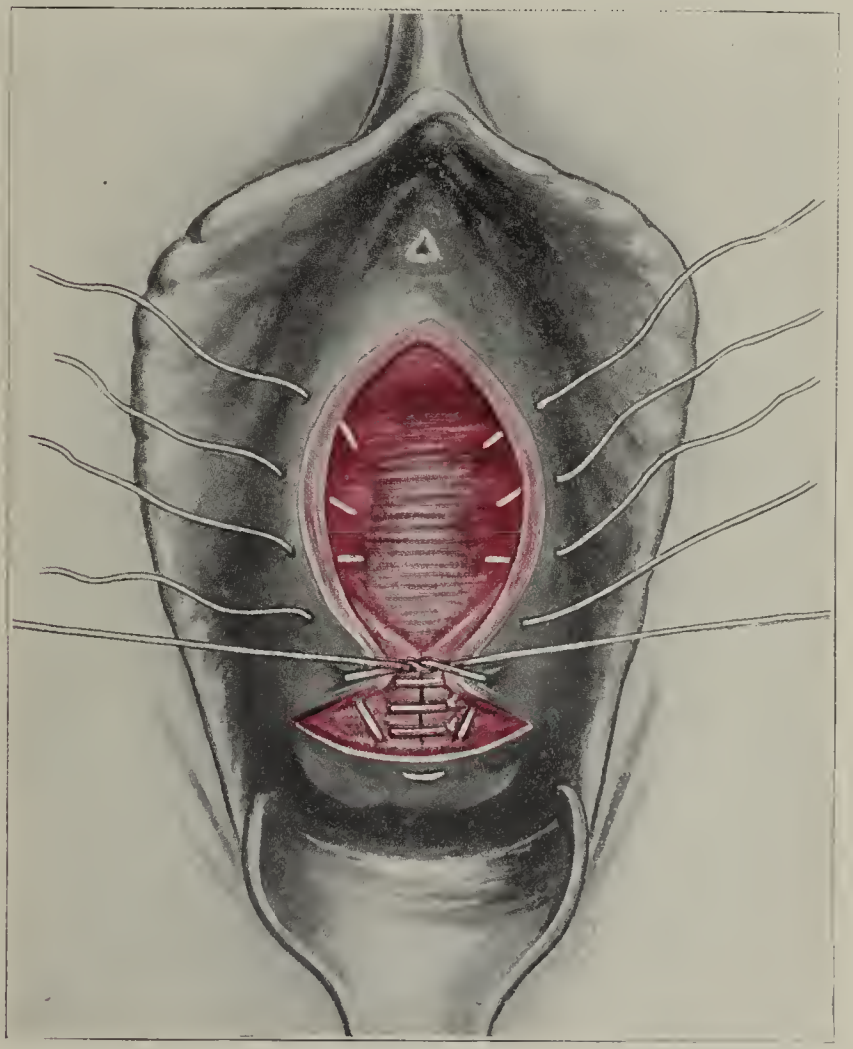


Fig. 9.—Broad Ligament Operation for Complete Descent of the Uterus.—The severed ends of the broad ligament having been united in front of cervix, and the cystocele excised, the cut edges of the vaginal wall are being approximated from side to side. The first suture, which is being drawn tight, shows how the margins are approximated near the cervix. The other sutures show the method of union between this first suture and the others, which are introduced but not tied. *Observe that these sutures all catch up the uterine wall, thus forcing the bladder up so that it can not come down again between the uterus and the vagina. This forcing up the bladder is a very essential factor in the success of the operation.*

END-TO-END APPROXIMATION OF THE BROAD LIGAMENT IN SUPRAVAGINAL AND COMPLETE HYSTEROMYOMECTOMY.

The older operation of hysteromyomectomy, by which the broad ligaments were ligated and permitted to retract to the sides of the pelvis was, in many cases, unsatisfactory, because the ligaments thus retracted could no longer contribute their part to holding up the pelvic floor and because consequently the operation often was followed by descent of the rectum, vagina and bladder to the vulva and in some instances outside the vulva. The purpose of end-to-end approximation is to utilize the ligaments in the performance of their normal sus-

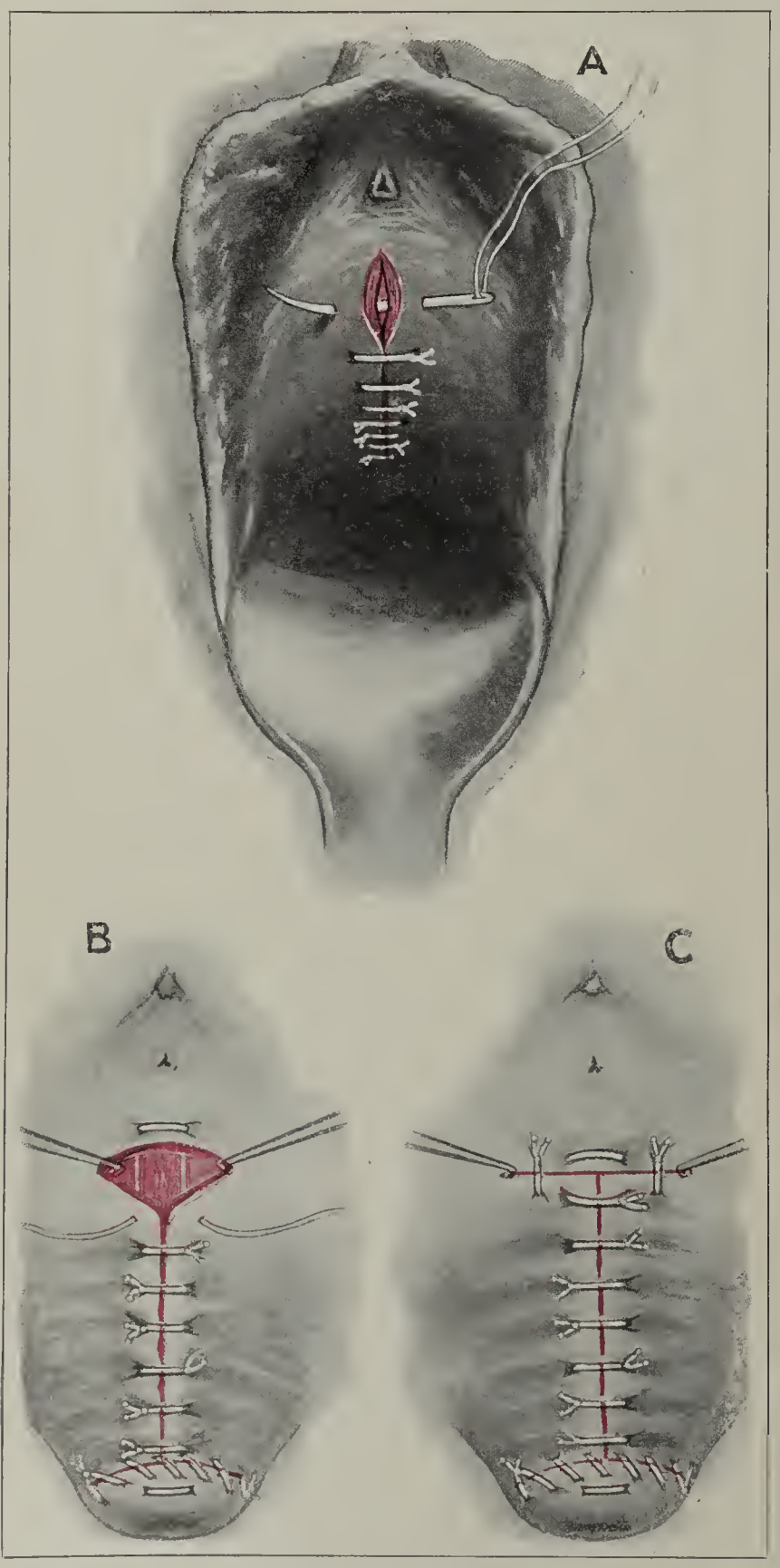


Fig. 10.—Broad Ligament Operation for Complete Descent of the Uterus.—The redundant vaginal wall having been removed (Figure 8) the lateral margins of the vaginal wound are being united by interrupted sutures. As the result of this union the cervix and upper end of the vagina have been forced back to their normal location in the hollow of the sacrum. B and C show the lines of union complete. At the urethral end of the wound the redundant vaginal wall can not be disposed of always by a median line of union. It may be necessary, as shown here, to unite that part in a direction at right angles to the main line of union. Traction is being made by tenacula at each end of this transverse line of union. The cervical lines of union also have the T shape.

Fig. 11.—Supravaginal Hysterectomy.—Median incision. Abdominal wound held apart by retractor. Myomatous uterus delivered through the wound. Broad ligament on either side clamped by two long forceps preparatory to supravaginal amputation of the uterus. Cervix uteri between tips of forceps. Bladder in front.

Fig. 12.—Supravaginal Hysterectomy.—Semi-diagrammatic. A transverse incision has been made in front of the cervix uteri at the vesical reflexion, each end terminating where the broad ligament joins the uterus. A similar incision has been made through the peritoneum on the posterior wall of the uterus, but on a line rather higher than the one on the front. The bladder has been stripped away from the cervix as far down as possible by the same kind of sponge pressure as shown in Figure 3. The posterior peritoneum has been stripped down toward the vaginal portion of the cervix in the same manner. The broad ligament has been divided on either side between the forceps and the utero-ovarian anastomosis has been clamped by an additional forceps.

taining functions. I published the essential principle of this operation in 1902, and here present it again in order to set forth certain modifications in technic.

Supravaginal Hysteromyomectomy Without Drainage.—Figures 11 to 16, with their legends, will explain the operation of supravaginal hysteromyomectomy as

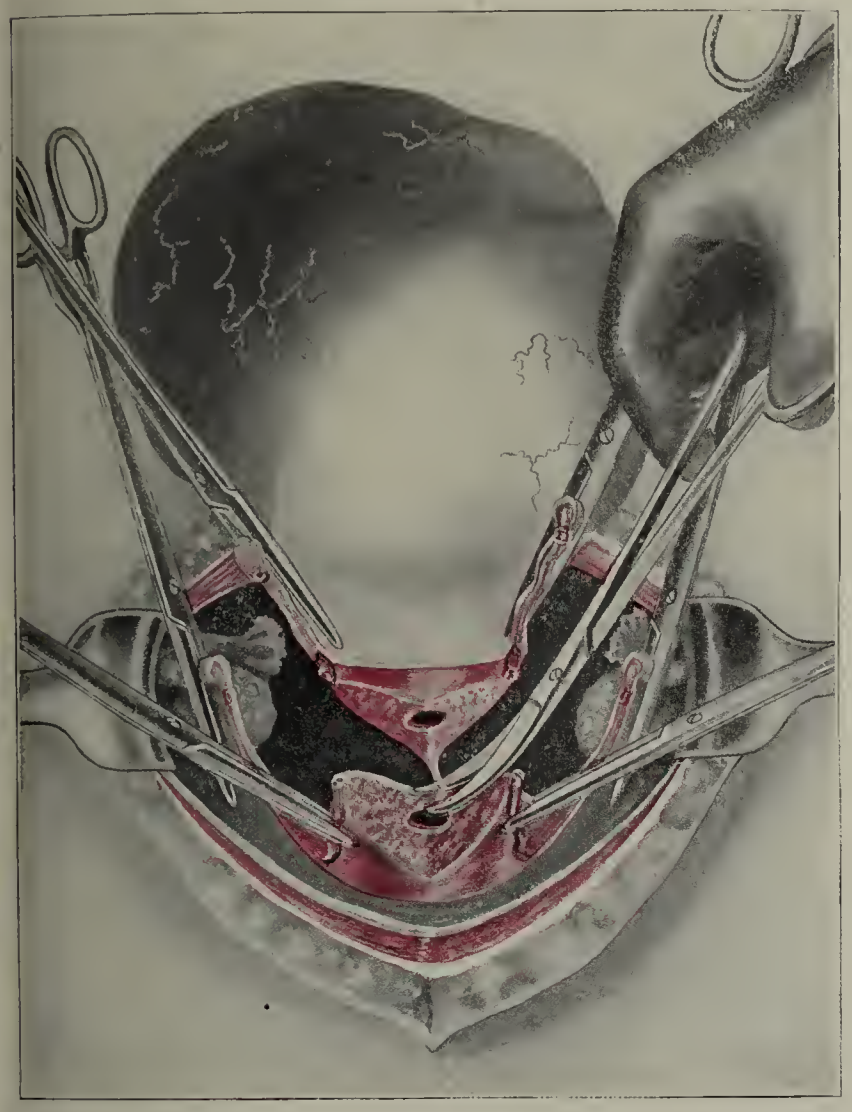


Fig. 13.—Supravaginal Hysterectomy. Semi-diagrammatic. The myomatous corpus uteri is being cut from the cervix by means of scissors. Observe the triangular incision is directed not in the lateral but in the anteroposterior direction. The tumor having been removed, the next step will be to secure the uterine and ovarian arteries by means of catgut ligatures on either side. This having been done the forceps are to be removed. The broad ligaments and the two sides of the cervical stump are then to be brought together.

Fig. 14.—Supravaginal Hysterectomy. Semi-diagrammatic. Looking down on the cervical stump and severed broad ligaments instead of looking at the anterior wall of the cervix as in Figure 13. Uterine and ovarian arteries secured by ligature. Two running catgut sutures catching up the peritoneal covering of the cervical stump and of the broad ligaments, one anterior and one posterior to the cervix and broad ligaments, have been passed in such a manner that when tied they will draw into apposition the two lateral surfaces of the cervical stump and will unite the ligaments, end to end.

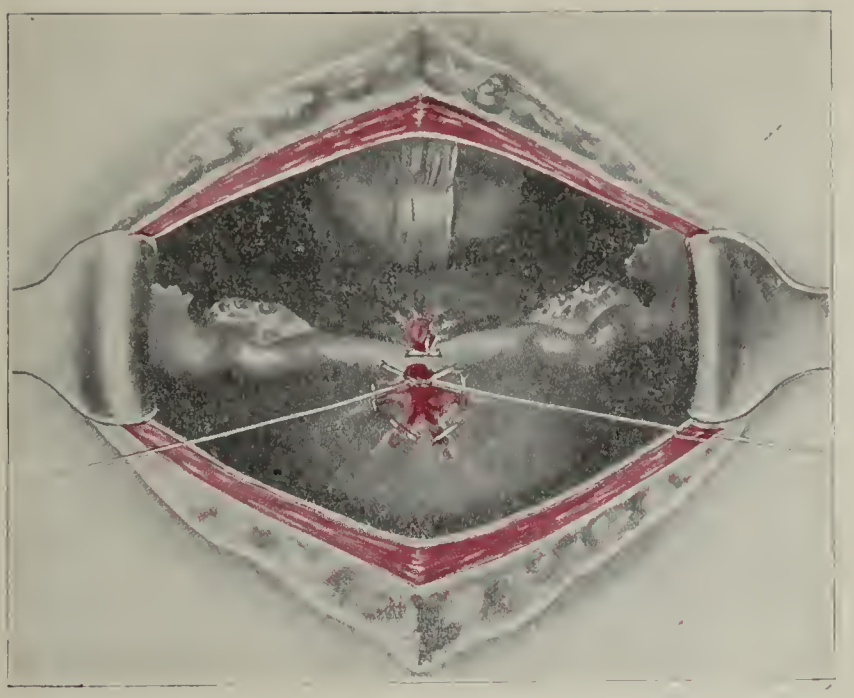


Fig. 15.—Supravaginal Hysterectomy. Semi-diagrammatic. The posterior continuous suture shown in Figure 14 has been drawn taut and tied. The anterior suture is being drawn taut preparatory to tying.

Fig. 16.—Supravaginal Hysterectomy. Semi-diagrammatic. The broad ligaments having been drawn together as shown in Figure 15 the approximation is completed by an additional running catgut suture beginning at the lower end of the line of union on the posterior side of the united ligaments and continuing over the edge of the ligaments down on the anterior surface to the bladder. This completes the closure of the pelvic wound.

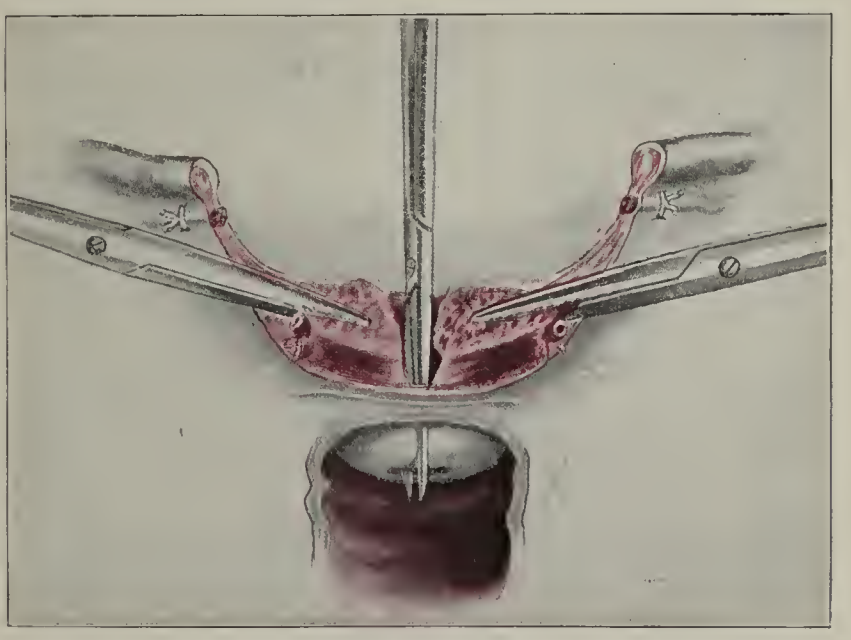


Fig. 17.—Supravaginal Hysterectomy. The corpus uteri has been removed, as shown in Figure 13. The uterine and ovarian arteries have been tied with catgut. The cervical stump is being held up and steadied by two forceps and divided anteroposteriorly into two equal lateral fragments clear to the vagina by means of scissors. In a very short, easily dilatable patulous cervix the uterine dilator introduced from above downwards might be used to divulse the cervical canal widely in place of cutting with scissors.

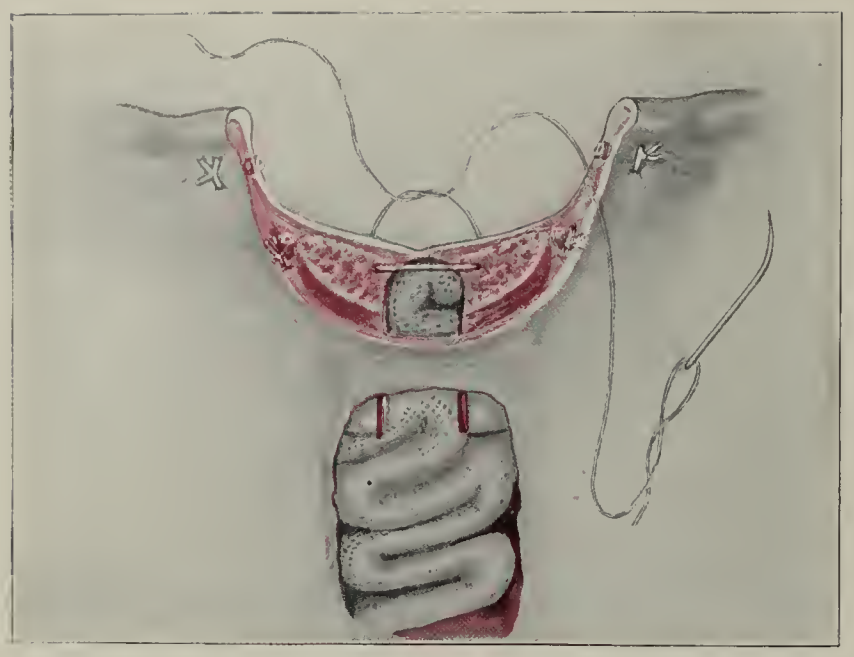


Fig. 18.—Supravaginal Hysterectomy. Semi-diagrammatic. The cervix having been divided or dilated as explained in the legend of Figure 17, a short strip of gauze is introduced from above downward into the vagina. The two fragments of the cervix and the cut ends of the broad ligaments are then ready to be united by sutures. The first suture is introduced but not tied. The operator may use the same form of suture as shown in Figures 14, 15 and 16, or may adopt any other form which the case may require.

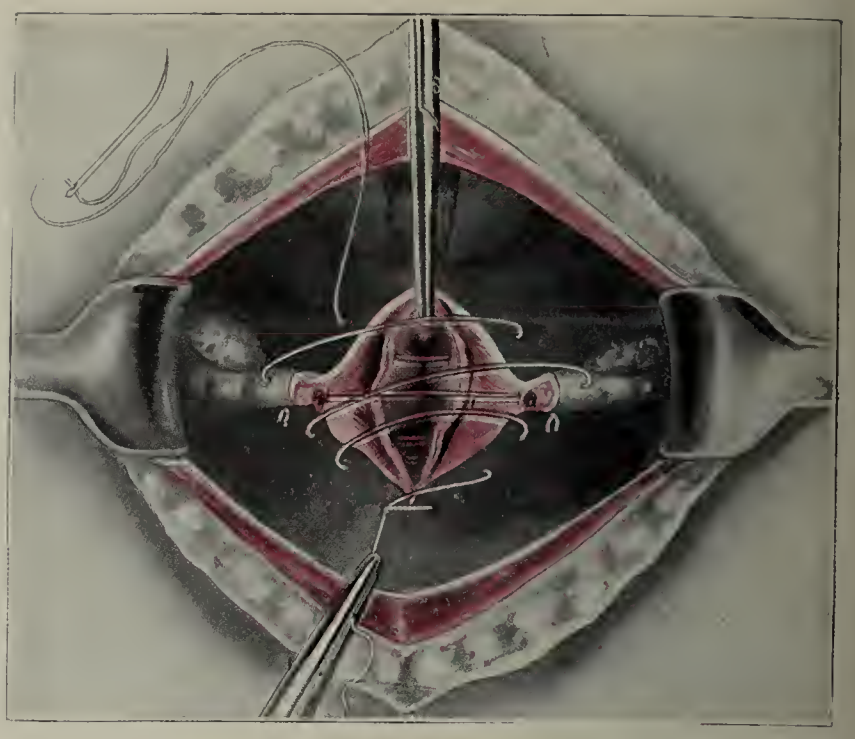


Fig. 21.—Complete Hysterectomy. Semi-diagrammatic. Continuation of Figure 20. The cervical stump having been removed, the cut edge of the vagina is drawn up by means of forceps and included in a continuous suture which closes the upper end of the vagina against the united broad ligaments which are brought together end to end. This form of suture is here introduced to show a method of union. Other forms of suture may be better suited to individual cases.

Fig. 19.—Supravaginal Hysterectomy. Semi-diagrammatic. Continuation of Figure 18. Vaginal gauze drain. End to end approximation of the broad ligaments by continuous suture. This suture is here intended to suggest a method of closure. Other forms of suture and methods of closure are permissible.

Fig. 22.—Reefing of Broad Ligaments After Removal of Uterine Appendages. For explanation see following page.

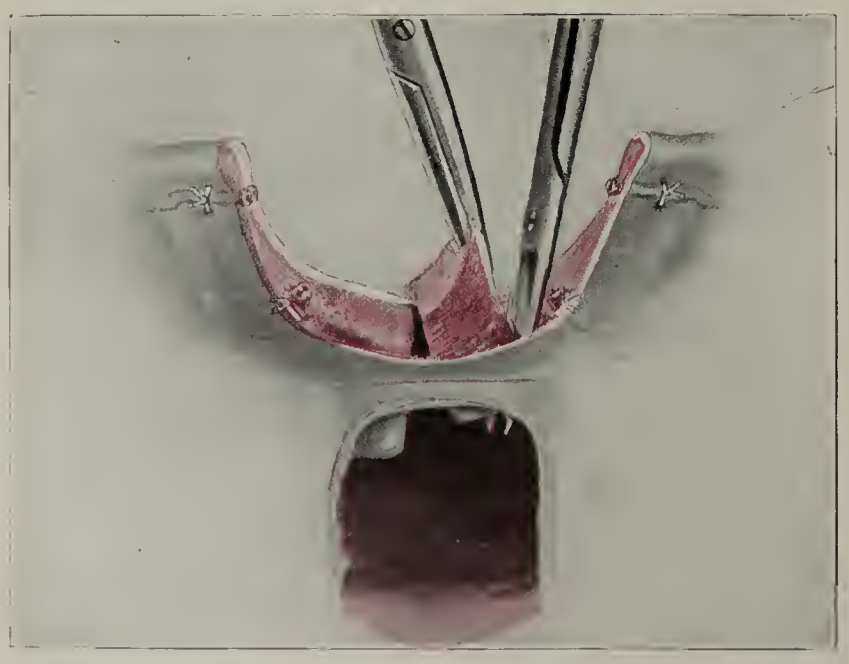


Fig. 20.—Complete Hysterectomy. Semi-diagrammatic. The myomatous corpus having been removed and the cervix split, the two lateral fragments are being removed by means of scissors, care being taken to keep close to the cervix in order to avoid the ureters.

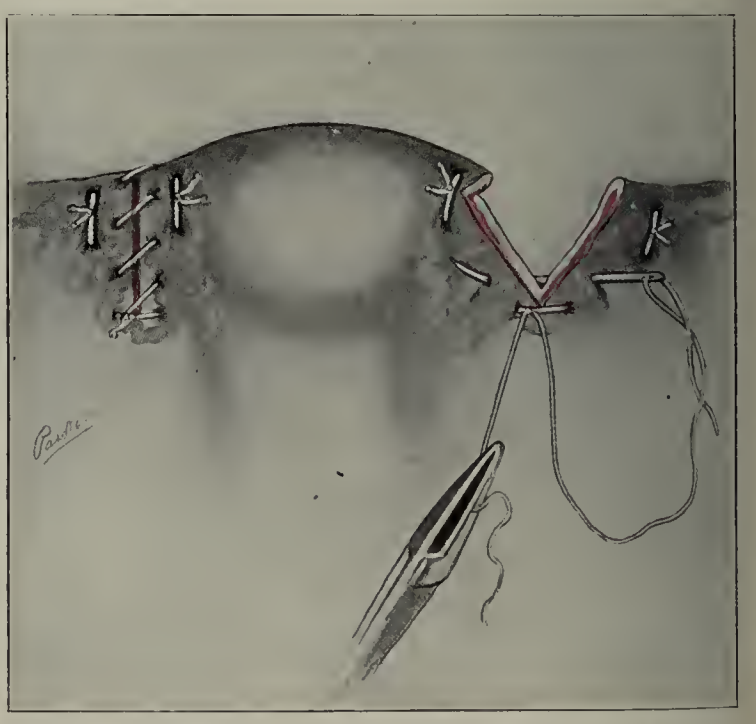


Fig. 23.—Reefing of Broad Ligaments After Removal of Uterine Appendages. For explanation see following page.

modified from the original publication. To secure simplicity, the non-essential anatomy has been omitted.

Supravaginal Hysteromyomectomy with Drainage.—There may be some pathologic condition in connection with the ligaments or the cervical stump which would indicate drainage so that any secretions which might form in the line of union may find their way into the vagina instead of into the peritoneum. Figures 17, 18 and 19, with their legends, illustrate the operation as modified for vaginal drainage.

Complete Hysteromyomectomy.—If the entire uterus is to be removed, the operation will go forward as already described for the removal of the myomatous corpus uteri. The cervix then may be cut out and the wound closed as shown in Figures 20 and 21.

ADVANTAGES OF END-TO-END APPROXIMATION.

1. The broad ligaments, in the anatomic sense, take the place of the excised uterus and form a pouch posteriorly like the cul-de-sac of Douglas, and anteriorly a depression that answers to the uterovesical pouch, thus conforming to the normal anatomy.

2. The broad ligaments, thus united, together with adjacent structures, hold up the rectum, bladder, vagina and other parts of the pelvic floor, and in so doing prevent the descent of these organs which so commonly results from hysterectomy as ordinarily performed.

3. The broad ligaments and adjacent structures, in occupying the space left by complete hysterectomy, prevent the intimate union of the rectum and bladder, a union which would leave only a thin wall between them, through which infection might pass from one to the other.

4. The operation is performed more easily and quickly by this method than by that of transverse suturing of the wounded ligaments.

5. There is, after closure, much less intraperitoneal traumatism and consequently less danger of sepsis, adhesions and secondary hemorrhage.

6. The mortality of the operation in my own cases during the last four years has not risen above 1 per cent.

REEFING THE BROAD LIGAMENTS IN THE REMOVAL OF THE UTERINE APPENDAGES.

The old and obsolete method of ligating the broad ligaments *en masse,* cutting off the tube and ovary and then dropping the raw stump back into the pelvic cavity, although surgically crude, yet had the advantage of shortening the broad ligaments and consequently of holding up the uterus and the other parts of the pelvic floor. A large proportion of the cases of removal of the appendages are complicated by backward or downward displacement of the uterus, and the displacement is apt to be increased by the modern operation of whipping over the edge of the broad ligament after removal of the appendage. The right side of Figure 22 shows the cut edge of the ligament. Instead of a running suture to unite the peritoneum on either side over this cut edge, I proposed, in 1902, to double it on itself and thereby to shorten the ligament. Although I have in no respect modified this operation, I venture to introduce it here both because of its effectiveness in holding the uterus in normal position and because the presentation of it completes the list of procedures in which I have been specially interested for the preservation of the functions of the broad ligaments and their adjacent structures in pelvic surgery. Figures 22 and 23 will serve to illustrate the method.

Figure 22 on the left side shows the anatomy of the circulation and two ligatures thrown around the ovarian artery, but not tied. The right side shows diseased appendages being cut away, the ligatures having been tied so as to shut off the blood current from the artery as it emerges from the infundibulopelvic ligament and from the utero-ovarian anastomosis.

Fig. 23 on the right side shows the raw edge of broad ligament after removal of the appendages. This ligament is being shortened by closure on itself by means of a continuous catgut suture. The left side shows complete closure and folding on itself of the broad ligament.

DISCUSSION.

DR. EDWARD REYNOLDS, Boston, said that if he disapproved of the proposed operation Dr. Dudley knows that he would say so, but as he listened to the paper he said to himself "Dudley has struck it this time." He would not, however, do this operation in young women likely to become pregnant. But nineteen-twentieths of the cases in which prolapse occurs are in women who will not again be pregnant. In Dr. Dudley's operation the natural supports are utilized so to fix the bulk of the support across the floor of the pelvis. This will so protect the natural supports that they are not likely to be broken down.

DR. E. E. MONTGOMERY, Philadelphia, agreed with Dr. Reynolds. He does not know of any condition that gives more trouble than an extensive prolapse, and after the description of this perfect procedure one is surprised that it has been overlooked so long. He has pushed off the bladder and tucked it up in order to keep it from pushing down, and then cut out a semicircular section on either side and lengthened the anterior wall of the vagina and overcome the cystocele, but this is not nearly so effective as the method mentioned by Dr. Dudley.

DR. R. WALDO, New York, said that if the broad ligaments hold, this operation may cure the disease, but we do not know that they will hold. All surgeons have had sad experiences wherein they have stitched fibrous tissues together. This does not always hold. Another principle which it is very essential to remember is the necessity of holding the fundus of the uterus forward, for in procedentia one of the first things to happen is retroversion. This operation will hold back the cervix. Dr. Waldo has operated for complete procidentia through the vagina anteriorly, bringing the fundus forward and stitching it there.

DR. F. J. TAUSSIG, St. Louis, said that it is as difficult to estimate the value of an operation for prolapse as it is that of an operation for uterine cancer, for in either case we have to wait three, four or five years after the operation to see if we have secured a permanent result. The method of using the broad ligaments instead of the round and the uterosacral ligaments is an improvement. Dr. Taussig recalls having seen Mackenrodt do a similar one in 1901, and since then he notes that Mackenrodt has given up this method. This method does not take into consideration the bladder. We know from experience in operating for prolapse that the recurrence is usually in the shape of a cystocele, and it is to guard against this that we must strive as much as possible. Seventy-five per cent. of these cases occur in women over 40. For these reasons the Freund-Wertheim uterovaginal plastic operation, in which the uterus acts as a plug for the cystocele, should be employed. Dr. Taussig finds in the reports of this operation 148 cases with a return of the prolapse in 5. This certainly speaks well for the operation. He believes it should receive more consideration at the hands of American surgeons.

DR. D. H. CRAIG, Boston, thinks that any of us who have had experience in the employment of the broad ligaments, as suggested some time ago by Dr. Dudley, have had occasion to be well satisfied with the manner in which they have functionated in their new relationship. The original causation of cystocele and other forms of descent of the vaginal wall, however, is almost invariably a laceration of the vaginal outlet, Dr. Craig emphasized the necessity of attacking certain

other conditions early; in his opinion if all these lacerations were promptly repaired cystocele would become of historical rather than of practical interest. Physiologically, the broad ligaments are required to possess enormous ability to elongate upward during pregnancy. In cystocele this ability simply manifests itself in the reverse direction, and since these ligaments have once partly elongated downward as the result of abnormal conditions below them, it may be that they possess an ability to elongate still further after the operation. To guard against this, operation must be done as early as possible and every item of injury to the vaginal outlet repaired. With this proviso the operation seems to Dr. Craig the best yet suggested.

Dr. E. C. Dudley, Chicago, stated that he has not performed the operation in young women, because his cases had occurred in women past middle life, but he would not hesitate to do so. The remarks relative to the operation of Mackenrodt, he declared, were irrelevant. Mackenrodt has never published a description of this operation, nor of any operation similar to this, nor has Dr. Dudley ever had any reason to think Mackenrodt ever performed it. The fact that he performed some other operation and subsequently gave it up as being unfit has nothing to do with the subject. In putting forth this operation Dr. Dudley said that he has had constantly before his mind anatomic conditions and the utilization of anatomic structures in such a way as to make them perform their functions with the least disturbance of normal relations. He emphasized the great importance of separating the bladder completely from the uterus, and pushing it up out of the way. He also reiterated the opening statement of this paper that the operation does not depend wholly on the supporting power of the ligaments, but also on other adjacent structures, the integrity also of which is restored by adjustment of the ligaments, this being an essential condition of success.

MILK IN INFECTIOUS DISEASES.

W. F. CHURCH, M.D.
GREELEY, COLO.

Milk has been used for so long a period and to such an extent that its status as a food ought to be settled beyond cavil or doubt. Unfortunately this is not the case. In this article it is my purpose to consider the objections to milk as a food for the sick, as well as its merits. Before discussing the advantages it may be well to consider briefly the actual conditions present, particularly in the digestive organs, in persons suffering from an infectious disease.

In infectious diseases it has not been found possible to prevent a steady loss of body weight by any method of feeding, save in rare instances. This varies in an average daily loss of from 0.33 to 0.5 of 1 per cent of the entire weight during prolonged fevers. A man weighing 150 pounds would lose from one-half to three-quarters of a pound daily or from 10 to 15 pounds in twenty days, notwithstanding that proper nourishment was supplied. In pneumonia the loss has been as high as 15 pounds in twelve days.

While the reserve fat is drawn on, the loss is chiefly in nitrogenous elements. It would seem to be an easy solution of the problem of feeding the sick to furnish as much nitrogenous food as is lost by excessive metabolism. Experiments show that if this is done the digestive organs are overworked, flatulence and loss of appetite may ensue, while in extreme cases an autointoxication may develop and instead of a gain there is a loss.

A man in health requires food equivalents of from 2,500 to 3,000 calories if measured in heat units. This must be divided among the chief classes of food in the proportion of 100 to 125 gm. of protein, 50 to 100 gm. of fat and 300 to 500 gm. of carbohydrates. The normal man can not get along well with protein or fat alone or with fat and carbohydrates without protein; neither can the man with an infectious disease, though perhaps the body's demand is not proportionally so great. In speaking of the need in fevers, Leyden of Berlin says: "Fats and carbohydrates are just as necessary as albumin, no one is preferred to the others." It has been estimated that a man ill with some form of fever needs from 2,000 to 2,500 calories to maintain complete renewal of structure. As this can not be entirely done, the actual need of the system is much less. Clinical experience is in entire accord with this view, as is easy to demonstrate that a patient does very well on much less. A laboring man if fed on milk would require 5 liters or approximately 3,000 calories a day, while 2 liters, 1,200 calories, have been found sufficient for an average patient stricken with an infectious disease.

There is a progressive weakening in digestion as an infection advances. The secretion of saliva is diminished or entirely checked, while mastication is difficult because of the dryness of the mouth and tongue. The gastric juice contains a diminished amount of hydrochloric acid, which may be entirely absent in some cases. The stomach may be weak and irritable, with its motor function impaired. According to Hoesslin, "on the part of the intestines fats and carbohydrates are quite well absorbed." These changes in the digestive organs vary according to the variety and intensity of the infection and its duration. It used to be taught that when the temperature was high absorption of food could take place only to a slight extent. This theory has long since been exploded, though probably tenaciously held yet by some. Proper food correctly administered does not apparently increase the temperature. Indigestion with flatulence and possibly a decomposition of albuminoids producing an autointoxication may exaggerate symptoms and cause a rise in temperature.

In a number of instances made in typhoid fever by experts attached to the U. S. Department of Agriculture it was found that about 80 per cent. of the protein in milk appears to be assimilated. It was also found that nitrogenous elements were more easily assimilated and in larger quantities when water was given freely. This was especially true when the temperature was high.

It is the ordinary custom at the beginning of an infection to stimulate the action of the bowels for the purposes of elimination. When this is done the patient is ready to be placed on a gradually increasing diet, whether he craves food or not, in order that the body may be fortified to withstand any demands made on it. Of what shall this diet consist? What shall be the chief article of food? To the unprejudiced, careful investigator milk is found to possess the necessary constituents that make it an almost ideal food for the sick. It contains protein, fat and carbohydrates, together with a small amount of salts usually required by the system, or all the ingredients needed to sustain and to nourish the body.

As a rule, milk is easy to obtain and, being a liquid, is readily administered. This is of great importance in sickness among the poor or in families where skilled preparation of food can not be expected. As each liter or quart contains 35 grams of albumin, 35 grams of fat and 45 grams of sugar, or energy represented by 610 calories, it does not require an expert or a chemist to estimate the amount of nutritive products the patient is receiving each day. It is probable that no other food

suitable for the sick can be gauged more accurately. The food value of soups, broths, etc., can not well be accurately measured except by the effect on the patient, and unnecessary weight may be lost before the discovery is made that the feeding is inadequate. As milk holds globules of fat in suspension, it is soothing to the irritated or inflamed mucous membrane of the alimentary tract. The diuretic effects from lactose which is readily absorbed and water are worthy of consideration as an aid in the elimination of toxins, for similar results can not be obtained from any other suitable food.

Some writers object to milk as food for the sick for some of the following reasons: It sometimes causes constipation; a certain form of bacterial decomposition may develop and possibly diarrhea; it is deficient in iron and has too large a proportion of fat compared with the protein and carbohydrates; it is insipid and, most important of all, forms tough, indigestible curds, which by blocking the lumen of the intestines or coming in contact with ulcerated surfaces in typhoid may endanger life.

One author (Benedict) objects to milk on account of its constipating effects and at the same time complains of the excess of fat, which tends to prevent constipation. It is a well-known fact that cream cheese does not have the costive effects of skimmed cheese or that made from milk with from 45 to 90 per cent. of the cream removed. If there is a deficiency in iron it can readily be supplied by occasional feeding with some liquid preparation of beef. If there is diarrhea or bacterial decomposition, or both, by a change in the quantity or in the method of giving milk proper conditions may be produced; if not, mixed or alternate feeding with other food substances may correct the abnormality.

The objection to the excess of fat can not be sustained by substantial reasons. The fat in milk is suspended in a fine emulsion. As a result the action of the intestinal juices in emulsifying fats is unnecessary, and the weakened organs are thus saved considerable work. It can reasonably be expected that the fat in milk is digested and absorbed to a much greater extent than would fat in other forms. It is known to be absorbed to a large extent even in typhoid. So great an authority as Klemperer does not seem to think that there is an excess of fat, for he states that in enteric fever "an addition of 50 grams of sugar of milk and 100 c.c. of cream to 1 liter of the milk markedly increases the nutritive value." By the addition of 0.5 liter of cream and 100 grams of sugar to 1.5 liters of milk the full theoretical calory requirement is attained, according to the same authority, if the patient is given a little alcohol in addition. If this amount of food could be properly digested each day the loss of weight should be reduced to a very small fraction.

The chief objection and the one that is entitled to careful consideration is that tough, cheesy curds are formed in the stomach and intestines, which may really do harm in their passage through the lower tract. To what extent is this true? When milk enters the healthy stomach it is at once coagulated by the action of the acids of the stomach and the rennin of the gastric juice. The casein thus separated into curds is then attacked and digested by the gastric juice. Should the stomach contain an excess of acids the curdling process will be more rapid and the curds firmer in consistency. If less hydrochloric acid is secreted, as is usual in infectious diseases, the clotting process must be slowed, but the curds need not be tough. On the contrary it is reasonable to expect that a softer curd would be the result.

If hydrochloric acid were absent or secreted in very small amounts there might be only a small degree of coagulation and consequently only a partial digestion of casein. If the curds were never compact they could cause no damage to ulcerated areas in the intestines. It is possible that the consistency and shape of undigested masses may be changed in the lower bowel. Curds found in stools may be quite different from those which passed through the small intestine. It is well to remember that curds do not have sharp edges or square corners, and that if they were not redissolved the friction and irritation to the intestinal wall would be less than that of a solid food, unless very finely divided. A high temperature can have but little effect on the curdling process, for in making cheese milk is heated to 110 or 112 F., yet several hours are required for separation of the curd, even with the help of rennin.

The indigestible curd is the *bête noire* that manufacturers of prepared foods hold up to physicians to induce them to use their preparations. One of these not long ago sent out an attractive pamphlet containing expensive cuts, which, together with the reading matter, were evidently intended to frighten the physician with possible dire results from milk curds in typhoid ulceration. A demonstrator of medicine in an Eastern school gives an elaborate account in this pamphlet of an autopsy performed on the body of a patient dead from typhoid, in which twenty feet of intestines were found filled with caseinous masses. He further claims that in autopsies made on typhoid cases fed with milk alone he has observed "the presence of tough cheesy curds in the intestinal tract, sometimes in considerable amount." He further states that "they occurred with more or less frequency" and draws the conclusion that they might be the determining factor in producing a serious outcome. The intention is apparently to impress the reader, who is, of course, a physician, that curds are found frequently at autopsies and that they are dangerous factors. Fortunately, they can be prevented, it is claimed, by using a certain food preparation, the virtues of which are extolled toward the close of the circular. Wishing to learn to what extent leathery curds were found at autopsies, I wrote to three of the leading pathologists in the United States, asking them to kindly answer the following questions:

1. In your examination of bodies dead from typhoid or other diseases, how frequently have you found a tough leathery milk curd in the small intestines?

2. If found, was this curd a cause of death or a contributory cause?

3. Was its formation due to defective digestion or to the conditions just preceding inevitable death?

Prof. L. Hektoen, of Rush Medical College, gave a negative answer to questions 1 and 2, which is also an answer to question 3.

Prof. Joseph McFarland, of the Medico-Chirurgical College of Philadelphia, states: "In cases in which I have opened the intestines myself I have scarcely ever found such curds, and in no case in which I did find them did I regard them of importance."

Prof. W. T. Councilman, of the Harvard University Medical School, answered these questions as follows:

"1. I have seen such masses.

"2. I have not considered that they contributed to death.

"3. I have regarded them as due to an injudicious pushing of a milk diet."

Since only two of these careful observers have discovered such curds, and one of these has scarcely ever found them, the conclusion can safely be drawn that they are rarely present at death. All were of the opinion that they were not a contributory cause of death. Is this testimony of these three eminent pathologists sufficient to lay the grim specter that has stalked in the shadow of tough, indigestible curds?

Much can be done to modify the curdling process in milk. If there is difficulty in digestion it is important that the casein be separated in a more flocculent form. Water given with milk or immediately after retards the clotting process and probably prevents a too firm formation. When water contains alkaline salts in solution it is hardly necessary to resort to limewater. Milk may be diluted with gruels made from cereals or with tea, coffee or cocoa. Not only will the process in the stomach be somewhat modified, but the insipid taste will be partly removed. At times it may be advisable to administer sour milk or buttermilk, each of which contains about one-half the calory value of sweet milk. When digestion seems difficult it may be a good plan to peptonize or pancreatinize the milk, that separation of casein may take place outside of the stomach.

The addition of citrate of sodium, from 1 to 3 grains to the ounce of milk, is being used in infantile feeding with great success. It apparently aids in preventing wrong curd formation or by rendering the casein more suitable for digestion. Being practically harmless, it can be added to milk given to adults when desired.

As milk requires about three hours for digestion in the stomach, the patient should not be fed oftener than this period, except in extreme cases. The stomach undoubtedly needs rest during disease as well as in health.

I do not advocate an exclusive milk diet, but I do claim that milk should be made the principal food substance in infectious diseases. Other valuable foods, such as the albumin of eggs or the juice of beef, which contains 6 per cent. of protein, may be used for alternate feeding or as adjuvants. Occasionally a patient has an extreme repugnance to milk and must be nourished by other foods.

Greater attention is probably paid to diet in typhoid than in any other infection, because of the intestinal lesions, and yet it has been claimed that less than one-fourth of the deaths are due to hemorrhage or perforation, while nearly one-half died from the severity of the infection. In other diseases, like pneumonia or variola, it is the severity of the infection that is the chief cause of death. Hence the great need in all severe diseases of maintaining the strength of the patient by proper nutrition. Lack of attention to feeding has undoubtedly been the cause of many deaths. For the system to win in a severe fight with the agents of death it must be fully and continuously supported.

The physician is beset by agents representing manufactured foods, each, according to claims made, superior to all others in some particulars. Some undoubtedly have merit and can be used to advantage for a brief period or for alternate feeding. The liquid preparations are ready for instant use and are easy to give at night. Their chief drawback is that they contain only albuminoid food, or nothing to maintain the vital processes unless it is the high percentage of alcohol. It may sometimes be forgotten by those opposed to alcoholic stimulation that the peptones are mummified in spirits and that with each ounce of food nearly one-half ounce of whisky or its equivalent is given.

At the Weld County Hospital, during the past four years, sixty-nine cases of typhoid have been treated in the charity department by different physicians, with a loss by death of two cases, or 3 per cent. The diet was exclusively one of milk, except when unfavorable abdominal symptoms developed. This record is much better than the average, though the nursing was probably not up to the usual hospital standard. So long as such results continue a change of feeding would apparently be unwise.

Shall physicians listen to the siren voices of commercialism and be cast adrift on the shoals of contrary claims and false representation, or shall they hold fast to a tried and efficient diet for the nourishment of the sick?

THE QUANTITATIVE ESTIMATION OF DIET, IN PRIVATE PRACTICE.*

A. L. BENEDICT, A.M., M.D.
Consultant City and Riverside Hospitals, Attendant in Digestive Diseases, Mercy Hospital.
BUFFALO.

The science of cookery is an important branch of pharmacy, in the broad sense, the decision as to the quality of a food stuff, an important branch of pharmacognosy, and the management of the diet by the physician, a branch of therapeutics. The quantitative estimate of foods consumed, and a knowledge of their active, nutritive principles, is quite as necessary as a knowledge of drug dosage, with the proviso that the necessity for accuracy in the amounts prescribed is inverse to the powerfulness, that is, the toxicity of the substance administered. While in health a normal appetite or even habit may be a tolerably safe guide to the nature and amount of the food ingested, quantitative estimates become necessary in disease, especially as the disease influences or is influenced by metabolism, so that the avoidance of an excess or deficit or the purposive creation of an excess or deficit of food in general or of any particular kind of food, has a direct bearing on the case. Obesity, leanness and emaciation, consumption, anemia, protracted fevers, especially typhoid in this climate, diabetes, gout and lithemia, direct disturbance of the nutritive and eliminative organs, nutrition of infants and the mentally deranged, including hysterics and the victims of habits, may be mentioned as requiring especial dietetic attention.

In this paper, the control of diet in institutions in which accurate metabolism experiments are feasible, will not be discussed, but only means available in private practice and involving approximate yet sufficiently accurate methods from the practical standpoint.

The following general rules should be laid down:

1. No single article of food contains the requisite proportions of the various proximate food principles necessary. To this rule we have one practical exception, that human milk or other milk, made to conform approximately to the gross analysis of human milk, is a satisfactory food for young infants, say up to the age of one year. This exception holds because the infant is build-

* Read in the Section on Pharmacology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

ing tissue, including fat, at a rate never subsequently paralleled and because the infant starts life with an excess of iron in the liver and, less markedly, in the spleen and marrow. An exclusive milk diet ordered for an adult for more than a few days is a therapeutic crime often terminating in homicide. A theoretic exception exists in the case of a few purely artificial foods, some of them available for a few days. In most instances, the claim that a certain proprietary article is an adequate, complete nutriment can be excused only on the ground of gross ignorance. Even if a theoretically adequate single food stuff existed, it would not sufficiently stimulate the digestive secretions.

2. The conception of condensed nourishment is utterly fallacious. The minimum daily adult requirement is about 50 grams of proteid, 300 of carbohydrate and 50 of fat and about 10 of mineral substances. The first three being, on the whole, lighter than water, the volume occupied is more than 400 c.c., approximately a pint. For various reasons, chemically pure nutriments are not compatible with the maintenance of life and the amount of indigestible material and water, contained in even apparently dry and concentrated food stuffs, can not fall much short of 50 per cent. Thus, about 800 grams, nearly two pounds, of solid food, occupying a bulk of nearly a quart, and not susceptible of any considerable compression, represent the minimum ration.

3. In any case, allowing for deficiencies of absorption of nourishment, and deficits or excesses to be created according to opposite conditions inherent in the case, and allowing also for habits of exercise, and disturbances of oxidation, the attendant must start with a definite conception of the ration for each proximate nutritive principle proteid, fat, carbohydrate, sodium chlorid, iron or hemoglobin, water, etc. needed. He must then translate these requirements into terms of ordinary food stuffs, allowing as great a variety as possible.

4. With certain rather rare exceptions, the following limits may be stated: Proteid, not less than 50 nor more than 150 grams are to be given. Russell H. Chittenden's experiments should be taken as showing the minimum allowance of proteid on which the body, with an ample allowance of fuel foods, can possibly maintain a balance. To hold that anything in excess of this minimum is injurious, would be analogous to saying that no clothing should be worn beyond that necessary to prevent arrest and frost bite. The various older standards seem to show that somewhere between 60 and 100 grams of proteid is the proper ration. In diabetes we are compelled to use proteid vicariously as a fuel food, but it is seldom advisable to exceed 150 grams.

Fats need not be given at all, their place being filled by proteid and still better by carbohydrate. About 30 grams may be introduced in apparently fat-free food. One hundred grams is the maximum desirable for a healthy person, about 10 per cent. being then passed through unabsorbed. When 150 grams are given, at least 20 per cent. is unabsorbed, and this is about the limit even in diabetes and phthisis and other states in which we are anxious to maintain or to increase the weight.

Carbohydrates, even in diabetes, except for a few days, must be given to the extent of 80 grams to prevent fatty acid intoxication, culminating in acetonemia. In obesity, it is well to reduce them moderately, but not so much as to prevent the formation of the requisite minimum of about 2,000 calories, for it is usually impossible to force the body to consume its store of fat by drastic measures. Three hundred grams is sufficient for persons exercising moderately at moderate temperatures and 500 grams is nearly the limit even under conditions of extreme physical exertion and cold.

Of sodium chlorid, about 9 grams a day seems to be required or, at least, advisable; as much as 30 grams may be taken without obvious harm, at least for a limited period.

Of iron, about 10 centigrams is required and this amount may be many times exceeded medicinally, without doing either harm or good. Generally speaking, enough iron and salts, aside from sodium chlorid, are taken in a fair ration of meat.

Of water, from 3,000 to 3,500 c.c. are required, the minimum normal elimination by the lungs, skin and kidneys being about 1,000 c.c. each. A little water, possibly sometimes as much as 300 c.c. is actually produced by oxidation in the body. About 1,000 c.c. are usually introduced in solid foods, leaving about 2,000 c.c. to be introduced in fruits and beverages, including water, of which about 1,000 c.c. should be taken. If there is excessive sweating, diarrhea or diuresis, more should be given, though not to the degree of maintaining the latter functions to a pathologic degree. Even in dropsy, water should be only moderately curtailed.

TRANSLATION OF FOOD REQUIREMENTS INTO TERMS OF ORDINARY FOOD STUFFS.

With regard to the problem of translating food requirements into terms of ordinary food stuffs, it is convenient to divide the latter into groups somewhat independent of the primary classification of proteid, fat and carbohydrate. To avoid undue prolixity, the matter of the other proximate principles will be disregarded.

Group 1.—Food stuffs composed of practically only one organic proximate principle. There is no natural food consisting of proteid alone, although lean meats, poultry, game and fish may be considered as 20 per cent. dilutions of proteid, the fat amounting only to about 1 per cent. and the carbohydrate to less. White of egg is nearly pure proteid, amounting to 5 grams per egg. Various artificial proteids are on the market.

Sugar, sago, tapioca and corn starch are nearly pure (98 per cent.) carbohydrate.

Butter, lard and olive and adulterant oils contain practically nothing but fat, butter being about 90 per cent., the oils almost 100 per cent. fat.

Group 2.—Fodder vegetables containing practically no nutriment for man or other non-herbivorous animals. There is no objection to the use of these vegetables in moderate quantities and they are even useful to stimulate peristalsis and as antiscorbutics, but they are usually out of place in dietaries for invalids. It should be remembered that, on account of the burial of starch and sugar in dense masses of cellulose, the body does not derive even the amount of nutriment shown in analytic tables.

(*a*) Almost entirely lacking in nutriment are: Asparagus, cabbage sprouts, cauliflower, celery, cucumbers, beet greens, lettuce, rhubarb, sauerkraut, spinach (relatively rich in iron), tomatoes (rich in oxalates and hence harmful in gout, etc.).

(*b*) Containing nearly 5 per cent. of theoretically available but practically unavailable carbohydrate are: Cabbage, eggplant, kohlrabi, leeks, okra, pumpkin and radish.

All of these may be allowed in diabetes, to amuse the patient.

Group 3.—Ordinary sweet fruits and certain succulent vegetables not of the nature of seeds (though, of course, containing seeds). Few of these contain more than 1 per cent. of fat, nor more than from 2 to 3 per cent. of proteid. On account of their consistence, neither proteid, fat nor starch is digested to any degree, but their freely soluble sugars, levulose and dextrose are quite absorbable. These substances vary from 5 to 15 per cent. or more in preserves, artificially sweetened, but as it is not usually advisable to give more than from 100 to 200 grams of such fruits and vegetables in a day, the total quantity of nutriment does not exceed 50 grams of carbohydrates and is usually much less.

Group 4.—Fresh legumes, peas, beans and lentils, contain about 0.5 per cent of fat, from 2 to 9 per cent. of proteids and from 5 to 20 per cent. of carbohydrate, but there is much waste on account of their consistence and, as they are best given in purées, it is exceedingly difficult to estimate their nutritive content.

Group 5.—Dry leguminosæ and gramineæ seeds and meals, including bread stuffs, and cereals in the restricted sense. Seeds are the only plant parts commonly containing enough proteid to nourish non-herbivorous animals and only seeds of these two orders are commonly employed as foods, although various nuts will be mentioned later. Providing that these seeds are ultimately sufficiently comminuted and cooked, it makes very little difference whether they are bought as seeds or as flour or meal and whether they are cooked into crackers, biscuit, cake, bread, or are used in other forms. While there are considerable individual variations, this group contains close to 1 per cent. of fat, from 7 to 25 per cent. of proteid and from 50 to 70 per cent. of carbohydrate, mainly starch.

Meals, flours, crackers and breakfast foods all contain about 10 per cent. of proteid and from 65 to 70 per cent. of carbohydrate, fat being artificially added to crackers and biscuits, so that the natural 1 per cent. content may amount to as much as 13.5 per cent. for certain Graham and oatmeal crackers. Macaroni contains 10 per cent. of proteid, 70 per cent. of carbohydrate and practically no fat. Bread is relatively moist, not to mention its distension with bubbles of carbon dioxid produced by yeast at the expense of carbohydrate. It contains about 8 per cent. of proteid, 1.5 per cent. of fat and 50 per cent. of carbohydrate and is usually spread with about 10 per cent. of its weight of butter. Gluten bread contains from 10 to 15 per cent. of proteid and about 40 per cent. of carbohydrate and does not differ enough from ordinary bread to be seriously considered in diabetes. Indeed, the name furnishes an entirely false sense of security. Oatmeal is popularly supposed to be highly strengthening but, as a matter of fact, there is not enough difference between oatmeal, corn, wheat and rice to amount to much, while the chaff of oatmeal is distinctly harmful in ischochymia. Oats also contain a toxic principle. Neither is there any appreciable difference between new process and whole wheat flour, in spite of the mass of hysterical literature on the subject.

Group 6.—Vegetables containing almost no fat, little proteid and moderate amounts of carbohydrate. The principal members are the Irish potato, 2.1 per cent. proteid, 22.2 per cent. carbohydrate; sweet potato, 1.5 per cent. proteid, 27.5 per cent. carbohydrate; banana, 4.8 per cent. proteid, 20.2 per cent. carbohydrate. Patients should be warned that the banana is different from all other fruits in common use and physicians should remember that it is the only important source of starch ingested raw. It does not, of course, digest till the stomach is passed, except, perhaps, for the absorption of sugar and digestion of some proteid. This may or may not be a contraindication to its use.

Beets, turnips, carrots and parsnips contain about 1.5 per cent. of protcid and somewhere near 10 per cent. of carbohydrate, but on account of their consistence they are not important nutritives.

Group 7.—Fat meats. Clear salt pork and bacon and what appears as clear fat of other meats contain about 1 per cent. of proteid and 80 per cent. of fat. A streak of lean increases the proteid to 8 per cent. and reduces the fat to 70 per cent. The muscle of mutton and pork and of the base of tongue is infiltrated with fat, so that the percentage of fat is about 35 and that of proteid 15.

Group 8.—Eggs. It is more convenient to deal with the actual amounts than percentages of nutriment. The white contains about 6 grams of proteid. The yolk contains 2.5 grams of proteid and 5 grams of fat. Six eggs, therefore, contain 51 grams of proteid, enough for a day's minimum ration, in addition to 30 grams of fat. Some years ago, an article appeared entitled "The Fable of the Egg," in which the author advised the use of 20 or more eggs a day, largely in a raw state, as an excellent ration. The use of the word "fable" was unintentionally appropriate. Obviously, any such number would afford a ration excessive in proteid and high in fat and, although the number of calories is nearly correct in theory, if two dozen eggs are taken, the lack of carbohydrate is not to be lightly considered. Raw egg-albumin is not always assimilated and, in such amount, would be liable to be excreted by the kidneys as a foreign substance. It is doubtful if eggs have the aphrodisiac power popularly attributed to them. While eggs are easily counted, it is worth while to remember that, in the form of a light omelet, two eggs make more show than four scrambled. Hard boiled eggs are quite easily digested, especially the whites. Indeed, pretty nearly every popular idea about eggs as food is incorrect.

Group 9.—Milk varies considerably in different animals, referring both to species and individuals. Cow's milk contains approximately 4 per cent. of each kind of organic nutriment. Cream contains about 3.5 per cent. each of proteid and carbohydrate and from 20 to 25 per cent. of fat. Cheese contains 25 per cent. of proteid, 30 per cent. of fat and only 5 per cent. of carbohydrate, differing according to kind. When sterilized by cooking, cheese is an excellent article of diet, even in the much maligned form of Welch rabbit (not rarebit). Milk is an exceedingly bad diet for patients, on account of its liability to tuberculous infection, colon bacillus infection with production of tyrotoxicon, saprophytic contamination, poverty in iron, the improper distribution of its organic nutriments for adults, its tendency to coagulate into indigestible masses, the large amount necessary for anything like adequate nutrition by calories, and the tendency to levulosuria when such adequate amounts are taken. Clinical typhoid is really, in many instances, a comparatively mild original infection, plus a fatal intestinal toxemia due to saprophytosis plus inanition, the last two items being directly due to milk diet. And yet, milk is almost indispensable in dietetics, if used with other foods and in moderation. The old rule of thumb, that a typhoid patient could be nourished on a quart of milk a day is almost homicidal. Five feedings daily of milk, variously modified, as in the form of weak coffee and cocoa, 250 c.c. to each feeding, with four soda crackers or other bread stuff at each feeding, is al-

most a theoretically ideal ration, except for the lack of iron, which can be compensated by the occasional use of meat extracts.

Milk and eggs together, as eggnog, with or without whisky, or as baked or boiled custard, and preparations with salt and not sugar, approaching the omelet, the German pancake and one form of Welch rabbit, are highly nutritious.

QUANTITATIVE ESTIMATION OF DIET.

In estimating a dietary quantitatively, we have two clinically applicable methods, one in which convenient units are counted, the other in which actual weighing is used. The former is obviously less accurate but is more convenient and, in the case of travelers, business men and residents of boarding houses and hotels, is the only one available. The dietary under this method need not be so very restricted.

Milk, cream and salad oils may be measured by cupfuls or glassfuls or spoonfuls, respectively. An ordinary tumbler or coffee cup contains about 200 c.c. when filled to the customary degree. A tablespoon holds about 15 c.c., a teaspoon 5 c.c. Cane sugar averages 6 grams to the lump.

Crackers are quite uniform for each kind and the number in a pound (about 470 grams net) may be counted. Small round Jersey crackers, weight about 6 grams, soda crackers, from 22.5 to 25 grams. Hard rolls weigh very nearly 60 grams, equally divided into two parts. Shredded wheat biscuits weigh 30 grams, or 3 of proteid, 2 of fat and 20 of carbohydrate to each.

Eggs have already been discussed. In the case of omelet and scrambled eggs, the patient can inquire how many are served.

Bananas average about 3 grams of proteid and 9 of carbohydrate each.

Tea and coffee can be estimated by the milk or cream and sugar added. Chocolate and cocoa contain an appreciable quantity of all three prime nutriments but, as ordinarily served, so little is used that we may neglect this and inquire whether the beverage is prepared with all milk or half milk and half water and add only the equivalent of a lump of sugar to our estimate, as for tea and coffee.

A lamb chop contains about 30 grams of lean meat, 20 in the round part, 10 in pickings. The fat ought not to be eaten by any one under dietetic restriction. A thin cut of rolled roast beef weighs about 25 grams. A small potato, less than is usually served, weighs 50 grams.

Fruit sauces may be estimated by bulk, allowing 25 per cent. of sugar, including that added.

An average slice of round bread, Vienna, French or rye, weighs about 25 grams. A small serving of butter weighs from 10 to 15 grams.

The above unit dietary, allows a fairly accurate estimate of the amount ingested to be made by any reasonably intelligent patient who will accustom himself to the size of cuts of meat, servings of potato, etc., of known weight and it is quite liberal in variety. Then, too, the innutritious relishes may be allowed if no contraindication exists. Clear soups are almost lacking in nourishment and, in many cases, even pie, cake (estimated as bread plus 10 per cent. of sugar) string beans, peas, etc. may be added and the amounts of nutriment partly calculated from tables and partly guessed at.

When we can reach the kitchen authorities, we may also estimate the content of average servings of ice cream, gelatin desserts, etc. The arithmetic computation is not difficult though it must be made in two steps. For example, counting pints at 500 c.c. each, the error being quantitative and not proportionate, so that it is negligible, we may estimate the nutritive content of a serving of ice cream as follows, following a given formula:

	Grams.		
	Proteid.	Fat.	Carbohydrate.
Milk, 500 c.c.	20	20	20
Cane sugar 750 grams	..	..	735
Wheat flour, 25 grams	4	..	14
Cream, 1,500 c.c.	52	300	52
Four whole eggs	34	20	..
	110	340	821

Ordinarily, about 125 c.c. of ice cream are served to a person, 200 c.c. being a liberal dishful for a small boy. Thus, we may estimate the serving at 5.5 grams of proteid, 17 of fat and 41 of carbohydrate.

In estimating home dietaries, a special supply of salt, sugar, butter, a package of any cereal, a given loaf of bread, etc., may be reserved for the patient and the consumption for a period of a week or so may be brought to a daily average. Candy, an excellent article of food in many conditions, may also be reserved for the patient and the sugar estimated at about 400 grams for each pound of candy. If the candy is home-made, the exact proportion of sugar and other ingredients may be determined. So, too, shelled nuts which are rich in fat and proteid may be weighed in bulk and the exact nutritive value calculated from tables. Even popcorn, if the hard seed coats be excluded, is an excellent addition to the invalid's diet.

The method of estimating diet by weight and measure can often be carried out by the patient, who may, indeed, actually be diverted by the occupation, though certain nervous invalids must have this done for them, the remnants of food being subtracted from the servings. Patients seriously ill, usually are best placed on a simple dietary which can be still more easily estimated by the nurse, even if she is an amateur of reasonable intelligence.

If economy is necessary, any fairly ingenious person can make a pair of scales that will balance to the fraction of a gram, out of light metal jar covers, connected to a metal bar about a foot long that has smoothly drilled in it a central hole and two others at equal distances near the ends. Silk threads or fine, soft metal wires may be used for suspending the pans and the beam, or the latter may revolve on a smooth pin. Five gram weights of considerable accuracy are furnished by the U. S. Government at a cost of five cents each and are legal tender when no longer needed as weights. I refer to new nickels. Graduates can be made of tumblers or olive bottles, marked by strips of adhesive plaster or by a file scratch. No difficulty need be feared from the use of the metric units as only the gram and c.c. need be used. Indeed, while the patient is familiar with the name ounce, he usually has not the faintest idea of how much food or drink it represents and, with regard to ordinary viands, the physician is not much better informed. Here is an appropriate place to confess that this paper has been prompted by the rather recent realization that, after writing a book on dietetics, and giving considerable attention to the subject, I had very vague ideas as to the weights of most ordinary articles that I was eating daily.

The patient or nurse should prepare for the physician a diet sheet in which the meals and days are clearly lined off from one another. For each meal there should be placed at the left the names of the articles eaten and drunk, then their quantities, then in three other col-

umns, the amount of proteid, fat and carbohydrate contained, as shown by food analyses obtained from any standard text-book. A surprising number of well-educated adults will state that, knowing the number of grams or c.c. and the percentages of each of the three organic nutrients, they can not calculate the latter in grams. But if the diet sheet is prepared in blank, the physician can easily add these latter, get their totals for the day and suggest additions or omissions necessary to make the diet conform to the desired standard for the particular case.

DISCUSSION.

Dr. H. Stern, New York City, said that Dr. Benedict evidently is an adherent of the dietary standards laid down by Chittenden. No doubt that Chittenden is correct in making his experiments. It has become a fad to give less food. As a matter of fact, Chittenden speaks of proteid values which certain foodstuffs present. By ingesting that certain foodstuff we do not get the proper amount of calories. Therefore, if we speak of food values and say that a certain human being eats 20 calories for each kilogram of his weight, it is understood that we mean liberated calories and not raw calories. For instance, a lump of sugar, that is not saccharum. It contains some water. Water has no caloric value whatever. We speak of elaborated calories; not calories which are ingested, but calories which are absorbed, and not foodstuffs which produce a certain amount of indigestible material. Dr. Stern said that egg albumin is different from serum albumin, and that whenever more than five or six eggs are taken egg albumin is found in the urine. Yolks can be well tolerated. A man can take 20, 30 or even 40 eggs daily. It is essential in cases of under-nourishment that material is fed which does not leave any of the fat acids. This is the only one that does not give fat acids. Dr. Benedict, he said believes what von Noorden teaches, that acetone substances are diminished by the ingestion of carbohydrates. Certainly, in the case of oatmeal, which does not yield any of the low fatty acids, this is true. If we have fat substances, which von Noorden recommends, even in these substances we have the production of low acetone substances, such as butter. By not taking these butyric substances the formation of the acetone substances is prevented; therefore, the best substitute would be fatty matter which does not contain oxybutyric acid. Therefore, the yolk of the egg is the best substitute we can have.

Dr. William R. White, Providence, R. I., cited the case of his son, who has presented a very peculiar dietetic problem. He has been called a dietetic crank by all who know him. His chief peculiarity has been that he has not eaten meat; nor has he been a vegetarian, because he has not eaten vegetables. It was absolutely impossible to get the boy to eat ordinary foods so far as meats and vegetables were concerned. The banana has proved an important element in the boy's diet. Many days he will eat from eight to ten bananas in the course of the day. Dr. White said that ordinarily, if the boy has the opportunity, he will take a shredded wheat biscuit and crumble it, add two or three perfect bananas sliced, pour over it a large quantity of the best milk and a moderate amount of sugar, and that combination he will take three times a day. He has been doing it for years. He seems to be in perfect health; has excellent color, splendid teeth, and is most uniform in his temperament. He never complains of heat or cold, and is a splendid sleeper. He proves by his individuality and his physique that his instinct has been a safe and good guide.

Dr. E. B. Fullerton, Columbus, Ohio, stated that it is very hard to get patients always to trust to diet, and there are reasons why one can not put this sort of dietary into operation. In hospitals and with rich patients it may be effected, but in the country there is not this great number of foods to select from. The extreme of this, perhaps, is Hudson Bay, where people have only two or three articles of diet. In regard to the limit of diet, Dr. Fullerton said that one can not limit everyone in the character or amount of food taken.

Dr. A. L. Benedict, Buffalo, stated that Dr. Chittenden's experiments were conducted with the purpose of ascertaining the minimum proteid ration necessary to maintain nitrogen equilibrium, with an abundant ration of fats and calories. In interpreting them he has unquestionably been influenced to some degree by personal factors, that is to say, the requirements of a fairly sedentary, intellectual rather than physical, life, and it must be borne in mind that he has used tobacco and coffee freely, though not excessively. It is doubtful whether, without these dietetic adjuvants, he could have been quite so abstemious in proteids. Some of his critics and adherents, he said, have also made the mistake of supposing that he intended to apply to the standard physiologic man the proteid ration which he has found possible for men of less than the average size, performing less than the standard amount of exercise. While the conditions of his experiments are beyond criticism as regards accuracy of observation, duration of the tests, hygienic surroundings and gradation of exercise according to the habits of the individual, it must be remembered that two factors, present in the ordinary strenuous life of to-day were, in the main, minimized: viz., sexual function and worry as to self-support.

So far from dissenting from the possibility of living on Chittenden's minimum proteid ration, Benedict found that his own diet, chosen entirely by appetite, except for the endeavor to hold his weight down by eating very sparingly of plain foods for which he does not especially care, conforms very closely to Chittenden's, allowing for differences in weight and amount of exercise. At the same time, while admitting that the earlier standard dietaries were high, especially in proteid, he does not believe that proteid alone should be singled out for abstemiousness, nor that it is necessary to adhere to the minimum ration required to prevent nitrogen deficit. He thinks that the matter of diet should be regarded very much as is that of clothing. A certain amount of clothing may be required to prevent freezing or being arrested, but there is no objection to exceeding this amount to a reasonable degree.

Regarding sugar, Dr. Benedict has recently taken pains to inquire of a chemist, to be sure that he had made no mistake. Commercial white sugar is nearly 99 per cent. pure and there is absolutely no water of crystallization. A small amount may be present as moisture. Of course, candy, for economic reasons, contains all the water it can hold, but good candy usually consists of at least 80 per cent. of sugar. In regard to the white and yolk of egg: While the yolk is ideal as a food rich in proteid and fat, many persons can not tolerate it. The white is, at least, not disgusting.

Regarding acetonemia and allied problems, he does not in the least understand why this proverbial 80 grams of carbohydrate is necessary to prevent the formation of toxic amounts of fatty acid products. He emphasized the fact that in diabetes the fat ration must not be run too high, and placed 150 grams as the maximum for most cases. Bananas may be used to supply the proteid and in nearly ideal ratio to carbohydrate. But, in order to introduce 50 grams of proteid, about 1,050 grams of peeled banana or, say 23 average specimens, would be needed. This quantity would contain a little more than 200 grams of carbohydrate. Practically, so large a quantity of cellulose would be introduced that there would be a great deal of waste in the bowel, not to mention the mechanical disadvantage, fermentation, etc. Still, it is necessary to consult the tastes and idiosyncrasies of each individual.

Escape of Cerebrospinal Fluid Through Ear with Intact Drum.—Lewin reports in the *Allg. med. Ct.-Ztg.* for October 6 the case of a girl of 14 who fell against a stove and must have fractured the base of the skull where it forms the wall of the outer auditory canal. No rupture at this point could be detected in the swollen soft parts, but cerebrospinal fluid flowed freely from the ear, in amounts reaching 2 to 3 liters a day for several days. A remarkable feature of the case was the absence of symptoms referable to this great loss of the cerebrospinal fluid, the constant wetting being the only complaint. He knows of only one similar case on record. The amount grew gradually less until the flow ceased entirely by the end of the third week.

THE DIET IN ALBUMINURIA.*

A CLINICAL-EXPERIMENTAL STUDY.

HEINRICH STERN, M.D.
NEW YORK.

Albuminuria is nothing but a symptom of disease. The cause of the symptom may be anterenal, renal or postrenal, and may be due to structural change or to pathologic function. Postrenal albuminuria, an admixture of various adventitious proteid substances with the urine after this has left the renal tubules, does not come within the scope of the subject under consideration. In the case of anterenal or renal causes, it is the albumin of the serum, or rather albumin having passed through the circulation which has found its way into the urine. We are perfectly justified in accepting anterenal factors of albuminuria when we are confronted with a large albumin output without corresponding kidney lesion as shown by the presence of goodly amounts of tubular epithelium. We may yet go a step further and maintain that native serum albumin occurring in normal amounts can not be eliminated, even by a structurally altered kidney, and that the serum albumin we meet in the urine has undergone physical and chemical transformation prior to its passage through the renal organs.

Hence, the real factors of albuminuria may antedate any renal anomaly. At any rate, it seems dubious whether or not the kidney alone can ever be the starting place of albuminuria. If the kidney itself is not the primary or true cause of the albuminuric symptom, what is the use of applying renal therapy for the elimination or suppression of the albumin? How little that plan of treatment avails in this respect is a matter of every day experience. Again, another question looms up: Shall we endeavor to combat the albuminuria at all? Is its reduction or cessation a signal of bodily improvement or is the albuminuria a compensatory phenomenon, a friend in disguise?

These few words may suffice as introductory remarks to the following recapitulation of my first series of clinical-experimental studies concerning the influence of diet on the degree of intensity of albuminuria. This series of observations was made on 82 patients, affected with various diseases, of which the phenomenon in common was continued excretion of serum-albumin, so-called, with the urine. In this series of observations my sole object was to determine the influence of certain types of nutritives and ingesta, not on the underlying disease, but on the accompanying chronic albuminuria. I may add that, according to the clinical conception of to-day, every one, or nearly every one, of these underlying diseases would have been classified as belonging to those of the kidney.

The albumin determinations were made in all instances with the 24 hours' urine, and were started 48 hours after instituting the diet, and by means of Esbach's albuminometer, which, although inexact, is accurate enough to point out the fluctuations of the degree of the albuminuria.

PROTEIDS.

Prior to the addition of the various other proteid-containing ingesta to the nutriment of the albuminuric, the latter was kept on an exclusive milk regimen for two weeks. According to the weight, the daily consumption of milk amounted to from three to four liters, which represents an intake of from about 100 to 140 grams of albumin. In a few instances the milk was abruptly withdrawn, to be at once replaced by other nutritives yielding, besides the necessary carbohydrates and fats, from 70 to 100 grams of proteid material. In the great majority of cases, meats, fish and eggs were gradually substituted for the milk, the replacing process taking on the average about two weeks. Individuals weighing from 100 to 115 pounds ultimately received 70 grams of albumin a day, those weighing from 115 to 130 pounds, 80 grams, those from 130 to 145 pounds, 90 grams, and all whose body weight exceeded 150 pounds received 100 grams. The daily amount of proteid was then usually obtained from two or three eggs (never in the raw state), from mutton or chicken, and principally from beef. The eggs, as a rule, were partaken of at breakfast, the meats, in about equal portions, at the midday meal and at supper. To prevent renal irritation meats of young animals and organs yielding large amounts of nucleins, as veal, lamb, liver, kidneys, sweetbreads, etc., were omitted.

The following observations were made:

1. In 21 individuals a two-weeks' exclusive milk regimen and bed-rest were followed by diminution of the albuminuria in 16 instances, by its complete cessation in 2 instances, and led to no material changes in the remaining 3 instances.

2. In 36 individuals a two-weeks' exclusive milk regimen and moderate bodily exercise were followed by diminution of the albuminuria in 5 instances, by its complete cessation in no instance, by no material changes in 29 instances, and by distinct augmentation in 2 instances.

3. In 25 individuals a two-weeks' exclusive milk regimen, without any restraint as to exercise and work, was followed by diminution of the albuminuria on one occasion, but for a very brief period only, by no pronounced changes in 18 (respectively 19) instances, and by more or less increase in the remaining 6 instances.

4. In two individuals at bed-rest the sudden withdrawal of milk and the substitution therefor of meats, fish, and eggs (and carbohydrates and fats) remained without noticeable influence on one patient, but caused a marked augmentation of the albuminuria, subsiding after about 36 hours in the other.

5. In 16 individuals at bed-rest the gradual withdrawal of milk and the corresponding addition of meats, fish and eggs (also carbohydrates, etc.), was followed by transitory augmentation of the albuminuria in one instance, by no pronounced changes in 12 instances, and by a more or less permanent decrease in 3 instances.

6. In 4 individuals performing moderate bodily exercise the sudden (unauthorized) replacement of the milk regimen by proteids, mainly derived from meats (and carbohydrates, etc.), remained without noticeable influence in any case. (Seen from 2 to 8 days after institution of meat diet.)

7. In 29 individuals performing moderate bodily exercise the gradual replacement of the milk by other proteid nourishment (and carbohydrates, etc.), was followed by transitory augmentation of the albuminuria in 5 instances, by permanent augmentation in no instance, by no distinct alteration in 20 instances, and by a more or less permanent diminution in 4 instances.

8. In 1 individual attending to his usual vocation the sudden replacement of the milk by other proteid ingesta remained without any influence on the degree of intensity of the albuminuria.

* Read in the Section on Pharmacology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

9. In 30 individuals who devoted approximately the usual amount of bodily and mental energy to their occupations, the gradual withdrawal of milk and the corresponding addition of other proteid ingesta, were followed by transitory augmentation in 1 instance, by no distinct alteration in 23 instances and by a slight diminution in 2 instances.

10. The only individual in whom supervened a permanent augmentation of the albuminuric symptom on changing from milk to other proteid food was affected with atheromasia, chronic parenchymatous nephritis and diabetes mellitus.

CARBOHYDRATES AND FATS.

From three to four liters of milk contain on the average from 135 to 180 grams of lactose and from 120 to 160 grams of fat. The albuminurics subsisting for two weeks on an exclusive milk regimen obtained every day, therefore, from about 550 to 750 calories, which were elaborated from the carbohydrate, and from about 1,100 to 1,500 calories which were yielded by the fat. Exclusive of the proteid, they ingested therefore enough nutriment to yield from 1,650 to 2,250 calories a day.

When the milk was replaced by other food stuffs, not the proteids alone were reduced, but the supply of the carbohydrates and fats were curtailed from 10 to 25 per cent. This was done, first, so as not to overtax the patient's digestive powers, second, to reduce the intake of water which runs parallel to that of carbohydrates and fats, and, third, because the energy evolved from the nutriment was deemed sufficient not only for those at bed-rest and moderately occupied, but also for those who attended to their routine work. Of course, the greater carbohydrate and fat reduction (from 15 to 25 per cent.) was made for the individuals at bed-rest and those performing little work, the smaller reduction (10 per cent.) for those who had not discontinued their usual mode of occupation. Gradually the carbohydrates and fats, like the meats, fish and eggs, were made to replace the exclusive milk regimen. The instances in which the change from the one to the other regimen occurred abruptly have already been mentioned. In a number of instances from 200 c.c. to 600 c.c. (and in a few cases even larger amounts) of milk were continued to be ingested after the exclusive milk regimen had been discarded; this fact, however, was taken into due consideration in every instance. The carbohydrates made use of were mostly wheaten bread, cereals, potatoes and sugar, the fats, yolks of eggs, olive oil and suets.

The following observations were made:

1. The commonly employed carbohydrates and fats, consumed in amounts which do not overtax the functional capacity of the various digestive organs and which, at the same time, yield sufficient energy to prevent disintegration of the body substance, do not exert any other influence on the degree of intensity of the albuminuria than the carbohydrates and fats contained in milk.

2. There is no evidence whatsoever that the commonly employed carbohydrates and fats exert any participating influence on the production or on the rise and fall of the albuminuria.

3. In the albuminuric the carbohydrate-fat-proteid ratio may be practically the same as in the healthy individual but that it appears to be advantageous to reduce the *entire intake* from 10 to 25 per cent.

WATER.

The patients who ingested from three to four liters of milk a day imbibed thereby in the neighborhood of from 2,580 to 3,440 c.c. water. This is rather a large amount, larger than it probably ought to have been in certain instances, especially in those of contracted kidney. However, if milk is to be the sole or the main nutriment in albuminuria, as has been the dictum of nephritis therapy, this surplus of water can not be averted. Some years ago, v. Noorden advocated a decided reduction of the water intake in nephritides. His own pupils, Mohr and Dapper, however, have shown that if but 1,250 c.c. of water are taken daily, the degree of the albuminuria would become perceptibly increased and that practically the amount of water to be imbibed each day should not fall short of 1,500 c.c. In this series of dietary experiments 35 c.c. of water a day for each kilogram of body weight were allowed the patient. A further reduction of liquid would have resulted in a disturbance of the intrasystemic equilibrium. A patient weighing 60 kilograms (132 pounds) received therefore 2,100 c.c. of water daily.

The ingestion of water, or weak unsweetened tea, was begun when some of the milk had already been withdrawn, generally three or four days after starting the gradual admission of the other food stuffs.

The following observations were made:

1. Water, in large amounts, as imbibed with an exclusive milk regimen, enhances diuresis and intestinal peristalsis and that it is often productive of, or is keeping up, various gastrointestinal disorders.

2. The larger water intake, that is, up to 3,500 c.c. a day, neither increases the degree of intensity of the albuminuria, nor augments the absolute output of the urinary albumin in the vast majority of instances.

3. If smaller amounts of water, that is, 35 c.c. a day per kilogram of body weight, are taken, the intensity degree of the albuminuria may become temporarily augmented, and after one or two days the absolute amount of urinary albumin is approximately alike to that when larger amounts of water are imbibed.

4. In the treatment of albuminuria *per se* the maximum amount of water which may be taken is of little practical importance unless an advanced heart or kidney disease or some gastrointestinal disorder, demands an adjustment; and the minimum amount of water must never be less for any length of time, than that which is essential for the performance of the intrasystemic osmotic processes.

DISCUSSION.

Dr. Alfred C. Croftan, Chicago, stated that in discussing the subject of albuminuria it is important to realize that albumin is determinable in every urine. In other words, albuminuria is a physiologic phenomenon. An increase of the normal urinary albumin occurs in so many conditions that are more or less independent of renal disease, that it is important to study the manifold origin of this symptom before undertaking to treat it. In many cases albuminuria is a symptom more of cardiovascular disorder than of renal disorder. In other cases metabolic disturbances, which lead to the flooding of the blood and tissue juices with abnormal products of intermediary metabolism, lead to renal irritation and albuminuria. In still other cases the albuminuria is due to digestive disorders, pure and simple. In none of these forms can one speak of a nephritis.

That there is really an alimentary albuminuria is made clear by the following facts: It can be demonstrated that certain albumins given by mouth promptly reappear in the urine. It is a well-known fact that the injection into the

peritoneal cavity of a guinea-pig or of a rabbit of a certain amount of egg albumin, bestows on the serum of the animal the property, after a number of weeks or months of these injections, of forming specific precipitins in the test tube when mixed with egg albumin. If, now, a serum prepared in this way is added to the urine of an individual who has been given from ten to twenty eggs to eat in twenty-four hours, especially if the individual is suffering from a dilated stomach, then a specific precipitin reaction will promptly appear. This is positive proof that the egg albumin as such was absorbed, passed through the blood and reappeared in the urine. From the life-insurance standpoint this test is very important. As far as the circulatory element in many forms of albuminuria is concerned, Dr. Croftan stated that it will frequently be found that the excretion of albumin proceeds pari passu with changes in the blood pressure. The albuminuria due to metabolic derangements is renal in the sense that some irritation of the renal parenchyma by abnormal chemical products must be incriminated with producing the albumin excretion.

In interpreting albuminuria and in attempting to treat it rationally, physicians should depart from the purely renal standpoint, unless there is distinct morphologic evidence in the urinary sediment of renal disease, and bestow more attention on the treatment of the individual.

Dr. Croftan said that for a time he was an enthusiastic disciple of von Noorden's teachings in regard to drink restriction in nephritis. However valuable this method of treatment may be in that type of true nephritis in which the renal affection is only a part phenomenon of a general cardiovascular disturbance, the restriction of the liquids is, of course, eminently rational, for here the heart should be treated rather than the kidneys. In many other forms of nephritis, and especially in the forms of albuminuria without nephritis, drink restriction may, however, be quite useless, if not detrimental; for in the latter category of cases it is quite important that the circulating toxins should be diluted properly and that they should reach the kidneys in as low a concentration as possible. Inasmuch as the disturbances about the cardiovascular apparatus in this type, especially stenocardiac attacks, and other consequences of high blood pressure, are frequently produced by the circulation of toxic bodies that fail of proper elimination through the kidneys, it is especially important, in order to prevent serious cardiovascular complications, to administer plenty of water. The advantages accruing from this practice, he said, fully overbalance any theoretical disadvantages that one might imagine to accrue to the heart and arteries when they are forced to pump large quantities of liquid; in fact, sometimes, paradox as it may seem, the blood pressure will be found to go down when large quantities of water are given.

DR. A. L. BENEDICT, Buffalo, asked whether, in obesity, there is an analogue to the hyperglycemia not directly due to alimentation. In regard to the use of water, whether trying to make the body take up a dropsical effusion or extrude toxins, he has been struck by the impossibility of forcing any endeavor by drastic measures. He has found it a good plan, in cases of chronic Bright's, to have the patient occasionally spend an afternoon or evening drinking two or three liters of water, as hot as can be tolerated, flavored with salt, lemon or whatever the patient likes. He asked Dr. Stern whether his statements of the amount of albumin are in parts per thousand or are they quantitative for twenty-four hours. Dr. Benedict uses the centrifuge method, after simple boiling, for estimating albumin in urine. There often is more toxemia in cases showing only 1 per cent. of albumin by bulk (about one-sixth as much by weight) than in those with more albumin. The highest reading he has gotten has been 6 per cent. albumin by bulk, or about 1 per cent. by weight.

DR. H. C. WOOD, JR., Philadelphia, thought that water plays more than one rôle in cases of renal disease. Acute cases of nephritis are usually due to the presence of some irritating substance circulating in the blood. It is only reasonable that these irritating substances will become less irritating the more they are diluted. This is a well-known pharmacologic fact about which there can be no doubt. As regards the effect of the water which enters the blood, it is commonly believed that any excess of water which comes into the blood must escape through the kidneys, and yet the evidence of this is not at all convincing. A year or two ago he repeated some experiments which had been done many years ago by Magnus concerning the effects of large amounts of physiologic salt solution on the blood and the excretory apparatus. It is possible to inject into the animal the amount of salt solution equal to the body weight of the animal, without very markedly increasing the blood pressure. This excess of fluid does not escape in any great part from the kidneys. Four-fifths of the salt solution escaped from the body through some other channel, probably the intestinal tract. In every case in which he used the salt solution he found the intestine filled with fluid. Two things are evident: First, that the large amounts of water ingested do not increase the blood pressure, and that the vessels are capable of taking care of an enormous amount of fluid. In the conditions he described the percentage of hemoglobin fell to 60 per cent., that is, the blood was diluted to one-half its concentration—the albumins and other organic constituents of the blood were equally diluted, showing that there is a true dilution of the blood, and presumably a dilution of any toxic substance in the blood. The effect of this large amount of water, he said, seems to be a double one: It dilutes any irritant substance circulating in the blood so that there will be a lesser irritation of the kidney; second, it encourages elimination through the intestinal tract, which thereby spares the kidney a large amount of work and permits an attempt at recovery from irritation.

DR. H. STERN, New York City, recalled two or three articles detailing certain work, giving positive proof that egg albumin passes through the blood and is excreted again as such. Whether there is an increased amount of serum demonstrable in the blood serum, he said, can be determined only by the electric measure. There is no ionic movement. In uremia there is a hyperosmosis. Hyperglycemia can be spoken of. As to the examination of the urine, Dr. Stern said the simplest test is the best. He has used the acid tests and Esmarch's, which is no good, excepting for fluctuations. It is the absolute amount of albumin which is thus measured in twenty-four hours. In this way simple experiments have been undertaken to find out whether the excretion of albumin has been increased by certain diet, and the result of these studies has been to show that proteid materials have very little aggravating influence on the intensive degree of the albuminuria.

NOSTRUMS AND FRAUDULENT METHODS OF EXPLOITATION.

L. F. KEBLER, M.D.
Chief of Drug Laboratory, Bureau of Chemistry, U. S. Department of Agriculture.
WASHINGTON, D. C.

(*Concluded from page 1550.*)

LOST MANHOOD RESTORERS AND NERVOUS DEBILITY CURES.

"AMBALINE."

This is a mixture of camphoraceous water and ammonia water in which are dissolved ammonium carbonate, ammonium chlorid, sodium sulphate and chlorid. This lotion is to be applied to the affected part and is claimed to possess miraculous powers. The action of the lotion is simply that of an irritant which increases the blood supply to the parts.

BRADFORD & CO., CINCINNATI.

This company announces:

A Complete Treatment for the Cure of Nervous Debility, Loss of Memory, Dizzy Head, Sexual Weakness, Premature Old Age, Impotency, Weak Back, Confusion of Ideas, Eruptions on the Face, and All Diseases of the Sexual and Generative Organs.

The company also claims to be able to develop shrunken organs and permanently cure varicocele. The medicines used are claimed to be the very latest and best known to science and never used by quacks on account of their ignorance and the high price. The general scheme employed is to advertise an alleged free cure for lost vitality, sexual debility, etc. When responses are received the party is mailed a letter, enclosing a circular giving the prescription. The circular represents that the prescription is the result of the studies of two learned scientific men, one a successful practitioner for over forty years and the other a manufacturing chemist of thirty years, both men standing without peers in their profession. An investigation showed that the learned practitioner of over forty years' experience belonged to the quack school, and the chemist was without reputation. The prescription was written expressly for this scheme. It had hardly been given a trial. Mr. Bradford, the sole active member of the company, has no medical knowledge whatever.

The exaggerations are similar to those employed for schemes of this type. The following quotations are representative:

Nervous Debility can be cured with the specific remedy. . . . The Result of Forty Years' Practice in curing these diseases, a tested and time tried prescription. When you consider you are getting the result of over forty years' successful practice you are very fortunate and will make no mistake if you stick to this treatment.

These statements and the connections in which they are used are designed to create the impression in the minds of the readers that this medicine, by reason of the long time in which it has been developed through actual practice, possesses peculiar efficacy and value and is not commonly known or usually prescribed in the treatment of these conditions. This impression is entirely false and not warranted by the facts of the case. When Mr. Bradford commenced his business about four years ago, he sought out the physician and obtained from him an ordinary prescription for the treatment of this class of diseases. The physician from whom the prescription was obtained had no more than the usual knowledge and ability with respect to these diseases, and had no more than ordinary (if ordinary) ability. The circulars giving the prescription also contain quotations from the writings of many doctors so selected and changed as to cause the reader to believe that they were written particularly for the medicines employed in this scheme. As a matter of fact, the writings were not made with reference to these medicines, nor were they intended by their authors to be used as they are being used, and their use in this manner is entirely unauthorized and is intended to deceive and mislead.

The company's literature also represents that the medical profession endorses the medicine. As a matter of fact, the medical profession knows nothing of the composition of this medicine; therefore, it is unreasonable to say that the profession endorses it. An investigation shows that the medicine consists of one of the many forms of aphrodisiac pills.

"CACTUS PRODUCTS."

These remedies are exploited by the Cactus Product Company, Philadelphia, and consist of "Cactus Lecithin Tablets," "Cascarin Tablets" and "Cactus Lecithin Salve." It is represented that the above medicines will cure all vital weakness, nervous debility, atrophy, varicocele, and all affections of a similar type. The name "Cactus" itself is a misnomer, inasmuch as no cactus product is contained in any of the preparations enumerated. "Cactus Lecithin Tablets" contain ordinary ingredients, such as are commonly employed by the medical practitioner in the treatment of nervous debility, excepting lecithin. The "Cascarin Tablets" are representative of the many laxative tablets on the market. The mixture for which the great claims are made is the "Cactus Lecithin Salve," which contains the following ingredients:

Lecithin, fluid extract of damiana, celery seed, capsicum, and extract of rose geranium.

Mixed into a suitable salve with enough petrolatum and paraffin wax.

The action of the salve is secured by applying it to the affected part. Virtually the only active agent in the salve when thus applied is the capsicum, the lecithin and other constituents being practically useless under these conditions.

"CALTHOS."

"The world's greatest remedy for the treatment of male affections." It is claimed to be imported by the Von Mohl Company, Cincinnati, Ohio. It is represented that the preparations used are those of Prof. Jules Laborde, an eminent French nerve specialist. The literature employed by this company is vulgar and misleading in every detail. The pills employed contain yellow phosphorus as the chief ingredient. The representations made by this firm were found on investigation to be unwarranted.

"CUPIDENE."

This remedy is placed on the market by the Davol Medicine Company, San Francisco, and consists of red and white pills. An examination of these pills shows that the active constituents are red pepper, Spanish flies, mustard and bitter principle. It is represented to be a "Great Vegetable Vitalizer," discovered by one of Europe's most celebrated physicians and is claimed not only to relieve but permanently to cure all complaints and diseases of the sexual organs, such as lost manhood, impotency, varicocele, constipation, etc. Pictures portraying "before" and "after" treatment are also employed. It is especially held out as being of value to married people.

"MORMON BISHOP PILLS."

The following are quotations from the literature:

This Remedy has been in use for fifty years by the heads of the Mormon Church and their followers. . . . Many men suffer from the evil effects of self-abuse, over-indulgence, excesses in use of tobacco and liquors, anxiety and worry. These bring on one or more of the following diseases: Lost Manhood, Nervous Prostration, Nervous Debility, Dizziness, Headaches, Indigestion, Loss of Will Power or Memory, Nocturnal Emissions, Pain in the Back, Loss of Semen, Impotency, Incapacity for Marriage, Sleeplessness, Spermatorrhea, Loss of Vital Fluids, Prematureness of Discharge, Varicocele, Atrophy, Hydrocoele and Constipation. . . . If you suffer from any of these symptoms take Mormon Bishop Pills and be cured before it is too late. . . . Do not become discouraged, no matter if you have tried many of the so-called cures. Take Mormon Bishop Pills and a cure is certain.

In this treatment three differently colored pills, red, white, and blue, are employed. The difference in color would lead to the belief that they are of different composition, but analysis shows that they are virtually the same in this respect. They belong to the general type of aphrodisiac pills.

"REGENERATIVE TABLETS."

Exploited by the Fallopia Lynn Company, St. Louis, Mo. It is represented that the tablets employed by this firm are such as will create a youthful feeling, dispel all bad effects of indiscretion, and are "A Regenerator and Tonic for Weak Men." An examination of the tablets shows that they are of a composition similar to that ordinarily employed by regular practitioners for tonic purposes, coupled with some of the recognized aphrodisiac agents. One of the active ingredients is strychnin.

"RESTORATIVE REMEDIES."

The parties exploiting these remedies have for various reasons changed the name of the company several times. It was at one time known as the Dr. Knapp Medical Company and at another time as the Dr. Raynor Medical Company. The scheme employed by the above companies is to advertise in newspapers that a Michigan specialist had discovered beyond a doubt "the most scientific and comprehensive treatment for the cure of sexual weakness, etc." This treatment is "sent free to all who apply in writing." In response to any letters received a number of formulæ with directions for taking medicines are sent to the prospective patient. This is as far as the free treatment goes. At the time of forwarding the prescription the patient is also informed that the company has forwarded to his address a complete treatment by an express company, to be delivered c. o. d. for $3.00 plus the expressage. The patient is also told that the charge for these medicines is less than the local druggist could prepare them for and at the same time the medicines are composed of the freshest and purest drugs. The company does not exactly obligate the patient to take the medicines, but the conditions are such that the patient is led to believe that it is decidedly to his advantage to accept the company's offer. From the method of doing business it can readily be seen that the company has no information relative to the disease with which the patient is afflicted, and, as a matter of fact, all diseases are treated with identically the same mixtures. The following is a list of the prescriptions employed by the company:

PRESCRIPTIONS SENT OUT IN RESPONSE TO LETTERS ANSWERING ADVERTISEMENTS.

Formula 1.

Ext. gentian .....gr.	1/2
Ext. nucis vom....gr.	1/10
Ext. saw palmetto..gr.	1
Ext. damiana.....gr.	1/2
Hyoscine hydrobromate .....gr.	1/200

M. et ft. pil. No. i, s. c. Ft.: No. xxx. Sig.: Take one pill after breakfast daily.

Formula 2.

Muriapuama .....gr.	1
Ext. tritici.....gr.	1/2
Ext. sombul.....gr.	1/2
Ext. quassia.....gr.	1/2

M. et ft. pil. No. i, s. c. Ft.: No. xxx. Sig.: Take one pill after supper daily.

Formula 3.

Aloin	60/407
Sugar	286/407
Blaud's mass.....	175/407
Glycyrrhiza	286/407

M. et ft. tab. No. i, s. c. Ft.: No. xxx. Sig.: Take one tablet at bedtime.

COMPOSITION OF PILLS USED IN TREATMENT OF PATIENTS.

Formula A.

Zinci phos.....gr.	1/10
Ext. nucis vom....gr.	1/10
Ext. saw palmetto..gr.	1
Ext. muripuama ..gr.	1/2

M. et ft. tab. No. i, s. c.

Formula B.

Ext. damiana.....gr.	1
Black Indian hemp.gr.	1/4
Ext. nucis vom.....gr.	1/10
Ext. buchu .....gr.	1/4

M. et ft. tab. No. i, s. c.

Formula C.

Aloin	60/407
Sugar	286/407
Blaud's mass.....	175/407
Glycyrrhiza	286/407

M. et ft. tab. No. i, s. c.

Formula of Special Treatment.

Strych. sulph.....gr.	1/200
Quininæ sulph.....gr.	1/16
Ferri reducti .....gr.	1/2
Arsenious acid.....gr.	1/200

M. et ft. tab. No. i, s. c. Ft.: No. xxx. Sig.: Take one tablet just after each meal.

Formula D.

Strych. sulph.....gr.	1/200
Quininæ sulph.....gr.	1/16
Ferri reducti .....gr.	1/2
Acidi arseniosi....gr.	1/200

M. et ft. tab. No. i, s. c.

The above formulæ show, first, the differences between the medicines made according to formulæ sent would-be patients and the medicines actually used; second, that the several formulæ contain nothing but well known drugs, and, last, that the same or similar mixtures are used by most specialists in the treatment of male diseases.

At the time of the hearing the physician representing the company was asked for information respecting certain claims made by the company and in reply many interesting points were brought out. The literature represented that this firm had a novel way of developing the organs free, which consisted of a so-called "Developing Lymph, which is now very widely used in Europe and is finding staunch adherents in this country as well." The physician admitted that the company was not in possession of any lymph and to the best of his knowledge the representation was not correct. When asked for information relative to the claims made that the treatment was new and novel, and to show wherein the treatment was new and novel, he stated that his firm was the first to introduce muriapuama and hyoscine hydrobromate to the medical profession. When informed that muriapuama was brought to the medical profession's attention before the existence of the company he was unable to make further reply, and when his attention was also called to the fact that hyoscine hydrobromate had been known to the medical profession nearly twenty-five years, and prominently brought forward by Dr. Wood in 1884, he had no defense to make.

Before closing this item it seems desirable to note a few clauses of the suggestive literature used:

Unhappy Homes caused by Weakness in Men. . . . There are thousands of cheerless homes in this country filled with discontent and unhappiness, lacking in love and companionship through the sexual weakness and physical impairment of a man. . . . It (the medicine) creates an immediate social feeling of warmth and good nature, forces active blood to the muscular tissue, tones the nervous system and arouses bodily confidence.

DR. STEVENS & CO., COLUMBUS, OHIO.

The following are illustrative statements of this company's literature:

A new, scientific method of treatment for diseases of men. . . . Ten Days' Free Treatment Offered Men. . . . Treatment absolutely free to every man. . . . It is no "prescription," "deposit," or "C. O. D." scheme. . . . In addition to the absolutely free trial treatment, they send the most complete book ever written on the Diseases of Men, telling all, and fully illustrated with forty engravings from life. . . . After twenty-five years of scientific investigation we have discovered and developed the "Paris Food" and crayon treatment.

The wonderful method is claimed to have been discovered by the company's physician after long search and experimentation:

One of our physicians continued his researches in the city of Paris, France, assisted in his researches by a noted chemist, and finally succeeded in perfecting the "Paris Food" treatment.

The points claimed to be novel in the treatment employed by this company consist in the application of medicinal agents directly to the parts affected by

means of crayons, bougies, and urethral suppositories; the introduction of numerous new medicinal combinations and the use of the "Paris Electro-Medicated Crayons." The formulæ submitted were no less than twenty-seven, all of which are claimed to be used in the treatment of the company's patients. Some of the formulæ had specific names attached to them, such as "Gonorrhea Crayons," "Aphrodisiac Crayons," "Bougies," "Urethral Suppositories," "Bougie Ointment," "Rubefacient Ointment," "Pills" and "Tablets."

It was admitted at the hearing that the method of treatment was scientific but not new. The local application of medicinal remedies by means of bougies, suppositories and crayons has been used for many years. In the early sixties it was common for pharmacists to issue catalogues enumerating various kinds and forms of suppositories. The base employed by this company, namely, cacao butter, is not novel, inasmuch as it was introduced as early as 1852 and has been continually used since for the purpose of incorporating medicinal agents which are to be applied locally. Bougies, urethral suppositories and vaginal suppositories, all of which are frequently called crayons, have been public property for many years. In 1886 Messrs. John Wyeth and Brother, manufacturing chemists, issued a pamphlet on suppositories which contains numerous cuts and formulæ of the many suppositories then in use. It was clearly shown that Dr. Stevens & Company was not the originator of this form of medicinal treatment and that it was not the result of years of experience and the expenditure of thousands of dollars on the part of Dr. Stevens & Company that brought this form of treatment into existence, inasmuch as it had been in vogue many years before the company was organized.

The firm also contended that the combinations employed were new and novel. None of the formulæ submitted, however, contain anything but well recognized drugs. The special formulæ submitted may differ slightly in the number of ingredients and quantities from those prescribed by physicians of standing for patients similarly afflicted, and if such a difference could be called new and novel then some of these formulæ would come under that designation. The advertising literature also represented that the ingredients employed were rare and costly and had been used in the treatment of disease only for a few years. When the company was requested to point out the justification of this statement no satisfactory response was offered. The cuts employed in the literature also represent that some of the crayons employed are electrified and it is even stated that these crayons were "subjected to a strong current of electro-ozone," which makes them "act like a mild electric current." When the physician representing the company was informed that there was nothing recognized in the scientific world as a "current of electro-ozone," nor was it specified in any portion of the directions accompanying the formulæ for the manufacture of the remedies that these crayons were to be submitted to a "current of electro-ozone," and when asked for an explanation he simply evaded the question by answering that he had no knowledge of such an electrification and was not aware that the representation was made in the company's literature.

One of the remedies brought out by this company is the "Paris Food," which is claimed to be new, costly, and rare, and largely employed by European physicians. The formula submitted for this preparation is the following:

PARIS FOOD OINTMENT.

Lanolin	4 oz.	Menthol	205 gr.
Benz. lard	4 oz.	Cerasin	1 oz.
Water	4 oz.	Oil wintergreen	150 min.

When the physician was asked to point out the active ingredients in this remedy he indicated that menthol and oil of wintergreen were probably the most active, aside from the massage necessary in applying the ointment to the organs. It was ultimately admitted that "Paris Food" possesses practically no more virtue in the treatment of male diseases than ordinary cold cream.

Another very interesting feature employed by this company is found on a small brown envelope, which reads as follows:

This envelope contains a strip of medicated paper. The properties of this slip are such that when it is dipped in the urine and dried, it can be chemically and microscopically analyzed and will show the stage of your disease.

The strip of paper is ordinary blue litmus paper and is therefore not a medicated paper. It is furthermore not within the power of any chemist or microscopist to analyze a strip of litmus paper when dipped in the urine and by this means to determine the condition of the patient. It is true the paper may indicate whether the urine is alkaline, acid, or neutral. It is a well known fact, however, that urine voided by the same individual at different times during twenty-four hours may at one time be acid, at another time alkaline, and at times both acid and alkaline to litmus paper. From this it can be readily seen that it is impossible for any one however skilled to make an examination of litmus paper that has been dipped in urine and by this means ascertain the stage of any disease. It also developed that this company did not possess a laboratory, did not make either chemical or microscopic analyses of urine, and no one in its employ was competent to make such analyses.

Some readers will probably wonder how pills, tablets and rubefacient ointments are used for local treatment. The company condemns the internal treatment of drugs in its literature, but in practice such treatment is resorted to and is employed in the form of pills and tablets. Some of the tablets contain one active ingredient, extract of capsicum, incorporated in sugar of milk. The directions for using same are to dissolve tablet in glass of water and apply to penis. The rubefacient ointment contains capsicum and is to be applied directly to the parts. As a side issue this firm claims to "treat and cure" diseases of the eye and ear, consumption, hip-joint disease, heart disease, paralysis, piles, cancer, chronic dysentery, gravel, dropsy, etc. The book referred to on the diseases of men, and used by this company in the furthering of its schemes, is one of the most immoral pieces of literature ever met with.

"VITAL RESTORATIVE."

The English Restorative Company, Denver, employs under this heading two forms of pills, one consisting of licorice and extract of saw palmetto, and the other is a methylene blue pill. The virtue of the former undoubtedly resides in the saw palmetto, which is claimed by some to be useful in the treatment of sexual decline. The methylene blue pill is described below under the head of "Methylene Blue Fraud."

"VITALA."

Remedies under the above name are exploited by the Vitala Company, managed by "Dr. Frederick Main," alias "Dr. NaMorg," Jackson, Mich. It is represented that the virtue of these medicines resides in a drug re-

eently diseovered in the Philippine Islands and tested by this firm. An investigation showed that the drug to which the name "Vitala" is applied, is *Caesalpinia Bonducella*. Common names for this plant in the Philippine Islands are "Nigger Nut," "Molucca Bean," "Calambit," and in Porto Rico it is known as "Mato Azul." The nut of this plant undoubtedly possesses valuable medieinal properties, inasmuch as it is recognized by the pharmaeopeia of India. Its valuc, however, depends on its tonie and anti-periodie properties. It also appears to aet favorably in affections of the digestive traet, especially diarrhea. There is no information available in literature which would indieate that this nut possesses any properties excepting those here enumerated. There is eertainly nothing in it whieh could be eonsidered as a cure-all for the numerous sexual diseases claimed to be eured by the Vitala Company.

A eareful examination of the advertising literature employed by this company and the formulæ submitted fails to show conclusively that even this drug was used in the preparation of the medicines. The only existing evidence is the representation made in the formulæ submitted that in certain prescriptions a minim of "Tincture of Vitala" was used for each pill. Exactly what "Tincture of Vitala" is could not be definitely aseertained . The formulæ submitted by the company at different times show decided differenees and the products were frequently not of the same composition as represented by the formulæ. Not only was the above inconsistency brought out, but on reviewing one of the medieines on which great stress was laid, namely, "Vitala Developer," it was found to be absolutely devoid of this wonderful medieine derived from the Philippine Islands both aecording to the literature of the company and the formulæ submitted. The composition of this "Developer" as submitted by the company is as follows:

FLESH FOOD.—PHILIPPINE DEVELOPER.

Oil citronella	6 oz.	Hydrated lanolin	45 lbs.
Menthol	6 oz.	Cerasin	2 oz.
Oleoresin capsicum	4 oz.	Lard	q. s. to 60 lbs.

The above formulæ clearly shows that the lauded "Philippine Developer" contains nothing but old and well known drugs. The marvelous Philippine drug is absent. The mixture is a simple ointment whose aetivity undoubtedly resides in the oleoresin of eapsieum. This agent is frequently employed as a counterirritant of the male organs in nostrums.

"VIGORO."

The elaims made for this remedy are similar to those already considered. The medieine consists of extraet of nux vomica, buchu, damiana, oleoresin capsieum, and a phosphid. All of the above agents have been used for many years in the treatment of disease. There is therefore no basis for the statement that "Vigoro" is made from rare and expensive drugs. A pill of the above eomposition certainly would not cure syphilis, gonorrhea, gleet, hydroeele, varicocele or stricture.

"VITALITY PILLS."

This medicine is exploited by the Missouri Drug Company, St. Louis. The representation is made that the "prineipal ingredient is an animal extract taken from healthy young bulls," whieh "gives man the vigor and vitality of the bull." On examination it was found that the pills were simply of the aphrodisiac type and could not aeeomplish anything exeept what pills of this general type are usually represented as being capable of doing.

"YOUSOF'S SALVE."

"Dr. Yousof's Celebrated Turkish Ointment" is exploited by the Franklin Remedy Company, New York City. An examination of the sample submitted shows that it eonsists approximately of 80 per cent. petrolatum and 20 per cent. of a wax-like body, the mixture being flavored with rose geranium. The salve is simply to be applied loeally to the generative organs.

METHYLENE BLUE FRAUDS.

The chemieal, methylene blue, is frequently used by nostrum mongers under some fanciful name for the purpose of frightening would-be patients as to the actual condition of their health. Methylene blue possesses the peculiar property of turning the urine green when passed through the human system, the shade depending on the amount of drug used.

The English Restorative Company, referred to under "Vital Restorative," in its literature to its patients advises the patient to watch the urine closely and if anything unusual is observed by him to forward a sample of the urine to the eompany in question and an examination would be made of the sample, from the study of which the condition of the patient would be diagnosed and treatment instituted aecordingly. While methylene blue may be utilized to some extent in diagnosing the eondition of certain patients, the method employed above is eertainly fraudulent to a degree.

Dr. L. R. Williams & Company, New York City, employs methylene blue in the treatment of lost manhood in the following manner: The methylene blue tablets, together with so-ealled "medieated cloths," are sent to the patient with instructions that after taking the pills, the "medieated cloths" should be dipped, at a suitable time after taking the pills into the voided urine, dried, and returned to the company. It is represented that when the cloths are received by the company they would be immediately examined and from the results obtained the patient's condition ascertained. The worthlessness of the proeedure is indicated by the fact that the "medicated cloths" turned out to be simply strips of cheese cloth. In this eonnection it is only neeessary to say that this procedure is absolutely valueless, inasmuch as it is not within the scope of the most skilful physieian, chemist or pathologist, either singly or eombined, to make such diagnosis as is represented above.

The Magic Foot Draft Company also employs methylene blue pills under the designation of "Magie Regulators." Those who doubt the magic part of this treatment can easily satisfy themselves by the simple test that goes with eaeh box of pills, which is as follows:

To prove the action of our Magic Regulators on the kidney, the organs which in rheumatism are always diseased and fail to do their work, allowing the poisonous acids to accumulate and lay the foundation for a long and painful run of rheumatism, watch the color of the urine, voided. If it assumes a light blue or bluish green color you may rest assured that the Magic Regulators are doing their work.

OBESITY CURES.

The two most prominent are "Obesity Food" and "Rengo Fruit."

"OBESITY FOOD."

The ingredients of this remedy are thyroid gland, poke root and toasted bread. In the literature employed for advertising this "food" the following representations are made:

These tablets are not a drug, but a food, and will agree with the weakest stomach. . . . Rapidly Reduces Fat without bad results. . . . Turns Fat into Muscle.

Whatever virtue this remedy may possess certainly resides in the drugs present. It is therefore unjustifiable to claim that the product is not a drug. The representation that this "food" has the power of turning fat into muscle has no basis for existence whatever. Nothing short of a miracle can turn fat into muscle. There is no process of nutrition by means of which fat can be turned into muscular tissue, since muscular tissue is a proteid compound and not a fat.

"RENGO FRUIT."

It is claimed that the active constituents of this "fruit" are derived from a luscious, tropical fruit, which grows in clusters similar to grapes. It was shown, however, that the "fruit" really consists of poke root, thyroid gland, cascara, cassia fistula, and confection of tamarinds. The composition of the "fruit" apparently is well known to the promoters of this remedy. Nothwithstanding this fact, however, the prospective patients are told that "Rengo Fruit" is not a drug or chemical preparation. This feature is reiterated in another form:

Man has never found a "regulator" by mixing up concoctions of different drugs; he must consult Nature, and adopt what she furnishes.

From the composition set forth above it can be readily seen that all the statements made are intended solely to mislead. Whatever virtue this "fruit" may possess resides solely in the drugs employed in their manufacture.

RHEUMATISM CURES.

"MAGIC FOOT DRAFTS."

The following are quotations from the literature:

Magic Foot Drafts are known all over the world as the safest, surest and simplest cure for all kinds of rheumatism. They cure when everything else fails. Best of all, they cure to stay cured. . . . If 100,000 people from every State and Kingdom of the earth have been cured of rheumatism, of every kind and from whatever cause, by Magic Foot Drafts, can any prejudice exist in your mind to prevent your giving the remedy a fair trial?

No one reading these quotations can arrive at any other conclusion but that "Magic Foot Drafts" are capable of curing all forms of rheumatism. "Magic Foot Drafts" consist of pieces of oil cloth, covered on the unfinished side, with a border of adhesive mixture, and the central portion with a plaster composed of the following:

Poke root .....30 per cent. Corn meal ..... 8 per cent.
Pine tar .....62 per cent.

These drafts are to be applied to the hollow of the soles of the feet and are claimed to effect cures in the following manner:

By cutaneous absorption curative elements are taken from the draft. These are carried to the blood by the lymphatics, and neutralize the poisons. . . . It (Magic Foot Draft) stimulates the nerves to activity. The nerves in turn act on the muscles, veins and arteries, increasing the circulation of the blood, compelling it to hasten and deliver up its poisons from the whole system to the sweat glands just beneath the skin, and from thence it is drawn by the Draft through the pores and absorbed. Thus is effected a cure, no matter where the pain is located, because all the blood of the body passed through the capillaries.

There is nothing whatever in these drafts to warrant such claims and representations. They possess no curative element whatever, which when absorbed into the blood will neutralize the poisons which are supposed to be the cause of the rheumatism and in this manner effect a cure.

A particularly interesting feature connected with this scheme is that the promoters when asked for reasons for their claims drew on the writings of the best authors of the country, such as the late J. M. Da Costa, Dr. H. C. Wood, Dr. J. V. Shoemaker, Dr. H. A. Hare, the medical author of the "American Dispensary," and others. These authors when informed relative to the use made of their writings vigorously protested, claiming that any interpretation of their writings which would in any way bolster up the schemes of the "Magic Foot Draft" was absolutely unjustifiable.

"PLASTERS, ORDWAY'S."

It is only necessary here to call the reader's attention to the fact that the "Ordway Plasters" are claimed to cure rheumatism. Details relative to these plasters have been given under "Consumption Cures in proper alphabetical order.

"VIBRO DISCS." "VIBRO TABLETS."

The promoter of these remedies styles himself as "Prof. S. M. Watson," alias "Professor Harraden," "The Greatest Hypnotist from Jackson, Michigan." This promoter is absolutely without medical knowledge and it also developed that he has been connected with a number of fraudulent schemes. The claims made for this remedy are fully set forth in the following quotations:

There is nothing cheap about it, nothing inferior about it, as is mostly the case with remedies put forth in a spirit of quackery. My tests of ingredients were simply numberless. My outlays were constant and unsparing. Almost every land and clime was laid under tribute to supply my laboratory with the right material and of the right quality. . . . I can not, of course, make known their ingredients publicly, but I will give you an idea how precious they are when I tell you that one of the number costs over forty dollars an ounce. You will not find drugs of that class in any other remedy advertised for this disease. I have made my remedies perfect, regardless of cost. . . . The absorbent material on my discs is not that of a common plaster. It is prepared for its special work out of no less than twelve ingredients. No other appliance on earth can equal it as a pain-killer and absorbent of uric acid. . . . I alone possess the secret of using a galvanic appliance to root out the poison of rheumatism. . . . Vibro Discs, the only sure and permanent cure for rheumatism in the world to-day. . . . My treatment consists of Vibro Discs and Vibro Tablets, the former being for external use and the tablets for internal. This is what may be called a double action, and science has amply shown that such double action is necessary to complete a cure.

"Vibro Discs" come in pairs of two distinct types. One pair consists of a circular portion of ordinary oil cloth partly covered on one side with a resin plaster and on the other side of one of the pair is a small plate of zinc. The other disc of this same pair contains a copper plate instead of a zinc plate. Beneath the copper and zinc plates the oil cloth is perforated. Externally each entire disc is covered with a piece of gauze.

The second type of discs is similar to that just described except that the plates of zinc and copper and the gauze covering are omitted.

Examination of the plaster covering one side of the discs shows that it is composed largely of some of the cheapest drugs employed in medicine, namely, burgundy pitch, resin, oil tar, sugar, poke root, kaolin, capsicum, and belladonna. The directions given for the use of the "Vibro Discs" are that the pair of discs containing the metallic plates must be warmed, separated from each other while warm, and applied to the soles of the feet before they become cool. The second pair of discs is to

be separated in the same manner and applied to the chief regions of pain. Immediately after the application of the discs it is claimed:

A prompt alleviation of the pains will ensue. . . . The gentle glow that will speedily be felt in the veins is the token that vibration has begun and that the rheumatic venom is being loosed from its strongholds.

The reason given for the induction of this gentle glow and the speedy removal of the rheumatic venom is that an electrical vibration is communicated to the blood, the source of this electrical vibration being the two plates of copper and zinc, respectively, forming a part of the "Vibro Discs." The general principle employed of producing electricity by two different metals, is based on scientific facts but the conditions under which the discs are applied absolutely prevent the formation of any current of electricity. The electric current is also claimed to be imbued with the power of causing the uric acid to be attracted to the discs and to be absorbed there.

Some of the follow-up letters contain interesting arguments, as the following will show:

You know that the acid venom has been encrusting your joints, shriveling up the delicate nerve filaments, and eating away the tissues of your body. It has been in your system for a long time, and each passing day it has dug deeper and intrenched itself more strongly. In view of all these facts, which can not for a moment be disputed, do you think it anything strange that the uprooting of the poison should cause more or less of a wrench—that it would make you suffer even more than you did before you made any effort to free yourself from it? The continued pain you experienced, then, merely indicated that my Vibro treatment was doing its work—that the acid was being rooted out, and that your system was making an effort to throw it off.

The "Vibro Tablets" do not appear to have been considered an essential portion of the rheumatic treatment at first, but it seems to have been found advantageous to introduce such tablets for internal use later. The tablets are claimed to contain the following ingredients:

VIBRO TABLETS.

Macrotin	⅛ gr.	Hydrated lanoline	45 lbs.
Caulophyllin	⅛ gr.	Cerasin	2 oz.
Ext. jaborandi	⅛ gr.	Lard	q. s. to 60 lbs.
Rhubarb	⅛ gr.		

There is certainly nothing new in this mixture and only one agent is recognized as having any direct influence on rheumatic conditions.

SKIN BLEACHERS AND BEAUTIFIERS.

"COMPLEXION POWDER."

One of the agents used for improving the complexion was found on analysis to consist entirely of Rochelle salts. Another product sold under the designation of "Complexion Tablets" was found on analysis to consist of reduced iron, plant extractive and strychnin. An unfortunate incident connected with this case was that the remedy was not marked so as to set forth its poisonous nature, and a mother into whose possession the remedy came carelessly placed it within reach of her two and one-half year old child, with the result that the child consumed a number of the tablets and died from strychnin poisoning. It was contended that the tablets did not contain strychnin but that extract of nux vomica is used in their preparation.

"FACE LOTION."

The most interesting "beautifiers" met with are usually sold under the name of "Face Lotion." The chief active agent found in the samples so far submitted is corrosive sublimate, which is usually dissolved in water containing an indefinite quantity of glycerin, the whole being flavored with a suitable amount of tincture of benzoin. These lotions beautify by destroying the tissue with which they come in contact, causing it to peel off and thus bringing to view the lower layer of the epidermis, which is smooth and pink-like in appearance.

MISCELLANEOUS.

"AQUAMIEL."

The Mexican Remedy Company exploited under the above name a mixture which it represented as follows:

The Miracle of Nature. . . . Magical Bust Developer and the most marvelous flesh-producing, blood-enriching, tissue-forming preparation the world ever knew. . . . Permanent Development Guaranteed. . . . Aquamiel is a product of the famous Maguey Plant of Mexico.

A number of interesting pictures accompany the advertising literature showing the remarkable results of this remedy. In one of the best testimonials submitted the patient said she believed that her breasts had increased in size one-quarter of an inch. An investigation of the remedy showed that it consisted of two solutions of different strengths, one of which contained 8 per cent. alcohol and the other 2 per cent. alcohol, both of which were sweetened with saccharine and colored with caramel; a small amount of plant extractive was also present. The medicine is absolutely worthless as a tissue developer, and any chemist can prepare it in any laboratory without the least difficulty.

"ELIXIR OF LIFE."

This preparation was also sold under the name of "T. Duffy's Solution," with headquarters at San Francisco. An analysis of a sample gave the following results:

	Per cent.		Per cent.
Water	99.611	Non-volatile matter	0.389

The "Elixir" is therefore nothing but an extremely weak mineral water, the non-volatile matter of which consists of potassium chlorid, sodium carbonate, sodium bicarbonate, calcium sulphate and a trace of lithium chlorid. It is heralded as being a most valuable remedy for many affections. Among the many representations made the following is typical:

The Solution cures all Germ and Contagious Diseases, destroying and annihilating them.

"15 MINUTE PILE CURE."

The Dr. Artz Medical Company, St. Paul, Minn., is credited with being the manufacturer and distributor of this remedy. The ingredients employed in its manufacture are zinc oxid, menthol, carbolic acid, simple cerate, chaulmoogra oil, and oil of sweet almonds. The mixture was found to be free from narcotics and opiates as claimed.

It was represented that the value of this ointment resided in the chaulmoogra oil, claimed to be a new principle. A search of literature failed to reveal anything which would justify such a claim for chaulmoogra oil. The advertising literature of the company contained numerous misleading and deceptive statements, of which the following are typical:

It is a positive and permanent remedy, tested in twenty thousand cases in the German Army before being given to the world as a positive and specific cure. . . . Pronounced by the medical profession the most wonderful discovery of modern science.

"LIQUID ELECTRICITY."

Under this name a number of mixtures are sent out from which teas are to be prepared and taken according to directions. The most important active constituents in the mixtures are powdered capsicum, essential oils, iron sulphate, and belladonna leaves.

It is represented that with teas prepared from such mixtures it is possible to cure consumption in a few days. The remedy is also styled an "Electric Cough and Consumption Cure;"

It kills the microbes of bilious, malarial and other fevers, germs of consumption or cancer. . . . Will annihilate the virus of blood disease, . . . remove all offensive odors, destroy all animal and vegetable poisons.

"RADIUMITE."

The following are quotations from the literature:

Nature's Gift to Mankind. . . . The Mystery of Its Powers Puzzles and Bewilders Scientists. . . . Radiumite is a Puzzle to Leading Chemists. . . . Keeps you well while you carry it. . . . Some of those who carry the stuff for warding off disease swear by its virtues, and I know of a number who declare they have been cured of nervousness and stomach troubles through its agency. They have the same faith in the mineral that many have in the rheumatism ring and the buckeye, and other such agencies. . . . It is a well known fact that many eminent French chemists carry radium in their pockets and have great faith in its curative properties.

Directions for using "Radiumite" are as follows:

Carry one or two pieces of the Radiumite in your pocket; or, encase it in a silken or chamois bag and wear it about the waist or suspended from the neck.

These quotations clearly set forth the manner in which "Radiumite" is supposed to cure. The advertising literature leads to the belief that "Radiumite" will cure diseases of the stomach, kidneys, liver, bowel troubles, rheumatism, cancer, etc.

Examination of the mineral submitted showed that it did not possess any radium or radio-activity. It was, however, pyrophosphorescent, that is, when the ore was submitted to friction in the dark it became slightly luminous. Ores of this character are well known and the one under consideration consisted of zinc sulphid and lead sulphid, with a certain amount of gangue. It seems hardly necessary to say that this ore does not possess any curative properties whatever.

THE CURE OF PSORIASIS, WITH A STUDY OF 500 CASES OF THE DISEASE, OBSERVED IN PRIVATE PRACTICE.*

L. DUNCAN BULKLEY, A.M., M.D.

Attending Physician to the New York Skin and Cancer Hospital; Consulting Physician to New York Hospital.

NEW YORK CITY.

Psoriasis is well known to be one of the most obstinate of all diseases of the skin, discouraging alike the physician and patient, and one which often persists for many years, or recurs, in spite of various attempts at cure. While, under proper and energetic local treatment, it is often possible to remove the existing lesions in a shorter or longer time, the tendency to a recurrence of the eruption is so strong that some have regarded the disease as incurable, and too often have only attempted to give relief to the cutaneous symptoms present, principally by local means.

It is to be noticed that writers who base their judgment on cases seen in public practice, and who dwell principally on the local treatment of psoriasis, speak most discouragingly in regard to the possibility of its permanent cure, while certain others, who study the disease in its broadest aspects, express the most hopes of ultimate recovery.

In order to understand the disease better I have looked over my records of cases of psoriasis seen in private practice during the last 35 years, and have had them analyzed in several particulars, which will be presented later. The total number amounts to 509 separate cases seen among 14,120 patients with miscellaneous diseases of the skin. This makes the percentage of psoriasis to be 3.6, which is somewhat smaller than that I reported some years ago.[1] The difference is probably due to the exclusion of cases of dermatitis seborrhœica (which may often resemble psoriasis) both of late years, and from older records of cases in which the history seemed to point to this affection; so that the cases here analyzed are all undoubtedly of the disease under consideration.

This proportion is a trifle larger than that observed in public practice. Thus, of 48,132 cases of miscellaneous skin diseases treated at the New York Skin and Cancer Hospital during the last twenty-two years there were 1,597 of psoriasis, making a percentage of 3.3; this varied in different years from 2.2 to 4 per cent. In private practice the males outnumbered the females, there being 295 males, or almost 58 per cent., to 214 females, or 42 per cent. In public practice the females were slightly in excess, 806 males and 791 females.

TABLE 1.

AGE AT TIME OF CONSULTATION.

Age.	Private Practice.			Public Practice.			Grand Total.
	Male.	Female.	Total.	Male.	Female.	Total.	
Under 5 years.....	..	2	2	5	6	11	13
From 5 to 10.....	3	11	14	24	62	87	101
From 10 to 15.....	6	9	15	46	79	125	140
From 15 to 20.....	25	42	67	65	114	179	246
From 20 to 25.....	34	44	78	114	135	249	327
From 25 to 30.....	48	41	89	146	129	275	364
From 30 to 35.....	53	23	76	136	88	224	300
From 35 to 40.....	46	12	58	87	40	127	185
From 40 to 45.....	27	5	32	66	42	108	140
From 45 to 50.....	23	6	29	41	40	81	101
From 50 to 55.....	13	6	19	29	20	49	68
From 55 to 60.....	6	5	11	22	11	33	44
From 60 to 65.....	4	6	10	16	11	27	37
From 65 to 70.....	3	2	3	5	8	7	12
From 70 to 75.....	2	..	2	5	2	7	9
From 75 to 80 (78).	1	..	1	2	..	2	3
Unknown age	1	..	1	..	6	6	7
	295	214	509	806	791	1,597	2,106

In looking at Table 1 we see that psoriasis comes for treatment at all ages; there were two patients under 5 years of age, the youngest being a female child of 2 years; the oldest patient was a male aged 78 when applying for treatment. But by far the largest number were first seen between the ages of 15 and 35, 310 in all, over 60 per cent., and the most in any quinquennium were in the period between 25 and 30, 89 patients.

Of more interest, however, is Table 2, which shows the age at which the eruption was first developed. Here it is seen that the skin lesions may begin at a very early age, the youngest recorded at 4 months, and in all 30, in whom it appeared before the age of 5 years, almost

* Read in the Section on Cutaneous Medicine and Surgery of the American Medical Association at the Fifty-seventh Annual Session, June, 1906.

1. "Clinical Study and Analysis of 1,000 Cases of Psoriasis," Trans. First Internat. Dermatol. Cong., Paris, 1890, p. 879.

6 per cent. of the whole; there were 52 cases, or 10 per cent., in which the eruption was first noticed between the ages of 5 and 10 years, a total of 82 cases, or 16 per cent., before the age of 10 years; this, however, differs from the statement of Neumann[2] that the eruption generally appears about the sixth year of life. It will be noticed that the eruption was recorded as appearing most frequently between the ages of 15 and 25, 190 cases, or 95 in each quinquennium; curiously enough, also, the numbers of males and females were exactly alike in each period of five years. It will be also noticed how very seldom it first developed after the age of 55, only 5 cases.

TABLE 2.

AGE AT FIRST APPEARANCE OF PSORIASIS.

	Male.	Female.	Total.
4 months	1	..	..
Under 1 year	3	..	3
From 1 to 2 years	2	3	5
From 2 to 3 years	2	6	8
From 3 to 4 years	1	3	4
From 4 to 5 years	3	7	10
From 5 to 10 years	21	31	52
From 10 to 15 years	25	50	75
From 15 to 20 years	57	38	95
From 20 to 25 years	57	38	95
From 25 to 30 years	30	15	45
From 30 to 35 years	28	7	35
From 35 to 40 years	22	6	28
From 40 to 45 years	10	4	14
From 45 to 50 years	7	8	15
From 50 to 55 years	5	3	8
At 56 years	..	1	1
At 59 years	..	1	1
At 61 years	..	1	1
At 63 years	..	1	1
At 64 years	..	1	1
Unknown	10	2	12
	283	226	509

That psoriasis is a chronic and rebellious disease is seen in Table 3, which exhibits the duration of the eruption before coming for treatment. While there were a few cases in which the patient was seen some weeks or months after it had first appeared, it will be observed that in a very large number of instances, 118, the eruption had already existed between one and five years, and in a still larger number, 123, it had first developed between five and ten years before the record was made. The diminishing numbers after this period do not by any means indicate that the eruption may not last even

TABLE 3.

DURATION BEFORE TREATMENT.

	Male.	Female.	Total.
Under 1 year	42	38	80
From 1 to 5 years	68	50	118
From 5 to 10 years	60	63	123
From 10 to 15 years	45	30	75
From 15 to 20 years	30	20	50
From 20 to 25 years	22	8	30
From 25 to 30 years	9	..	9
From 30 to 35 years	5	..	5
From 35 to 40 years	3	1	4
From 40 to 50 years	2	1	3
Unknown	10	2	12
	296	213	509

longer than the highest period mentioned, fifty years; for we know that it frequently does continue till death. It only shows that after the eruption has lasted many years, perhaps with intermission, the patient no longer attempts to get relief, hence the small number seen after a duration of twenty to twenty-five years.

PROLONGED TREATMENT NECESSARY.

Patients with psoriasis are proverbially restless under treatment, and continually wander from one physician to another, visit mineral springs, and try about all the quack remedies. It is very hard to hold them to a strict régime of diet and hygiene, and internal medication for a length of time, and they even tire of the local treatment when it is not rapidly beneficial. With a return of the eruption they naturally seek other help.

In Table 4 is exhibited the duration of observation and often irregular treatment of the cases analyzed. It is here seen that 108 cases were seen only once, many of them in consultation, and 68 for one month or less, a total of over one-third of the whole number; while of the cases which were treated at all there were 231, or nearly one-half that were under treatment for only one year or less. This, as will be seen later, is far less time than is necessary to overcome the tendency to the disease. Of the 170 cases, or 33 per cent. that were under observation for a period of over one year, my records show that very few of them pursued treatment faithfully and continuously for a lengthened period of time, but were seen now and again, as fresh eruptions or other reasons led them to seek medical advice. It will be noted that some patients were under observation for very many years, and in certain instances in which it was possible to carry out efficient treatment, general and local, the permanent results have been very satisfactory. But with the uncertainties of an office and consultation practice it is evidently impossible to make any definite statements in regard to permanent cures; in a limited number of cases, however, that have been heard from or seen from

TABLE 4.

DURATION OF OBSERVATION OF CASES.

	Male.	Female.	Total.
Seen once	75	33	108
1 month or less	43	25	68
1 to 2 months	16	17	33
2 to 4 months	12	20	32
4 to 6 months	16	14	30
6 months to 1 year	36	32	68
1 to 2 years	21	20	41
2 to 3 years	16	14	30
3 to 4 years	6	5	11
4 to 5 years	9	1	10
5 to 10 years	18	20	38
10 to 15 years	9	14	23
15 to 20 years	4	5	9
20 to 25 years	3	2	5
25 to 30 years	2	1	3
	286	223	509

time to time, it is believed that the tendency to the disease has been eradicated by complete, prolonged treatment, the patients remaining free from eruption.

It is not surprising that psoriasis should be rebellious, and the eruption apt to recur, when we compare it with certain other diseases whose chronic character is accepted, but which are known to be amenable to prolonged treatment, perfectly directed in every respect. It is within the memory of many of us when syphilis was regarded as incurable, and when physician and patient were content to meet and remove symptoms as they recurred, and we were constantly seeing patients with this disease presenting repeated lesions, even for many years. But now the laity, as well as the profession, have pretty well accepted the fact that proper and sufficiently prolonged treatment will eradicate syphilis, and we no longer have presented to us the sad and distressing late ravages of the disease, in the frequency with which we met them some years ago. But this change has been accomplished only by recognizing and accepting the fact that the patient must submit to a continuous course of treatment, with intermissions, perhaps, but only as directed by the physician, for at least two years, and often for three or more years; and also that faithful treatment is necessary as early in the course of the disease as possible. Or, take the case of gout and rheumatism. There are certainly fewer individuals with the severe chronic forms of these diseases than formerly,

2. "Lehrb. der Hautkr.," Wien, 1873, p. 259.

because patients have learned from physicians that they must take prolonged treatment, and guard their mode of life during a considerable period, or even indefinitely, if they wish to escape from these troublesome and rebellious affections. The same may be said of chronic bronchitis and asthma, and sufferers from these maladies go to infinite pains in many directions, including great climatic experiments, in order to get relief. All are familiar with the satisfactory results which can often be obtained in diseases of the hip and spine by prolonged proper treatment, constitutional and local.

In regard to some affections of the skin it is likewise recognized that greatly prolonged treatment, and careful dietary and hygienic measures may be necessary in order to overcome the tendency to the eruption. Thus, eczema will often persist continually, or with exacerbations, for years, until by proper, faithful, and persistent medical supervision, perhaps for years, the susceptibility to its recurrence is conquered. The same may continually be observed in regard to acne, which has persisted into adult life, and also with regard to urticaria. All of these illustrations apply to the proper treatment of psoriasis. For, while we are not yet prepared to state the exact nature of the disease, or the immediate underlying causes of the eruption, any more than we can of eczema or some other general disease, we know enough of the clinical history and many other matters, to enable us to assert the soundness of such a deduction.

TABLE 5.

HEREDITY, 509 CASES.

Psoriasis:	Father.	Mother.	Patients.	Per cent.
Patients with anterior heredity.	28	49	47	.09
	Sons.	Daughters.	Patients.	
Patients with posterior heredity.	8	10	18	.03
Described as family disease	..	..	9	.01
Neither anterior nor posterior heredity	..	..	308	.60
Heredity unknown or unrecorded	..	..	127	.25
Patients			509	

	Father.	Mother.	Patients.
Having parents with psoriasis	25	16	41
	Grandparents on: father's side.	mother's side.	
Having grandparents with psor.	3	3	6
	Sons.	Daughters.	
Having children with psor.	8	10	18
	Brothers.	Sisters.	
Having brothers or sisters	30	28	58
Gout and rheumatism:	Father and father's father.	Mother and mother's father.	
With anterior heredity	17	12	29
Eczema and dermat. seb.:	Father.	Mother.	
With anterior heredity	14	14	28
	Brothers.	Sisters.	
Having brothers and sisters	6	8	14
Asthma:	Father.	Mother.	
Having parents with asthma.	2	..	2

Psoriasis is not a local disease of the skin as is epithelioma. Psoriasis is not a parasitic disease of the skin in the ordinary acceptance of the term, as has been abundantly shown by the conflicting studies of many observers. Psoriasis is not a self-limited disease of the skin; when once developed it has no natural tendency to disappear, while the patient remains in the same condition of life. Psoriasis is not permanently curable by local treatment alone; and if we ever hope to overcome the disease, it must be by measures of some kind other than local.

IS PSORIASIS HEREDITABLE?

Psoriasis is often spoken of as an hereditary affection, but a study of the recorded histories here analyzed, of the more intelligent class of patients in private practice, seems to show that this is not an important feature in any proportion of the cases, as is shown by Table 5.

Thus, in 305 cases, or 60.75 per cent., concerning which inquiry was made, there was no anterior or posterior heredity; and in 127 instances no statements were recorded. If we allow that 60 per cent. of these latter, or 76 patients, had also no hereditary history, it makes a total of 384, or over 75 per cent., in which the disease showed no hereditary influence. Of the patients in regard to whom any anterior hereditary influence was observed, there were only 41, or .09 per cent. who had 25 fathers and 16 mothers affected, and six who had three grandfathers and three grandmothers affected; of those with posterior heredity, there were only 18, 8 of whom had sons and 10 had daughters affected. There were also 58, 30 of whom had brothers, and 28 who had sisters affected. In regard to 9 patients it was recorded that psoriasis was a "family disease." It is not possible at present to state how many children of psoriatic patients escaped the disease, as these were not tabulated; but from casual inspection of my notes, and from memory, it can be confidently stated that there were many hundreds, many of them coming to advanced years, who never showed any signs of the disease.

It is recognized, of course, that these figures are not as absolutely reliable data in regard to the hereditability of psoriasis as could be desired, for naturally the knowledge or memory of the patient or friends can often be at fault, and frequently very searching and accurate questioning is not made. But as they relate to patients in the higher walks of life, in private practice, and as full and careful notes have been preserved in regard to every case, it may be pretty well accepted that the disease shows hereditary influence in not over one-quarter of the cases. This proportion might readily be expected when we consider that parents and children are commonly under the same influences of climate, hygiene, diet, and whatever may tend to produce the disease. It is, however, so constantly observed that many children in a family will escape, and only one be affected, that it is evident that true inheritance does not play a great part in the genesis of the eruption. It is reasonable to suppose that when the disease does exist, a tendency to it may be hereditarily transmitted, as other tendencies and peculiarities are handed down through generations. I am inclined to believe that, as in eczema, gout, asthma, tuberculosis, etc., it is a weakness of tissue that is inherited, which renders it susceptible to the true exciting causes of the eruption, rather than any specific disease element which is hereditarily transmitted.

ETIOLOGY.

When we come to consider what is the real cause of the eruption we are confronted with a difficult task, for as yet no accurate studies have afforded an adequate answer. The eruption has been carefully studied microscopically by many competent observers, but thus far these studies throw no clear light on the true nature of the disease. Great activity is found in the epithelial elements of the skin, with rapid keratinization; but there is also dilation of the blood vessels in the papillary layer, even in a very early stage, while later, there is perivascular cell extravasation, even deep in the corium; and observers are not agreed as to which occurs first, in point of precedence. Many claims have been made of a parasitic element, but no specific organism has yet been demonstrated, only such as are commonly found on the skin, more or less modified by their surroundings.

It is reasonable to suppose that there are many causative elements concerned in the production of the eruption in psoriasis, as in other skin affections, and I am prepared to accept a micrococcic agent as one of the direct exciting causes of the separate lesions: for, it

must be acknowledged that their clinical appearance and mode of development and extension all strongly resemble the results produced in the skin by the trichophyton. It is also not a little striking and impressive that most of the local remedies of value in psoriasis are such as have decided parasiticidal action. Chrysarobin was first used, in the form of Goa powder, for ringworm.

But. as stated, no specific parasite has yet been demonstrated, and we have to fall back on the pathogenic effect of some of the many ordinary cutaneous micro-organisms, which are almost omnipresent: even as we see the lesions of scabies and eczema becoming pustular, in certain subjects whose tissues afford a proper nidus for the coccus, which does not seem to affect other skins. For we know that micro-organisms which are ordinarily harmless may take on pathogenic action under suitable circumstances. When, therefore, the skin by inheritance is peculiarly liable to such invasion, and ready to take on diseased action, the micro-organisms which are continually lodged in the skin (as is evident from many experiences relating to surgery), excite the changes of psoriasis in the epithelial cells, if all other conditions are favorable.

Exactly what all these other conditions are it is impossible to state, for neither clinical nor laboratory work has as yet demonstrated just where the fault lies. But there are many features connected with the disease which seem to point to a constitutional state or condition which, at one time or another, favors the development of the lesions, and which can not be ignored. Thus, the intermittent character of the eruption, often without treatment, shows some change in the individual which even on the theory of a microbic origin of the lesions, causes the omnipresent micro-organisms to have effect. The same may be said in regard to the well-known proclivity of the eruption to appear at certain seasons, at which we know that the diet varies greatly, as well as the mode of life, all of which may modify greatly the metabolic processes on which the state of the tissue depends.

Most writers speak of psoriasis as occurring in persons in the best of health; but from a study of many cases in private practice, often over long periods of time, I am convinced that this is not the case, and that there is always some departure from the normal which can and should be discovered and reached if the disease is really to be cured. In many instances the eruption depends wholly on pure debility, and a prolonged and most careful tonic course, with iron, etc., will ultimately overcome the difficulty. In the gouty and rheumatic class of cases undoubted benefit results from a protracted and faithful alkaline course of treatment, with such dietary, hygienic and medicinal measures as meet the underlying blood state. In a certain proportion of cases a strumous habit will be at the bottom of the trouble, and cod-liver oil, phosphates, etc., will be needed, occasionally with alterative doses of mercury.

It would be possible to demonstrate all these points by illustrative cases, but time forbids. But I may state that it is only by the most careful study of everything pertaining to the life and health of the individual, and by complete and repeated note taking, over periods of time, that the real condition of psoriatic patients can be understood and properly treated, as, indeed, is true of many other chronic complaints: and I am sure that if this were habitually done, these matters would be as evident to others as they have been to me for many years.

Some writers claim that the disease is only a very late manifestation of syphilis, either acquired or inherited, and it is, indeed, surprising how a well defined psoriasis will sometimes melt away under efficient mixed treatment, or under iodid of potassium alone. But I can not share in this view of psoriasis, and recognize in such therapeutic results only a modification of the faulty metabolism induced by these remedies, even as eczema in children will often yield so remarkably to the proper use of calomel and soda.

From constant study of these cases I am convinced that faulty metabolism is at the bottom of psoriasis, and I believe that sufficient care can commonly demonstrate this in a considerable proportion of patients. The urine is a most important and valuable indication of the manner in which metabolism is carried on, and should be frequently and completely investigated in psoriatic patients. I do not refer to the discovery of sugar or albumin, but to a perfect knowledge of its relative and absolute quantity, its volumetric acidity and specific gravity at various times, and the exact amount and character of its many possible ingredients, etc. Deficient and defective urinary secretion will explain very many otherwise obscure and rebellious conditions of the system: it is understood, of course, that it is not believed that the kidneys themselves are necessarily at fault, but that the condition of the urine affords an indication as to how the metabolic processes have been previously carried on in various parts of the system.

This is a very large subject and can not be entered on further at this time, and I must refer to what I have already written on the subject.[3] But I will briefly refer to two very striking cases which have recently been under my care: A woman, weighing 163 pounds, with inveterate psoriasis, had passed only 13 ounces of urine the day before her visit, and at times has passed as little as 11 and even 7 ounces in the 24 hours, and yet was thought to be and appeared in perfect health. Another, a young woman, aged 21, weighing 138½ pounds, who had had psoriasis eight years, passes at times enormous amounts of urine, with great frequency and urgency day and night, and again a scanty urine of a specific gravity of 1,041 (no sugar), and an acidity, as measured, of almost four times the normal degree, and with 4.3 per cent. of urea, over double the normal amount. Surely the perturbations of metabolism manifested in these two patients can not be without effect on the condition of the skin. Moreover, the effect of intelligent treatment, dietary, hygienic and medicinal, on these and other patients, has demonstrated to a nicety that there is an intimate relation between metabolic conditions and the eruption on the skin.

Very recently, at the New York Skin and Cancer Hospital, one of the most rebellious and distressing cases of psoriasis that I have ever seen, has changed in a remarkable manner by internal treatment along metabolic lines. The patient, a woman, aged 32, has had characteristic psoriasis for very many years, and has been in the hospital for months at a time, the disease resisting every conceivable form of treatment. A month ago, when the eruption had affected almost the entire surface, many large areas suggesting dermatitis exfoliativa, she was given four drops of strong nitric acid, internally, well diluted, three times daily, after eating. The good effects were apparent very soon, and the eruption has steadily faded, leaving most of the surface in a normal condition, and

3. "Relation of Diseases of the Skin to Internal Disorders," Rebman & Co., New York, 1906.

this with relatively little of the same, rather mild, local treatment which she was previously using without effect. What the ultimate results will be can not yet be judged, but, in all my experience I have never witnessed such a startling result from a single internal therapeutic measure in psoriasis.*

TREATMENT.

The treatment of psoriasis, as may be judged from what has preceded, may cover a very wide range of measures, and it is readily understood why arsenic is not always successful in controlling the disease. And yet arsenic is considered by many as about the only remedy in this disease, and assuredly, in certain cases it will often control the eruption in a very satisfactory manner. Its mode of operation is by no means fully understood, although it is commonly credited with having a more or less definite action on the epithelial elements of the skin. This may be so, but to my mind it is more logical to explain its effect through the agency of the general nutrition: for arsenic is equally recognized as a nerve tonic, controlling chorea and neuralgia to a marked degree, and is also of value in chronic malaria and in many conditions of debility.

The internal remedies which may, at one time or another, be used with advantage in the treatment of psoriasis, embrace a fair proportion of these in the Pharmacopeia, and it is impossible even to mention the many which from time to time have been brought forward. The truth is that each and every one of them has probably been of service in one or more cases, which happened to be suitable for it at the time.

It is here that the correct treatment, looking toward a cure of psoriasis comes in: namely, in studying the patient at each visit, and determining the proper line along which to operate at that particular time, for undoubtedly constitutional conditions change from many causes, and treatment should be varied accordingly.

Moreover, it is well to remember what was said a while ago in regard to the obstinacy of the disease, and the length of time often required to overcome syphilis and many other chronic conditions. In my judgment there are many failures in psoriasis which are due to irregularity and intermissions in the constitutional treatment, or cessation of the same. Although the eruption of psoriasis may often be removed relatively easily by local measures, the patient is by no means cured, and it is often a disadvantage to have the eruption too quickly removed by local means, as it renders the patient careless and unwilling to pursue the dietary, hygienic, and medicinal treatment long enough to effect a cure.

As may be inferred from what has preceded, I have no single remedy or treatment to present or advocate, nor do I believe that such will ever be found: for there is no specific element to overcome, as in syphilis and malaria, nor any parasite that can be eliminated, once for all, as in scabies and favus. But I do plead for a more careful and prolonged study and control of the psoriatic patient, in all particulars, and such a regulation of the life, and such a use of all the measures known to the science and art of medicine, as shall suffice to change the constitution to that degree that, although the eruption may possibly threaten at times, it need never prove a serious matter: and, as before stated, I believe that this can be done in a very much larger proportion of cases than has hitherto been generally believed and accomplished, and that even the tendency to the eruption can often be entirely overcome.

As in the case of gout and chronic bronchitis, the psoriatic subject must recognize the existence of a disease of deep-seated nature, which will require the best efforts of the physician and patient, over a long period of time, in order to have it effectually overcome. I commonly fix two years (it may be longer) as the least period to be considered at first; and then, if after that the patient relapses into exactly the same mode of life and condition of system as previously, there may be a threatening of the eruption. But if, with its slightest recurrence, energetic measures are at once taken and continued, the trouble may be avoided, as I have observed time and again.

Time forbids going at length into the details of constitutional treatment, so different are the cases, but a few words of suggestion may be given. Mention has already been made of the excellent results sometimes obtained by antisyphilitic treatment, even when no specific history can be obtained, also of the disappearance of the eruption under the free use of nitric acid internally. In full blooded plethoric cases, tartar emetic in increasing doses, to toleration, given six times daily, with nux vomica and quassia, has cleared up a number of my cases in a surprising manner, without local treatment; but this needs to be followed by a tonic course of iron and arsenic, and perhaps returned to again. In cases in which debility was evident, a strong course of iron and arsenic, with bitter tonics, has had like effect, and the same has been accomplished with cod-liver oil, in suitable cases. There are also many patients in whom arsenic alone, in efficient doses, suffices to keep the disease in abeyance.

Arsenic is so well known that little need be said concerning it. I have never had occasion to regret its use in suitable cases, and have had patients who consumed large quantities with only beneficial results. The greatest consumer of arsenic was a clergyman, under my care more or less for twenty years, beginning at 30 years of age, when he had already had the eruption eight years. He calculated that sometimes he took almost 8 ounces of pure Fowler's solution in the course of a single year, and over half a gallon, in drops, in the course of fourteen years. But arsenic does not suit every case nor every stage of the disease. As is well known, it sometimes stimulates the eruption to increased activity, and is seldom of value in its acute or developing stage, but rather aggravates it.

Alkalies, properly used, and such remedies as promote a perfect urinary secretion, are of the utmost value in most cases of psoriasis: and it is here that the value lies in most of the mineral waters used at the springs or at home. But to be really effective they should be administered with a repeated and perfect knowledge of the kidney secretion, as shown by quantitative analysis. The urine should not be kept alkaline, but somewhat below the normal acidity. Acetate of potassium, combined with nux vomica, and the fluid extracts of dulcamara and rumex, is most valuable, especially in the most congestive forms of the eruption.

Diet, undoubtedly, has much to do with psoriasis, and should always be most carefully attended to. Alcohol in any form, even the lightest wine or beer, is prejudicial and must be absolutely avoided. Whatever may be the mode of operation, there is no question in my mind, from

* At the date of correcting proof, four months later, I may add that the dose has been gradually increased until she is now taking about ten drops of the strong nitric acid, three times daily, with the entire absence of the eruption, when seen to-day, and with no local treatment for a long time.

repeated observations, extending over many years, that meat, especially if freely indulged in, increases the liability to and severity of the eruption, as I reported ten years ago;[4] and I am more convinced in regard to this than at that time. For many years I have placed numerous psoriatic patients on a strictly vegetarian diet, with most excellent results; and these results are further corroborated by the fact that now and again, when one has broken through the regulations, he or she has reported with a recurrence of the eruption. I make the diet absolutely vegetarian, not even allowing eggs or fish, or milk as a beverage, with eating; and sometimes I have even excluded coffee and tea with advantage. Excess of sweets also tends to increase the eruption in psoriasis, and these should be greatly restricted: moreover, as the eruption is often increased by dyspepsia I see to it that pastry or articles exciting indigestion are also avoided.

Hygiene has a certain bearing on psoriasis, and in an effort to secure a cure of the disease it should always be controlled. This can not be gone into fully here, but if, as I believe, faulty metabolism is the bottom cause of the malady, every item which can conduce to its perfect performance should be attended to: and unless the physician investigates and directs this, the patient will be apt to live just as before. I have elsewhere reported psoriasis profoundly affected by the condition of the nervous system, the eruption appearing with each nervous breakdown, and we all know of the recurrence of psoriasis in connection with lactation. Temperature has much to do with the eruption, as it frequently disappears on removal to a warm climate, and the disease is relatively seldom seen in the tropics.

In regard to local treatment I have little to say, except that I agree with the most radical localists, in regard to the importance (although not relative importance) and effect of local therapeutic measures; no one who has seen much of the disease could rightly do otherwise. The rapid removal of a long standing and rebellious eruption of psoriasis by the proper use of chrysarobin, of good quality, is certainly a striking evidence of therapeutic power; but we all know the objections to chrysarobin, and often it is not feasible to employ it in private cases in an efficient manner. Sometimes, however, the eruption does not yield to it, and occasionally it fails owing to an inferior quality of the drug. I need not take time to enter into the details of other local treatment, which are well given in literature, almost every variety of which I have, at one time or another, used in private or public practice. As in all other cutaneous maladies the application has to be fitted to the case, and varies according to the character and stage of the eruption, and time forbids further consideration of the subject. But I would like to say a few words in regard to the treatment of the eruption by the *x*-rays, in which I have had some interesting experiences. They are by no means suitable to every case, although as yet I have had no unfavorable experiences, except one, among a considerable number of cases thus treated, in part. In this patient, a man aged 55, there was a slight burn on the abdomen, with the same strength of application used elsewhere: but this healed soon, and the results elsewhere had been so favorable that he insisted on having the *x*-ray still employed on other patches, even while this was sore. I have used it only on older, more chronic lesions, and have repeatedly seen a single application of medium intensity remove a patch entirely. It often leaves a brownish stain, which persists some little time. I have had cases in which, although new eruptions developed elsewhere, the portions which had been treated by the *x*-rays remained free. As an adjunct to the local treatment of psoriasis, in proper cases, I consider this new measure a most valuable addition to our armamentarium.

4. Trans. Third Internat. Dermatol. Cong., London, 1896, p. 734.

CONCLUSIONS.

In conclusion I would emphasize the following points in regard to the disease under consideration:

1. Psoriasis is not a purely local disease of the skin, but has constitutional relations which are most important.

2. Psoriasis is not a parasitic disease of the skin, in the usual acceptation of the term; it is not contagious, nor has it a definite micro-organism. But probably the immediate lesions on the skin are caused by the growth of some of the ordinary micro-organisms usually found on the skin, which take on a pathogenetic action when the soil is suitable.

3. Psoriasis can not be cured permanently by local treatment alone, although when properly directed this is commonly capable of removing existing lesions, which are likely to return.

4. In some instances in which local treatment seems to be followed by success, the eruption may be seborrheic dermatitis, which in some of its phases closely resembles psoriasis.

5. Hereditary influence is a relatively unimportant factor, not operative in more than one-quarter of all cases: even in many of these instances but one child may be affected among many healthy children.

6. Psoriasis is not a late manifestation of syphilis.

7. There is no one tangible internal cause of psoriasis, though faulty metabolic changes are probably at the bottom of every case, and these may be induced in many ways.

8. The repeated and thorough volumetric analysis of the urine is a most valuable aid in determining the line of proper treatment in different cases, and at different times.

9. There is no one internal remedy universally of value in psoriasis, although arsenic is the single agent of most service in the greater number of instances. Arsenic is safe, if properly used, and may be taken for a long time with only beneficial results: but it commonly requires to be employed in conjunction with other internal measures, or alternated with them. In acutely developing psoriasis it often acts badly, increasing the eruption.

10. In a large share of cases alkalies, if properly used, are of the greatest value in psoriasis.

11. The avoidance of meat, or an absolutely vegetarian diet, is a most valuable aid in treatment, and sometimes will be attended with freedom from the eruption.

12. Psoriasis is an exceedingly chronic and rebellious disease and effective internal measures must be continued for a long time, generally for at least two years, to ensure a cure.

13. Local treatment is of the greatest value in the removal of the eruption present, but its temporary success should not interfere with the persistence in proper internal measures for a length of time, even when no eruption exists. The eruption can also disappear under the strictest proper internal treatment, without the aid of any local measures.

14. The *x*-ray is a most valuable adjunct to local therapeusis, and is sometimes capable of removing chronic lesions even by means of a single application.

531 Madison Avenue.

DISCUSSION.

Dr. Frederick A. Rhodes, Pittsburg, Pa., said that a few years ago he sent a letter to a number of dermatologists in this country asking what, in their experience, is the ratio of psoriasis to other skin diseases; also, to what diseases, in their opinion, it is especially allied, and their views, in a few words, as to prognosis, etiology and treatment. To most of these letters he received courteous replies, but after summing up the conclusions he was no better off than before. He is particularly interested in psoriasis because for 6 years he has been a sufferer from the disease. In 1899 he first noticed a small, papular lesion on the inner surface of the left ankle, above the malleolus, which he did not consider seriously. It remained as a single lesion for a number of months. About that time, on account of an epidemic of smallpox in the neighborhood, he re-vaccinated himself a number of times, but with no result. In the course of a few weeks, however, a number of new psoriatic lesions developed, and within three months there were numerous patches from the knees to the feet, and a few isolated lesions on the thighs and arms. Dr. Rhodes said that some of the leading dermatologists hold the view that vaccination will arouse a latent psoriasis, and a few years ago, in the *British Journal of Dermatology*, a series of cases was reported in which the claim was made that vaccination is the cause of the disease. Dr. Rhodes said that he does not agree with the view that it can be the real cause, but believes it can arouse a latent one.

During the first year after his psoriasis developed it was worse than it has been at any time since, and the scaling was very free. He tried various methods of treatment without avail, and stated that if one were to try all the remedies that have been recommended in this disease, it would practically include the entire pharmacopeia. He tried the different local remedies and arsenic internally, with no other effect than to alleviate the symptoms to some slight extent. Finally he came to the conclusion that the eruption is the result of metabolic disturbance, and in spite of the fact that during the past three or four years he has done practically nothing in the way of treatment, a gradual improvement has been noticed. The eruption is worse during the winter months; in February and March the lesions usually increase in size and number, and with the onset of the warm weather an improvement is noticed. While the *x*-rays have given good results in some cases, he is of the opinion that exposure to sunlight has been equally efficacious in his cases. The fact that there are so few cases in tropical countries, with benefit of warm sunlight when tried, tends to show that the eruption is caused by some disturbance of the vasomotor system, probably of the vasodilators, the action being reflex and irritant due to metabolic products circulating in the blood. Dr. Rhodes said that a peculiar feature in connection with his own case is that at the time the disease manifested itself he had an attack of gastralgia which persisted as long as the eruption was severe, and there have been recurrent attacks of the gastralgia coincident with the outbreaks of psoriasis. In conclusion he stated that the attacks, both in time of appearance and physiologic action, resemble very much those of chorea, another disease of doubtful etiology. In chorea the irritating effect is manifested through the motor nerves, while in psoriasis the manifestation is seen in those nerves when modified by sympathetic ganglia.

Dr. Charles P. Sylvester, Dorchester, Mass., reported a case of psoriasis which resisted all external and internal medication, but was rapidly cured by laparotomy and curettage. The patient was a married woman, aged 27, a blonde, who had always been strong and healthy, except for a constant leucorrhea following the birth of a child 6 months before. Her bowels were regular; menstruation was normal, but rather free. She was fond of candy. In March, 1903, she had a severe attack of tonsillitis which so closely resembled diphtheria that 5,000 units of antitoxin were given while awaiting culture reports, all of which were negative. Five weeks later, punctiform macules appeared on the face and body, which were scaly and itching in character, with lameness of the muscles and painful joints. The patches slowly increased in size and number until almost the entire body, including the scalp and face, but excepting the palms and soles, was covered with the lustrous, scaly patches, some of which, around the umbilicus and sacrum, coalesced to form areas as large as the palm, while most of them did not enlarge to the size of a dime. Various internal and external remedies were used without much effect, including mercury and potassium iodid, as the sore throat, followed by the eruption, suggested syphilis. The subsequent history, however, eliminated that disease. Vaginal examination revealed a large, retroverted uterus, with a polypus projecting from the external os, and a small fibroid on the posterior wall of the fundus. The cervix was slightly torn on the left side. There was an offensive, viscid discharge. An operation was advised for the removal of the tumors, for restoring the normal position of the uterus and relieving the leucorrhea, and as the best chance of curing the psoriasis. The patient refused surgical treatment. The disease assumed more and more of a chronic nature, until finally 6 months after its appearance, it began to fade gradually, and in January, 1904, it had entirely disappeared. The following September it again appeared, and progressed steadily until December, when the patches were thicker and more hyperemic than at any time during the previous attack, and her face was so involved that she would not venture outdoors. An operation was again strongly advised, and this time the patient consented. She was taken to the Moultrie Street Hospital, Dorchester, and on January 4, 1905, after curetting the uterus and removing the polypus, Dr. Sylvester performed a laparotomy, removing a small fibroid and attaching the uterus to the anterior abdominal wall. Four days later the eruption seemed much improved, and in two weeks it was no longer visible on the face. She made an uneventful recovery from the operation, and on the fifteenth day left the hospital. On March 1, less than two months after the operation, there were no visible signs of the eruption, except a slight erythematous appearance about the umbilicus and sacrum, where the most indurated patches had occurred. Up to the present time there has been no recurrence of the psoriasis or the leucorrhea, and she is in excellent health.

Dr. Sylvester said that psoriasis, in his opinion, is not of parasitic origin, nor is it an inherited sequel of syphilis, tuberculosis, rheumatism or gout. It is a manifestation of a toxicosis, and the case he reported together with others he has seen following vaccination and scarlet fever is in accord with that theory. Either the streptococcic infection of the throat, the administration of the antitoxin, or the infected endometrium, one or all, on the one hand, or the reflex irritation of the retroverted uterus and the presence of the tumors, on the other, furnished the cause. Relieving the leucorrhea, which was kept up by the polypus and the displaced uterus, in all probability effected the cure. A laparotomy diet for one or more weeks may not be without beneficial effects if psoriasis is due to an autointoxication.

Dr. William S. Gottheil, New York City, said that the position taken by Dr. Bulkley marks a reaction against the purely local treatment of psoriasis which the Vienna school has long advocated. There are certain cases, no doubt, in which metabolic conditions are connected with the appearance and persistence of the eruption, but there are also a large number of cases in which nothing abnormal can be detected in the constitutional states of the patients. He recalled one case under his observation, the wife of a physician, who suffered from a recurrent attack of psoriasis every time one of her children was ill, or when she was worried from any other cause. When such an attack came on she was isolated in a room on the upper floor of her home, she was not allowed to be harassed by any household cares, and with practically no other treatment the eruption rapidly disappeared. Dr. Gottheil said that arsenic is beneficial in many cases of psoriasis, especially when given hypodermically and in large and in-

creasing doses. His favorite preparation is a 1 per cent. solution of sodium arseniate, repeated every day or every other day, until 40 drops are given in the course of 24 hours in appropriate cases. Externally, the preparations of tar are as useful as chrysarobin, and are much more commonly employed in Germany than in this country. Dr. Gottheil said that he has no doubt the *x*-ray is beneficial in some cases, but he has yet to see the psoriatic patch that will not respond to proper energetic local treatment. He agreed with Dr. Bulkley that it would be a good thing if patients with psoriasis would consent to remain under treatment for 2 years or more. The majority of them, however, grow impatient unless they obtain prompt relief. The practical conclusion is that these patients are relieved but not cured, and that a recurrence can usually be confidently looked for.

DR. FRANCIS J. SHEPHERD, Montreal, said that he is inclined to agree with those who attribute psoriasis to some fault in the metabolic processes, at least in many of the cases, if not all, even though it can not be detected. He referred to a case he saw a number of years ago, which was interesting in connection with a meat diet and its bearing on this form of eruption. The patient was an officer in the Hudson Bay Company who lived far north, and for about 10 months in the year subsisted on a meat diet almost exclusively. He had a very extensive psoriatic eruption, which disappeared permanently after he removed to Montreal, and gave up his meat diet. Dr. Shepherd also mentioned another case, that of a man who at times drank wine to excess, even indulging in prolonged sprees. At such times he had severe outbreaks of psoriasis, the eruption disappearing when he stopped drinking, and recurring with the onset of the next spree. Dr. Shepherd said that he is convinced that vaccination at times determines the outbreak of psoriasis in predisposed individuals, although if vaccination had not been the exciting cause, no doubt something else would.

DR. JAMES C. WHITE, Boston, declared that he always tells his patients that psoriasis is in one sense an incurable disease. Some persons may have only one attack; others may have repeated attacks, and he does not believe that any medicine, either internal or external, will radically change the course of the disease to any material degree so far as its recurrence is concerned. In dealing with an affection which is capable of spontaneous disappearance, it is perhaps erroneous to draw deductions from its non-recurrence following any course of medication. Moreover, the course of the disease is so irregular and uncertain that it is difficult to draw conclusions as to whether or not it would recur after this or that method of treatment. With increased experience, he said he becomes less and less confident as to the value of internal remedies in this disease. He gives arsenic less than in former years, and in the chronic form of the disease he is inclined to rely more on potassium iodid. In acute cases he gives no internal remedies, except perhaps some alkaline preparation. Dr. White said that many years ago a statement was made by a physician of authority, who cited a large number of cases to prove his assertion, to the effect that the disease is curable by the use of an exclusively vegetable diet. A year or so afterward another, equally distinguished, put all his psoriatic patients on an animal diet, and his results were just as good. The important factor in the treatment of psoriasis, Dr. White said, is to put all the patients into as good a condition as possible. Psoriasis has been called the skin disease of health, because it is observed so frequently in patients who are otherwise perfectly healthy. He said that in some cases, but not in all by any means, the results of the use of *x*-rays are marvelous, even in cases that have resisted every other method of treatment. In those very same cases the eruption may recur and the *x*-ray treatment prove without effect. Thus it is that the *x*-ray has only added one more uncertain remedy in the treatment of this disease.

DR. W. D. CALVIN, Fort Wayne, Ind., called attention to the fact that he has seen a psoriatic eruption disappear while the patient was suffering from pneumonia, only to reappear later. He has observed the same phenomenon during the course of an attack of inflammatory rheumatism, and has recently heard of an instance in which it disappeared during typhoid fever. These experiences seem to indicate that psoriasis is not the result of various kinds of intoxications, but of a special poison. He has seen cases in which the eruption yielded to almost anything; in others it persisted in spite of various methods of treatment. He has never resorted to the *x*-ray treatment in psoriasis, but has always endeavored to put the patient in as good a physical condition as possible, correcting errors of diet, methods of living, etc., but none of those measures has proved very satisfactory.

DR. GARDNER T. SWARTS, Providence, R. I., said that acting on the theory that psoriasis is due to metabolic disturbance resulting from a deficiency of some of the glandular secretions, he has administered thyroid extract in a number of cases with apparently satisfactory results, only to have the eruption recur and disappear again under the use of potassium iodid, hydriodic acid, or alkaline treatment. Whether the various remedies that have been recommended ever cause the eruption to disappear, or whether the improvement is due to Nature, or to the peculiarity of the disease he said he would leave to the members of the Section to decide.

DR. JOHN B. KESSLER, Iowa City, Iowa, said he is rather inclined to favor the use of salicin in preference to arsenic in the treatment of psoriasis. His experience with the *x*-rays in the disease has not been satisfactory. He asked Dr. Stelwagon what his experience has been with carbolic acid in the treatment of this condition.

DR. HENRY W. STELWAGON, Philadelphia, said that he believes that heredity, either directly or indirectly, exerts some influence on the development of this disease. In any predisposed person, any ill condition of health accompanied by fever may also be a contributing factor. There are many other contributing factors, but they should not be mistaken for the cause of the disease. In the treatment of psoriasis, the first essential is to put the patient in as perfect a condition of health as possible. The fact that the psoriatic eruption may disappear temporarily during the course of the acute exanthemata or any febrile condition is true not only of psoriasis but also of many of the inflammatory dermatoses, including eczema, dermatitis herpetiformis, etc. Dr. Stelwagon declared that he was surprised to hear that reference had been made, even negatively, to the possible relationship between syphilis and psoriasis. He had supposed that that question was settled long ago, and that the view that there is any association between the two diseases is obsolete. It is well known that psoriasis is a chronic, general disease, bearing no relation to syphilis. In regard to the various remedies and successful methods of treatment that have been loudly proclaimed at different times in psoriasis, Dr. Stelwagon said that, in his opinion, the result of treatment depends largely on the time of year when the case comes under observation. Take, for example, a patient who, during the winter, has been under the care of various physicians without being benefited. About May or June, at the approach of warm weather, when the disease shows a natural tendency to improve, he perhaps makes another change in his physician, and under almost any remedy the eruption often disappears, due largely to the seasonal influence. Dr. Stelwagon is in the habit of telling young men who suffer from psoriasis that they should reside in a warm climate, because the disease, as known in the north, is often extremely persistent and rebellious; but that it can be temporarily cured, though a recurrence is very apt to take place. In many psoriatic patients who have never taken arsenic, the drug seems to act almost like a specific. Thyroid extract is beneficial, but it has so many unfavorable effects that it is withheld until absolutely necessary. Carbolic acid, which was recommended long ago, in small doses, by Kaposi, has given good results in Dr. Stelwagon's practice during the past year, when administered in large dosage. He usually administers the drug in a 25 per cent. solution of glycerin and water, and gradually increases the dose until the patient is taking from 18 to 30 grains daily. The patient's urine should be watched for possible toxic action, but if the pure acid is used there are rarely any bad effects. Like other remedies, it gives the physician an opportunity of doing away with the arsenic treatment.

DR. F. A. KLEINHANS, Milwaukee, Wis., said that he has been a sufferer from psoriasis for 18 years, and has tried practically everything in the line of treatment both internal and external, the *x*-rays alone excepted. He is firmly convinced that psoriasis is not of parasitic or microbic origin, but is a cutaneous manifestation, due to faulty metabolism, in fact a sort of autointoxication. In sections of most recent psoriatic lesions excised from his own person, he has found a parakeratosis, i. e., a thickening of the horny layer and dilatation of the vessels of the corium and round cell infiltration surrounding the dilated vessels and the sweat coils. Among other methods he has tried the hypodermic use of arsenic (as Fowler's solution) and found it very painful. At times he can rid himself very readily of the lesions in the course of a week or two by taking 5 grains of bicarbonate of potash 3 times daily; at other times this remedy has no effect. Sometimes Fowler's solution proves beneficial and again it fails, or even aggravates the condition. Thyroid extract has also been tried without any effect. He believes that there is no one remedy that can be depended on in all cases at all times.

DR. WILLIAM L. BAUM, Chicago, said he has always regarded psoriasis as a dermato-neurosis. In the first place, there is a distinct hereditary tendency to the disease, as it can be traced from generation to generation, following practically the same type as does a psychosis. The mere fact that so many remedies have been recommended by different authorities indicates that the opportune moment effected the cure rather than the remedy. He has frequently observed exacerbations of the disease after violent emotional disturbances. The eruption may disappear rapidly when the patient is placed under a different environment. This does not depend so much on the climate, as the disease is observed in both warm and cold climates. In the majority of cases, the patients should be made to understand clearly that the disease is incurable, although in some instances it is limited to a single outbreak. Vaccination and injections of antitoxin may be exciting factors in causing an outbreak. In Cook County Hospital, Chicago, about 3,200 patients have been given injections of antitoxin and a decided number of the patients injected have returned with psoriatic efflorescences attributed to the antitoxin. Still, any other form of irritation might have the same effect. In over 70 per cent. of the patients who returned, Dr. Baum was able to get a history of psoriasis either in the parents or grandparents, or in some collateral branch of the family. In the treatment of psoriasis, the possibility of neurotic origin should always be remembered.

DR. DAVID LIEBERTHAL, Chicago, said that all are agreed as to the difficulties connected with the management of psoriasis. It is difficult to have a patient carry out such strict diet as Dr. Bulkley demands. Dr. Lieberthal has under his care a patient with psoriasis who years ago was treated by Dr. Bulkley and freed from the disease through the diet treatment exclusively. But the patient remarked that he would rather keep his skin affection than undergo such a diet treatment again. It can not be denied, however, that regulating the diet of certain patients with systemic derangements will bring about good results. Dr. Lieberthal has under his care a patient who for 16 years was not relieved of his affection in spite of having had the benefit of the best dermatologic care here and abroad. The patient's urine was loaded with urates and uric acid and after his diet was accordingly modified, the skin cleared up and remained so until his death, 18 months later. It is important to see the patients at short intervals in order to observe the lesions and to control the internal administration of drugs. External treatment should be employed with due diligence and if chrysarobin is applied, it should not be allowed to spread to the normal skin, otherwise it is apt to produce a dermatitis, on the basis of which new psoriatic lesions may develop. Arsenic should be administered rather in older cases of limited area. If Fowler's solution is used a fresh preparation should be secured as the older becomes inert. Dr. Lieberthal said that he uses the *x*-ray in psoriasis, but only in the severe inveterate cases. Any treatment employed should be carried out until the last traces of the disease have disappeared.

DR. L. DUNCAN BULKLEY, New York City, said that he has used carbolic acid in psoriasis, and knows what it will do in certain cases. He thinks it entirely erroneous to regard psoriasis as incurable. He also disagrees with those who claim that it is impossible to get patients to live on a vegetable diet. He had one psoriatic patient who has been a vegetarian for 10 years, and a number who have abstained from animal food for from 3 to 4 years. He has seen psoriatic outbreaks following a shock or mental strain. In the treatment of psoriasis, patients should be kept under observation for a long time after the eruption itself has actually disappeared. The same thing is done in syphilis and in gout. Psoriasis can be cured in a certain proportion of cases. Those not cured are the ones in whom the basic cause of the eruption can not be discovered.

UNILATERAL ASCENDING PARALYSIS AND UNILATERAL DESCENDING PARALYSIS.

THEIR CLINICAL VARIETIES AND THEIR PATHOLOGIC CAUSES.*

CHARLES. K. MILLS, M.D.

Professor of Neurology in the University of Pennsylvania; Neurologist to the Philadelphia General Hospital; Consultant to the Philadelphia Orthopedic Hospital and Infirmary for Nervous Diseases.

PHILADELPHIA.

In December, 1899, I presented a paper to the Philadelphia Neurological Society in which I called attention to a new clinical type which I designated as unilateral progressive ascending paralysis.[1] Somewhat similar cases have since been described under such terms as progressively developing hemiplegia, chronic progressive hemiplegia, and ascending unilateral paralysis. Unilateral ascending paralysis is probably the simplest and, therefore, the best designation for the symptom-complex.

Since the publication of the first contributions on this type of paralysis, the subject has attracted some attention, but not perhaps as much as its importance warrants. Probably not a few cases of progressively ascending hemiplegia or hemiparesis have failed of record because of the slowness of development of the affection and the overlooking of the essential feature of upward progression. Some cases have, no doubt, been passed by as lacking in interest, or as probable instances of focal disease not worthy of elaborate report.

Practical medicine is advanced by directing attention to clinical types or entities which are peculiar in their method of development, their symptomatology or their pathologic causes. One point which has been brought out during the brief history of the existence of progressively ascending hemiplegia is that unilaterality and upward progression of the paralysis are exhibited by affections differing in their pathology.

A close study of the recorded cases of unilateral ascending paralysis shows that this clinical type in a more or less pure form may occur, 1, as the result of primary degeneration of the pyramidal tracts to which may be added other degenerative lesions; 2, as the early stage of disseminated sclerosis; 3, as the form assumed by unilateral amyotrophic sclerosis; 4, as the order of progression in unilateral paralysis agitans; 5, as the expression

---

* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

* From the Department of Neurology of the University of Pennsylvania.

1. Jour. Nerv. and Men. Dis., April, 1900.

of a focal lesion either cerebral or spinal; 6, as a clinical type in cerebrospinal syphilis; and as a peripheral or a hysterical affection.

In my description of the first case (rather of the first two cases of unilateral ascending paralysis, for brief account was given of a second case seen many years before the publication of the paper), I suggested that the disease probably represented a new clinical type due to slowly increasing degeneration of the pyramidal fasciculi or of the cerebral motor neuron systems.

The cases which have been recorded by others as well as by myself, since attention was first called by me to the clinical type of ascending hemiplegia, even those cases which have been regarded as instances of pyramidal degeneration, have varied somewhat in their clinical features. In some, for example, spasticity has been present from an early period; in others it has been absent or has been but slightly marked. The reflexes, usually exaggerated, have in one or two instances been diminished or only moderately marked; the wasting usually present but moderate has varied in amount in different cases. As the literature of this affection is still meager, I shall take occasion to give a résumé of all the cases so far published, unless, indeed, some reported case has escaped my investigations.

Before doing this, however, I desire to direct attention to unilateral descending paralysis, which is to be regarded as simply the same type reversed. Unilateral ascending paralysis due to degeneration of the pyramidal tracts, or to this and some added condition of degeneration, is the more common form of progressively developing hemiplegia, but an affection essentially the same sometimes takes a reversed order so far as the limbs or as the face and limbs are concerned, giving us a unilateral descending paralysis or a progressively descending hemiplegia. Through the courtesy of two of my professional colleagues in Philadelphia, Dr. David Riesman and Dr. William Pickett, I shall have the opportunity to present in the concluding portion of this paper two cases of this descending type, the one an example of disseminated sclerosis taking at first the unilateral descending and systemic form, and the other probably an instance of nearly pure pyramidal degeneration.

That the suggestion of a new clinical type is sometimes fruitful in the development of diagnosis is illustrated by the brief history of progressively developing hemiplegia. The report of two or three cases of unilateral ascending paralysis of unusual form has called attention to the question of ascending and descending unilateral types of certain well-known diseases, such as disseminated sclerosis, paralysis agitans and amyotrophic lateral sclerosis. Variations in the symptomatology of these reported cases have also awakened interest as to the probably differing pathology of some of the cases recorded.

After summarizing in the briefest manner possible the cases of unilateral ascending paralysis hitherto published, and after some discussion of the different forms of disease of the nervous system which may present a progressively developing hemiplegia, ascending or descending, I shall record one new case of unilateral ascending paralysis and one new case of unilateral descending paralysis, describing also the case referred to me by Dr. Riesman, when considering the unilateral ascending and the unilateral descending types of disseminated sclerosis.

CASE 1.—A man, aged 52, about two years before coming under observation,[1] began to show signs of weakness in the right lower extremity. Weakness in the arm appeared eighteen months after the impairment in the lower extremity was first noticed. This soon became more and more evident, and was accompanied by the tendency to carry the arm raised against the body and flexed at the elbow.

When first examined the paresis in the upper extremity, although easily determined, had not nearly reached the degree of impairment observed in the leg. The right side of the face was also slightly paretic. Wasting was distinct in the right lower extremity, the measurements showing a difference of one and a half inches for the thighs and five-eighths of an inch for the calves. The various movements of the right leg were distinctly weaker than those of the left, but were nowhere absolutely abolished; similarly all the movements of the right arm were distinctly impaired. Faradic contractility was retained. The affected limbs were not spastic nor contracted. Careful examination showed retention of all forms of sensation. The tendon and muscle phenomena on the right side were all somewhat exaggerated. Knee-jerk was plus on the left side, but considerably more exaggerated on the right. Patellar clonus and slight ankle clonus were present on the right, but not on the left. The plantar reflex was normal on the left; but on the right, while the Babinski response was not present, downward flexion of the toes was distinctly less marked than on the left.

CASE 2.—A woman, aged 43, first noticed weakness in her left leg while pregnant with her last child, three years before coming under observation.[1] A few months later the left arm became paretic. The reflexes were much increased on the affected side. The patient remained under observation for many months, the paresis of the leg and arm slowly increasing. Neither leg nor arm was contractured, and sensibility was preserved. The patient complained at times of pains in the limbs and twitching in the leg and arm.

This woman was under my care more than 20 years ago and had previously been a patient of the late Dr. E. C. Seguin, who believed that there was a cerebral lesion causing secondary changes in the crossed pyramidal fasiculus. The view taken by me was that the alterations in the pyramidal tracts were of the nature of a lateral sclerosis, but were primary and not secondary to any cerebral lesion. I have learned that the patient was alive about fifteen years after she was first seen by me and had become entirely unable to walk. Just how she was affected at this time was not ascertained, except that she had become triplegic, the affection having evidently passed over to the lower extremity on the side opposite to that on which it had started.

CASE 3.—A man, aged 41, four years before coming under the notice of the reporter,[2] began to have a sense of weakness in the left lower limb in walking. This weakness gradually increased, and in about a year the left upper limb began also to be weak. The patient was positive that a year had elapsed after the impairment in power in the lower limb before he felt any weakness in the left upper extremity. He had never had any symptoms of an apoplectic seizure.

This showed that the movements of the left lower limb were very spastic, but not in the least ataxic. The toes of the left foot scraped the ground, and this foot was inverted in walking. The left knee-jerk was much more marked than the right, which was, however, prompt. Ankle clonus and the Babinski response were present on the left, but not on the right. Sensation was normal. The left upper limb was weaker than the right; it was also spastic, but the weakness and spasticity were less than in the lower extremity. The left upper limb was held slightly flexed at the elbow and against the body, but no contractures were present anywhere. Speech was normal, but the mouth could not be drawn up as well on the left side as on the right. The tongue went slightly to the left on protrusion. Ophthalmoscopic examination showed white atrophy of the left optic nerve. Wasting which was present was like that occurring in hemiplegia.

CASE 4.—A youth, aged 19, about four years before coming

2. Spiller, William G.: Philadelphia Med. Jour., Feb. 9, 1901.

under observation[3] began to drag his right foot; it tended to cross in front of the left, and he wore off the sole of his right shoe at the toe. Two years later he had diplopia, which lasted for five months. The right leg at this time was somewhat smaller than the left. About three and a half years after the right foot first began to drag, which was about five months before coming under observation, weakness was noticed in the right arm.

Examination showed that when the patient walked the right leg was rigid and the toe dragged. The movements of the right leg could be performed, but were distinctly weaker than those of the left. The right leg and arm were both somewhat atrophied. The adductor pollicis muscle of the right hand was not so large or firm as that of the left. The muscles everywhere responded to the faradic current; the tendon reflexes on the right were all exaggerated, and a well marked Babinski reflex was present on this side. The reflexes on the left, while marked, were much less active than those on the right. Plantar stimulation caused slight extension of the great toe and flexion of the others. Right-sided facial paresis was present. The muscles of the right side of the throat were also paretic, and the voice had a distinct nasal twang. Nystagmus and paresis of the left inferior rectus, and pallor of the temporal halves of the discs were other symptoms. All forms of sensibility were everywhere preserved. The patient showed a slight Romberg symptom, and at times while standing or walking, a tendency to lose his balance. The case was regarded as one of disseminated sclerosis, beginning as unilateral ascending paralysis.

Case 5.—A man, aged 60 at the time of his death, about eight years before had some paralysis of the right extremities.[4] At this time knee-jerk and biceps-jerk were increased on the affected side. Four years before his death hospital notes showed some loss of power in both the right leg and right arm; and all the muscle and tendon phenomena on the right side were exaggerated, patellar clonus and ankle clonus both being present; also the speech was slightly affected, and sensory impairment and astereognosis were absent.

Notes made between two and three weeks before death showed that he was markedly paralyzed in the right leg, and to a less extent in the right arm; also that he was paralyzed in the left leg, but not as seriously as the right. The paralyzed limbs were spastic, and the tendon and muscle phenomena were all exaggerated. He had ankle clonus on both sides, and patellar clonus and the Babinski response on the right. Sensory phenomena were absent. The face was not paralyzed. Contractures and wasting were absent. During two or three years before his death he was treated for cardiovascular symptoms, including attacks of angina.

Postmortem showed advanced disease of the heart, vessels and kidneys, the case being an extreme instance of arteriosclerosis. Chronic pleurisy and tuberculosis with cavity formations were present. Microscopic examination showed intense and long standing degeneration of the right crossed and left direct pyramidal tracts, the degeneration extending into the pons, but not into the left cerebral peduncle; also comparatively recent degeneration of the left crossed and the right direct pyramidal tracts, traced by the method of Marchi into the lower part of the right internal capsule. No lesions, degenerative or focal, were found elsewhere in the brain or spinal cord.

Case 6.—A young woman, aged 18 at the time of first coming under observation,[5] was noticed to show slight clumsiness and awkwardness in using the right hand and foot shortly before the age of fourteen. Gradually the weakness of the right lower and upper extremities increased, this from description being more marked proportionately in the former than in the latter. When between seventeen and a half and eighteen years old a slight swelling of the right half of the thyroid was noticed.

Examination showed no abnormality of cutaneous and muscular sensibility nor of the special senses. Pupillary reactions, movements of the ocular muscles and the fundus oculi were all normal. The sphincters were also normal and the patient was mentally sound. The reporter gives in careful detail a description of the musculature and of the movements performed or incapable of proper performance on the right half of the body. Summarized, this indicated marked loss of power and atrophy in both the right upper and lower extremities, considerably greater in their distal than in their proximal portions. The affected limbs were neither spastic nor ataxic, but gave rather the appearance of flaecidity or flabbiness. The paralysis and atrophy were not localized to special groups of muscles. Marked quantitative change to the faradic current was present, being especially noticeable in the muscles which showed the greatest wasting, these being the hand muscles, the anterior tibial and the peroneal. All the deep reflexes were greatly exaggerated on the right side. The Babinski extensor response was typically present, but there was only an indication of ankle clonus. Some paresis of the muscles supplied by the seventh nerve and marked loss of power in the motor distribution of the fifth nerve were present.

Case 7.—A woman, aged 50, was seen in consultation in October, 1905.[6] In August, 1904, she first discovered some weakness of the right lower extremity, although it may have been present in mild degree before. The weakness and awkwardness in using the limb very gradually increased until about one or two months before coming under observation, since which time the impairment had increased more rapidly. The patient had suffered no pain in the extremity, in the back or in the head, and had no symptoms of cerebral disease. She had occasional headaches which seemed to be of the migraine type, and now and then had a slight vertigo, but this was probably due either to the condition of her stomach or to some arteriosclerosis.

Examination of the right lower extremity showed general paresis of moderate degree in the entire limb; that is, all movements were impaired in force without definite localized palsy of any group of muscles. The movements of flexion, extension, abduction and adduction of the foot and also intermediate movements were distinctly impaired as compared with those of the left foot, but the reduction in power extended to the entire limb, although it appeared to be more marked distally. The right knee-jerk was greatly exaggerated and patellar clonus could be elicited. Persistent ankle clonus and also a decided Babinski response were present on the right. Front tap was present and marked on the same side and the muscle jerks were also plus on this side. On the left the knee-jerk was somewhat above the usual norm, as were also the muscle jerks, but patellar clonus and front tap were absent. The plantar response on this side was irregular. Careful examination was made for sensory disorders, with absolutely negative results. Examinations seemed to show some slight impairment of the upper extremity, but so slight that it was hardly fair to record it as present.

Case 8.—A young man, aged 23, complained that for six months his left leg had been growing gradually weaker. He would sometimes trip because he could not clear the ground well with the tip of his left foot. At times also he could not use the left arm well. His condition for about one year is described by the reporter.[7]

His walk suggested a foot drop on the left side, but did not show the circumduction frequently exhibited by hemiplegics. Dorsal flexion of the foot was very feeble, movements of the toes being almost completely lost. Movements at the left knee and hip could all be performed, but with less force than on the right. Knee-jerks and heel-jerks were lively on both sides, but much more marked on the left than on the right, and after three or four months ankle clonus could be elicited. The Babinski response was absent on both sides. The entire left lower extremity was not spastic but flaecid and the seat of general wasting. The left upper extremity was smaller than the right. Atrophy was also distinctly shown in the neck and shoulder. As time progressed the left upper extremity became completely paralyzed. The left face showed no paralysis or atrophy.

3. Potts, Charles S.: Jour. Nerv. and Ment. Dis., xxxviii, No. 10, October, 1901.

4. Mills, Charles K., and Spiller, William G.: Jour. Nerv. and Ment. Dis., July, 1903.

5. Patrick, Hugh T.: Jour. Nerv. and Ment. Dis., xxx, August, 1903.

6. Mills, Charles K.: Jour. Nerv. and Ment. Dis., xxxiii, No. 2, February, 1906.

7. Newmark, L.: Jour. Nerv. and Ment. Dis., xxxiii, No. 3, March, 1906.

Examinations made several years after the first observation of the patient gave, by the Oppenheim method, a flexor response in the smaller toes of the right foot, and a distinct extensor response in the big toe of the left foot. The response to both the faradic and galvanic currents was normal. All forms of sensibility, the special senses, and the bladder and bowels were normal. Absence of exaggeration of the deep reflexes in both upper extremities was an incongruous feature of the case.

These cases represent the literature of this subject as known to me up to the time of the preparation of this paper. They all seem to present in their symptomatology evidences of the probable degeneration of the pyramidal tracts, crossed and direct. I shall recur again to Case 1, when discussing the subject of the unilateral ascending type of paralysis agitans, which this case was believed to be by Patrick. Whatever the case was in its totality, it certainly presented some of the features of a case of pyramidal degeneration. Case 2, seen by me more than 20 years ago, and, therefore, in reality, the first case observed, was without doubt one of progressively ascending hemiplegia due to pyramidal degeneration. Cases 3, 5, 6, 7 and 8 seem to belong to the type first indicated by me, although differing in some features, especially as regards spasticity, the reflexes and wasting. The solution of these differences can only be had as we gain more knowledge by the study of cases, and especially as we acquire additional pathologic data. Case 5, that of a patient originally observed in my wards at the Philadelphia General Hospital, and published by me in conjunction with Dr. Spiller, is the only one as yet in which necropsy and microscopic examination have shown degeneration limited or almost limited to the crossed and direct pyramidal tracts. Case 4, recorded by Potts, was, in all probability, as he suggests, one taking the form of unilateral ascending paralysis in a comparatively early stage of disseminated sclerosis. This case will be presently referred to again when considering the unilateral ascending type of disseminated sclerosis.

I shall next present the details of an unrecorded case of unilateral ascending paralysis—one which does not seem to belong clearly with any one of the 8 cases just summarized. It is apparently an illustration of cerebrospinal syphilis, taking the unilateral ascending form.

CASE 9.—The patient, a man, aged 55, had no family history of importance. He had worked in lead 10 years before coming under observation. Four years before this time his right leg began to grow weak, the impairment of power steadily increasing. The veins of the right leg were markedly varicose. A dull aching pain developed in the heel and in the calf in the region of the varicose veins. The aching had grown worse with the weakness. Three years after the onset he first began to notice weakness and aching in the right arm, these increasing steadily. Shortly after this weakness became noticeable in the left knee and ankle, with some ache in the heel. The left arm remained normal. The bladder and bowels were not involved. He occasionally suffered from backache.

Examination showed that in walking the patient dragged his right leg. Power in the right leg was greatly diminished but normal in the left. The right arm was weaker than the left. The right lower face was paretic. He could not draw the right angle of the mouth up; on smiling the left angle of the mouth was drawn upward more than the right. He could wink each eye separately, the left better than the right. Patient stated that his left arm and leg were beginning to feel as the right extremities felt a year or more before. Muscular atrophy was absent. Standing with his eyes shut he almost fell. Both knee-jerks were exaggerated, the right more than the left. The ankle-jerk was exaggerated on the right but diminished on the left. The Babinski response was obtained on the right, but not on the left. Biceps and triceps reflexes were increased on the right and normal on the left. Sensation for touch and pain was normal in the extremities and in the face. Speech was normal.

Eye examination revealed extensive chorioretinitis with well advanced optic nerve atrophy. The pupils responded sluggishly to light and more promptly to convergence. No diplopia or muscle insufficiency was present. The fields were much contracted, especially on the temporal side. Patient passed from under observation before an entirely satisfactory investigation of his case was made.

UNILATERAL DESCENDING PARALYSIS.

I had the opportunity of seeing and studying the following interesting case through the courtesy of Dr. William C. Pickett, of Philadelphia, whom I had requested, with others, to be on the lookout for cases of unilateral ascending and unilateral descending paralysis. Dr. Pickett, on first seeing the case, at once recognized that it belonged to the type of progressively developing hemiplegia, in this case taking a descending course.

CASE 10.—A woman, about 45, had been well until three years before coming under observation, when for the first time she noticed a weakness in the left arm on attempting to use it. She soon lost the power of lifting and projecting the arm. The impairment of power became more marked in the distal than in the proximal portion of the limb, and a few months after the onset of the paresis the movements of the hand at the wrist and those of the fingers became much impaired.

About one year from the time when the arm was first affected she noticed some weakness in the left leg. In describing the condition of her lower extremity at this time she said that she felt as if she made miscalculations in stepping up or down. In walking, the toes and fore part of the foot would catch or not be lifted properly, causing her to stumble. She soon had a limping or dragging gait. In the course of five or six months a marked degree of paralysis developed in the left lower extremity. The left upper and lower extremities had been in a condition of gradually increasing helplessness during the last 18 months. The patient said that she felt as if she had to carry them with the other part of the body. She had also a curious feeling of loss of power in the abdomen or bowels of the left side. Her face and ocular muscles had not been affected.

Neither before nor since the coming on of the paralysis the patient had not had any severe headache, paroxysmal or continuous, or any spells of nausea, vertigo or vomiting. She had also had, so far as she knew, no disorder of sight, hearing, smell or taste. She had had no loss of control or other affection of the bladder. She had had no double vision or no difficulty in dragging in the affected limbs. Her menses had continued regular, and her bowels had also been regular with the exception of occasional constipation.

Careful examination gave the following results: Left arm was limp or flaccid, the only place where any contractures were shown was in the fingers, which were half flexed at the first and second phalangeal joints, but this condition of contracture was a passive rather than an active one. The bend of the fingers was evidently due rather to loss of power in the extensors than to any active spastic condition of the flexors. The fingers and thumb dropped into the hand. The loss of power in the limb was greater distally than proximally. She could elevate the entire extremity to an angle of only about 45 to 50 degrees with the shoulder. She could, however, bend the forearm about half way, and extend the arm against resistance, but with about half the normal power; in other words, the movements of the upper arm were considerably impaired but all retained. She could not pronate or supinate the forearm; she could not flex the hand on the wrists; she could not ulnar flex it or fully extend it, but had some power of extension, especially showing itself toward the radial side of the hand. She could not extend the fingers at the metacarpophalangeal articulations or distally. She had some slight flexor power in the movements of the fingers. She could adduct and abduct the thumb which lay helpless toward the palm. Inspection showed some apparent slight wasting of the suprascapular muscles and perhaps of the small muscles of the hand.

There was not, however, the distinct atrophy which is so marked in amyotrophic lateral sclerosis and progressive muscular atrophy of the Aran Duchenne type.

MEASUREMENTS OF THE UPPER EXTREMITIES.

Middle of left forearm	7⅝ in.	Middle of right forearm	7⅝ in.
Left hand	7 in.	Right hand	7½ in.

She dragged the left leg in walking, but not with the circumduction movement of the foot which is shown in so many cases of hemiplegia. The lower extremity, like the upper, was partially paralyzed, but not in any part quite as markedly affected as the upper extremity. The loss of power was more marked distally than proximally. The movements of the left foot were tested and compared with those of the right, and all were found greatly impaired but none completely lost. Those most affected were dorsal flexion of the foot and dorsal flexion with adduction. The arch of the foot was somewhat flattened; the foot showed a tendency to turn outwards, exhibiting a partial valgus. The movements of the leg on the thigh, of the thigh on the pelvis and all other movements of the thigh could be performed with considerable force, but less energetically than the corresponding movements on the right side. The muscles of both the lower and upper extremities responded everywhere to the faradic current, but with some quantitative diminution, particularly in the upper limb.

MEASUREMENTS OF THE LOWER EXTREMITIES.

Middle of left leg	11½ in.	Middle of right leg	12⅛ in.
Left foot	7¼ in.	Right foot	7½ in.

The two sides of the face were symmetrical. She had about equal control over the movements of the left and of the right side of the face. The tongue was protruded straight and showed no fibrillary tremor. No loss of power was present in the masseter, temporal and pterygoid muscles. Ocular movements were normal; there was no nystagmus. Articulation, enunciation, phonation and swallowing were normally performed. The pose of the body and head and the facial expression had none of the appearances seen in paralysis agitans. Knee-jerk and quadriceps jerk were much exaggerated on the left; they were present but not increased on the right. Patellar clonus was absent on both sides, as was also ankle clonus, although a slight tendency to clonus was twice shown on the left. Achilles jerk was marked on each side. A typical Babinski reflex was present on the left, the great toe extending distinctly and somewhat deliberately, the other toes more quickly but less decidedly. On the right the small toes were plantar flexed on stimulation of the sole, the great toe sometimes extended and sometimes flexed, but when it extended it was not in the same typical and deliberate manner as on the other side. Examination of the upper extremities was made for the wrist, and elbow jerks and the von Bechterew reflex and its modifications. The jerks were a little more marked on the left than on the right; the most marked responses were the triceps and the infra-spinatus which, while not greatly exaggerated, were undoubtedly more marked on the left than on the right side.

Well marked anesthesia to touch, pain and temperature was nowhere present, but careful and repeated examinations showed slight hypesthesia on most of the left half of the body like that so often seen in hysteria and hystero-neurasthenia of traumatic origin. Her answers, however, were not uniform as to the limitations of this slight hypesthesia. Above the waist, for instance, her replies seemed to show that the sensation was fully retained nearly all over the region of the left scapula and of the deltoid.

Dr. G. E. deSchweinitz made the following report: Vision, right eye 6/5; left eye, 6/5. A., right eye, 6.5 D; left eye, 6.5 D. Pupils normal in all their reactions; equal in size. No diplopia; no limitation of rotations of exterior ocular muscles. Esophoria less than one degree. Optic discs of good color; retinal circulation normal in distribution and carrying normally tinted blood; slight enlargement of retinal veins, but no decided disproportion between size of veins and arteries. No ophthalmoscopic changes in the retina or choroid. Dr. deSchweinitz remarks that the ocular examination is practically negative; that the eyes are normal; that a slight contraction of the color fields found to be present is probably due to lack of concentration from retinal tire induced by long examination. This ocular examination is important as indicating the absence of a focal lesion like a cerebral tumor.

This interesting case, which I examined with great care, is an excellent illustration of a progressively developing descending hemiplegia in all probability due to primary degeneration of the pyramidal tracts, with possibly some slight involvement of other parts of the neuraxis. With the exception of the slight hypesthesia on the affected side, the case was purely motor, and had the usual diagnostic concomitants of a purely motor case, namely, abnormal increase of the deep and superficial reflexes. The hypesthesia, like the sensation of dragging of the limbs, seemed to be due to suggestion. The case in this respect reminded me of the idea long since advocated by Charcot, that the slight or moderate impairment of sensation sometimes observed in cases apparently due to a strictly motor cerebral lesion was sometimes best explained on the hypothesis of hysteria or suggestion. It undoubtedly belongs to the clinical group of unilateral descending paralysis, the pathology being the same as that which is present in at least some cases of unilateral ascending paralysis, the degenerative lesion, however, having developed in the upper part of the spinal cord and later in the lower. It is unlike the cases presently to be described, the one referred to me by Dr. Riesman, in which some of the symptoms seemed to point unerringly to a disseminated sclerosis beginning as a descending hemiplegia. The descending types of amyotrophic lateral sclerosis and of unilateral paralysis agitans could be easily excluded, the former chiefly by the absence of true spasticity, decided wasting, fibrillary tremors, and partial degeneration reactions; the latter by the absence of tremor, masked face and fixed pose and all the truly typical features of Parkinson's disease. Nystagmus, disorders of speech and other symptoms and signs of disseminated sclerosis were absent. The case was inexplicable on the theory of a focal lesion; syphilis, hysterical paralysis and peripheral disease could all be excluded.

UNILATERAL ASCENDING TYPE OF DISSEMINATED SCLEROSIS.

Disseminated sclerosis may first show itself as a spastic paralysis which, beginning in the one lower extremity, ascends in a greater or less time to the upper. It can not be doubted that Case 4, reported by Potts, is one of this kind, as in addition to unilaterality and progressive ascent, this patient showed several of the typical signs of disseminated sclerosis, as nystagmus, pallor of the temporal halves of the discs and some incoördination in standing and walking. In cases of this description it is altogether probable that the sclerosis at first largely attacks the pyramidal tracts and assumes an almost systemic form. This tendency, to a large degree of systematization, is sometimes observed in cases of bilaterally beginning and progressively increasing disseminated sclerosis.

A case of the hemiplegic form of disseminated sclerosis recorded by Thomas and Long[8] differs from the case of Potts in that the symptoms were not purely motor.

CASE 11.—A man, aged 47, seven years before his death became paretic in his right leg, the impairment of power increasing and having added to it diminution of sensibility and incontinence of urine and feces. Some improvement in the symptoms in his right leg occurred, but two years before his death these gradually increased and numbness and paralysis in the right

8. Thomas, A., and Long, E.: Compt. rend. hebd. des Seances de la Soc. de Biol., Oct. 13, 1899, No. 28.

arm appeared. The year before his death he had almost complete paralysis in the right lower extremity with contractures, exaggerated deep reflexes on the affected side, including ankle clonus; also slight atrophy of the lower extremity. The right upper extremity was a little paretic, the reflexes at the wrist and elbow were exaggerated in both upper extremities, but more on the right. Marked anesthesia was present in the right lower extremity and the right half of the trunk, and a hypesthesia in the hand and forearm. The special senses were unaffected. He died of an attack of acute pleurisy.

Plaques of sclerosis which, from their position and extent, explained the characteristics of the symptomatology and progress of the cases were found in the cervical and thoracic cord.

UNILATERAL DESCENDING PARALYSIS IN DISSEMINATED SCLEROSIS.

In rare instances, a form of more or less slowly descending paralysis is observed, that is, of paralysis beginning in the arm and face and later involving the leg. This, of course, is known to occur somewhat frequently in paralysis agitans, although after the plastic rigidity with or without tremor has attacked one upper extremity it is perhaps just as likely to cross to the opposite leg as to pass to the leg of the same side. Dr. David Riesman, of Philadelphia, has furnished me with the notes of a case which appears, when closely analyzed, to be one of disseminated sclerosis in which the paralytic, spastic and tremulous phenomena were first most marked in the upper extremity. So far as the limbs were concerned, the affection was, up to the time when the last notes were made, unilateral in its distribution. Some question may arise in the consideration of this case as to whether it is one of disseminated sclerosis of unilateral and descending type or a form of slowly developing unilateral paralysis due to meningomyelitis or some other form of specific lesion. On the whole, however, it would seem to me that the diagnosis which fits the case best is that of disseminated sclerosis, in the stage when the record was made, of unilateral and descending form.

The patient was a man forty-three years old whose father died of nephrolithiasis at the age of sixty-three and his mother of apoplexy at the age of fifty-eight. One brother was in an insane asylum for two periods of six months each.

CASE 12.—Patient had primary specific lesion at the age of 26, accompanied by alopecia and later by secondary eruptions on the abdomen, thorax and arms. He took medicine for this disease for one year. He had pyelitis 8 years before coming under observation, suffering from this affection for one year. According to his statements, he is especially subject to erysipelas, which he had had about six times in all. Two of the attacks of erysipelas he had had within 18 months, the supraorbital and infraorbital regions being affected. The patient's most evident symptoms when he came to the hospital were partial loss of motor power in the right upper and lower extremity, accompanied by violent coarse tremors of the extremities when he attempted any movements of them. He limped somewhat with the right leg. He dated his present trouble to two years before he was seen, when he began to have a dull heavy feeling in the right shoulder. He then began to lose control of the right arm, which loss of power was accompanied by trembling of the arm when he attempted to use it. He stated that within the last year, that is, about a year after the onset of the paralysis and tremor in the arm, the right lower extremity had troubled him because of a loss of power in this part. He had had sharp shooting pains in this lower extremity. He had been able to walk in the dark without falling. Both bowel and bladder control had remained intact. He had never had any girdle sensation. Consciousness had never been lost.

This showed his speech to be somewhat monotonous, with a tendency toward scanning speech; spasticity of right leg, thigh and arm; marked intention tremor of the right upper extremity; fibrillary tremor of the tongue; some right-sided suprascapular atrophy; nystagmus; increased right knee-jerk with slight ankle clonus; normal reaction of pupils to light and distance; and intact sensation. Later notes made by Dr. Riesman showed that the left pupil was larger than the right; also that the pupils reacted sluggishly both to light and accommodation, the left not as well as the right. There was also no apparent contraction of the visual fields. The tremor in the right upper extremity was most noticeable when moving from a resting position and it seemed to disappear at times when the arms were supported. It was very noticeable when the arm was held free. The tremor was not rotary or rhythmic, but jerky and varying in amplitude. No pill-rolling motion like that seen in paralysis agitans was present. The patient tended to hold the fingers somewhat flexed at the knuckles. The hand, arm and shoulder girdle showed no atrophy. All movements of the upper extremity could be performed, but were affected by the tremor. Slight tremor was present in the right leg on its being moved, with no wasting of this extremity and no apparent shortening, although the patient said that the leg felt shorter than the other. Extension and flexion of the right foot were ample, but more sluggish than similar movements of the other foot. There was marked limitation of rotation of the right leg; other movements were normal. Knee-jerk was increased on the right side; slight tendency to ankle clonus was shown and a marked Babinski reflex was present on this side. Sensation was normal. The gait of the patient was hemiplegic, the right leg being dragged somewhat. Distinct right-sided ptosis is noted in one entry. The lungs, heart, blood, abdominal viscera and all parts of the body were carefully investigated, and notes of these examinations have been furnished me by Dr. Riesman, but as they seem to have no special bearing on the man's nervous disease they have been omitted for the sake of brevity.

Pupils 4 m.; irides react to light and accommodations; tension normal; in the right eye the media were clear and the disc pale, showing atrophic excavations; there was myopic astigmatism, 1 D. The left eye was the same as the right. Ocular movements were unimpaired. It is stated in the history that the patient had diplopia fifteen years before coming under notice, this having been corrected by glasses.

ASCENDING TYPE OF UNILATERAL AMYOTROPHIC LATERAL SCLEROSIS.

Unilateral amyotrophic lateral sclerosis, a comparatively rare form of amyotrophic disease, is occasionally ascending, although this is not the rule. Spiller[9] succeeded in collecting 10 cases of unilateral amyotrophic lateral sclerosis; of these, four were with necropsy. Three of the ten were of ascending type (Vierordt, Mott, Senator). To these is added a case of his own, with necropsy and microscopic examination.

The paralysis began in the right lower extremity, passed to the upper limb of the same side, and later to the left lower extremity, the left upper extremity being also eventually slightly involved. In this case, besides spastic paralysis and abnormally exaggerated reflexes, considerable atrophy was present in the right upper extremity. Degeneration in this case was found in the ventral horns as well as in the pyramidal tracts. It is probable that, at least, in some cases which begin with pyramidal tract degeneration, if the patient lives long enough the ventral horns eventually take part in the degeneration; although, as already shown in the case recorded by myself in collaboration with Dr. Spiller,[4] pathologic examination showed that the cells of the ventral cornua were not involved to any appreciable extent in this unique case.

After the publication of the paper by Spiller, an additional case of amyotrophic lateral sclerosis, at first uni-

9. Spiller, William G.: Univ. Penna. Med. Bull., January and February, 1905.

lateral and deseending, has been recorded by Potts.[10] Both sides of the body were eventually involved, bulbar symptoms appearing and beeoming prominent.

DESCENDING TYPE OF UNILATERAL AMYOTROPHIC LATERAL SCLEROSIS.

Seven of the ten cases collected by Spiller were of deseending type (Dejerine, Piek, Leyden, Lennmalm, 3 cases of Probst). Of these, five began with bulbar symptoms, the paralysis of the upper and lower extremities coming on in succession, or at least later. In a case reported by Dejerine, beginning with bulbar symptoms, the lower extremity of the side affected was more markedly paralyzed than the upper. In Piek's case paralysis began first in the left upper limb and extended to the lower of the same side; later the right side became affected. In Leyden's case bulbar symptoms were first; next weakness developed in the left upper limb and later in the left lower extremity. In Lennmalm's case bulbar symptoms were followed by loss of power in the extremities of the right side and later by paralysis in the left upper limb.

In one of the several cases reported by Probst bulbar symptoms began first, the right upper and lower extremities beeoming involved. In another case reported by Probst, weakness began in the left upper and lower limbs and later in the right upper. In still another case of Probst's bulbar symptoms began first, followed by weakness in the left upper extremity and in a short time in the left lower extremity.

Reeently, I had the opportunity of studying a case of unilateral amyotrophic lateral sclerosis of deseending type which it may be worth while to record in this connection, owing to the faet which has just been shown that scarcely more than a dozen unilateral cases of this disease have as yet been put on record.

Case 13.—A boy, aged about 14, was in good health until about three years before he was seen by me for his family physician, when he began to have slight tremor in the right hand. About eighteen months to two years later some weakness in the right leg was observed.

Examination showed no particular difference in the two sides of the head and face. Ocular movements were normal, as were also movements of the parts supplied by both the facial and trigeminal nerves. The right upper extremity showed distinct and nearly generalized atrophy, and some wasting was present in the right half of the trunk. The right thenar and hypothenar eminences were extremely wasted. The right lower extremity, like the upper, was also generally smaller than the left. Testing for special movements, weakness was found in all parts of the limb, but this was much more decided in the proximal than in the distal portions. The movements of the foot on the leg and the movements of the toes were greatly impaired. Every possible movement of the foot and toes was tested, with the result just given. Farado-contractures were well preserved on both sides; on the right side was a quantitative increase, the muscles generally responding to a current of less current strength on the right than on the left side. A moderate current produced widespread contractures in the general musculature of the arm, probably partial degeneration reaction.

On attempting movements of the right or atrophied arm the patient had associated movements of the left. No matter what movement was attempted with the right upper extremity, the left upper extremity responded, sometimes in regular and sometimes in a sort of forced athetoid movement of the hand and fingers. Voluntary movements of the right lower extremity did not cause movement in the left lower, but did cause some movement in the left upper extremity. These, however, were by no means as marked as when the voluntary effort was made with the upper right extremity. Both the deep and superficial reflexes were everywhere greatly exaggerated on the right side, the muscle and tendon jerks of both arm and leg being carefully examined. The right great toe remained permanently somewhat extended as in a case of Friedreich's ataxia. A marked Babinski reflex was present on this side, the already extended great toe extending still further on plantar stimulation. Ankle clonus was present on the right side. The wasting and loss of power were not present anywhere in the left half of the body. The reflexes, while prompt, were not exaggerated as on the other side, and irritation of the sole of the foot gave normal plantar flexion. A very slight hypesthesia was present in the right arm and trunk. The patient's mental condition was good. He had kept up with his class in a good preparatory school. He had neither continuous nor paroxysmal headache nor any other evidences of focal disease. The case seemed to be clearly one of unilateral amyotrophic lateral sclerosis beginning first in the upper extremity.

10. Potts, Charles S.: Univ. Penna. Med. Bull., July and August, 1905.

UNILATERAL ASCENDING TYPE OF PARALYSIS AGITANS.

It is, of course, well known that paralysis agitans is often for a long time a unilateral affection; it is not so well understood that the unilateral form of this disease not infrequently is of ascending type, the disease passing from lower to upper extremity of the same side and later to the opposite lower and upper extremity. Patrick regarded one of the cases described by me in 1900 as an illustration of this affection rather than a case of primary degeneration of the pyramidal tracts, but of this I have not been convinced. With regard to this matter I need only reproduce here remarks made in a previous paper written in collaboration with Dr. William G. Spiller:[4]

Among the reasons for believing that the case was not paralysis agitans were the absence of spontaneous tremor; the presence of markedly exaggerated reflexes on the affected side, even including ankle clonus and patellar clonus; the existence of decided wasting on one side, especially of the lower extremity; and the absence of the facies of paralysis agitans and of a fixed position of the body and head. According to Sir William Gowers[11] both primary lateral sclerosis and paralysis agitans are probably abiotrophies, and it may be that in the case under consideration the two abiotic diseases are conjoined.

Patrick[5] reports a case of unilateral paralysis agitans in his paper with the view of indicating the similarity of this case to that reported by me and reinvestigated by him. In this case the disease began in the upper extremity, passing later to the lower. My impression is that this is rather the usual course, although I have not made any collection of cases to demonstrate the point. Whether or not the case reported both by Patrick and myself was one of paralysis agitans or of paralysis agitans and pyramidal degeneration conjoint, it is certain that Parkinson's disease may remain for a considerable time unilateral, and beginning in the lower extremity may take an ascending course. Recently, I have seen two cases of this ascending type.

Case 14.—A man, aged 55, a pattern maker, first began to notice stiffness or impairment in movement in his left leg in December, 1904. At first and for some time there was no involvement of the left upper extremity, but this gradually came on, and at the time when he was first seen, about 16 months after the beginning of the trouble in the leg, the arm was very markedly affected. He had occasional cramps in the legs, the toes at times contracting when these cramp-like feelings were present. He also had at times, especially after sitting, feelings of numbness or tingling in the left leg and arm.

Examination showed a rather fixed position of the head, slowness of gait with some dragging of the left foot, and a marked tremor in the left upper extremity, especially in the hand, this being the type usually seen in Parkinson's disease. Observed over short periods it was sometimes present and at

11. Gowers, Sir William: Lancet, April 12, 1902.

others absent, and it was a little increased by voluntary effort or attention. While both the leg and arm on the affected side showed a little stiffness and awkwardness in movement, real loss of power was slight. The patient still continued to work at his business, even using the left hand. He said that if he could get a good grip on an object with this hand he could go on using it in his work. Sensation was everywhere retained.

CASE 15.—A woman, aged 43, first observed weakness in the left lower extremity four years before coming under observation. Tremor did not appear for three years in the left lower extremity and shortly after this the upper extremity became involved, showing both weakness and tremor. Symptoms appeared in the lower extremity of the opposite side three and a half years after the beginning of the disease. The case was clearly one of paralysis agitans and need not be described at length.

It is not my intention to go with any elaboration into a discussion of the differential diagnosis of unilateral ascending and unilateral descending paralysis from focal lesions, cerebral or spinal, from cerebrospinal syphilis, and from peripheral or hysterical affections. For the sake of completeness, however, a few words may be said about these diagnoses. In a rare case a brain tumor may originate in the cortical leg area or beneath it and develop toward the arm and face regions so as to cause a progressive hemiplegia of the ascending type. The reverse might, of course, take place, and the tumor originating in or near the face or arm area and progressing toward the leg center, give a unilateral descending paralysis. In such a case some or all of the general symptoms of brain tumor would be likely to be present, and other focal signs of this affection, especially Jacksonian epilepsy, would sooner or later appear. A tumor of the internal capsule would most probably produce loss of power in both arm and leg nearly simultaneously. In some cases of arteriosclerosis necrotic areas form first in one and then in another portion of the brain, and it might happen that these would be so placed in succession in the motor region as to give unilateral ascending or unilateral descending paralysis. Such a case would develop clinically by steps rather than by regular progression, and other signs or symptoms indicating the character of the lesions could probably be detected if sought for diligently. A single tumor or necrotic lesion of the spinal cord would not cause a paralysis ascending from the leg to the arm, as the cerebrospinal tracts passing to the nerve nuclei for the upper extremity do not proceed lower than the upper thoracic region. Peculiarly situated and peculiarly progressing focal lesions of the cervical cord might simulate a unilateral descending paralysis, but the other well-known symptoms of such a unilateral focal lesion would be present and the subject hardly needs discussion.

The forms of spinal and cerebrospinal syphilis are protean. A spinal or intracranial gumma or gummatous meningitis or a succession of focal syphilitic lesions might give rise to a one-sided paralysis appearing first in the leg and afterward in the arm, and later taking the form of a triplegia. This is, indeed, what occurs in some cases of meningitis or meningomyelitis with a secondary degeneration of the pyramidal tracts. The new case of unilateral ascending paralysis (Case 9), had some of the features of a cerebrospinal syphilitic affection, although the patient denied venereal disease. Close attention to the history, and the presence of other evidences of syphilis and the variable and irregular manner in which the paralytic symptoms appear will assist in differentiating.

A paralysis of peripheral origin, of ascending or descending type, is rare, but, of course, may occur. Such a case would probably depend either on the degenerative neuritis or on the succession of peripheral lesions. The manner in which each stage of the paralysis appeared, the state of the reflexes, the results of electrical examination, and other well-known methods of determining the existence of a peripheral nerve disorder would serve to separate such a neural case from the forms of progressive hemiplegia under consideration. The absence of hysterical stigmata, as well as the slowly progressive manner of appearance of the paralysis of leg, arm and face would make a hysterical hemiplegia improbable. A pure neurasthenia never shows itself as a slowly developed and permanent hemiplegia.

DISCUSSION.

DR. HERMAN H. HOPPE, Cincinnati, said he was very glad to hear Dr. Mills increase the latitude of the subject. He reported a case perhaps of this kind that he had had under his care for about a year or 18 months. A young child about 3 or 4 years of age developed spastic paralysis, which first appeared in the arm, and then descended to the leg and ascended to the face. The child was absolutely healthy up to the age of 2½ years; it developed, intellectually and otherwise, normally, walked normally and looked like a normal child; then it gradually developed paralysis, spastic in character, of the right arm, then spastic in character of the right leg, and then of the face, during a period of perhaps six or eight months. In other respects the child was perfectly well; there was no headache and the child ate and slept well. One peculiarity about the case was that there was absolutely no syphilis, and the mother gave birth to other children who are well. The mother was addicted to drink, which was particularly manifested before the child was born. Until Dr. Mills spoke of the descending type Dr. Hoppe was very much puzzled about this case. Whether there was any other feature about the case that would develop in the future he could not say. That particular manner of development of spastic paralysis in a child never occurred to him before. There was no history of any infectious disease of any kind which might have caused an encephalitis.

TECHNIC IN THE AFTER-CARE OF THE RADICAL MASTOID OPERATION.*

PHILIP HAMMOND, M.D.
Aural Surgeon Massachusetts Charitable Eye and Ear Infirmary, Instructor in Otology Harvard University.
BOSTON.

To remove diseased tissue thoroughly from the temporal bone, in cases of chronic suppuration, is an easy task compared with the difficulty of obtaining a resultant cavity absolutely free from granulations or discharge, and lined with healthy new epidermis. To establish such a condition speedily is an end toward which we are all striving.

When the first radical operations were done in 1889, it was no uncommon thing to have suppuration continue within the cavity for many months; healing was finally obtained only at the expense of much time and suffering, and was usually attended with considerable deformity. To-day it is possible to have our exenterated cavity thoroughly healed in a comparatively short time, in many cases only five weeks, and with absolutely no postaural deformity, only a fine linear scar marking the line of incision.

---

* Read in the Section on Laryngology and Otology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

HISTORICAL REVIEW.

How has this remarkable advance in the care of our patients been accomplished? It is not by the adoption of any one step, but rather by taking advantage of a series of improvements, as they have suggested themselves, that we are able to achieve a cure in practically as short a time as is usually allowed for the recovery of the simple Schwartze operation.

In the earlier cases I saw, practically no attempt was made to close the posterior wound, and reliance was placed on plastic flaps turned into the cavity. By the use of this method, it was practically impossible to obtain a flap long enough to reach into the inner wall of the antrum, and much surface was necessarily left uncovered. Two places in particular almost always gave rise to considerable trouble in the way of granulation formation, namely, the facial ridge and the inner wall of the antrum. Granulations from all directions would encroach on this small cavity, and it was only by means of the most active treatment and continual packing that they were kept down at all. Even when new epidermis had formed, the organized granulations would have assumed such proportions that in many cases the antrum was practically obliterated.

Suturing the posterior wound completely and obtaining primary union here was a distinct advance in the treatment. This procedure was first advocated by Körner, to whom we are also indebted for the plastic operation on the meatus now so generally used. There were still many problems connected with the epidermization of the cavity.

As early as 1893 Thiersch grafts were being used by Stacke,[1] Urbantschitsch,[2] Jansen and others, in the effort to produce a lining of new skin in the cavity. There were obviously many difficulties attending placing these grafts in good position and retaining them *in situ* until they could become attached to the walls of the cavity. They were ordinarily placed on small spatulas, carefully floated from these into the selected place, and held in position by a small tampon of gauze, while the same procedure was employed with the next graft. In this way a large portion of the cavity was covered, but inevitably there would be granular areas between these small islands of epidermis, and the effort to keep these granulations down while the new covering was spreading throughout the cavity required the utmost vigilance and care on the part of the attendant and consumed many weeks.

The next important step in the rapid epidermization of the cavity was in the employment of larger grafts, first introduced by Ballance. His method was to reopen the posterior wound at the end of from 10 to 14 days, and to place the grafts on the newly formed granulations, retaining them in place with gold foil.

In 1899 Denker used a single large graft, applying it through the open posterior wound 2 to 4 weeks after the operation. He was the first to use the open air method of treating the wounds, no packing of any kind being employed. Practically all other operators have retained the graft against the walls of the cavity by means of some kind of packing. Many, however, have recognized the necessity for using some smooth, pliable material next the graft, to prevent it from adhering to the gauze, as evidenced by the gold foil used by Ballance, and the silk tissue of Reinhard.

1. Stacke: "Die operative Frulegung der Milhjohrräum," Tubingen, 1897.
2. Urbantschitsch: "Ohrenheilkunde," fourth ed., p. 496.

A little over a year ago the practice of using one large graft for the entire cavity was attempted at our institution. Simultaneously with this proecdure, advantage was taken of the method of treating skin wounds without dressing, as employed in extensive burns of the surface. This was a radical departure from the procedure which up to this time had been followed practically exclusively.

The results in several of the first cases on which this method was employed were almost startling. Complete epidermization of the cavity was obtained in from 5 to 7 weeks.

But little change has been made in the routine during the past year, and repetition of the cases but adds cumulative testimony to the value of the method.

TECHNIC.

The procedure in detail, as now carried out in my practice, is as follows: After a thorough bone operation, in which great attention is paid to detail, all bone being carefully smoothed down, Eustachian tube cleared out, and Körner flap turned into the mastoid, the whole cavity is packed with short pieces of iodoform tape, the pieces being perhaps one-half inch square. The posterior wound is sutured tightly, and in most cases heals by primary union.

Except to change the outer gauze, this dressing is not tampered with until one week from the day of the operation, when the patient is again etherized, the entire packing removed from the wound, all bleeding stopped, and any clotted blood removed. It is of the utmost importance that all foreign substance, particularly pieces of the gauze packing, be removed from the cavity, otherwise failure of the graft to adhere must necessarily result. While the operator is doing this, his assistant is removing the graft from the thigh, which has been prepared previously. An ordinary amputating knife, freshly sharpened, and sterilized by dipping for one or two minutes only in 70 per cent. alcohol, is the only instrument needed. So delicate is the cutting edge necessary to obtain a proper result that boiling the knife will ruin it, and it is also practically impossible to employ the same knife twice without sharpening.

It is often possible to secure a graft 2x3 inches. After being separated from the thigh, the skin is spread out without being removed from the place from which it was cut, and a piece of peau de soie placed on it. This gauzy tissue, with the skin adherent to it, is now carefully removed from the thigh. The peau de soie is used to keep the skin from curling up, and also to serve as a protective medium between the graft and the gauze plug on which it is inserted into the ear. This plug is prepared by taking several layers of gauze and winding it into a cone, the apex of which will just fit into the middle ear and antrum, the remaining portion being loosely rolled so that it can be readily adapted to the shape of the cavity. The skin graft is now placed on the end of this gauze plug. The graft must be very thin, of sufficient area to completely cover the surface of the exenterated cavity, and carefully inserted into position, precaution being taken that the apex reaches the middle ear. The remainder of the plug is then expanded, after entering the meatus, so that the graft shall everywhere come in contact with the granulating area. This completes the operation of the skin graft. The sutures in the posterior wound are usually removed at this time.

An external dressing is applied over the ear, and the head again bandaged. On the third day following the

graft, and the tenth from the original operation, all dressings are removed, and from that time on no packings of any kind are employed. When the gauze plug is removed the peau de soie almost always comes with it, leaving a perfectly clean cavity inside the temporal bone, in which can be seen the newly applied graft.

It has been my custom to do as little as possible to this cavity for several days following the removal of the plug. Within the first 24 hours after the ear is left exposed there will be more or less purulent discharge from the sloughing of the redundant folds of the graft. In a few days long strings of this sloughing material may be wiped out with the cotton stick. Often by the end of two weeks of this open treatment a firm layer of new skin will be visible nearly if not quite all over the cavity, and suppuration will have ceased. Usually the only granulations with which we have to deal are when the graft was not large enough to line the cavity to the outer part; there will be a ring of exuberant tissue around the meatus, and particularly at that part where the Körner flap was made. This new tissue is easily kept down by use of a curette and caustics, however, and in the cases in which the graft is large enough to cover all denuded area inside the cavity does not bother at all. The part which always gave most trouble with other systems of grafting, namely, the antrum, is always epidermatized from the start, as the portion on the apex of the plug must completely cover this part.

CAUSES OF FAILURE.

In some cases there has been a signal failure of the graft to adhere generally to the walls of the cavity, and recovery has been necessarily much delayed. From a careful analysis of these cases it seems to me that failure has been due in all cases to some departure from the routine procedure here laid down.

1. The first essential is a perfectly smooth cavity, free from any projecting edges or carious areas. It is asking the impossible to expect any graft to take well on a surface to which it cannot be applied evenly.

2. The next requisite is a large graft and a thin one. No matter how expert the operator he cannot cut a satisfactory graft with a dull knife, and a thick dermis will not only roll so as to bother in the application, but it may not take at all.

3. Careful preparation of the cavity immediately before the insertion of the graft. There is a tendency toward bleeding on the removal of the packing put in at the time of the original operation. This must be carefully checked, and all clots removed before applying the graft.

4. The graft must be kept warm and moist, but little time should elapse between its cutting and the placing in position, and extreme care be taken that it touches the cavity in all its parts.[3]

DISCUSSION.

DR. J. C. BLAKE, Boston, said that, having followed Dr. Hammond at the Eye and Ear Infirmary, he knew that a part of the credit which Dr. Hammond attaches to the method employed should be credited distinctly to Dr. Hammond's own powers of differentiation and to his ability to adapt the handling of this method of treatment to the needs of the individual case. Certainty of arriving more speedily at the desired result is most encouraging, as presented by Dr. Hammond in giving the result of his experience. It requires care not only in the preliminary operation but in the complete clearing of the cavity, a necessity in all mastoid and antrotympanic work and, in addition, an appreciation of the condition of the tissues to be grafted. The application of the graft, also, is a matter which requires considerable care. Dr. Hammond makes a single graft application and then leaves the case untouched for some time. That means that the application of the graft must be most thoroughly and carefully done, and the work is one which requires dexterity. It is a most promising departure in the direction of rapid healing.

DR. E. A. CROCKETT, Boston, said it has been his custom for two years to use a single large graft, as Dr. Hammond describes, but applied at the time of operation. The method has been successful, both when the dura was exposed during operation and when it was not exposed, but he is a little afraid to use it now when there is exposed dura. The method offers one less dressing to the patient and a few days' quicker healing when the graft takes. If it does not take, regrafting can be done on the seventh to the tenth day, as if primary grafting had not been attempted. This, he thought, has been the custom in German clinics for some years. With the single graft at time of operation another advantage is that the careful preparation of the graft does not seem so essential as when the graft is applied over a granulating surface. Certainly a graft of decidedly greater thickness than Dr. Hammond uses has had perfect staying power in a number of cases Dr. Crockett has observed.

DR. J. F. BARNHILL, Indianapolis, said many operators seem to think that if they have done a thoroughly careful mastoid operation they have completed most of their work, whereas it has always seemed to him that the work has just begun when the extirpation of the bone is completed. The success of mastoid operations depends very largely on that minute care in after-treatment which Dr. Hammond emphasized. As Dr. Hammond said, every portion of the graft must be applied to absolutely smooth surfaces. It is in this lack of thoroughly smoothing the field that many get into trouble in so far as the "taking" of the graft is concerned. It is always a question in smoothing down those parts which surround and lie in immediate proximity to such structures as the facial nerve and dura mater that operators are likely to meet with their greatest difficulty in preparing the bony surface properly without running the risk of injury to these important structures. Dr. Barnhill considers it much wiser to run some risk of failure to cure the patient than to persist in measures directed toward smoothing every part in the vicinity of the nerve, and thereby greatly endangering the functions of the facial, for if the patient were given choice in the matter he would always choose a running ear rather than a paralyzed face. It requires a great deal of experience and discrimination in operating on the bone, and a great deal of care to know just how far the operator is to go in his efforts, not only to remove every portion of the diseased bone, but also to leave the parts smooth enough to be quickly covered by granulations or to receive a graft if one is applied. If he goes just far enough, if his experience has been great enough so that he gets the field smooth and free from disease without entering the facial canal, then he has made an ideal preparation for the skin graft. Contrary to what Dr. Hammond advises Dr. Barnhill has for a long time preferred the Panse flap to the Körner for the reason that it gives a broader opening through which to conduct the after-treatment. But if one uses the Panse flap he must not stitch these flaps as Panse advises. The original advice was to leave the postauricular wound open, and to stitch the flaps to the external skin. It is clear that if this were done, closing the wound posteriorly as Dr. Barnhill invariably does, there would be skin in approximation with new-cut osseous surface, thereby inviting a fistula, which is to be avoided. He, therefore, stitches these flaps to the periosteum, not in any definite position, but in that one which it is clear is the proper one at the time of operation; and in such position that when the postauricular wound is brought together the flaps will lie deeply in the cavity and in direct contact with the bone. After the employment of this method he has been able to inspect the wound entirely to his satisfaction. It makes a little larger external meatus, but he can always see the entire healing surface during the healing proc-

3. The following additional literature may be consulted: Siebenman: Berlin. klin. Wochschr., 1893, p. 43; Körner: Arch. Otol., xxxvii, p. 130; ibid., xxi, p. 256; ibid., xxxv, s., 145; ibid., xxxv, p. 144; ibid., xlv, p. 186; Politzer: "Ohrenheilkunde," fourth ed., p. 464: Verhandlungen der Deutsch. otol. G. Gesellschaft., 1903; Blav: Encyklopedia.

ess, and can therefore give more rational after-attention than is possible when other flaps have been selected at the operation.

Dr. A. E. Prince, Springfield, Ill., said that in securing such a graft as Dr. Hammond mentioned the difficulty will be experienced of securing a graft of uniform thickness. Drawing the knife back and forth often produces a serrated graft. This difficulty may be overcome by taking a piece of sterilized board, say from an ordinary cigar box. Follow the edge of the board with a knife. The board will keep the skin perfectly straight and tense, and in that way any length of graft desired may be obtained. Dr. Prince has found that particularly useful in attempting grafts for the restoration of the orbit. It may be from faulty technic in the operation but it has been Dr. Prince's misfortune from time to time to have a little necrotic area follow.

Dr. Cullen F. Welty, San Francisco, believes there is no one method that covers all points in different cases. For this reason he uses different flaps in selected cases. He tries to close every case if possible and in those he can not close because of pathologic lesions, he uses the Panse flap. He thought it would be hard to adapt such a large skin graft to the cavity of the ear after operation. It would be much easier to adapt smaller pieces to the various recesses and corners that are naturally encountered, than to cover the entire cavity with a single graft. He does not think skin grafts should be used in cholesteatoma because the cholesteatoma dips into the individual caniculi of the bone and continues to grow. He would like to hear from Dr. Hammond about skin grafting over the stapes, whether it is not likely to diminish the hearing much more than by the ordinary process.

Dr. Kaspar Pischel, San Francisco, showed a flap he has used for the last few years, and demonstrated his method as published in the *Archives of Otology*, xxx, No. 2, 1901. His method assures a well nourished covering of the bone trough, while skin grafts alone furnish poorly nourished tegument.

Dr. Philip Hammond, Boston, said he expected there would be more opposition to the use of ether a second time during the operation; that is, doing the operation in two stages. He has pronounced views on the subject, however, or he would not subject the patient to this extra inconvenience. The cavity on which this operation is done of course contains more or less pus, granulation tissue and sometimes cholesteatoma. It is difficult to get the cavity clean and aseptic. The skin graft applied primarily to such a cavity is not as apt to take, in a large number of cases, as after there is good healthy granulation tissue. He packs the cavity with iodoform gauze and then does not touch it for 7 days. On the seventh day when taken out the gauze is as clean as when introduced. That gives a good clean healthy tissue on which to introduce the grafts. The question of the flap to be employed, whether the Körner or the Panse, of course varies according to the conditions. In some cases he has thought it necessary to use the Panse flap, but when he selected his case he prefers the Körner. It can be made as broad as the canal will permit. When thoroughly applied the flap helps to pin down the posterior wound that is sewed together and makes one solid mass.

As to facial paralysis, it requires considerable experience and some knowledge of anatomy to do this operation thoroughly and save the patient from paralysis. In something over 50 radical operations it has been his misfortune to encounter facial paralysis twice. In the first case there was a fistula leading from the mastoid cavity into the facial ridge. He wanted to get at the caries, and succeeded in removing it, but the patient suffered a facial paralysis. That was 2 years ago. To-day the paralysis has disappeared. The other case was that of a young girl, last year. On getting into the antrum there was distinct caries and much granulation tissue all around the facial nerve, which could be seen plainly in the diseased tissue. He left that as it was, but there was paralysis.

As to the use of a board in making a graft, Dr. Hammond referred to the excellent work done by his assistant, Dr. Tobey, in getting these grafts for all his private cases and most of his hospital cases. Dr. Tobey finds that he can get a decent graft by drawing the skin taut with the hand. In that way there is little difficulty in securing a good graft. As to the question of hearing when the skin is laid over the stapes, Dr. Hammond has one patient in whom the hearing power remains at 20/35. In a still more recent case, the hearing increased from 1/35 to 10/35. As a rule there is a slight improvement in hearing following the operation. Regarding the ability to see into the mastoid cavity with the closed posterior wound, it depends entirely on how much of the mastoid is taken out and how much facial ridge is left. If the bone is removed close to the facial nerve there will be no difficulty in looking into all the parts, mastoid, antrum and middle ear.

ANASTOMOSIS OF BLOOD VESSELS BY THE PATCHING METHOD AND TRANSPLANTATION OF THE KIDNEY.*

ALEXIS CARREL, M.D., and C. C. GUTHRIE, M.D.
CHICAGO.

DEFINITIONS.

The patching consists of closing an opening in the wall of a vessel by fitting and sewing to its edges a flap taken from another vessel or from some other structure such as the peritoneum.[1] For example, a portion of the wall of a carotid artery may be removed and the opening thus produced closed by a patch taken from the external jugular vein.

The anastomosis by the patching method consists of extirpating a vessel together with an area or patch from the vessel of origin, the patch being so cut that the mouth of the extirpated vessel is situated in the center of the patch. The edges of the patch are then fixed to the edges of a suitable opening made in the wall of another vessel. For example, a spermatic artery of a dog was dissected and removed with a triangular patch of the wall of the aorta surrounding its mouth. The edges of this patch were then sutured to the edges of a suitable opening made in one of the femoral arteries. The spermatic artery was thus anastomosed to the wall of the femoral artery (Fig. 1).

AIM.

We have attempted to develop a method of anastomosing blood vessels so that even in case of slightly imperfect technic resulting in the deposition of fibrin on the lines of suture, the circulation would not be disturbed.

In methods hitherto employed, a fault of technic was sufficient to cause hindrance or even stoppage of the circulation. In the simple transplantation of the kidney, for instance, the wall of the renal vessels is cut and sutured. Then it happens that, in case of infection, or fault of technic, fibrin deposits itself on the line of suture and occludes the lumen of the vessel, that gangrene or atrophy of the organ are very liable to result.

In the anastomosis by the patching method the wall of the renal vessels is respected. Instead of cutting the vessels themselves, we extirpate a patch of the aorta and vena cava, in the center of which is located the mouth of the vessel. The edges of the flap are sutured to the edges of the aortic opening. If infection occurs, a clot can be produced on the line of suture. But this suture is located far from the mouth of the renal artery. Thus, the circulation of the renal artery is not troubled. As regards the aorta, a small clot adherent to its wall does not disturb its circulation. Occurrence of gangrene in the transplanted organs is then almost impossible.

---

* From the Hull Physiological Laboratory, University, Chicago.

1. Carrell and Guthrie: "Resultats du patching des arteres." Comptes rendus de la Societe de biologie de Paris, June 22, 1906.

TECHNIC.

The operation may be divided into two stages: 1. Preparation of the vessel to be transplanted and, 2, transplantation on the second vessel. For example, the anastomosis of the renal artery to the aorta in the transplantation of the kidney will be described.

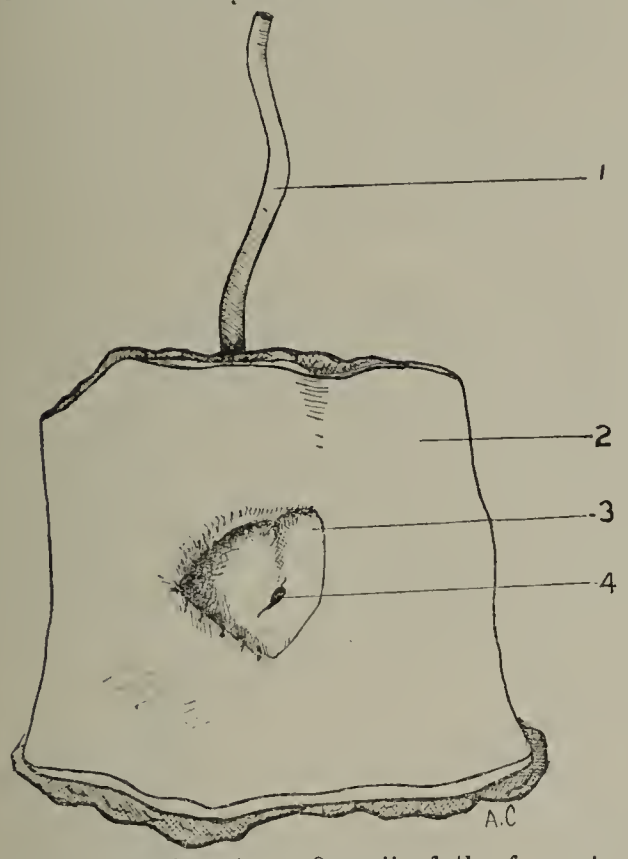


Fig. 1.—1. Spermatic artery; 2, wall of the femoral artery; 3, aortic patch; 4, mouth of the spermatic artery.

1. Preparation of the Renal Artery and Aortic Patch.—The aorta of the first animal is dissected to the level of the mouth of the renal artery. The renal artery, however, is not dissected. A patch of the aorta (Fig. 2) surrounding the mouth of the renal artery is cut with scissors. The patch should be triangular or elliptic in shape and the edges as regular as possible in order that a smooth anastomosis can be made.

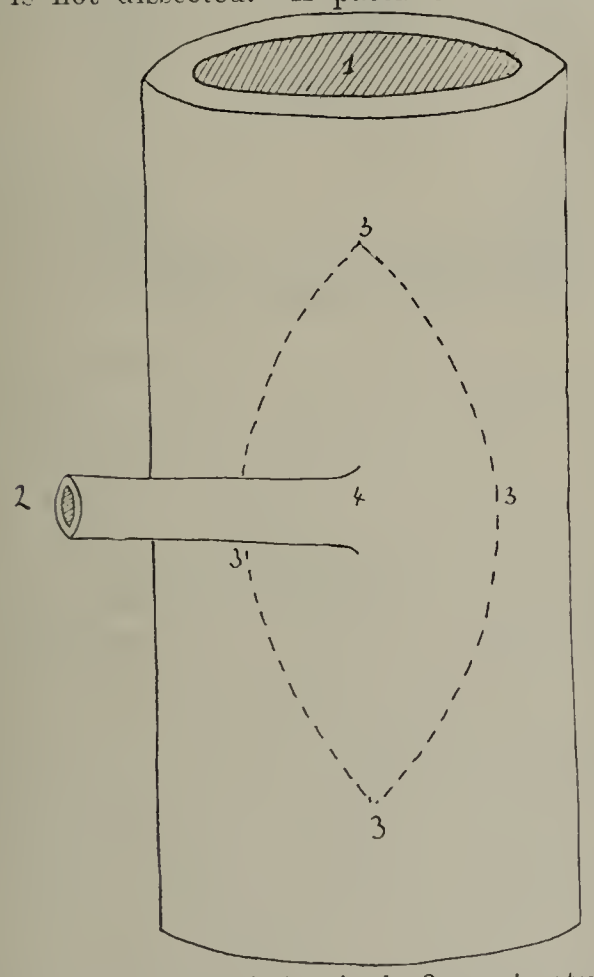


Fig. 2.—1, Aorta of the first animal; 2, renal artery; 3, line of incision for the aortic patch; 4, mouth of the renal artery.

2. Transplantation of the Patch on the Wall of the Aorta of the Second Animal.—The aorta of the second animal is dissected between the mouths of the renal and genital arteries. The vessel being temporarily occluded both above and below, with one cut of the scissors an elliptic opening a little longer than the patch taken from the first animal is made in the wall of the aorta.

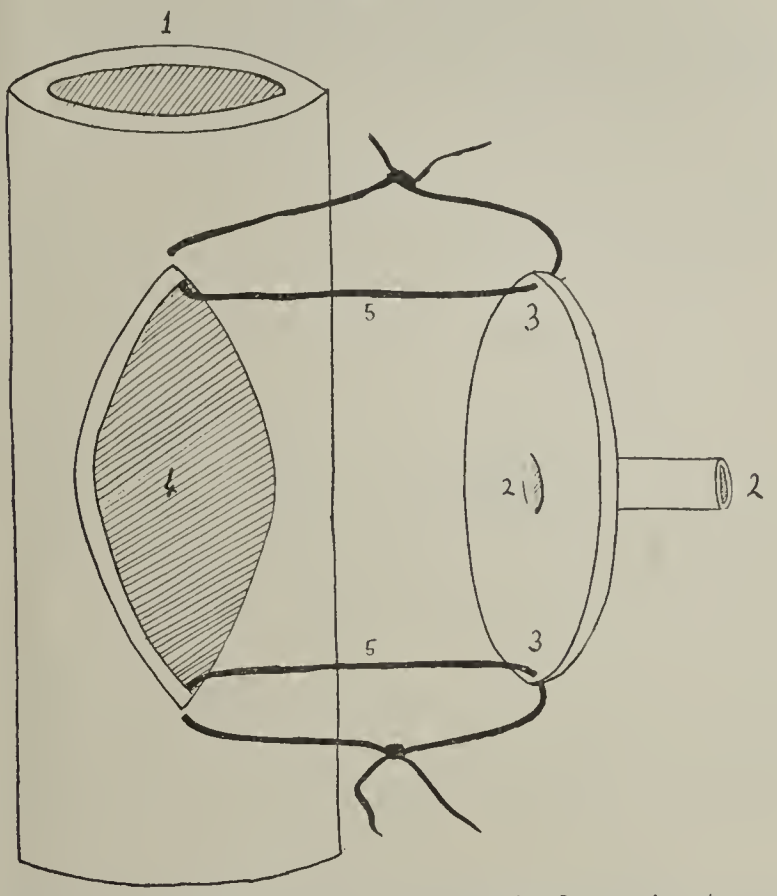


Fig. 3.—1. Aorta of the second animal; 2, renal artery; 2', mouth of the renal artery; 3, patch taken from the aorta of the first animal; 4, aortic opening; 5, threads uniting the ends of the patch and of the aortic opening.

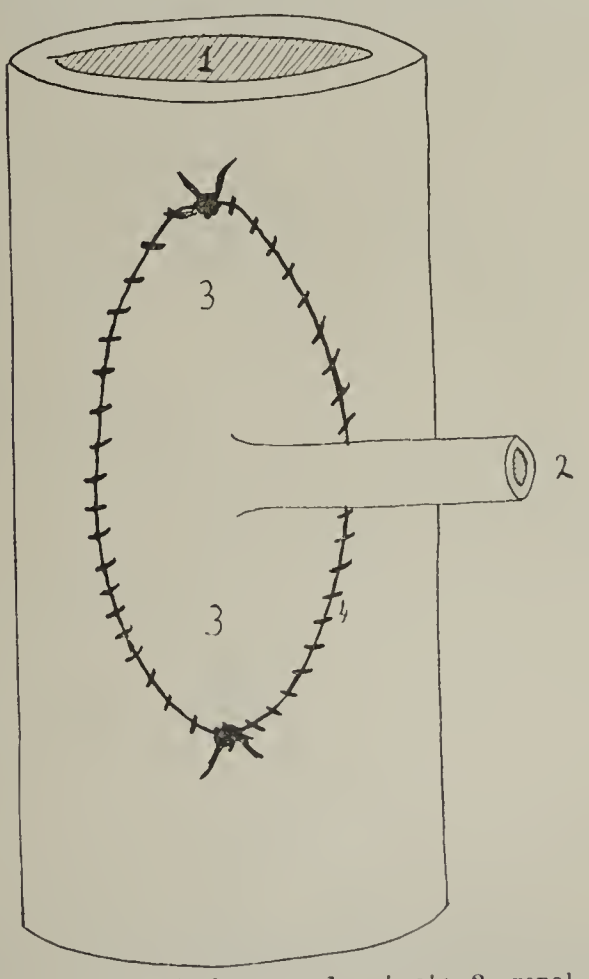


Fig. 4.—1, Aorta of the second animal; 2, renal artery; 3, patch of the aorta of the first animal; 4, continuous suture.

Each end of the patch is then fixed to the ends of the aortic opening by a single stitch (Fig 3). The edges of the patch and of the aortic opening are then united by a continuous suture (Fig. 4).

Anastomosis of the renal vein to the vena cava is performed in the same manner.

The circulation is re-established by releasing the vessels where they were temporarily occluded. The blood penetrates immediately through the renal artery into the capillaries of the organ and returns through the renal vein to the vena cava.

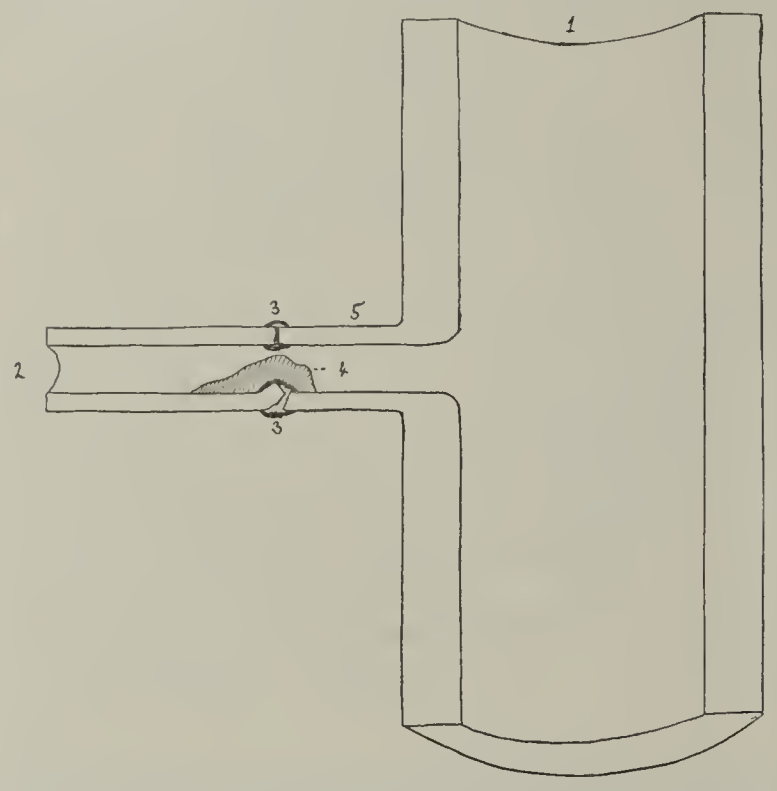


Fig. 5.—1. Aorta of the second animal; 2, renal artery of the first animal; 3, line of suture of the end-to-end anastomosis; 4, clot on a point of the line of suture, with almost complete obliteration of the vessel; 5, renal artery of the second animal.

At the line of suture of the aorta a little blood may escape. This hemorrhage ordinarily stops of itself within one or two minutes, but if it continues it is easily controlled by one or two supplementary stitches. The operation is less difficult on the veins owing to their

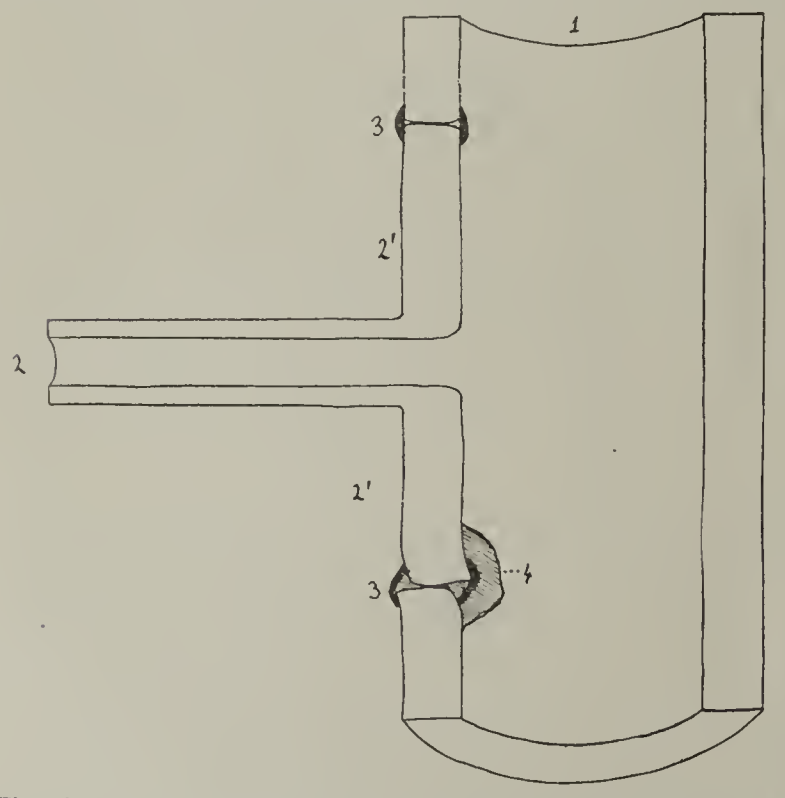


Fig. 6.—1, Aorta of the second animal; 2, renal artery and aortic patch taken from the first animal; 3, line of suture of the aortic patch to the edges of the aortic opening; 4, clot on the line of suturing.

greater flexibility. For this reason the line of suturing on the vena cava is usually blood proof.

The same method is well adapted to the anastomosis of the ovarian, spermatic and other vessels.

RESULTS.

This method has been employed on cats and dogs in fourteen cases of transplantation of the kidney, in one case of transplantation of the ovary, in several experiments of simple patching (i. e., repairing openings in walls of arteries by flaps of vein or peritoneum) and in some experiments in which the animals were killed at the end of a few hours, such as the transplanting the head of an animal in the abdominal region of another animal.

Although infection often occurred, the circulation in the organs has nearly always been good, and in no case gangrene of the transplanted organ (kidney or ovary) has been observed.

(*a*) *Anatomic Results.*—Within a few days after the operation, the stitches placed in making the anastomoses became covered with a glistening substance similar in appearance to the normal endothelium. In some cases there was a very small ribbon-like deposit of fibrin around the line of anastomosis. Irregularly shaped clots sometimes occurred at points of defective union of the intimas. In a dog that died eight days after the operation from diffuse phlegmon of the abdominal wall, a clot was found tightly adherent to one of the ends of

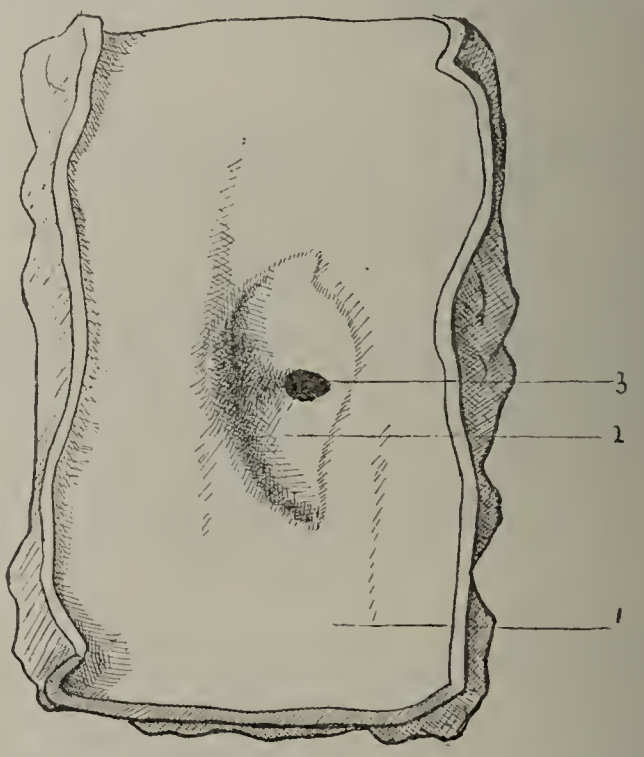


Fig. 7.—1, Wall of the aorta; 2, aortic patch; 3, mouth of the renal artery.

the patch. But the surface of the patch was smooth and the mouth of the renal artery was entirely unobstructed and normal in appearance. If such infection had occurred in a termino-terminal (Fig. 5) or termino-lateral anastomosis, obliteration of the vessel would probably have occurred. By the patching method, however, this accident had practically no effect on the circulation either in the aorta or in the renal artery (Fig. 6).

Anatomic union of the wall and the patch may occur rapidly after the operation. For example, fifteen days after transplanting the ovary of a pregnant cat into a small male kitten, it was practically impossible to distinguish the line of union of the patch of vena cava of the former to the wall of the vena cava of the latter. Also the union of the arterial anastomosis was excellent, the endothelium being smooth and glistening, but it was possible to distinguish the outline of the transplanted aortic patch. In some other cases small deposits of fibrin were observed on the line of the suture. They were very thin and, of course, did not interfere at all with the circulation. Specimens taken eight days, ten days,

eighteen days, twenty-seven days, forty-three days (Fig. 7) after the operation, and one taken five months after, show that the results remain excellent for these periods.

(*b*) *Physiologic Results.*—As soon as the blood is allowed to flow through the aorta, the circulation of the renal artery is re-established and appears to be practically normal. The renal vessels are surrounded by their connective tissue and protected by the peritoneum. Their caliber and their appearance are not modified. The kidney is a little redder, harder and enlarged.

Such animals walk, climb, jump and, in fact, comport themselves in a manner very like the normal the day following the operation and even, in some cases, within a few hours after the operation.

A cat into which a kidney had been transplanted was anesthetized eight days after the operation and its abdominal cavity opened by a transverse incision a little above the renal vessels. The transplanted kidney was found covered by glistening peritoneum without intestinal adherences. The color of the kidney was a little redder, but practically normal; the organ was slightly increased in size. The circulation was excellent and even greater than before the operation. The only evidence of the operation was a bulging of the aorta and the vena cava at the point of anastomosis of the renal vessels. The excellence of the physiologic result was presumably in a large measure due to the insignificant alteration of the condition of the renal vessels and the ureter from the normal.

A female cat,[2] to which a kidney from another cat was transplanted four months ago, is now living in good health. The transplanted kidney is enlarged. Its consistency is a little harder and its form is normal. By palpation the pulsations of the renal artery are easily detected and appear to be normal.

These observations show that the results of the anastomoses by the patching method remain good for a long period.

CONCLUSIONS.

1. By the patching method, the termino-lateral anastomosis of blood vessels is more safely performed than by the other methods.
2. It prevents the occurrence of gangrene after the transplantation of organs even in case of slight infection.
3. The circulation of a kidney, transplanted with anastomosis of its vessels by the patching method, is excellent four months after the operation.

Clinical Notes

ACETOZONE IN TYPHOID FEVER.*

RAY HUMISTON, PH.G., M. D.
WORTHINGTON, MINN.

For a number of years acetozone has been vigorously pushed in the treatment of typhoid fever, the manufacturers making the following claims:

1. A greater freedom from intestinal disturbances such as characteristic odor of stool, diarrhea, tympanites, hemorrhage, perforation, peritonitis.
2. A diminution of the toxemia, and the consequent improvement in physical and mental condition.
3. The return to normal temperature more quickly.
4. A modification of the course, severity, and type.
5. Complications less frequent.
6. Relapses less frequent.
7. Recovery more prompt and certain.

We will see how far these claims are substantiated in a short series of 10 cases in which records have been kept; bearing in mind that the series is too short to indicate very much either way. All the patients in the series were treated by hydrotherapy with a milk diet. The acetozone solution contained from 15 to 20 grains to the quart, and was administered freely according to directions.

FIRST CLAIM.—FREEDOM FROM INTESTINAL SYMPTOMS.

Findings:
One only had diarrhea.
Nine had constipation.
Odor of stool was modified in all cases.
Tympanites was troublesome in but 2 cases.
Hemorrhage was present in 2 cases.

SECOND CLAIM.—TOXEMIA DIMINISHED WITH IMPROVED PHYSICAL AND MENTAL CONDITION.

Findings:	Slight.	Moderate.	Severe.
Mental Impairment	4	1	5
Physical Impairment	3	2	5

These conditions seemed to go hand in hand. The subjects taking the most nourishment were most free from both conditions, hence suggesting free feeding to overcome mental condition.

THIRD CLAIM.—QUICKER RETURN TO NORMAL.

The fever was not considered absent until evening temperature was normal.

Findings:
Minimum number of febrile days..... 18
Maximum number of febrile days.....109
Average number of febrile days..... 43

By omitting 2 cases with relapse the average is brought down to 31 days.

FOURTH CLAIM.—COURSE, SEVERITY AND TYPE MODIFIED.

Findings:
Average evening temperature first week.....102.6
Average evening temperature second week.....102.4
Average evening temperature third week.....101.4

It should be noted that when temperature was 102 cold baths were administered every 3 hours.

FIFTH CLAIM.—COMPLICATIONS LESS FREQUENT.

Findings:
Two had pneumonia.
Two had hemorrhage.
Six had no complications.

SIXTH CLAIM.—RELAPSES LESS FREQUENT.

Findings:
One had 3 relapses, each of which took a typical course.
Practically 4 relapses.

SEVENTH CLAIM.—RECOVERY MORE RAPID AND CERTAIN.

Findings:
Rapid recovery, 6.
Prolonged convalescence, 2.
Deaths, 2; pneumonia, 1; hemorrhage, 1.

SUMMARY.

Claim 1: Greater freedom from abdominal symptoms; claim justified.
Claim 2: Toxemia decreased; claim not justified.
Claim 3: Quicker return to normal temperature; claim not justified.
Claim 4: Course, severity and type modified; claim not justified.
Claim 5: Complications less frequent; claim not justified.
Claim 6: Relapses less frequent; claim not justified.
Claim 7: Recovery more rapid and certain; claim not justified.

---

2. This animal was presented before the Section of Physiology of the meeting of the British Medical Association, Toronto, August, 1906.

* Read at meeting of Southwestern Minnesota Medical Society, Luverne, Minn., July 12, 1906.

This brings us to the real value of the drug; it prevents intestinal fermentation with the consequent tympany and diarrhea, and, in my opinion, this in a measure increases the patient's comfort and chances of recovery, but it has little value above other intestinal antiseptics.

The question arises, however, whether we are not depending too much on remedies having a local action for a general condition. We were overdoing it in the case of antipyretics. Some one said: "The only advantage of an antipyretic is to let the patient die with a normal temperature." Are we not overdoing intestinal antisepsis? Are we not simply attempting to let the patient die with a sterile intestine?

NEW APPARATUS: (1) AN ASEPTIC PROTECTIVE SHEET FOR MASTOID SURGERY, AND (2) A PRACTICAL ALGESIMETER.*

H. O. REIK, M. D.
Associate in Ophthalmology and Otology, Johns Hopkins University; Ophthalmic and Aural Surgeon, Baltimore Eye, Ear and Throat Charity Hospital; Visiting Ophthalmologist and Otologist to the Cambridge-Maryland and Peninsular General (Salisbury) Hospitals.
BALTIMORE.

I. ASEPTIC PROTECTIVE SHEET FOR MASTOID SURGERY.

One of the important problems confronting the aural surgeon is the maintenance of strict asepsis of the mastoid wound without unduly disfiguring the patient, even temporarily, by extensive removal of hair. The practice of different operators, as regards the preparation of the field for a mastoid operation, varies from removal of only a small amount of hair immediately surrounding the area to be opened, to a close shaving of the entire head. I have never felt justified in exposing an extensive area of the scalp, except in a premeditated brain investigation, and yet, in my efforts to save the patient from unnecessary loss of hair, I have frequently been sorely troubled by hairs encroaching on the wound at a critical stage of the operation.

In preparing for a simple mastoidectomy it has been my custom to have the scalp shaved for a distance of, approximately, 3 cm. and 6 cm. posterior to the auricle, then to make a skin incision parallel to the postauricular sulcus and about 5 mm. therefrom throughout its curvilinear course. The scar following a wound so situated is well hidden by the auricle and causes the least disfigurement. My best efforts, however, to protect such an operation field, by the use of sterilized rubber caps or by the application of sterile towels wound about the head, have not been productive of satisfactory results. The most carefully applied headgear is apt to become loosened by manipulation attending the operation and to permit straggling hairs to wander into the field; particularly is this true when dealing with female patients in whom the mass of hair makes it more difficult to apply the towels tightly and the longer hairs are especially prone to creep from under cover. In order to obviate these difficulties I have had a special rubber sheet made that can be neatly applied and that will surely prevent any possibility of hair encroaching on the field even though the shaved region be a very narrow one.

About three years ago my attention was attracted by an illustration, in the business catalog of the B. F. Goodrich Co., depicting a rubber operating sheet devised by Dr. Murphy of Chicago, for use in abdominal operations. This sheet consisted of a heavy rubber apron of sufficient size to cover the entire abdomen, and in its center was inserted a small square of thin rubber tissue. The skin surface having been cleansed in the usual way preparatory to operating, the sheet was to be laid over the abdomen so that the square of thin rubber tissue came over the area to be incised and this portion was made to adhere to the skin by the application of a solution of Para rubber in chloroform. The incision was then to be made directly through the thin rubber, as through an additional layer of skin. The entire sheet could be boiled with the instruments and its adjustment rendered it impossible for any extraneous matter to enter the wound except through the direct channel. It occurred to me at once that if such a device could be employed in mastoid surgery it would very much simplify the problem of operating without much loss of hair and greatly aid the surgeon's efforts to maintain asepsis throughout his work. In order to accomplish this I have experimented with sheets of different sizes during the past two years and I offer this pattern for consideration.

Description of Sheet and Method of Use.—It consists of a heavy rubber sheet 30x30 cm. with a thin rubber insert 7x7 cm. The latter is not placed directly in the center, but toward one corner of the sheet in order to bring the greater portion to lie above and behind the operation field, where it is most needed. The anterior edge of the thin rubber section is only partially attached to the sheet and a semilunar piece has been cut away so that the auricle can be drawn through the opening and the edge of the rubber will fit in close to the postauricular sulcus.

The mastoid region having been prepared in the usual manner for operation, a coating of Para rubber solution is applied to the skin and the protective sheet laid on and smoothed down in the proper position; it will adhere to the skin very quickly, very much as a collodion dressing does and no further fastening of the sheet is necessary, though there can be no harm in binding the loose portion of the sheet in place by sterile towels. The entire sheet can be sterilized by boiling and it may be used repeatedly but, of course, the thin insert will have to be removed and a new one attached for each case. As both sides are the same, this sheet can be used for operation on either mastoid by simply reversing it. In practical use it has given me a great deal of satisfaction but if any one can suggest any improvements to be made on it I shall be very glad to adopt them.

II. A PRACTICAL ALGESIMETER.

Some accurate means of estimating the degree of tenderness accompanying inflammations of the mastoid bone is very desirable. No other symptom of mastoiditis is so constant and none compares with it in value when considering whether or not a given case requires operative intervention. Acknowledging its importance, we have all been relying on the most primitive means of ascertaining its presence and intensity. Furthermore, we have been describing our examinations in the most inexact language as, for instance, when stating that "the mastoid was tender on slight pressure," or, "deep pressure produces exquisite tenderness," etc., such statements not conveying an intelligent idea of the exact amount of pressure exerted or the degree of tenderness elicited. What one examiner would call slight pressure might be regarded by another as firm or even deep pressure.

Hoping that such discrepancies might be prevented by the use of an instrument that will register the amount

* Read in the Section on Laryngology and Otology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

of force required to elicit the first sign of discomfort, empower the watcher to note the effect of increasing pressure, and permit the study of smaller points on the surface of the bone than can be palpated by the finger alone and, in addition, that some standard might be established for recording the results of examinations made, the accompanying instrument was devised.

Description of Instrument.—It consists of a modification of the combined piezometer and algesimeter described by Dr. Howard A. Kelly.[1] It is a fenestrated hollow cylinder in which a slender piston rod moves against a resistance coil. The outer end of the rod is capped by a smooth, spherical button and the inner end is attached to an indicator that slides in the fenestrum. The margin of the slit in the cylinder is marked to show the amount of pressure exerted on the piston, being graduated in hundreds from zero to 2 kilograms.

With such a device it is possible to determine accurately, and to express in grams, the amount of pressure required to elicit tenderness at any particular spot. If pressure be made with this instrument over the mastoid antrum or tip of a normal person the full amount of power it registers, 2,000 grams, will be borne without material discomfort. In no case of mastoid inflammation in which it has been used, however, could such pressure be endured and, as far as can be said at present, the more advanced the mastoid disease the lower degree of pressure required to bring forth complaint of pain.

DISCUSSION.

DR. W. SOHIER BRYANT, New York City, said that while he had used Dr. Reik's device with considerable satisfaction, he had found the greatest difficulty, not in keeping the hair out of the wound at the time of operation, but afterward during the dressings. He asked how Dr. Reik manages to do that.

DR. PHILIP HAMMOND, Boston, asked what Dr. Reik does in case it is necessary to make a posterior incision as recommended by Whiting. It often happens that after a patient is on the operating table the necessity for a more extensive posterior opening may arise. Very likely the incision will invade the hair area unless the patient has been previously shaved. At the Eye and Ear Infirmary it is the custom to shave the patient an inch and a half or two inches from the ear; to fasten long hair away from the auricle by collodion and perhaps by braiding the hair. When the patient is on the table several layers of gauze with an oval hole cut through are placed over the auricle, leaving only the operative field exposed. Various protective sheets are used, and, something that has not been described, a tent is placed about the face of the patient in such a way that the etherizer has free access to the face without being in the operative field.

DR. H. O. REIK, Baltimore, said that he disclaimed any credit for the sheet as an invention. It is simply a modification of Murphy's rubber sheet. In the original rubber dam Murphy used the rubber tissue simply fastened down to the skin. There is no interference with the vascular condition. As regards comparison with the collodion application, the advantage is it is so much more easily removed. At the close of the operation you can tear off the entire sheet, and if any portion adheres it can be removed with chlorform. He had heard from other sources the same objection to collodion that Dr. Sprague mentioned. Replying to Dr. Hammond, he said he does not use the Whiting posterior incision. He did not know whether operations differ in Baltimore from New York and Boston, but he had very rarely found it necessary to make an incision such as Whiting has spoken of. The sheet is not recommended for universal use, but for the average simple mastoidectomy in which the brain or neck is not entered and the operation is not extended, as in ligating the jugular when not anticipated prior to operation.

1. Johns Hopkins Hospital Bulletin, September, 1904.

ETHER-AIR ANESTHESIA OR THE DROP METHOD FOR THE ADMINISTRATION OF ETHER.

FROM AN EXPERIENCE OF SIX HUNDRED AND FIFTY CASES.*

MYRON METZENBAUM, B.S., M.D.
Staff Anesthetist to the Mount Sinai Hospital.
CLEVELAND, OHIO.

In the United States ether is generally the anesthetic of election, and in this country, at least, its administration is conceded to be attended with less danger than that of chloroform. The universal method for the administration of ether is by means of the Allis or similar cone, and a universal principle governing its administration is that it should be given with the least possible amount of air.

From the manner in which ether is generally administered by the cone, except when given by a skilled anesthetist, there is produced, besides the anesthetic effect, one of partial asphyxiation.

To exclude all fresh air by using a closed cone and wrapping a towel around the chin and the cone, to prevent the escape of the inhaled vapors and to force the re-inhalation of these vapors without admitting any fresh air, is to produce a partial asphyxiation.

Ordinarily the ether is poured in the top or the bottom of the cone, which is then quickly lowered over the patient's mouth and nose, thereby forcing the inhalation of very dense vapors. The condition of partial asphyxiation, plus the inhalation of dense ether vapors, is directly responsible for the coughing, struggling, frothing and cyanosis.

With these points in mind, let us consider the open or drop method for the administration of ether with a large volume of air. This is not a new method, for it has been used by individual surgeons for many years. Today this method is in such favor that the labels on the Squib's ether cans have directions for fixing the cork for this drop method.

TECHNIC OF THE METHOD.

The ordinary Esmarch or chloroform mask, covered with six or eight layers of gauze, is held three or four inches above the patient's mouth and nose. The patient is directed to count slowly after the anesthetist, or to breathe in and out, or to blow the vapors away.

The ether contained in the ordinary chloroform bottle with dropper is allowed to drop on the mask somewhat more rapidly than if it were chloroform. The bottle is moved continuously, so that each drop falls on a different spot on the mask, and is thus thoroughly mixed with air, so that when it is inhaled from the mask it enters the lungs as a partially warmed gas well diluted with air. The mask is lowered gradually; at the same time the drops of ether are increased until a very fine, continuous steady stream is being spread over the entire mask. The mask is finally lowered until it almost touches the face.

The average patient will be able to count from 70 to 80, some only 40 or 50, while others may count 120 before unconsciousness begins. This will require from two to three minutes. At the end of a period of from five to seven minutes the patient relaxes and becomes sufficiently unconscious so that the final preparations for the operations may be begun. By the time these are

* Read before the Cleveland Academy of Medicine, June 1, 1906.

completed the patient is in a condition of surgical anesthesia. To accomplish this from two to two and one-half ounces of ether have been administered and from twelve to fifteen minutes have elapsed.

Once the patient is thoroughly anesthetized he is saturated, so to speak, and a lesser quantity of ether is given to keep him in this condition.

During an operation lasting from one to one and one-half hours from five to seven ounces of ether are administered. Soon after the anesthetic is discontinued the patient comes to and frequently awakens before leaving the operating room.

ADVANTAGES OF THIS METHOD.

Some points of advantage of this open drop method as compared with the cone method in producing ether anesthesia are: By the open method the patient takes in almost as much fresh air as when awake. The loss of consciousness is due to the anesthetic effect of the ether, without the added partial asphyxiation. Therefore, this method is one of purer anesthesia.

By this method the factors of carbonic acid gas poisoning are eliminated and need not be considered. The patient is so gradually introduced to the anesthetic that the change is a transitorial one, during which time the mind, brain, heart, lungs and circulating apparatus quietly assume the new condition of anesthesia.

There is little, if any, choking, holding of breath, coughing, struggling, rigidity or vomiting. The patient's eyes are bright, the skin is warm, the peripheral circulation about the face and head is almost a blush. The perspiration is warm.

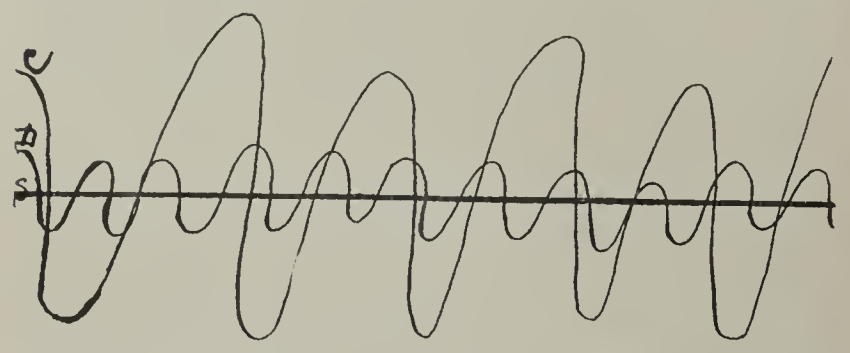


Fig. 1.—The anesthetic curve. S, surgical anesthesia; C, cone method; D, drop method.

Considered as a whole, the patient appears more as if asleep than when under any other anesthetic.

The dosage can be governed to a fine point and is within the control of the anesthetist. The patient can be kept just under, and there rarely exists a state of profound anesthesia.

THE ANESTHETIC CURVE.

The difference in the anesthetic state between the cone and drop method is graphically illustrated by the diagram in which the abscissa line represents the line of surgical anesthesia and the line of ordinates the anesthetic curve.

Assuming the patient near the point of surgical anesthesia by the cone method, a quantity of ether, usually from 3 to 4 drams, is poured into the cone. This amount of ether reduces the patient to a profound anesthetic state, so that the curve falls from a distance above to a considerable distance below the line of surgical anesthesia. After a time the ether in the cone is consumed, so that the anesthesia is no longer profound and the curve rises until another quantity of ether is added when it again drops.

Now, assuming a patient near the point of surgical anesthesia by the drop method, a few drops of ether are administered almost continuously, so that the patient is at all times just near the point of surgical anesthesia. The anesthetic curve is always only a little above or a little below the line of surgical anesthesia.

By the cone method there must be considerable difference in the degree of anesthesia, while by the drop method the anesthesia is very even.

GENERAL CONSIDERATIONS.

This form of anesthetic is borne well by infants and the aged. Again, bronchopneumonia in the young, or pneumonia in the aged, as a direct sequence to the anesthetic, does not seem to occur so often as when the cone is used. This may be due to the fact that the ether is not taken in as a very dense vapor capable of abstracting large amounts of heat from the lungs, but enters the lungs as a gas already mixed with air and almost the temperature of the operating room.

This comparative difference in temperature can be easily demonstrated by placing a finger under the mask

Fig. 2.—Crile's Method. Pieces of gauze placed loosely in the funnel so as not to prevent expirations. The top of funnel is covered with six thicknesses of gauze. The ether is dropped slowly on the gauze, great care being taken so it does not run into the tube and directly into the larynx. The arm of the tube is lower than the patient's face to prevent the ether from dropping directly into the tubing. The glass coupling makes it possible to see that the tubing is clear. Stiff rubber tubing is used to prevent kinking and closing off of the tube. By this method of anesthesia operation within the mouth, such as for cleft palate and those on the jaws, can be performed without the slightest interference on the part of the anesthetist.

and noting that it is not even chilled; while if the same operation is repeated within the ether cone, after the ether has been poured in, the finger will be almost as cold as though it had been sprayed with ethyl chlorid. This chilling of the lungs, due to the abstraction of large volumes of heat, may be partially responsible for the pneumonias following ether anesthesias.

By this open method, the after vomiting and retching is reduced to a minimum, and I have found it not only far less than when using the cone, but much less than when chloroform is given. If the retching and after-vomiting is reduced, then, not only will there be a great

deal less discomfort to the patient, but severe post-operative dangers are often prevented.

This method is just as applicable to alcoholic patients as any other method of anesthesia. I have administered it to many of the patients at the St. Alexis Hospital during a period of one and a half years, and at Mount Sinai Hospital, Cleveland, where I have been staff anesthetist for a period of three years.

The total amount of anesthetic used for the average patient during an operation, lasting from one to one and one-half hours, will be from 5 to 7 ounces, and this, I may add, is less than the average amount I have found necessary when using the cone.

The disadvantages to many who have tried this method are, first, getting the patient under the influence and, second, keeping the patient under the control of the anesthetic. However, if one recalls his first experiences in giving chloroform or ether, he will remember that he experienced not only the same difficulties, but only too often was confronted by the more serious problem of bringing the patient out from a profound anesthesia. By the drop method the dangers of profound anesthesia are less than when using the cone; and for this reason, if for no other, it is a safer method in the hands of the inexperienced.

If the cone is to be preferred to the mask for the administration of ether, then use the open cone. Pour the ether, in small quantities, in from the top, lower the cone gradually, do not bring it in close contact with the face, and do not wrap a towel around the chin and cone. If the ether is given in this manner and compared with the usual method, the anesthetist will note such a marked improvement in so many points in the anesthetic as to arouse his astonishment. A lesser quantity of ether will be used, the patient will be just under and will awaken very soon after removing the cone.

The advantages of the ether-air anesthesia are well demonstrated in operations within the mouth, when the anesthetic be given through a funnel, covered with layers of gauze and containing pieces of gauze, from which two rubber tubes lead to the nostrils. Here the ether is poured gradually on the gauze and mixed with the air *ad libitum*.

After having given 370 chloroform anesthetics, 260 anesthetics by means of the Allis or similar cones. and over 650 anesthetics by the open or drop method, I desire to state as my positive convictions that, from all points of view and after consideration of the many factors which must be considered in administering an anesthetic, I firmly believe that the open or drop method of giving ether is far superior to the closed or cone method. This open drop method may be properly designated ether-air anesthesia.

1242 Willson Avenue.

DANGERS IN THE USE OF ADRENAL PREPARATIONS.

F. C. BENNETT, M.D.
LORING, LA.

In an article in THE JOURNAL, Oct 13, 1906, Dr. B. H. Potts, of Philadelphia, warns the profession of some of the dangers of suprarenal preparations. The following case illustrates a danger in the indiscriminate use of the drug:

A negro, aged 26, male, very rugged and healthy, had a stricture of the urethra. After some difficulty I succeeded in passing a No. 24 French sound. When the sound was withdrawn considerable blood followed it, which greatly alarmed the patient. Thinking to quiet his fears I injected into the urethra about half a dram of adrenalin chlorid (1-1000). In about thirty seconds the patient became restless and moved about, staggered and was laid on the couch. He complained of intense pain about the heart and his breathing was labored and very rapid. The heart beat was so fast that I could not count it. The conjunctiva was blanched. Profuse perspiration broke out all over the body, and the extremities became very cold. The man declared that he was dying and I was inclined to believe him. In about five minutes he began to cough and spat up mouthfuls of bloody froth. The coughing and spitting of blood continued for over an hour. The pulse, which had been very hard, became soft and slow.

The patient gradually became quieter and the symptoms subsided. He slept fairly well the following night and rose the next day very little the worse for his experience.

I gave him morphin, atrophin and nitroglycerin hypodermatically during the continuance of the alarming symptoms.

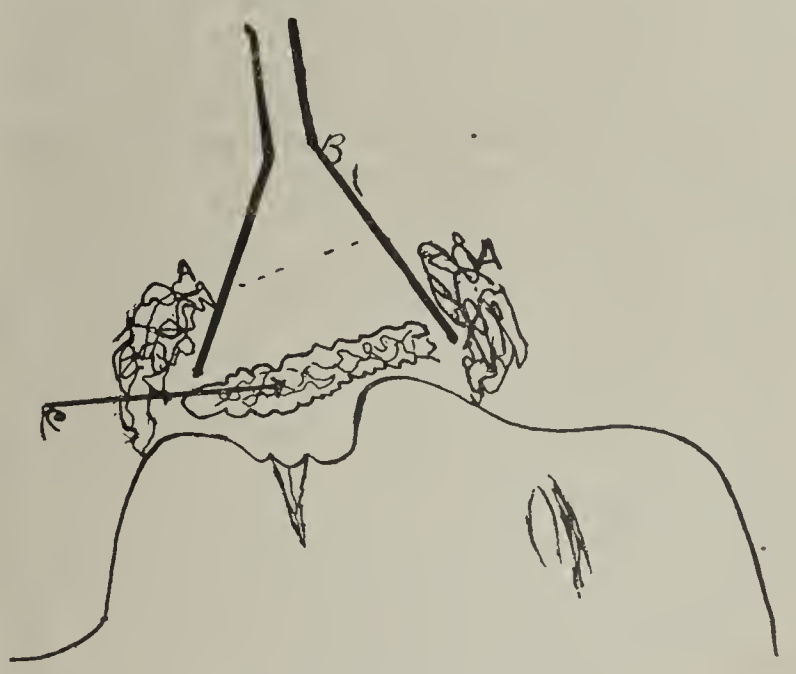
ETHYL CHLORID AS A GENERAL ANESTHETIC.

A. E. OSMOND, M.D.
CINCINNATI.

I have lately noticed in THE JOURNAL various articles on the use of ethyl chlorid as a short general anesthetic, and some specially constructed masks.

To my mind the latter are too expensive for the general practitioner, and I desire to present a method that I use in the receiving ward of the Cincinnati Hospital.

With the patient on his back, I place over his mouth and nose two layers of thin gauze. Over this I place a tin or glass funnel around the bottom of which is wrapped a towel, as shown in the accompanying illustration. The ethyl chlorid is sprayed down the small end of the funnel.



A, towel; B, funnel; C, gauze.

The gauze keeps the nose from being frozen, and the towel prevents too great a loss of ethyl chlorid, yet gives free access of air, so that the vapor can not be too concentrated. The patient readily goes to sleep.

The expense of such an outfit is about 10 cents; it works equally as well as the more expensive apparatus, and can be had at a moment's notice. I use it daily in any case demanding a short general anesthesia, as, for instance, to reduce a dislocated shoulder or set a fracture, and at all times with happy results. On an average about 10 c.c. of ethyl chlorid are used for each anesthetic.

New and Non-Official Remedies

THE FOLLOWING ARTICLES HAVE BEEN TENTATIVELY ACCEPTED BY THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR INCLUSION IN THE PROPOSED ANNUAL, "NEW AND NON-OFFICIAL REMEDIES." THEIR ACCEPTANCE HAS BEEN BASED LARGELY ON EVIDENCE SUPPLIED BY THE MANUFACTURER OR HIS AGENT, BUT TO SOME EXTENT ON INVESTIGATION MADE BY OR UNDER THE DIRECTION OF THE COUNCIL. CRITICISMS AND CORRECTIONS ARE ASKED FOR TO AID IN THE REVISION OF THE MATTER BEFORE FINAL ACCEPTANCE AND PUBLICATION IN BOOK FORM.

THE COUNCIL DESIRES PHYSICIANS TO UNDERSTAND THAT THE ACCEPTANCE OF AN ARTICLE DOES NOT NECESSARILY MEAN A RECOMMENDATION, BUT THAT SO FAR AS KNOWN IT COMPLIES WITH THE RULES ADOPTED BY THE COUNCIL.

W. A. PUCKNER, SECRETARY.

(*Continued from page 1565.*)

PEGNIN.

MILK SUGAR RENNET.

The milk-curdling enzyme of calf's rennet, diluted with sugar of milk and sodium chloride.

It is prepared by mixing pure rennin with milk sugar and sodium chloride.

It is a fine white powder, having a sweet saline taste, readily soluble in water, and forming a solution which readily and rapidly coagulates the casein of milk.

On adding 2 Gm. of pegnin to 200 Gm. of milk, which has been boiled and cooled to 40°C. (104° F.), and shaking the mixture, the milk should be completely coagulated in from 3 to 4 minutes and after vigorously shaking, the curd should be finely divided and equally distributed throughout the liquid. A solution of 1 Gm. of pegnin in 50 Cc. of water, should require 17 to 17.5 Cc. of tenth-normal silver nitrate for complete precipitation, equivalent to 10 per cent. sodium chloride.

It is incompatible with a temperature higher than that indicated for the fermentative action.

Actions and Uses.—Producing a finely divided coagulum, it obviates the formation of the clotty curds which are liable to be produced when untreated cow's milk is taken as food. Cow's milk coagulated with pegnin as described below is said to be particularly serviceable for infant feeding and well adapted as a food for adults in stomach affections and in disturbances of the digestion incident to infectious diseases, in hyperacidity, etc.

Dosage.—8 to 10 Gm. (120 to 150 grains) of pegnin are required for 1 liter (34 fluidounces) of milk, previously boiled and cooled to about 40° C. (104° F.). The mixture, after brief shaking, is allowed to stand 2 to 3 minutes or until it is completely coagulated, and then shaken vigorously during several minutes until the coagulum has been converted into a smooth, homogeneous mixture, and set aside in a cool place. It is transferred to the nursing bottle as required and heated in warm water to the body temperature (37.5° C., 99.5° F.) before feeding infants.

Manufactured by Farbwerke, vorm. Meister, Lucius & Bruening, Hoechst a. M. (Victor Koechl & Co., New York). U. S. patent No. 700,631.

PIPERAZINE.

DIETHYLENEDIAMINE. ETHYLENE-IMINE. PIPERAZIDINE.

Piperazine, $NH\begin{matrix}\swarrow CH_2.CH_2\searrow\\ \searrow CH_2.CH_2\swarrow\end{matrix}NH = C_4H_{10}N_2$, is a synthetic base obtained by the condensation of two $.CH_2.CH_2.$ groups, with two :NH groups.

It is prepared by the interaction of ammonia on ethylene chloride, treating the complex mixture of different salts produced with sodium nitrite at 60° to 70° C. (140° to 158° F.), purifying the sparingly soluble dinitroso-piperazine, which separates as a scaly crystalline mass, by repeated crystallization from hot water, and subjecting the pure dinitroso-piperazine so obtained to distillation with an alkali. It is also prepared by several other patented processes.

It forms colorless, lustrous, tabular crystals, hygroscopic, which melt at 104° C. (219.2° F.). It is extremely soluble in water, forming strongly alkaline but non-caustic solutions. It is not so readily soluble in alcohol. It is volatile. It forms soluble salts with acids, and with uric acid it forms a very soluble salt (in 50 parts of water; lithium urate requires 368 parts of water). It is not affected by chromic acid, but is slowly oxidized by potassium permanganate.

In aqueous solution it gives a characteristic scarlet-red precipitate with potassium-bismuth iodide, a white precipitate with Nessler's reagent, and is precipitated light blue by copper sulphate, white by mercuric chloride, lemon-yellow (crystalline) by picric acid and grayish by tannic acid.

It is incompatible with acetanilide, acetphenetidin (phenacetin), alkaloidal salts, nitrites, metallic salts in general and with picric and tannic acids. It should not be exposed to moisture.

Actions and Uses.—A part of the piperazine ingested passes undecomposed into the urine and is claimed by some to form a very soluble compound with the urinary uric acid; others state that the piperazine which is excreted is largely in combination with the stronger mineral acids. It has been shown that urine containing piperazine has no greater solvent power on uric acid than ordinary urine. It seems to produce no symptoms in man or animals, even when administered in fairly large quantities, although it is stated that, after large doses, tremors, clonic spasms and general depression have occurred.

Piperazine has been recommended for the prevention of the formation of renal and vesical calculi and for the relief of irritation of the bladder due to excess of uric acid in the urine and in cases of chronic gout, rheumatism, renal colic, etc. The attempt to secure the solution of uric acid in the body by this as well as other remedies has not been successful in the experience of many clinicians.

Dosage.—0.3 to 0.6 Gm. (5 to 10 grains); daily dose, 1to 2 Gm. (15 to 30 grains). Owing to its hygroscopic character, it is impracticable to dispense it in powder; it should, therefore, be dispensed in solution in water, plain or carbonated, but in quantities sufficient for a day's supply only.

Manufactured by Farbenfabriken, vorm. Friedr. Bayer & Co., Elberfeld, Germany (Continental Color & Chemical Co., New York). U. S. patent No. 482,108. Also by Chemische Fabrik auf Actien vorm. E. Schering, Berlin (Schering & Glatz, New York). U. S. patent No. 543,214.

POLLANTIN (FALL).

DUNBAR'S SERUM.

An antitoxic serum from horses treated with pollen toxin derived from ragweed.

Horses are injected with gradually increased doses of pollen toxin (derived from ragweed), which results in the formation of an antitoxin after two or three months of treatment. The horses are then bled and the strength of the serum is estimated by determining the proportion which will prevent the action of a solution of pollen toxin, of which one drop is barely sufficient to produce a reaction when instilled into the conjunctival sac of a hay-fever patient. The serum is preserved by the addition of 0.25 per cent. of phenol.

It is a clear, slightly yellowish liquid, having the odor and taste of a dilute solution of phenol. On standing, the liquid deposits a slight precipitate. The liquid is alkaline in reaction and not irritating to the normal conjunctiva.

It should neutralize the effects of a solution of pollen toxin when mixed with it and dropped into the eye or when a drop is applied immediately after a drop of the toxin solution.

The liquid does not keep well if exposed to the air. When it becomes cloudy or a bad odor develops, decomposition has occurred and the preparations should no longer be used.

Actions and Uses.—It has no pharmacologic action except the neutralization of the pollen toxin. The serum is not intended for use hypodermically. It is employed for the relief of hay fever; it may be used as prophylactic.

Dosage.—One drop should be instilled by means of a pipette into the outer angle of each eye and one or two drops into one nostril, the other being kept closed, every morning before rising. If the first application causes sneezing or reddening of the mucous membrane of the eye, it is recommended to repeat the application, even for the fourth time, if necessary.

Manufactured by Schimmel & Co., Miltitz, near Leipsic. (Fritzsche Bros., New York.) U. S. patent No. 745,333.

POLLANTIN POWDER (FALL).

A powder obtained by evaporating, *in vacuo,* pollantin serum derived from ragweed toxin at about 45° C. (113° F.) and mixing it with sterilized sugar of milk.

It is fine, slightly yellowish, almost odorless powder, almost but not entirely soluble in water, and having a slight alkaline reaction. The tests are the same as for the liquid. It should reduce Fehling's solution. The powder keeps well.

Actions and Uses.—The same as those of the liquid.

Dosage.—The powder is applied to the eyes by dusting on the conjunctiva and to the nose by snuffing into one nostril, the other being closed, a piece as large as a lentil.

Manufactured by Schimmel & Co., Miltitz, near Leipsic (Fritzsche Bros., New York).

PURGATIN.

ANTHRAPURPURIN DIACETATE. PURGATOL.

Purgatin, $C_{14}H_5(OH)\ (CH_3COO)_2O_2=C_{18}H_{12}\ O_7$, is the diacetyl ester of trihydroxyanthraquinone (anthrapurpurin).

According to the patent specifications it is obtained from anthrapurpurin or 1,2.7-trihydroxy-anthraquinone, through acetylization, by boiling for a stated time with acetic anhydride, or a mixture of acetyl chloride and acetic acid, or a mixture of acetic acid and phosphorus oxychloride.

It is a voluminous, orange-colored, crystalline powder, melting at 175° to 178° C. (347° to 352.4° F.); tasteless and insoluble in water and in dilute acids, but slowly soluble in weak alkaline solutions, splitting off anthrapurpurin, which is manifested by the development of a deep violet-red coloration.

It is incompatible with alkalies and their carbonates.

Actions and Uses.—It is a laxative, said to be free from by-effects. Being insoluble in dilute acids, it passes unchanged into the intestinal tract, where it is slowly split up and produces painless peristalsis. The urine behaves as it does after the ingestion of rhubarb. It has a reddish color and reduces Nylander's reagent. Purgatin is recommended as a mild laxative.

Dosage.—0.5 to 2 Gm. (7 to 30 grains), according to individual idiosyncracy, in powder, capsules or tablets, taken at night.

Manufactured by Knoll & Co., Ludwigshafen a. Rh. and New York. U. S. patent No. 678,070.

PYRAMIDON.

DIMETHYLAMIDOANTIPYRINE.

Pyramidon, C_6H_5N (CO———C.N$(CH_3)_2$ / N(CH_3).C(CH_3) \ ||) =

$C_{13}H_{17}N_3O$, is phenyl-dimethyl-dimethylamido-pyrazolon, a substitution product of antipyrine, $C_{11}H_{12}N_2O$, into the molecule of which a dimethylamino group, $N(CH_3)_2$, has been introduced.

It is prepared by the reduction of nitroso-antipyrine to amido-antipyrine and treating this with methyl chloride or iodide.

It forms small, colorless, slightly alkaline crystals, melting at 108° C. (226.4° F.); almost tasteless; soluble in 11 parts of cold water and readily soluble in alcohol, ether and benzene. Its aqueous solution saturated at 70° C. (158° F.) deposits oily globules of pyramidon on boiling.

Ferric chloride colors the neutral or slightly acidulated solution of pyramidon a bluish violet color; nitrous or nitric acid produces a fugitive blue-violet color; silver nitrate produces an intense violet coloration when added to the aqueous solution, followed by the formation of a black precipitate of metallic silver, and the same color is produced by platinum chloride, by ammonium persulphate and by lead dioxide. In hydrochloric acid solution pyramidon gives a fine crystalline double salt with mercuric chloride.

Its incompatibilities are in general the same as those of antipyrine. Oxidizing agents (also acacia) often produce colored solutions.

Actions and Uses.—Pyramidon acts as an antipyretic and anodyne, like antipyrine, but is effective in much smaller doses. The action, while somewhat slower at the beginning, is more lasting. It is claimed to be devoid of harmful influence on the blood, heart or kidneys; to the contrary, it is said to stimulate the heart's action. It has been recommended particularly in the chronic fevers of tuberculosis, as well as in the acute febrile conditions incident to typhoid fever, erysipelas and pneumonia.

Dosage.—0.3 to 0.4 Gm. (5 to 6 grains), most conveniently in the form of tablets, a single dose usually sufficing for 24 hours.

Manufactured by Farbwerke, vorm. Meister, Lucius & Bruening, Hoechst a. M. (Victor Koechi & Co., New York). U. S. patent No. 579,412.

PYRAMIDON NEUTRAL CAMPHORATE.

This compound, $(C_{13}H_{12}N_3O)_2.C_{10}H_{16}O_4$, is a neutral salt of pyramidon and camphoric acid.

It is prepared by combining its components with the aid of suitable solvents, under exclusion of light, moisture and heat.

It is a white, crystalline powder, melting (indefinitely) at 80° to 90° C. (176° to 194° F.). It dissolves with acid reaction in 15 parts of water or 2 parts of alcohol.

It gives the characteristic reaction of pyramidon (which see) with silver nitrate. If the solution in hot water is made alkaline with caustic soda, the pyramidon may be shaken out with chloroform; if the residual aqueous liquid is then acidified with sulphuric acid the camphoric acid (melting point 186° C., 366.8° F.) may be shaken out with ether.

Actions and Uses.—See pyramidon acid camphorate.

Manufactured by Farbwerke, vorm. Meister, Lucius & Bruening, Hoechst a. M. (Victor Koechi & Co., New York). U. S. patent No. 686,998.

PYRAMIDON ACID CAMPHORATE.

This is an acid salt of pyramidon and camphoric acid, $C_{13}H_{17}N_3O.C_{10}H_{16}O_4$.

It is prepared under the same conditions as the neutral salt.

It is a white, crystalline powder of acid reaction, melting (indefinitely) at 84° to 94° C. (183.2° to 201.2° F.); soluble in 20 parts of water or in 4 parts of alcohol.

The tests are the same as for the neutral salt.

Actions and Uses.—The acid and neutral salts combine the antipyretic action of pyramidon with the antihydrotic action of camphoric acid. It is claimed that in these compounds the respective action of the component is modified, the antihydrotic effect of the camphoric acid being materially increased, while the toxicity of the pyramidon is diminished. In the neutral salt, the antipyretic action of the pyramidon predominates; in the acid salt the antihydrotic effect of the camphoric acid.

They are particularly recommended in the febrile conditions of phthisis, attended by profuse sweating.

Dosage.—Neutral camphorate, 0.5 to 0.75 Gm. (8 to 12 grains); acid camphorate, 0.75 to 1 Gm. (12 to 15 grains), given in powders or aqueous solution.

Manufactured by Farbwerke, vorm. Meister, Lucius & Bruening, Hoechst a. M. (Victor Koechi & Co., New York). U. S. patent No. 686,999.

PYRAMIDON SALICYLATE.

Pyramidon salicylate, $C_{13}H_{17}N_3O.C_7H_6O_3$, is an acid salt of pyramidon and salicylic acid.

It is prepared by combining its components with the aid of a suitable solvent and avoidance of exposure to light, moisture and heat.

It is a white, crystalline powder, having an acid reaction and melting indefinitely at 68° to 70° C. (154.4° to 158° F.). It is soluble in 16 parts of water or 5 to 6 parts of alcohol.

The aqueous solution is colored intensely red by ferric chloride, and produces a white precipitate with silver nitrate, the solution assuming a violet color after a short time.

It is incompatible with ferric salts.

Actions and Uses.—It is antipyretic, analgesic and antiseptic, combining the activity of its components.

It is recommended in rheumatic and gouty affections, neuralgia, pleuritis, etc.

Dosage.—0.5 to 0.75 Gm. (8 to 12 grains) in powder or aqueous solution.

Manufactured by Farbwerke, vorm. Meister, Lucius & Bruening, Hoechst a. M. (Victor Koechi & Co., New York). U. S. patent No. 680,278.

(To be continued.)

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

103 Dearborn Avenue . . . . Chicago, Ill.

Cable Address . . . "Medic, Chicago"

Subscription price.....Five dollars per annum in advance

[*For other information see second page following reading matter.*]

SATURDAY, NOVEMBER 17, 1906.

THE PHYSIOLOGIC STANDARDIZATION OF DRUGS.

The scientific striving for exactness has led to two distinct tendencies in materia medica: The first consists in the substitution of the active principles isolated from a drug for the crude drug itself. This is undoubtedly the correct and scientific method, when the isolated principle really represents the full therapeutic value of the drug; but, since this is by no means always the case, the method has its limitations.

The second method consists in the estimation of the strength of a crude or unstable drug by assay processes, i. e., by the determination of the amount of some active constituent contained therein. Perhaps the most notable advance in the new U. S. Pharmacopeia consists in the increased requirements in this respect and in the greatly enlarged list of drugs and preparations for which an assay is directed. With the single exception of diphtheria antitoxin, these assays are all based on chemical methods, in accordance with the instruction of the pharmacopeial convention. It is well known, however, that there are many medicinal substances—including such important articles as digitalis, ergot, strophanthus, suprarenal gland, etc.—for which no satisfactory chemical assay has been elaborated, but the strength of which can be ascertained by appropriate experiments on animals.

These so-called physiologic assay processes yield very satisfactory results with many drugs, and are usually not difficult to execute for those trained in the technic of animal experimentation. It is doubtless true that this training is not possessed by the pharmacist. The expense of these tests is also such that it would not be profitable to apply them on a small scale, but they can be applied in the large manufacturing houses, or by the importers of crude drugs; and, indeed, a very large part of the credit of introducing these methods of standardization is due to the individual enterprise of American firms. Since each firm, however, uses its own methods and standards, a "standardized" product of one maker may be very different from that of another; indeed, in the absence of published standards, we have little more than the word of the manufacturer for his statement that his product has been assayed. To illustrate, we may again refer to the reports[1] of Hunt and of Sollmann and Brown on suparenal preparations. All the manufacturers claimed a uniform strength, i. e., one part of the alkaloid in 1,000 of solution. Two makers, X and Y, emphasize in their advertising that they assay each lot physiologically; if the same standards were used, the products should be uniform, but, as a matter of fact, X is found 50 per cent. stronger than Y. A third maker, Z, advertises that all his products are of the highest standard, and subjected to chemical and physiologic assay. Hence, his suprarenal solution should be expected to come up to X, or at least Y. In fact, however, it is but a fifth as strong as X. We have no reason to believe that the manufacturer of X is honest and those of Y and Z intentionally dishonest. It is much more likely that they all standardize their products, but that they do so by different standards. And this must necessarily continue until official sanction is given to some single standard, and fairness to the manufacturer as well as to the public would seem to require this.

It would be a mistake, we believe, to make these assays compulsory, in view of their impracticability for the retail pharmacist, but there could be no objection to introducing official methods and standards to which such preparations which are simply marked "physiologically assayed" must conform. This would give a definite meaning to a term which is now most indefinite. It would leave the manufacturer free to use other methods, should he so desire, but would compel him to state the fact. It may also be remarked that the warranty clause of the new Pure Food Law would relieve the retail pharmacist from the responsibility for tests which he could not himself execute.

It is to be hoped that the next pharmacopeial convention will appreciate the importance of this subject, and direct the adoption into the United States Pharmacopeia of suitable standards (optional if need be) wherever practical and advisable. It will be a matter of ten years, however, before the next Pharmacopeia becomes official, and the matter is too pressing, at least as regards the suprarenal preparations, to be shelved in the meantime. The adjustment of these standards would require considerable original investigation, which should be started at once.

The further question as to what body should take the initiative in this movement may be a rather delicate one, but, in view of the importance of the subject, all secondary consideration should be laid aside. It would seem that the best method to give immediate effect would be for the Hygienic Laboratory of the U. S. Public Health and Marine-Hospital Service to take up the matter, as it has facilities to do this work. Undoubtedly, the manufacturers would coöperate in this, as they have done in the stardardization of diphtheria antitoxins, which has been done by the above laboratory with such satisfactory results.

1. The Journal A. M. A., Sept. 8, 1906, p. 790.

THE DESMOID REACTION IN GASTRIC DISEASES.

While the value of the stomach tube as a diagnostic agent can not be denied, it is safe to affirm that there are drawbacks to its use, which, at times, are serious. Aside from the definite contraindications to the use of the tube, some patients are so impressed by the obvious discomforts attending its use, and are rendered so nervous by the thought of it, that they refuse point blank to have the instrument introduced. After the test meal has been given, and has been successfully withdrawn, there is always more or less doubt whether the secretion of the acid and ferments of the stomach can be regarded, under the peculiar circumstances, as even approximately normal. The test meal is bland and unirritating and hardly comparable in stimulating power to an ordinary meal, and, moreover, the psychic condition of the patient is very frequently such that some disturbance in the secretion of the digestive juices is almost to be anticipated. It must be remembered also that the test meal, withdrawn, as it is, after an hour, undergoes changes in the stomach which may result in the neutralization of a certain amount of acid.

Some time ago Sahli, impressed by the drawbacks of the ordinary test meal, suggested the use of a method of examination which he named the desmoid reaction. The reaction has as its basic principle the fact that the gastric and pancreatic juices act independently and in a totally different manner. Sahli's idea was to find some substance digestible by the stomach juice, but not by the pancreatic or intestinal fluids, and to enclose in this substance medicaments which would be absorbed by the stomach and appear in characteristic form in the secretions. After some experimentation, he has decided that methylene blue and iodoform are the most suitable chemical substances, as they are excreted by the urine, and can be easily recognized therein. To protect them from the action of the pancreatic and intestinal juices they are made into a small pill, wrapped in a small square of rubber tissue, and protected from the action of the intestinal digestive ferments by closing the rubber tissue bag with catgut. As both catgut and rubber tissue are impermeable to the pancreatic and intestinal juices the methylene blue and iodin do not appear in the urine if gastric digestion is markedly deficient. In the case of normal gastric digestion the catgut string is dissolved, allowing the square of rubber tissue to be opened, and permitting the absorption of the methylene blue and iodin. The latter substances may be given separately or combined, usually the latter, are administered as described above, at the beginning of the noon meal, and are tested for at 5 and 7 o'clock in the evening, and again on the following morning. Usually, too, the saliva is tested at the same time for the presence or absence of iodin.

The desmoid reaction has several advantages over the use of the stomach tube. It is not a very disagreeable procedure to swallow a small rubber-coated pellet, certainly by no means so unpleasant as the usual performance with the stomach tube; the reaction is brought about under the normal circumstances of digestion; it may show digestive power where a test meal has shown no acid whatever; and it shows not merely the presence or absence of certain substances, it shows functional ability. Its absence with a normal gastric juice indicates excessive motility of the stomach. The main drawback, according to Monod,[1] is that it does not show when an excess of acid is present. While the desmoid reaction will probably prove to be a valuable adjunct to the ordinary gastric examination, it is not likely that it will entirely replace this. No doubt it will tend to reduce the number of patients who have to be put through the ordeal of the stomach tube, if it is used as a preliminary test; it will be useful also in showing remaining gastric function, and perhaps in indicating a more favorable prognosis, in patients whose secretion has seemed entirely lacking in digestive power when tested in the ordinary way. Evidently it can not take the place of the ordinary examination in hyperchlorhydria, and this must not be forgotten.

THE MIGRATORY NEEDLE STORY.

Every now and then in the newspapers there is a wonderful story of a needle that entered the body of a person many years ago and, after remaining there, giving absolutely no sign of its presence, makes its appearance at a more or less distant point and is removed. The favorite newspaper item is that it entered a finger of one hand and came out of one of the fingers of the other. When a really talented correspondent reports the story the needle always comes out of the finger corresponding to the one which it entered on the other side. Occasionally, as was recently the case in the *New York Herald,* a correspondent suggests that such migrations deserve careful study, because they may point to some law of circulation within the tissues as yet imperfectly understood or perhaps not even guessed at in present-day medicine.

A story that recently went the rounds was a variant on the old-time needle migration, because the traveling object was that interesting element of romantic detail—a serpent's fang. This, after having supposedly entered into the thumb of the right hand, came out on the left. Unfortunately for the most sensational part of the story the actual details showed that a portion of the fang had entered one thumb some years ago, and, its presence having been unsuspected and having created no reaction—it was the fang of a non-poisonous serpent—gradually worked its way to the surface of the same thumb, producing a small inflammatory area in the process, and found its way out.

Of course, newspapers will continue to print such stories because it is copy that certain readers feast on

1. Jour. de Physiol. et de Path. gen., 1906, vol. viii, p. 853. See abstracts in THE JOURNAL, page 1420.

with avidity. In the meantime it would be well to know from a scientific standpoint just how far the migration of small sharp objects is possible. Such cases as present the phenomena of migration should be reported with care. The accounts of ignorant patients can not be depended on. Occasionally, when needles have appeared in the abdominal wall there is no doubt that they have been swallowed, though sometimes such appearances are accounted for on the supposition that a needle may have found its way beneath the skin of the hand or the foot. Although there is no definite memory of such an occurrence at first, after the person has thought over the matter for some time, some incident is remembered that seems to suggest that such an incident may have occurred. Here is a chance for studies in suggestion and psychology as well as in surgery and physiology, but the subject deserves more accurate attention than has hitherto been given it.

THE NEGRO BRAIN.

There is little doubt that the race feeling which is present in those states which contain a large negro population is due to the fundamental differences of a psychologic and temperamental character between the two peoples. It is interesting, therefore, to find in Bean's[1] recent paper the evidence that there are anatomic differences in the brain of the negro which distinguish it from the brain of the Caucasian, and which doubtless account for the differences in mental character which distinguish the two races. The negro brain is smaller than the brain of the Caucasian, especially so far as the frontal lobes are concerned and the areas having to do with the association of this part of the brain with other regions. From what we know of the functions of the frontal lobes, and of the mental differences between the races, Bean concludes that the lower mental faculties of the negro, such as smell, sight, handicraftmanship, bodysense and melody, are well developed, but in the higher faculties, self-control, will power, ethical and esthetic senses and reason the negro falls considerably behind the Caucasian.

FLAT RESIDENCE AND INSANITY.

An official of the state board of charities of one of our larger states is credited with the assertion that a large proportion of the insanity in women in cities is due to living in flats and that the isolation and monotony of such a method of existence is the cause. Hitherto, he says, the monotony of farm life has been regarded as a principal cause of female insanity, but now the city flats are running the farm a close second. While it is probable that the effects of farm life have been over-rated and that it is likely that those of flat buildings may possibly be subject to the same charge, it can not be denied that there is a possibility of evil in the great extension of the flat system of dwellings so far as the mental, as well as the physical, health of the community is concerned. The congregation of individuals and families in flats does not tend apparently to a greater community of interest or to social intercourse. Even in the better class of tenements there are disadvantages in the lack of interest and occupation as compared with housekeeping under other conditions, and, owing to the exigencies of city building space and the greed of landlords, many of the even moderately expensive flats are anything but sanitary on account of the lack of light and ventilation. Living rooms in which the sun can never enter directly, or at best for only a brief portion of the day, are not only unhealthy, but are mentally depressing, and it need not be thought surprising that some women with melancholic dispositions should suffer from such environment. With the poorer class of tenements all evils are likely to be exaggerated. The fact is, however, that the greater portion of the insanity is already coming from the cities, and the flat is only one of the contributing factors among all the others incident to the overcrowding of population. The prospect is that matters are liable to be worse before they are better if the present tendency of crowding into apartments continues.

1. Amer. Jour. of Anatomy, 1906, vol. v, p. 353.

IODOPHILIA.

We have previously commented on the iodin reaction of the leucocytes, the so-called iodophilia, and have called attention to the value of the test in clinical medicine, a value especially emphasized by the work of Cabot and Locke in this country. In all new tests the danger is to overestimate rather than to underestimate the value of the procedure, and it is well to take stock of a new test or a new discovery after it has had two or three years of use at the hands of competent and unprejudiced observers. A recent paper by Bernicot[1] suggests that we shall have to modify our estimate of the usefulness of the test for iodophilia. Bernicot's paper brings out the fact, soon discovered by those who used the test, that a good deal of experience is needed to interpret the findings. He emphasizes also the lack of relation between the presence of iodophilia and the degree of leucocytosis, but thinks that the degree of iodophilia and the degree of toxemia run fairly parallel. He believes that the reaction is evidence of toxemia, whether bacterial or otherwise, and that it is so inconstant and variable that it is unworthy of use as a routine procedure. There are two conditions, however, according to Bernicot, in which the iodin reaction is of great value: lobar pneumonia, in which its persistence after the crisis signifies complication or delayed resolution, and suspected abscess, in which its absence is of great negative value.

SERA FOR SNAKE BITES.

Compared to India, or even to Australia, the United States does not lose many inhabitants from the bites of poisonous snakes. And yet those who con the daily papers know that, especially in the South and West, a year never passes without a number of fatalities from this cause. A little over ten years ago Calmette an-

1. Jour. of Pathology and Bacteriology, 1906, xi, 304.

nounced that he had discovered an antitoxin which would protect against all varieties of snake bite, and even against scorpion bites, and was, moreover, curative. The vast mass of work on immunity and allied problems done since this announcement has made increasingly clear that antisera, like toxins, usually have a marked degree of specificity. Calmette's conclusions have been shown to be erroneous, and his serum has been demonstrated to be of value only in cobra poisoning. In practically all snake poisons there are at least two kinds of toxin, one acting on the central nervous system, the other producing a local hemolytic and necrosing action. In some snakes, the cobra, for instance, the nerve poison is greatly predominant in the venom; in others, like the rattlesnake, the hemolytic and necrosing substance is in the ascendant. The difficulty in producing a serum antagonistic to the venom of the rattlesnake has been due to the fact that the intense local effects of the poison had to be overcome, while at the same time the toxin must not be so injured that its power of producing antibodies was lost. This was accomplished by Noguchi[1] some time ago, and he has recently published a further study in which he shows that the poison of the rattlesnake has a high degree of specificity and that rattlesnake bites must be treated by a specially prepared serum. The point of practical interest in connection with this paper is the high degree of therapeutic efficiency possessed by the anticrotalus serum. Animals which had been poisoned with virulent snake poison could be rescued almost up to the time they became moribund by its administration. There seems good reason to believe that an anticrotalus serum of sufficient therapeutic power to be of service in cases of rattlesnake bite in man can be prepared, but whether its use would be sufficiently extensive to make its manufacture a commercial success is another matter. Whether it is prepared or not will probably depend on this last factor.

1. Jour. of Exp. Med. 1906, vol. viii, p. 614.

Medical News

ILLINOIS.

Personal.—Dr. John C. O'Connor and family, Buffalo, have returned from Pueblo, Colo.——Dr. Frank E. Baldwin, Peoria, who is suffering from septicemia, is improving.

Addition to Hospital.—A 12-room addition to the main building of Beverly Farms, Godfrey, has just been completed and furnished, and the new school and gymnasium building is also open for continuous service. Dr. W. H. C. Smith is superintendent of the institution.

Burning Leaves.—Dr. James A. Egan, secretary of the State Board of Health, declares that there should be an ordinance against the burning of leaves at night, or in the evening, as the smoke irritates the throat and leaves it susceptible to the lodgment of germs of diphtheria and other diseases.

Typhoid Fever at Mont Clare.—Typhoid fever is reported to be raging at Mont Clare and the surrounding territory, on the northwestern border of Chicago. Officials of the health department report that the outbreak is due to an impure milk supplied by one dealer. Twenty cases are reported in the village.

Quarantine Enforced.—Stringent action is being taken by the State Board of Health compelling the observance of rules of quarantine in the village of East Springfield, where several cases of diphtheria have developed. Under the direction of the village board, an armed guard is maintaining quarantine. ——The Stuart School, Springfield, which has been closed on account of diphtheria, was reopened November 5.

Chicago.

Gas Kills Hospital Employés.—Two employés of the German Hospital were asphyxiated by gas and two others were overcome in the room in which all four slept at that institution, November 8.

Donation to Institute.—The Pasteur Institute, Paris, has donated to the Turck Institute a complete collection of all micro-organisms known to infest the gastrointestinal tract of man. This collection includes specimens obtained from all parts of the world.

Diphtheria.—Diphtheria continues to spread and the mortality is higher than in any October or November for four years. The chief medical inspector attributes this increase to the absence of school inspection, and is making every effort to have this service resumed.

Cocain Seller Arrested.—George Styer, a druggist on West Randolph Street, is reported to have been arrested, November 8, on the charge of selling cocain to Walter Butler. He was arraigned before Justice Schott on the charge of disorderly conduct, and is reported to have admitted selling the drug.

Examination.—An examination will be held at St. Joseph's Hospital, Joliet, December 12, at 2 p. m., for interne. Any reputable physician, a graduate of a medical college, is eligible for the appointment. Those wishing to take the examination should address the Sister Superior, St. Joseph's Hospital, Joliet.

Typhoid Fever Prevalent.—The health department reports that typhoid fever is more widely spread throughout the country than at any time since 1902. It is especially prevalent in localities dependent for their water supply on shallow wells and streams, which, on account of the phenomenally dry weather have become polluted.

Personal.—Dr. D'Orsay Hecht has been elected assistant professor of nervous and mental diseases and medical jurisprudence in the Northwestern University Medical School.——Dr. Edson B. Fowler has returned after a year in Europe.——Dr. H. R. Pitz has been added to the staff of the Michigan Asylum for the Insane, Kalamazoo.

Deaths of the Week.—For the week ended November 10, 514 deaths were reported from all causes, equivalent to an annual death rate of 13.08 per 1,000. Pneumonia caused 68 deaths; consumption, 66; violence (including suicide), 38; heart diseases, 36; nephritis, 35; acute intestinal diseases, 34; nervous diseases, 24, and cancer, 22.

Tillman to Aid Charity.—On November 27 Senator Tillman of South Carolina will lecture in Orchestra Hall for the benefit of the equipment fund of the new Chicago Union Hospital, on the subject, "Shall the United States Annex Cuba?" The new hospital is a five-story brick structure, and is now nearing completion at a cost of about $60,000.

Lot Deeded to Hospital.—A deed has been placed on record whereby Otto Young transfers to Dr. Frank Billings the property at the northwest corner of South Park Avenue and Sixty-fourth Street, a site selected more than a year ago for the McCormick Memorial Institute for Infectious Diseases, but which was made unavailable for that purpose by the action of the city council at that time.

INDIANA.

Acquitted.—In the case of the board of health of Madison against Dr. Nathan P. Graham, charged with failure to report a case of smallpox, the mayor declared the charge against Dr. Graham not sustained.

Personal.—The State Board of Health has accepted the resignation of Dr. Thomas V. Keene, Indianapolis, its pathologist.——Dr. James R. MacCracken, Garrett, will leave for Pueblo in a few days on account of his health.——At the annual election of the Fort Wayne Academy of Medicine, November 3, Dr. Garrett von Swerngen was elected president; Dr. Charles Beall, vice-president; Dr. Louis E. Brown, secretary, and Dr. Adam L. Schneider, treasurer.

District Society Meeting.—At the semi-annual meeting of the Ninth Councilor District Medical Society, held November 8, at Lafayette, about 80 physicians were present. The president, Dr. Charles Chittick, Frankfort, presided. Dr. William S. Walker, Lafayette, delivered the address of welcome. An

amendment of the by-laws providing that the annual meeting should be held in October was carried, and an amendment was also passed that each society in the district should be represented by one member and one alternate. Dr. George F. Keiper, Lafayette, read a letter from the governor, showing his approval of the movement for the establishment of a state sanatorium for tuberculosis. After the reading of papers the physicians were entertained at dinner at Lafayette Club by the Tippecanoe County Medical Society. Dr. George F. Beasley, Lafayette, acted as toastmaster.

MARYLAND.

Cornerstone Laid.—The cornerstone of the north wing of the Frederick City Hospital, donated by Mrs. Margaret E. S. Hood, was laid with appropriate ceremonies November 2.

Schools Closed.—The trustees of the public schools of Hyattsville, Marlboro and Berwyn, Prince George County, have closed the institutions temporarily on account of the prevalence of diphtheria.

Emergency Hospital Closed.—The Emergency Hospital of Frederick, which has been in operation for the last three years, has been closed by action of the Frederick County Medical Society, which established the hospital. The institution is entirely solvent, but owing to lack of adequate state and other support, it is deemed best to close it.

Vaccine Physicians Named.—The county commissioners of Cecil County have appointed the following vaccine physicians: Drs. Edwin N. Crawford, Ceciltown; J. J. Wright, Warwick; William C. Karsner and Thomas J. Conrey, Chesapeake City; John H. Jamer and William T. Morrison, Elkton; Camillus P. Carrico, Cherry Hill; Philip B. Housekeeper, North East; L. George Taylor, Perryville; Harry E. Clemson and S. Groome Fisher, Port Deposit; George S. Dare and John B. Slicer, Rising Sun; Samuel T. Roman, Conowingo; Ernest Roland, Liberty Grove; David T. Gifford, Zion, and Davis H. Richardson, Calvert.

Baltimore.

Personal.—Dr. Francis J. Kirby, who has been seriously ill at the St. Joseph's Hospital, is reported to be convalescent.——Dr. William H. Smith is in Paris.——Dr. Robert E. L. Campbell, who has been spending two years in Europe and the East, has returned to Baltimore.

Service for Medical Men.—The second annual service for physicians, medical students and nurses, modeled after that held in St. Paul's Cathedral, London, was held in Grace Church, November 4. The service was conducted by the bishop of Delaware and the offertory was for the Hospital for Consumptives of Maryland.

Examination of School Children.—Medical examiners of public schools report that they examined 11,293 children in October, of whom 3,651 were suffering from slight ailments of the eye, ear, nose, throat, skin or nervous system. All but 236 of the children had been vaccinated and only 62 were obliged to be removed from school for treatment.

Bequest to Hospital.—The Maryland University Hospital has been named in the will of the late J. G. Harvey for a large residuary bequest. The value of the estate is estimated at from half a million to a million dollars and is left in trust. The income on it is to be paid to an only son, and at his death the estate is to be equally divided between the University Hospital, Union Protestant Infirmary and the Hospital for Consumptives.

University of Maryland Centennial.—The dates of holding the University of Maryland centennials have been definitely fixed at a meeting of the committee of regents, faculties and alumni, held last week. The ceremonies will commence May 3 with a general home-coming and alumni day. There will be a reception at the University Hospital, followed by private receptions and society and class reunions in the evening. The buildings will be decorated, illuminated and will be open for inspection. May 31 will be University Day, when joint commencement exercises of the various schools will be held, with the conferring of honorary degrees, followed in the evening by a banquet. June 1 will be students' day, devoted to athletics, excursions, torchlight procession, students' banquet, etc. June 2, Sunday, will be celebrated by religious ceremonies and commencement exercises. Dr. John C. Hemmeter is chairman of the joint committees.

MASSACHUSETTS.

School Closed.—The Malden school board has closed the Coverly school on account of the prevalence of diphtheria.

Personal.—Dr. A. F. Downing, Cambridge, has been appointed physical inspector by the State Civil Service Commission.——Dr. Arthur V. Goss has been elected superintendent of the Taunton Insane Hospital, vice Dr. John P. Brown, resigned.——Dr. Fred M. Stiles, Waltham, was recently injured in a collision between automobiles.

Red Cross Election.—The Massachusetts Red Cross Society elected the following medical men on its board of officers for the ensuing year: Vice-presidents, Drs. Henry P. Walcott, Arthur T. Cabot and Herbert J. Burrell; executive committee, Dr. Edward H. Bradford, and advisory committee, Drs. Homer Gage, James T. Adams and David Cheever. During the past year $89,250 was collected by this branch of the association.

Harvard Scholarships.—The faculty of the Harvard University Medical School has awarded the scholarships for the year 1906-1907 as follows: The Claudius M. Jones scholarship of $250 to F. O. West; two Hilton scholarships of $225 each to M. J. Shaunessey and H. V. Hendricks; the Charles E. Porter scholarship of $225 to A. A. Howard; the Edward M. Berringer scholarship of $200 to C. A. McDonald; the Alfred H. Sinder scholarship of $200 to W. J. C. Sharpe; the Edward Wigglesworth scholarship of $200 to H. Morrison; the John T. Taylor scholarship of $200 to H. S. Bernstein; the Lucius F. Billings scholarship of $200 to E. D. Bond; two Eveleth scholarships of $200 each to R. C. Hunt and J. E. Overlander; the two halves of $100 each of an anonymous gift to H. H. Smith and M. H. Neill; the Orlando W. Don scholarship of $100 to J. P. Leake; the Charles P. Strong scholarship of $100 to C. W. Waddell; two-thirds of the John Foster fund, amounting to $100, to E. T. Congdon, and the Cotting gift of $125 to A. T. Grant.

Tuberculosis Society Meets.—The annual meeting of the Boston Association for the Relief and Control of Tuberculosis called attention to the fact that 4,702 persons died of this disease in the state in 1905, and that about 9 per cent. of all the deaths were from this cause. The association has been active this year in promoting the new hospital for Boston which is to be built at Mattapan; the development of the day camp on Parker Hill; the tuberculosis classes for home treatment, of which there are now three; the care of these patients by the Instructive District Nursing Association, and the "social service department," which has been started in connection with the out-patient department of the Massachusetts General Hospital. The receipts during the past year were $13,138. Dr. Edward O. Otis is president, Dr. Arthur K. Stone, vice-president, and the following physicians are on the council: Drs. George S. C. Badger, John G. Blake, Vincent Y. Bowditch, Arthur T. Cabot, Herbert C. Clapp, William T. Councilman, Samuel H. Dargin, Harold C. Ernst, George W. Fitz, Reginald H. Fitz, Elliott P. Joslin, Frederick I. Knight, James J. Minot, Joseph H. Pratt, Charles P. Putnam, George H. M. Rowe, Frederick C. Shattuck and Henry P. Walcott.

NEW JERSEY.

Personal.—Dr. Waldo F. Sawyer was elected mayor of Vineland, November 6.——Dr. Eugene J. Asnis has been appointed a member of the Woodbine board of education.——Dr. Leslie L. Hand, Millville, has been appointed pastor of the Newfield Methodist Episcopal Church.

Bacteriologic Laboratory Report.—The report of the state bacteriologic laboratory of the Bureau of Health for the month of October shows that 751 specimens were examined for special diagnosis, as follows: From suspected cases of diphtheria, 334 cultures; tuberculosis sputum, 245 specimens; 154 Widal examinations were made, and 11 examinations of blood for the malarial parasite; 7 miscellaneous examinations were made.

Free Dispensary Opened.—A new dispensary for the free treatment of the poor of Newark was opened November 1. It is known as the Newark Polyclinic and is under the charge of the following staff: Drs. Siegfried Husserl, S. H. Gordon, Carl F. W. Lippe, E. Reissman, William D. Bleick, Theodore E. Bleick, Charles A. Rosenwasser and others. The dispensary is open to the public every afternoon and evening except Sundays and holidays.

Contract Medical Practice.—The Orange Practitioners' Society at its last meeting adopted the following resolution in regard to the practice of contract medicine. The resolution was incorporated as a by-law of the society.

Resolved, That no member of this society shall accept or maintain the position of club, society, or organization physician, or do, or agree to do, any medical or surgical work for any club, society, or organization at a less rate than the regular customary charges for like service rendered by other physicians for patients not members of such club, society or organization. Also, that in no case shall any physician agree to attend the families of the members of such club, society or organization at half price, or less price, than the usual rate.

Nothing in this resolution shall be construed as preventing any member from attending the worthy poor at a less rate, or from giving free service to those who are too poor to pay anything, or

from acting as city, county, or town physician, or health officer, or from serving under any political appointments.

Any violation of this by-law shall be considered unprofessional conduct, and shall render the member guilty thereof liable to suspension or expulsion from this society, as the society may determine.

Society Meetings.—At the annual meting of the East Monmouth Practitioners' Society, at Long Branch, Dr. Harry E. Shaw was elected president; Dr. James J. Reed, vice-president; Dr. Harry B. Slocum, secretary, and Dr. William K. Campbell, treasurer.——At the eighth annual meeting of the Tri-County Medical Society of Sussex, Morris, and Warren counties, which was held in Newton, October 10, the following officers were elected: President, Dr. Alfred A. Lewis, Morristown; vice-presidents, Drs. Alvah C. Van Syckle, Hackettstown, and Jackson B. Pellett, Hamburg, and treasurer, Dr. Frederick W. Flagge, Rockaway.——At the thirteenth annual meeting and dinner of the Clinical Society of the Elizabeth General Hospital, held October 16, Dr. Steven J. Keefe, Elizabeth, was elected president; Dr. James L. Perkins, Cranford, vice-president; Dr. Russell A. Shirrefs, Elizabeth, secretary, and Dr. Frederick H. Pierson, Elizabeth, treasurer.

State Health Report.—The number of deaths reported to the Bureau of Vital Statistics for October was 2,519, a decrease of 216 from the previous month and 719 less than during the month of August. By ages there were 631 deaths among infants under one year, 254 deaths of children over one year and under five years, and 600 deaths of persons aged 60 years and over. The number of deaths from infantile diarrhea is diminishing, the mortality from this cause for October (237) being only 45 per cent. of that for September (520). Pulmonary tuberculosis continues to maintain a high death rate (257), but a falling off is shown in the figures for pneumonia (100). The number of deaths from the group of affections classified as "diseases of the nervous system" (313) is 63 less than the average for the months of July and August. The usual annual increase in the deaths from typhoid fever has not yet appeared in the records, and the figures for July (24), August (28), September (29) and October (27) vary but little. Scarlet fever caused only 3 deaths, and only 2 were caused by measles, but the mortality from whooping cough was 42.

NEW YORK.

New York City.

Conditional Gift.—John D. Rockefeller has pledged $20,000 toward a new hospital at Tarrytown, provided $75,000 is raised by May 1.

Milk Dealers Again Fined.—Judge Zeller has placed the penalty for selling adulterated milk at $100 and $75 in two cases, and smaller fines were imposed in many other instances.

Many Accidents.—St. Gregory's Free Hospital, Gold Street, has the record number of accidents. For the week ended October 20 this hospital reported 1,330 cases of emergency surgical operations and dressings.

Personal.—Dr. George Franklin Shiels has received from the War Department a medal for bravery on the battlefield during the Philippine insurrection.——Dr. Francis H. Markoe arrived from Europe on the *Kaiserin Auguste Victoria*.

Bellevue Charges Dismissed.—At the meeting of the trustees of Bellevue and the Allied Hospitals it was decided to take no action on the charges against Dr. Armstrong which have been preferred by the 51 members of the hospital staff.

New Hospital on Fire.—The dormitory of the new branch of the Metropolitan Hospital, Blackwell's Island, caught fire recently. Fortunately, the building was still unoccupied and the fire was extinguished before much damage was done.

Hospital Staff Resigns.—The six doctors on the house staff of the German Hospital, in Brooklyn, have sent in their resignations on account of trouble with the head nurse. The trustees support the nurse and have accepted the resignations of the staff.

Ambulance Accident.—A Lebanon Hospital ambulance was struck by a car at One Hundred and Fifty-eighth Street and Third Avenue and all of the occupants received injuries. The motorman was arrested and held in $1,000 bail on the charge of assault.

Bequests to Hospitals.—Mrs. C. H. Polhemus has bequeathed $300,000 to the Polhemus Memorial Clinic of Brooklyn and smaller sums to other hospitals and asylums.——One-forty-eighth of the estate of the late Edwin Stone, which is valued at $200,000, is to go to the Seaside Hospital.

Hospital Anniversary.—The twenty-fifth anniversary of the Brooklyn Home for Consumptives has just been celebrated. A handsome loving cup was presented to Mrs. S. V. White, the president of the home. During the existence of this institution 5,483 patients have been cared for in the home, and 3,423 were cured or benefited.

Professions Unite in Society.—At a meeting of the Tri-Professional Society, composed of physicians, dentists and pharmacists of New York City, the following officers were elected: President, Dr. Samuel S. Wallian; vice-presidents, Dr. J. Monroe Lieberman, and E. H. Felix Pirkner; secretary, Dr. J. Carlisle De Vries, and treasurer, Dr. Eugene R. Eliscu.

Bequest.—Among the numerous charitable bequests of the late Mrs. Mary L. Cassilly is one of stock worth $153,575 to the New York Society for the Relief of the Ruptured and Crippled. After other bequests to relatives and to other charities the residuary estate of several hundred thousand dollars is to be divided equally among the Society of the Lying-in Hospital, the Home for Incurables and the Society for the Relief of the Ruptured and Crippled.

Contagious Diseases.—There were reported to the sanitary bureau for the week ended November 3, 387 cases of tuberculosis, with 176 deaths; 239 cases of diphtheria, with 25 deaths; 99 cases of typhoid fever, with 24 deaths; 73 cases of scarlet fever, with 5 deaths; 64 cases of measles, with 3 deaths; 41 cases of whooping cough, with 5 deaths; 6 cases of cerebro-spinal meningitis, with 11 deaths, and 48 cases of varicella, a total of 957 cases and 249 deaths.

NORTH CAROLINA.

Physicians as Candidates.—It is reported that 14 of the legislative candidates in North Carolina are practitioners of medicine.

Portrait Presented.—The Capitol Club, Raleigh, has recently placed on its walls a life-size portrait of Dr. James McKee, superintendent of the State Hospital at Raleigh, and for 20 years president of the club.

Physicians Robbed.—The home of Dr. George L. Wimberly, Rocky Mount, was entered by burglars October 27 and a considerable amount of silver and other valuables stolen.——A sneak thief entered the home of Dr. William H. H. Cobb, Goldsboro, October 25, and stole $45.

Judgment Affirmed.—The Supreme Court has handed down a final opinion in the case of Dr. Joseph B. Matthews, Greensboro, who was convicted of killing his wife and sentenced to 20 years' penal servitude. The judgment of the lower court is affirmed. It is since reported that Dr. Matthews has committed suicide.

Charter Amendment.—The charter of the North Carolina Medical College has been so modified as to permit the conduct, by the corporation, of two schools, one for freshmen and sophomores, at Davidson, and one for the junior and senior classes at Charlotte. It provides also that both schools may be united at Charlotte. The capital added to the institution is $30,000.

Personal.—Dr. Henry H. Harris, Wake Forest, is critically ill at his home in that place.——Dr. P. L. Murphy, superintendent of the State Hospital at Morganton, and Dr. Isaac Y. Faisan, dean of the North Carolina Medical College, Charlotte, have recently undergone operations for gallstones in Baltimore.——Drs. S. Westray Battle, Asheville, and Edward C. Register, Charlotte, have returned from New York.——Dr. William S. Anderson, Wilson, sustained painful injuries in a head-end automobile collision, October 27.——Dr. Lewis M. Gaines, Wake Forest, is seriously ill with typhoid fever.

PENNSYLVANIA.

Staff Physicians.—At a special meeting of the board of managers of the Chester Hospital, the following attending staff was named: Drs. Jonathan L. Forwood, Samuel R. Crothers, L. Haines, Leon Gottschalk, Daniel W. Jefferis, Ellen E. Brown, Katherine W. Ulrich, Edward W. Bing, Frederick H. Evans, William F. Lehman and D. Forest Harbridge.

Personal.—Dr. W. W. Richardson, newly elected physician of the men's department of the State Hospital for the Insane, Norristown, assumed his duties November 15.——Dr. Thomas C. Rutter, Hazelton, is seriously ill at his home.——Dr. Katrina Freudenberger, Tamaqua, was thrown from her carriage November 5, and sustained a fracture of the left arm and painful contusions.

New State Laboratories Opened.—In a letter addressed to physicians throughout the state, Dr. Samuel G. Dixon, state commissioner of health, announces the opening of the new laboratories of the Department of Health, located in the University of Pennsylvania, Philadelphia, November 3. The opening of these laboratories ranks in importance with the establishment by the commissioner nearly a year ago of 500 stations

for the free distribution of diphtheria antitoxin to the poor throughout the state. The letter issued to the profession calls attention to the operation of the laboratory and to the facilities offered by the institution. In an accompanying pamphlet the scope of the work is set forth. The department also issues a concise pamphlet of instructions for the regulation of quarantine, isolation and disinfection in the several communicable diseases.

Philadelphia.

Pleased with Hospital Site.—The finance committee of city councils has recommended that the councils make an appropriation of $261,000 for the purchase of 870 acres of farm land in Byberry as a site for the new Insane Hospital and Home for the Indigent.

Hospital Donation Days.—At the annual donation day of the Children's Hospital $1,500 in gifts and money were received. ——St. Luke's Hospital will hold its annual donation day December 1; the Germantown Hospital, November 22, and the Samaritan Hospital, December 1.

Medical Society Anniversary.—The Northern Medical Association of Philadelphia, next to the College of Physicians the oldest medical society of the city, will celebrate its sixtieth anniversary by the publication of the history of the association and by a special festival and banquet on December 5. Present and former members and other friends are cordially invited to participate.

New Contagious Hospital Plans.—Plans have been completed for the buildings which will comprise the administration, store, public and private wards, nurses' home, refectory, receiving and observation wards for the treatment of scarlet fever. The sum of $891,500 is available from the $16,000,000 loan for the purpose. The buildings will be arranged on the group plan, connected by open corridors.

Hospital Society Meets.—Fourteen hospitals were represented at the annual meeting of the Hospital Association of Philadelphia, November 2. The following officers were elected: President, John C. Brown, Episcopal; vice-president, Ellison T. Morris, Germantown Hospital; secretary and treasurer, Robert E. Hastings, University Hospital. The Hospital for the Diseases of the Stomach was admitted to membership.

Carnegie Donation for College of Physicians.—At the meeting of the Philadelphia County Medical Society November 7, Dr. S. Weir Mitchell announced that Andrew Carnegie will give the College of Physicians $50,000 contingent on the college raising the sum of $100,000. The money is to be used in the erection of a new college home. This is the second donation of $50,000 that Mr. Carnegie has made to the institution. It is said that the new home of the College of Physicians as now proposed will cost about $200,000.

Health Report.—The total number of deaths reported for the week ended November 9 was 474. This is an increase of 38 over the number reported in the preceding week and an increase of 36 over the number reported in the corresponding week of 1905. The principal causes of death were as follows: Typhoid fever, 15; measles, 4; pertussis, 3; diphtheria, 18; consumption, 56; cancer, 15; apoplexy, 17; heart disease, 58; acute respiratory disease, 63; enteritis, 28; apendicitis, 4; Bright's disease, 33; suicide, 8; accidents, 17, and marasmus, 2. There were 236 cases of contagious disease, with 35 deaths, as compared with 201 cases and 19 deaths the previous week.

Bequests.—By the will of the late Hannah C. Ralston, the residence at 914 Clinton Street is given to the Pennsylvania Hospital, to be used for the establishment of free beds in the hospital for poor children.——The will of the late Judith L. Frechie directs that his estate, valued at $150,000, shall be placed in trust, the income to be paid to his widow during her life. At her death the will directs the following bequests to be made: To the Jewish Hospital Association, $5,000; Jewish Maternity Association, $2,000; Jewish Emigration Society, $2,000.——By the will of the late Sarah Lewis the Children's Hospital will receive $2,000.——By the will of the late Samuel W. Goodman a contingent bequest of $2,000 is made to the Jewish Hospital Association; $1,000 to the Jewish Foster Home and Orphan Asylum, and $300 to the Jewish Maternity Hospital.

VERMONT.

Pardoned.—Dr. W. R. Harkness, Montpelier, convicted of forgery in 1903, and sentenced to six years' imprisonment, has been pardoned by the governor after serving a little more than three years of his sentence.

Typhoid Prevalent.—Typhoid fever is reported to be prevalent in many places in the state. Rutland is reported to have 8 cases and Cuttingsville 7. The State Board of Health has forbidden the use of unboiled lake water in all towns situated on Lake Champlain.

Commission Asks Abolition.—The state tuberculosis commission has decided that its duties can be performed efficiently and conveniently by the State Board of Health and recommends in its report the abolition of the commission, that the work be transferred to the State Board of Health, and that a bill be passed by the legislature to appropriate $2,000 for this purpose. The State Board of Health will urge the legislature to retain the tuberculosis commission and not to turn its work over to the board.

Personal.—Dr. Joseph T. Peladeau has been elected health officer of Swanton, vice Dr. Frank H. Dunbar, deceased.——Dr. Samuel E. Maynard, Burlington, has been elected adjunct professor of gynecology; Drs. Aymer S. C. Hill, Winooski, and G. E. La Tour, Burlington, have been appointed clinical assistants in gynecology; Dr. Bingham H. Stone has been made adjunct professor of bacteriology, and Dr. Watson L. Wasson, Waterbury, professor of mental diseases, in the University of Vermont, Medical Department.

VIRGINIA.

Schools Reopen.—The schools of Onancock, closed for two weeks on account of diphtheria, reopened October 17.

Officers Elected.—At a recent meeting of the Newport News Medical Society, Dr. Thomas J. Sims was elected president; Dr. Clarence L. Jones, vice-president, and Dr. Anna Moon Randolph, secretary-treasurer.

Health Ordinance Approved.—An ordinance creating a health department of Norfolk was passed on the first reading by the common council October 19. The department, as planned, will cost the city $1,900 more per annum than the old department, and by it the following officers are provided: Health commissioner, four assistants, an inspector of foods and milk, five sanitary inspectors and two apothecaries.

Personal.—Dr. A. P. Bonahan has been appointed resident physician of the Newport News City Hospital.——Dr. T. M. Marcellus, Charlottesville, who has been seriously ill at the Jefferson Hospital, Philadelphia, is reported to be improving. ——Drs. Joseph M. Burke, Petersburg, and William L. Harris, Norfolk, have been appointed members of the board of visitors of the Medical College of Virginia, Richmond.

Health Officers' Conference.—At the Conference of Health Officers of Virginia, held October 10, resolutions were adopted setting forth the necessity of requiring registration of vital statistics and the coöperation of the various states in establishing registration, and recommending to the legislature of Virginia that a law be enacted for a thorough and complete registration of vital statistics throughout the state, by means of standard certificates as recommended by the United States Census Bureau and the American Public Health Association, and that burial or removal permits be required for the removal or burial of the dead.

GENERAL.

Hospital Opposes Removal of Cuban Lepers.—Cable reports state that San Lazaro Hospital, Cuba, in which there are several hundred lepers, probably will be removed to an island off the northern coast of Matanzas province. The removal of this hospital has long been desired, but the project has been opposed, it is stated, by the wealthy private corporation by which it is controlled.

Yellow Fever in Cuba.—Cases of yellow fever are still being reported from Havana, Cruces and other parts of Cuba. By telegraph we learn that on November 12 there were 7 cases in Havana and 3 in Santa Clara province. In *Public Health Reports*, Minister Morgan at Havana gives details of the precautions ordered taken by Charles E. Magoon, provisional governor, to prevent the spread of the disease.

The municipal districts of the following towns, Cruces, Ranchuelo, Palmira, and Lajas, are considered as the infected zone.

Chief inspectors will direct work at each town.

In each town adequate screened rooms will be prepared for the isolation of patients and suspects.

The passenger trains running between Cruces and the other three towns will carry physicians who will make inspections *en route*.

The local physicians appointed will keep a record of the morning and evening temperatures of the non-immune persons within the infected zone.

At a detention camp near Cruces non-immunes will be watched for five days before leaving the infected zone.

Brigades will be established for extirpation of mosquitoes and disinfection of dwellings.

Historical Laryngologic Exhibition.—Prof. Bernhard Fraenkel of Berlin, Germany, reached the age of 70 years November 17. Numerous proposals to celebrate the event by a banquet and by a special celebration by the Berlin Laryngological Society,

of which he is the president, were respectfully declined by him. His assistants, Prof. Edmund Meyer, Dr. Arthur Alexander, Dr. George Finder and Dr. Börger, have arranged an exhibition in honor of the event illustrative of the progress of laryngology in the past 50 years. It will be held in the Kaiserin Friedrich Haus in the Louisen Strasse in Berlin, November 17 to 30, and this, because of its value historically, the professor has accepted. In order that this exhibit might be complete, the coöperation of laryngologists throughout the civilized world was sought in the early spring of this year. At the regular meetings of the various national associations of American laryngologists it was voted to participate, and their interests were placed in the hands of Dr. Emil Mayer of New York City. As a result of the hearty coöperation, over 1,000 instruments, appliances, models used in teaching, etc., each bearing a distinctive tag with the word America stamped across the face, were sent, and the best represented country, aside from Germany, in this exhibit will be our own. Letters and cablegrams from all over the world were sent congratulating the professor, who is well known as the dean of laryngologists, for many years the head of the department of laryngology in the University of Berlin, and for 19 years, since its establishment, the editor of the *Archiv für Laryngologie.*

CANADA.

Prevalence of Smallpox.—There are 75 cases of smallpox in Moncton County and vicinity, New Brunswiek.

University News.—The work of raising a $500,000 endowment fund for Queen's University, Kingston, is proceeding apace, $250,000 having been promised.——McGill Union is the name of a new society being formed at McGill. This society promises to be the most influential of all the student societies of McGill.——The students in the various faculties of MeGill University are organizing a brass band.

Inspection of Schools in Montreal.—Dr. J. E. Laberge, Montreal's chief medical school inspector, reports that out of 43,241 children inspected at various schools, 20,622 were found suffering from some affection more or less necessitating medical treatment. The five chief items are as follows: Inflammation of glands, 1,699; defects of vision, 1,022; decayed teeth, 9,393; enlarged tonsils, 2,107; pediculi, 1,091.

Hospital News.—The directors of the General Hospital, Regina, Sask., are asking the council of that city to establish a $100,000 municipal hospital.——During October 249 patients were admitted into the wards of the Montreal General Hospital; 235 were discharged, and 16 died. The outdoor eonsultations numbered 3,877.——The annual report of the Toronto Home for Incurables states that during the past official year the institution cared for 171 patients; 40 patients were admitted, and 28 deaths occurred. The institution now contains 139 patients.

Personal.—Dr. J. P. Pennyfather, Holland, Man., is establishing the Spruce Hills Sanatorium for Consumptives in the Spruce Hills district of that province.——Dr. Walter Bingham Kendall, Toronto, has succeeded in his examinations at Edinburgh and will take up postgraduate work at London and Dublin.——Dr. John MacCrae, Montreal, has passed the examinations for the degre of M.R.C.P., London.——Dr. Fred. J. Hart, Barrie, Ont., has gone to Winnipeg to practice.——Dr. A. D. McIntyre, Petrolia, Ont., has been appointed medical superintendent of the Kingston General Hospital.——Dr. Frank Allin, Parkhill, is going to China as a medical missionary.——Dr. C. O. Fairbank, Petrolia, Ont., will spend the winter at Santa Barbara, Cal.

How Canada Is Fighting Tuberculosis.—So far as sanatoria are concerned this is what Canada is doing in the way of eombating the great white plague: Muskoka Cottage Sanatorium, Gravenhurst, 85 beds; Muskoka Frec Hospital for Consumptives, Gravenhurst, 50 to 70 beds (both for incipient eases); Mountain Sanatorium, Hamilton, Ont., 20 beds; Toronto Free Hospital for Consumptives, Weston, 60 beds, advanced and far advanced eases; Galt (Ont.) Swiss Cottage Hospital for far advanced eases; Stratford, Ont., two tents for advanced eases; Lahl Ghur, Ste. Agathe des Monts, Que., for incipient cases, 21 beds; camp of Montreal League for Prevention of Tuberculosis, for poor of Montreal; Provincial Sanatorium, Kentville, N. S., 20 beds for the residents of that province; Wolfville Highlands Sanatorium, Wolfville, N. S., 10 beds, private; Calgary Sanatorium, Calgary, Alta., 16 beds, private. British Columbia is endeavoring to establish a provincial sanatorium.

New Toronto Greek Letter Chapter.—Alpha Omega Alpha, a medical honor society, which elects a small number of students from those standing highest in scholarships in the fourth-year class, granted a charter to students in the Medical Department of the University of Toronto, November 12. This is said to be the first college honor society to grant a charter outside of the boundaries of the United States, although one of them, the Phi Beta Kappa, has 63 chapters and has been in existence since 1776. Alpha Omega Alpha was established in 1902 and has chapters at the University of Illinois, University of Chicago, Northwestern University, Western Reserve University, Jefferson Medical College, University of Pennsylvania, Washington University, Harvard University, University of California, Johns Hopkins University and the University of Toronto. The official head of this order is Dean Winfield S. Hall of Northwestern University Medical School, Chicago; Dr. William W. Root, Parker, Ind., is secretary-treasurer.

FOREIGN.

Prize for Cure of Sleeping Sickness.—Consul-General Roosevelt of Brussels reports that the King of Belgium has offered a prize of $38,600 to any person of any nationality who shall discover a cure for sleeping sickness; and also an additional sum of $57,900 for the purpose of making researches and experiments toward exterminating this plague.

Koch's Research on Sleeping Sickness.—Koch writes from Sese, Bugala, in Africa, to the *Deutsche med. Wochschr.*, stating that his researches on sleeping sickness occupy his time so closely that he does not have even a quarter of an hour left for any other work. The party are in excellent health notwithstanding their incessant labors.

American Hospital in Turkey Burned.—The American Hospital and Training School for Nurses in Constantinople was burned to the ground on the eve of its formal opening. The loss is estimated at $10,000, which is only partly covered by insurance, but the board of directors proposes to rebuild at once, and steps have been taken to raise the necessary amount.

Prohibition of Yellow Phosphorus in Germany.—According to the resolutions adopted by the international conference to improve the conditions of wage earners, held at Berne last spring, Germany has forbidden the manufacture, importation and sale of matches made with yellow phosphorus, the law to go into effect Jan. 1, 1907. The restriction of the sale is given a year of further delay.

Goldberger Prize Goes to Obermayer and Pick.—The K. K. Medical Society of Vienna has the awarding of the Goldberger prize every three years. Only one article was received in competition for it this time, and the article did not meet the conditions. The prize was, therefore, given to F. Obermayer and E. P. Pick for their research in the last three years on the specific properties of the albumin eompounds.

Organization of the Profession in Austria.—Last month witnessed the final organization of the physicians of Austria for concerted action. The secretary of the German *Leipziger Verband* attended the assembly of delegates and gave them the benefit of his experience in organizing the physicians of Germany. He urged the collection of a fund by imposing an annual fee of $5, as in Germany, but the Austrian association feared to dampen the ardor of the newly organized profession by exacting any contributions at present.

Trachoma in Italy.—The eighteenth Italian congress of ophthalmology was held at Rome in October, and resolutions were adopted urging the government to take measures to eradicate or at least prevent the spread of trachoma. It is extremely prevalent in Italy, and measures were advocated somewhat similar to those now in vogue for the prophylaxis of pellagra, tuberculosis and malaria: Compulsory declaration of all cases of trachoma, both by civilian and military doctors; a eertificate declaring the individual free from trachoma to be required of graduates of the schools, and of all applicants for public office; establishment of schools for children with trachoma to segregate them; and also free eye dispensaries where needed, and wards in the hospitals for patients with trachoma; establishment of postgraduate courses in treatment and prophylaxis of trachoma, and, finally, if a separate school for children with trachoma is not practicable, their segregation in special rooms or parts of school rooms.

Measures to Improve the Lot of the Ship Doctor.—The *Leipziger Verband* of Germany, has taken up the question of the standing and pay of medical officers on German ships, and has announced its ultimatum to the various ship-owners as follows: In regard to salary, the minimal monthly rate for oceanic voyages must be 175 marks the first year, 200 the second, and 250 the third (respectively, about $44, $50 and $62.50). For coast trips to China, for instance, the minimal monthly rate must be 250 marks for the first six months and 300 for the second (respectively, $62.50 and $75). In case

the physician is a graduate of the Hamburg School for Tropical Diseases, these terms are to be increased by $6.25 and $7.50. The customary "wine allowance" of 2 marks or 50 cents a day is to be paid in cash. The idea that a ship doctor should not retain his position for more than three years is discountenanced, and his salary should be increased with length of service. He is entitled to demand payment according to accepted rates for medical attendance on first-class cabin passengers. The ship-owners are not to advertise or proclaim in placards or otherwise that passengers on the ship are entitled to free medical attendance, as this is liable to lead to excessive demands for the services of the physician and also to detract from the dignity of his position. He should rank as one of the upper officers although not wearing the insignia of his rank unless required to dress in uniform. In case this is required, the price of the uniform is to be allowed by the ship-owners. Otherwise the ship doctor should add merely the velvet collar and Esculapius badge or the service cap. The captain has no right to forbid the ship doctor from going ashore in a foreign harbor, but the physician must notify the captain or his representative when he leaves the ship, and he goes ashore entirely on his own responsibility. The ship doctor is to be provided with a cabin suitable in location, size and furnishings for his position as one of the upper officers. Another place must be provided elsewhere for drugs and to serve as the office for the physician. The supply of drugs should not be kept in the doctor's cabin for hygienic and other reasons. The *Leipziger Verband* has presented this ultimatum after long deliberation, and intends to insist on its adoption by ship-owners, with financial aid for physicians who lose their position on account of these new stipulations. There has been no uniformity hitherto.

A South American Hospital.—Mr. Alfred Cartwright, British consul in Ecuador, in his annual report, alludes in terms of high praise to the new general hospital of Guayaquil, which, he says, stands in the first rank among the hospitals of South America. Special attention has been devoted to provide plentiful accommodation, abundant light, good ventilation, and efficient sewerage—requisites most necessary in a country where malarial fevers and tuberculosis are so rife. The hospital is situated on the slope of the hills to the north of the city, at an elevation of 26 feet above high-water mark, and is connected with the main town by tramway and telephone. It occupies an area of 15 acres and has a frontage of nearly 650 feet facing and overlooking the city. It consists of a residence for the Sisters of Mercy, chaplain and others, at the front; behind are six two-story medical wards, connected by covered corridors, but isolated one from another by gardens 40 feet wide. Each building is divided into suitable wards, with accommodation for 70 medical patients. At a level of 16 feet above the medical wards, with intermediate gardens, there are two surgical wards, with all the requisites for 80 patients, large operating rooms, a central chapel, removed from the main buildings, and a large and modern cooking department. Adjacent are a steam laundry, disinfecting rooms, linen stores, stabling, mortuary, etc. The hospital can accommodate 500 patients. Each ward has been provided with balconies and benches for those who are convalescent, with sunny exposures, baths and closets, as well as lavatories and other conveniences. The floor space allowed to each bed is 108 square feet and the cubical capacity is 1,765 cubic feet in the medical and 2,470 in the surgical wards. Perfect surface drainage has been formed, as well as an elaborate system of underground sewerage. An ample water supply has been assured through steam pumps for elevating the city supply to a large reservoir built into the hills behind the wards. The exposure of the hospital being to the south it enjoys a plentiful amount of sunshine. The cost of this hospital has been £32,500 ($162,500). There is a second hospital called the Central, which was a gift to the city, at a cost of £6,500 ($32,500), by a British merchant, Mr. Alexander Mann, a native of Nairn, Scotland. On an average in the two hospitals 7,000 indoor patients are attended annually. The average yearly expenditure on both establishments is about £8,000 ($40,000), 80 per cent. of which is provided by the municipality and 20 per cent. by the government.

LONDON LETTER.

(From Our Regular Correspondent.)

London, Oct. 22, 1906.

Food Inspection.

Since the Chicago revelations the subject of food inspection has received considerable attention from the public health authorities. At the annual meeting of the Society of Medical Officers of Health, Dr. D. S. Davies read an important paper on "The Administrative Control of Food." He indicated the difficulties of carrying out a proper inspection of meat. After seizure careful examination should be made by the health officer and full notes taken of the pathologic condition of the meat. Before any further proceedings are taken the vendor should have ample means of examination. Private slaughter houses should be gradually abolished and there should be a rigid system of marking and stamping all inspected meat, home and foreign. Foreign meat should be required to comply absolutely with English standards and there should be some guarantee that it has passed a proper inspection. More adequate inspection of tinned meats and similar foods is urgently needed. There is evidence of much unwholesome preparation by no means confined to America. Even in London he has found tuberculous pus in widely advertised sausages, diseased horse flesh in potted meat and decomposing animal matter in potted salmon and shrimp. The only way of effective administrative control of the preparation of these and other foods is inspection at the time of manufacture of their constituents and inspection of the premises. There should be a distinctive inspection mark. Name and date of canning should be stamped on every tin. The regulations necessary for the protection of the consumer will require fresh legislation. It is astonishing, he said, how little is done to protect the milk consumer, and that the dairy industry should be allowed to pass out of our hands for the lack of a little coöperation and common-sense administrative control, such as is exercised in Denmark.

VIENNA LETTER.

(From Our Regular Correspondent.)

Vienna, Oct. 19, 1906.

Remarkable Accident in a Hospital Ward.

During a suit for damages brought by the friends of a patient who died recently in one of our hospitals, the facts of a very strange case of negligence came out. As the number of doctors applying for the unpaid position of "juniors" is constantly and swiftly declining, the few paid medical officers of the ward are over-burdened, and gladly accept the aid of medical students to relieve them of some of their work. Thus, in a certain ward of the general hospital, it happened that a patient with a supposed carcinoma of the stomach, in whom that organ had to be rinsed out after a test meal, was given in charge of a medical student. The student did not succeed in his effort, as by some misadventure, the balloon of the pump had been fixed with the valve the wrong way out, so that instead of pumping fluid out of the stomach air was being forced into it, until suddenly there was a jerk and the patient collapsed. When the alarm was raised, the condition was immediately recognized and an operation was performed, but the patient died during the laparotomy. At the postmortem examination it was found that the friable walls of the stomach, being infiltrated by cancerous masses, had burst under the pressure of the distension from the air pumped in. The case is still on trial, but the fact that a subordinate officer, or rather a guest in the ward, was allowed to undertake such an important procedure as the pumping out of a diseased stomach, has excited much comment, and will undoubtedly have the effect of stopping the admission of non-qualified students to the ward as assistants. Consequently, as physicians are urgently required for the work, they will have to be paid.

Successful Anti-Malarial Campaign in the South of Austria.

The Austria coast line on the Adriatic has from time immemorial been the seat of malaria, and the indolent inhabitants take little or no precaution to check the spread of the disease. Lately the government officials have found it necessary to take stringent measures against it, because the majority of Austria's navy recruits come from these regions. An imperial commission, consisting of doctors, government and navy officers, and the chiefs of the board of health was formed some two years ago, and they set to work to eradicate the hunting grounds of the anopheles. Marshy, swampy tracts of land were partly drained, partly covered with oil, and set afire. Ample provisions of cinchona bark and quinin were distributed among the "mayors" of the villages, and the district doctors were required to deal vigorously with all cases of malaria. At Pola, the chief naval port, $25,000 has been spent for dikes and for draining and leveling the marshes. The success achieved by such measures was soon visible, as the number of fresh cases of malaria declined 62 per cent. in two years. Extensive action on the same lines has been undertaken by the governor of Dalmatia, the country of the most southern frontier of Austria, and his report of the campaign is equally encouraging. In Hungary the same measures have been adopted recently, so that uniform action is now under way in all the malarial regions of the empire, with education of the population, distribution of quinin, and measures to eradicate mosquitoes.

Fighting Quackery.

A movement has been started by a few practitioners to induce the profession to refrain from prescribing ready-made preparations of the type of proprietary medicines, also of such remedies as are advertised widely in the lay press. The chief endeavor of this small group of energetic, level-headed men is directed, however, to secure the enforcement of the so-called "Kurpfuscher" paragraph by the police and local sanitary boards. Advertising by inventors of electric life restorers, hair preservers and electric spectacles for the deaf has been so sharp and unchecked lately that the efforts of the physicians have been approved by many newspapers, who make it now a point of honor not to accept such advertisements. Much harm has been done not only to the public, but also to the profession, by the increase of "naturopaths" and "water cures." This fact itself suggests that the public actually demands a greater consideration of mechanical and physical modes of treatment, not restriction solely to drugs and compounds of a chemical nature. A suggestion has been thrown out that all contracts between doctors and the owners of hydropathic establishments should be revised by a body of competent men to see if these contracts do not conflict with the recognized medical ethics and the just demand of the public to be treated truthfully, not by charlatanism.

Investigation as to the Cause of Increasing Myopia.

Four thousand pairs of eyes, belonging to school children from 6 to 16 years of age, have recently been examined by order of the board of health, with a view to ascertain whether myopia is increased by the stress required by the present system of education in the public schools. The increase in nearsightedness was found proportional to the size of the town and the amount of study required. The prevalent degrees of myopia were from 1 to 4 D., astigmatism being present in about 12 per cent. Excessive myopia was always congenital among children; in only one case was it the result of an injury to the cornea. (This case has been reported elsewhere by an ophthalmologist.) Spectacles were not generally worn by those children who needed them, partly from neglect, partly from unwillingness on the part of the parents. School authorities will in future be empowered to compel parents to consent to the wearing of eyeglasses in such cases. The report to the board of health sums the investigation up in the words: "Better care for the eyes of the children may prevent the development of myopia already present, but the chief point is to prevent myopia altogether. Regular examinations by qualified ophthalmologists are *conditio sine qua non*. The print must be uniform, alternating large and small types on the same line should be avoided. Due consideration should be paid to the nature and source of supply of artificial light in school rooms, as in our climate the months from October to February require artificial light after 3 p. m.

Pharmacology

The Sins of Physicians.

The *California State Journal of Medicine* says:

"The present trend of the nostrum agitation has evoked much discussion of the sins of the pharmacist. Our *Journal* has for some few years taken a slightly different attitude, and while recognizing the many and variegated sins of the pharmacist, has also called attention to a few of the sins of the physician, which may have been, through precept or example, or even more actively, responsible, in some measure, for the former's sins.

"Certainly, if the physician were sufficiently educated in his profession, he would ignore the therapeutic education so gratuitously handed out to him by the agent of the nostrum maker, and he would confine his prescribing to those remedies about which facts, rather than fiction, are known. It is not the druggist who rushes to the jobber for a stock of some new-fangled stuff—let us say anasarcin, the 'cure for dropsy'—and then hastens to beg the physician to prescribe it. Rather it is with a feeling of dread that the pharmacist hears of some such preparation, originating in a commercial mind and foisted on a credulous profession for the enrichment of the maker and not for the benefit of a suffering public and profession. He knows that soon the lying 'detail man' will be about among the physicians, and then some of them, all too ignorant of what they should know, will begin to prescribe it and he will have to invest more money, uselessly, and cumber his shelves with one more of the horde of rank nostrums.

"And just now the country seems to be troubled by a pest of new 'cure alls.' They have appeared like grasshoppers in Kansas—from the Lord only knows where! Beware of the new nostrum; beware of the detail man who has something nice and new and curing. Ask him what the Council on Pharmacy and Chemistry has done about his nice new preparation, and if you will take the time, write to the Council and ask them about it. Your patient has a right to demand that you yourself shall know what you are giving him, and this you can not know if you depend on the statements of the manufacturer or his smooth-tongued agent. Nine-tenths of the nostrum business is deceit, and the other tenth advertising. And we are beginning to learn that deceit may exist in high places, and that manufacturers whom we have previously regarded as above reproach, may do strange things.

"Our only hope is in the Council on Pharmacy and Chemistry of the American Medical Association, and in THE JOURNAL of the Association, which is to undertake to tell us, from time to time, still more of the truth about things pharmaceutical. Do not allow anything to blind you to the enormous value of this Council and its work. Do not allow the inspired criticism of the 'published for profit' medical (?) journals to make you believe that there is trouble in the Association or that the work of its Council is not honest. Come back out of the nostrum mire and try to clean up."

The Interest of the Public in Medication.

"Public interest in the drug question," remarks *American Medicine*, "has been aroused by the present warfare against the nostrum evil, but the comments of the lay press leave considerable doubt as to whether this interest is working for good or evil to the cause of scientific therapy. When laymen heard that 44 per cent. of Boston prescriptions call for 'patent medicines,' the composition of which is unknown to the doctor, they immediately jumped to the conclusion that a sick man might just as well trust to the advertisements as to the doctor and save the latter's fee. Of course, it is difficult to convince them that no sick man can diagnose his own case, as judgment is warped by every illness, but we can reach those needing help if they are convinced that we know what we are prescribing and that we prescribe for a definite purpose. The accusation, made at one of the recent Boston meetings, that we are often densely ignorant of what we advise our patients to take, is a most serious charge. If true, there is need of considerable house-cleaning in our medical store-house. The paucity of specifics is not a blot on medicine, but it should be widely advertised as a desirable fact for laymen to know. Oliver Wendell Holmes said that if we would keep five or six drugs and cast the rest into the ocean, 'it would be better for mankind—but bad for the fishes.' Since he spoke we have learned of a half dozen or so more, and have succeeded in making some palatable mixtures of others which have proved their usefulness, but the opinion has become fixed in the lay mind that there is a separate drug for each disease and each symptom. The sick demand drugs and will dismiss the physician who does not prescribe them—a human trait about as old as man himself. Is the physician to go with the tide or try to check it? Surely good can come from this side of the present agitation, and if every physician prescribes only that of which he knows the composition, and gives it for its known effect, there can be no blots on our methods. Let the public be freed of their false opinions and the self-prescribing nostrum evil will correct itself."

Tricks of the Nostrum Men.

Under the above title the *Druggists' Circular*, November, 1906, discusses editorially the methods employed by manufacturers, and comments on the fact that proprietary manufacturers are quick to take advantage of anything which may be

used as an advertisement of their goods. The editorial continues:

"Let something arise which may be construed as a reflection on the quality of a druggist's own output, or the probity or ability of a physician who prescribes Pharmacopeial, National Formulary or other officinal preparations, and the nostrum makers may be depended on to twist it into the semblance of an argument in favor of the use of their stuff. They do not, however, emphasize the fact that preparations with secret formulas are automatically protected against a charge of impurity or of being below standard, as 'purity' is an elastic term, and until there is a standard nothing can be below it.

"The proprietor of a secret remedy may change the formula of his nostrum whenever he chooses; he may substitute a cheaper drug for a high-priced one whenever the desire for more profits prompts him so to do; he may convert a 'catarrh' remedy into a cathartic, or tonic bitters into an emetic, and is not amenable to any man or any law for the misbranding—simply because the standard for purity and strength of his article resides only in his own mind, and may shift every time that mind changes.

"These supposititious variations in formulas are by no means purely hypothetical, as instances in which they have been made are not wanting. On the other hand, there is a fixed legal standard for the druggist's goods, and when they fail to measure up to this standard, boards of pharmacy, boards of health, and the people through their prosecuting officials may, and more and more do, call the druggist to account for the shortcoming. But the man who takes a proprietary medicine to-day, and goes back for another dose of the same to-morrow, may get an entirely different thing, and either is kept in ignorance of this fact or has no recourse on any one when he discovers the deception that has been practiced on him.

"It is our duty to remind the druggist of these things, and it is the duty of the druggist to pass the reminder on to the physicians and to the public."

Mixtures Exploited as Synthetics.

J. O. Schlotterbeck, Ann Arbor, in the *Journal of the Michigan State Medical Society*, June, 1906, calls attention to mixtures that are exploited as synthetics by some of our manufacturers, who have heretofore been considered reputable. He said that he had in mind an external preparation advertised as a definite synthetic compound of a half dozen or more antiseptics and germicides and claimed to liberate at least four powerful antiseptics in a nascent state, when brought in contact with serous fluids. The claims of this preparation, he stated, are preposterous and fraudulent on their very face, for such a combination of "shot in one load" is an absolute impossibility and contrary to all principles of chemistry.

St. Louis Pharmacists Appeal to the Medical Profession.

A most timely appeal has been made by the St. Louis Retail Druggists' Association to the physicians of that city presenting the claims of the new Pharmacopeia and new National Formulary and suggesting that physicians give pharmacists opportunity to use professional skill in the preparation of medicines by prescribing the preparations of the Pharmacopeia instead of proprietary mixtures.

Correspondence

What Is General Suppurative Peritonitis?

Columbus, Ohio, Oct. 27, 1906.

To the Editor:—In discussing any subject it is very essential that those who take part in the discussion shall agree on their definitions of the terms that are used. In this part of the country surgeons have been in the habit, I think, of limiting the diagnosis of "general" suppurative peritonitis to cases in which the entire peritoneum from the floor of the pelvis to the diaphragm is involved in the suppurative process. If the suppurative process is very limited, we have called the case one of "local" peritonitis; if the process is more widely diffused we call it "diffuse" peritonitis; but we do not use the word general unless the entire peritoneum is involved. In cases of general purulent peritonitis the process has been going on as a rule for five or six days, the abdomen is distended, peristalsis has ceased, the Hippocratic countenance is marked, the pulse is usually though not invariably rapid, while the temperature may vary from high to subnormal. I have never seen recovery occur in one of these cases, and I never expect to. When, therefore, I saw reports of cases of "general suppurative peritonitis" in which patients had recovered under removal of the perforated appendix by short incision and stab drainage of the pelvis, with the patient in Fowler's position, with or without rectal injections of saline solutions, I felt that I had not been doing my own patients full justice, and accordingly in two or three cases of the character described above I resorted to this treatment, but without the slightest possible benefit.

At the meeting of the American Association of Obstetricians and Gynecologists in Cincinnati, last September, Dr. Murphy of Chicago (The Journal A. M. A., Oct. 13, 1906, p. 1219) read a paper reporting 36 cases of "general suppurative peritonitis from perforation, with one death." In the discussion which followed, however, in response to a direct question, and later more fully in private conversation, he stated that he did not mean by this title cases such as those described above, but that he included under this title all cases of peritonitis resulting from perforation, no matter whether the perforation had taken place an hour beforehand or several days. Patients such as those mentioned he said were "dead already," and nothing could be done for their relief.

With this understanding, therefore, of what is meant by certain writers when they report cases of "general suppurative peritonitis" terminating in recovery, I think we can all look back over our cases of local peritonitis, though without protecting adhesions, in which we have had prompt recovery following operation and drainage, and in which we have not at any time felt that we had accomplished anything so very wonderful.

I think the Fowler position very important in mechanically limiting the diffusion of the inflammatory process, but the main thing is prompt operation with removal of the point of leakage and drainage. The rectal use of normal salt solution may be of a little advantage in washing out the blood, but I think this is of minor importance, while I do not think the "antistreptolytic serum" of any proven value whatever in these cases.

My object in writing, however, is purely to correct the misunderstanding which to my knowledge a good many surgeons have had of what some writers call "general suppurative peritonitis."

J. F. Baldwin.

Misquotations of Dr. Sajous.

Philadelphia, Nov. 3, 1906.

To the Editor:—Two letters received from New York, one from San Francisco, and a clipping from a newspaper, the New York *Journal*, sent by a friend, indicate that an article I read by invitation before the Medical Association of the Greater City of New York, Oct. 15, 1906, has formed the basis of sensational articles in the lay press. The gross misstatements the clipping I hold contains, e. g., that I have discovered "adrenalin" (sic); that I kept "life in the body of a dog for ten hours after its head had been removed"—a distorted reference to Dr. Crile's experiments which I quote—; the use of adrenalin to "keep life" until "water can be expelled from the lungs,"— a fact "absolutely established by experiments," but to which I do not even refer, etc.,—were such, I thought, as to protect me against imputations on the part of our profession, as similar exaggeration had protected me once before. I am sorry to state, however, that the *Medical Standard* of Chicago, in its November issue, without even mentioning the source of information, uses the misstatements of newspapers to cast reflections on my mode of work.

In the first place, I wish emphatically to disclaim any connection whatever, direct or indirect, with the publicity given the paper in question. My position in such matters is now,

as it has always been, to avoid such publicity. In the second place, my mode of work differs only from that of other investigators in that I do not content myself with two or three experiments to reach a conclusion. I hold that a broad view of all questions, utilizing factors from all directions and branches of science concomitantly, will alone give us a correct estimate of the functions of the organism, and therefore of its diseases, and raise our therapeutic methods to a standard compatible with our hopes.

I avail myself of the large circulation of The Journal to request the profession to consider as my statements only those published in the medical press.

C. E. de M. Sajous.

The Harvard Medical School Buildings.

Boston, Nov. 4, 1906.

To the Editor:—In the last paragraph of the editorial on the Harvard Medical School Buildings in The Journal, Oct. 6, 1906, page 1100, it is implied that the clinical facilities of the school are inadequate and an impression may thus be made which does not coincide with the facts. Really, to the best of my knowledge and belief, the present clinical facilities are unequalled in this country. The fact that the hospitals, great and small, in which clinical teaching is now carried on, are at some distance from the new buildings is of less consequence, inasmuch as bedside work begins the second half of the second year, occupying only the mornings in that year, while practically the whole of the third and fourth years are passed at the hospitals. Thus twenty minutes by car or thirty minutes on foot are practically no disadvantage. Within the next few years a general hospital of 250 beds, the Children's Hospital of over 100 beds and the Infants' Hospital will be in operation on land immediately contiguous to the school buildings. The new clinical facilities thus provided will not replace but supplement those now enjoyed by the school. We shall never consider any part of our work or facilities, therefore, "satisfactory" so long as we can see a chance for betterment. Frederick C. Shattuck.

[The part of the editorial to which Professor Shattuck objects was influenced by the article by Dr. Mallory on "The Present Needs of the Harvard Medical School," published in *Science*, September 14.—Ed.]

Association News

Senn Medal Essay Contest.

The Committee on the Senn Medal announces that a gold medal of suitable design is to be conferred on the member of the American Medical Association who shall present the best essay on some surgical subject. The award will be made under the following conditions:

(a) The name of the author of each competing essay must be enclosed in a sealed envelope bearing a suitable motto or device, the essay itself bearing the same motto or device. The title of the successful essay and the motto or device is to be read at the session at which the award is made, and the name of the successful author announced.

(b) All successful essays become the property of the Association.

(c) The medal shall be conferred and honorable mention made of the two other essays considered worthy of this distinction at a general meeting of the Association.

(d) The competition is to be confined to those who, at the time of entering the competition, as well as at the time of conferring the medal, shall be members of the American Medical Association.

(e) The competition for the medal will be closed on, and no essays received after, April 1, 1907.

Communications may be addressed to any member of the committee, which consists of the following: A. F. Jonas, chairman, 18 Continental Block, Omaha; J. F. Binnie, 302 Argyle Building, Kansas City, Mo.; Harry M. Sherman, 2210 Jackson Street, San Francisco.

Book Notices

Nursing in the Acute Infectious Fevers. By G. P. Paul, M.D., Assistant Visiting Physician and Adjunct Radiographer to the Samaritan Hospital at Troy, New York. Illustrated. Cloth. Pp. 200. Price, $1,00 net. Philadelphia: W. B. Saunders Co., 1906.

This book is intended for nurses; treatment by drugs, therefore, and physical signs and symptoms are little discussed. The book is divided into three parts: 1, Fever in general; 2, acute infectious fevers, with their cause, signs, symptoms, course, prognosis, care and management; 3, practical procedures. Chapter II, on the "Hygiene of the Sick Room," is good. The author emphasizes the necessity for quiet. Chapter III on diet is also good. While the treatment by drugs is not altogether eliminated, it is noticeably less than in some similar works. For example, in the treatment of hemorrhage, instead of enumerating drugs to be administered or heroic methods of treatment which could only be carried out by the physician. Paul states how and where to apply an ice-bag and what to have in readiness for the physician. One chapter deals with the symptoms of poisoning from various drugs and the antidotes.

There is also given in tabular form a list of drugs the physiologic action of which the nurse should understand. On the whole, the book is to be commended.

The Medical Directory of New York, New Jersey and Connecticut. Published by the Medical Society of the State of New York. Vol. viii. Cloth. Pp. 982. 1906.

This directory, formerly published by the New York State Medical Association, has been continued by the reorganized state society. In this eighth edition appear the names of 15,531 physicians, of whom 11,976 are in New York State, 2,276 in New Jersey and 1,279 in Connecticut. In greater New York there are registered 6,034 physicians. Under each name appears the residence number, office hours, telephone number, medical college and year of graduation, membership in medical societies and medical appointments held. The directory matter for New York State is divided into three portions, viz., Manhattan and the Bronx, Brooklyn, and the state at large. These three sections are distinguished by the use of different colored papers, making reference easy. Preceding the sections on New York City and Brooklyn appear street lists of physicians, arranged in order under the streets, which are alphabetically arranged. Following the matter for the state of New York is a list of physicians arranged alphabetically by name, which renders reference to any particular name easy. The directory matter for Connecticut and New Jersey is arranged alphabetically by postoffices, followed by an alphabetical list of physicians by names. This edition is fully up to the standard of preceding ones and forms a volume of about 900 pages and of convenient size. Beside the directory matter proper, much additional matter is included, such as lists of state, county, district and local societies, hospitals and dispensaries, benevolent institutions, medical libraries and official boards of each state.

The amount of advertising carried is not large, amounting to about 55 pages. The great majority of advertisements are entirely unobjectionable, but a few might with propriety be omitted from future editions. On the whole, the eighth edition is a credit to the Medical Society of the State of New York.

Marriages

W. L. Allee, M.D., to Miss Maud Franklin, both of Eldon, Mo., October 27.

Herbert E. Doty, M.D., to Miss Cora Bagby, both of Kansas City, Kan., recently.

Charles C. Morison, M.D., to Miss Nancy Howard, at Parker, S. D., November 6.

William Winton Kemper, M.D., to Miss Helen Garner, both of Muncie, Ind., October 18.

Henry Charles Johannes, M.D., to Miss Ada May Summers, both of Chicago, recently.

Samuel Searley Houlton, M.D., Baltimore, to Miss Mary Clark, at Baltimore, October 10.

Herbert C. Deane, M.D., to Miss Retta A. Wilson, both of Salt Lake City, Utah, October 29.

Jesse R. Pritchard, M.D., to Miss Martha Leigh Penniman, both of Fort Scott, Kan., October 3.

Charles J. Wivell, M.D., Wilkesbarre, Pa., to Miss Alice Moran, at Aldenville, Pa., October 30.

George F. Doyle, M.D., Philadelphia, to Miss Anna Laura Drake of Mount Sterling, Ky., recently.

Edward A. Glasgow, M.D., to Miss Mildred Daise Mattinly, both of Mulberry Grove, Ill., October 31.

Azariah Worthington Parsons, M.D., Mexico City, Mex., to Miss Ethel E. Shaman of Ohio, July 15.

William J. Martin, M.D., Kokomo, Ind., to Miss Nina Leona Bolt of Red Oak, Iowa, October 23.

Louis J. Kehres, M.D., Cleveland, Ohio, to Miss Elizabeth Anna Thomas of Cuyahoga Falls, Ohio, October 31.

Charles Clinton Ogle, M.D., Chambersburg, Pa., to Miss Ethel Dawn Smiley of Shippensburg, Pa., October 30.

Archibald M. Burt, M.D., to Miss Katherine D. Wheat, both of Wheeling, W. Va., at St. Clairsville, Ohio, October 25.

William F. Wittwer, M.D., Los Lunas, N. M., to Miss Anna C. Nowlin of Montgomery City, Mo., at Albuquerque, N. M., November 7.

Deaths

Isaac M. Rosenthal, M.D. Medical Department of Western Reserve University, Medical Department of Adelbert College, of the Western Reserve University, Cleveland, 1876; a member of the American Medical Association; a member and formerly vice-president of the Indiana State Medical Society; a member of the Maumee Valley Medical Society; one of the most prominent citizens and practitioners of Fort Wayne, Ind.; first president of the Allen County Medical Society; for eight years president of the Fort Wayne board of health, and surgeon to St. Joseph Hospital since its establishment, died October 29 at his home in Fort Wayne, from meningitis following middle-ear disease, after an illness of several weeks, aged 74.

Robert T. Davis, M.D. Harvard University Medical School, Boston, 1847; a veteran of the Republican party of Massachusetts, and representative from the Fall River district in the Forty-eighth, Forty-ninth and Fiftieth congresses; formerly mayor of Fall River; since 1847 a member and councilor of the Massachusetts society; for 56 years a member of the Bristol South Medical Society and for several years its president; state senator in 1856 and 1860; a member of the first Massachusetts Board of Charities and of the State Board of Health, died at his home in Fall River, October 29, after a short illness, aged 83.

Edgar H. Nichols, M.D. Savannah, (Ga.) Medical College, 1881; acting assistant surgeon United States Marine-Hospital Service, 1880-1884; honorary physician to the consulate of Spain for 15 years; formerly assistant inspector of the National Board of Health; a member of the American Public Health Association, Medical Association of Georgia, Georgia Medical Society, and Savannah Medical Society, died at the Savannah Yacht Club, Thunderbolt, from the effects of a self-inflicted gunshot wound, November 5.

Carl Weschcke, M.D. University of Greifswald, Germany, 1856; a surgeon in the Prussian army for one year; surgeon in the United States Army for several years; a charter member of the Minnesota Medical Association; for four terms a member of the council of New Ulm, and from 1878 to 1881, from 1886 to 1889 and from 1896 to 1904 mayor of the city; who did valuable service during an Indian outbreak in 1862, died at his home in New Ulm, October 20, from chronic nephritis, after a long illness, aged 75.

David Bell Birney, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1885; a member of the American Medical Association; one of the consulting surgeons of the University Hospital; from 1888 to 1893 vaccine physician of Philadelphia and at one time resident physician of the Presbyterian Hospital, died at his home in Philadelphia, November 2, from injuries received on October 13 in a collision between his carriage and a trolley car, aged 46.

N. A. Pratt, M.D. Savannah Medical College, Savannah, Ga., 1859; an eminent scientist of Atlanta; professor of chemistry in Savannah Medical College from 1857 to 1861; a Confederate veteran; professor of geology and chemistry in Oglethorpe University, 1861; and geologist and chemist for the Confederate government from 1862 to 1865, was struck by a train when walking on the tracks of the Georgia Railroad at Decatur, Ga., and instantly killed, October 31, aged 73.

Laurin Williams Reed, M.D. Medical Department of the Columbian University, Washington, 1892; a member of the Illinois State Medical Society and Vermilion County and Champaign County medical societies; a practitioner of De Land, Ill., for ten years and for a few months in Fairmount, Ill., died at his home in Bridgeport, Conn., October 9, eight days after being attacked with appendicitis, and three days after operation, from pulmonary embolism, aged 36.

Sylvester L. Nidelet, M.D. Medical Department of the St. Louis University, St. Louis, Mo., 1852; for several years a surgeon in the United States Army; from 1882 to 1886 coroner of St. Louis; Indian agent for the Sioux for one year, and after the war chief surgeon at the Whetstone reservation, died at his home in St. Louis, from pneumonia, October 30, aged 77.

William T. Collins, M.D. University of Georgetown, Medical Department, Washington, D. C., 1865; a veteran of the Civil War; president of the first board of regents of the University of North Dakota, Grand Forks, and for one or two sessions a member of the territorial legislature of North Dakota, died recently at his home in Santa Monica, Cal., aged 68.

Henry Marshall Bourne, M.D. New York University, New York City, 1875; president of the medical board of Corning Hospital; member of the Steuben County Medical Society, and Medical Society of the State of New York, died at his home in Corning, N. Y., from chronic nephritis, October 24, aged 54.

Edward Linden Naret, M.D. Maryland Medical College, Baltimore, 1903; a member of the American Medical Association, died at his home in Morgantown, W. Va., from pneumonia which followed two weeks after an attack of appendicitis, November 1, after an illness of two days, aged 41.

George A. Cable, M.D. University of Wooster Medical College, Cleveland, Ohio, 1873; a practitioner and clergyman of Minnesota for many years; who did effective work in California during the prevalence of bubonic plague, died at the home of his son-in-law in Minneapolis, October 30, aged 60.

Frederick C. Bucher, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1895; formerly a practitioner of Columbia, Pa., died at the home of his father-in-law in Mount Joy, Pa., after an illness of several months, October 30, from pachymeningitis, aged 38.

Rinaldo P. Hazzard, M.D. Vanderbilt University Medical Department, Nashville, Tenn., 1886; formerly a practitioner of Zenas, Edinburgh, Ind., and of Louisville, Ky., died at St. Anthony's Hospital, Louisville, October 18, after a long illness, from senile debility, aged 78.

Orsman S. Kenyon, M.D. Eclectic Medical College of the City of New York, 1879; postmaster of Taberg for eight years, and highway commissioner and town clerk; for 38 years a practitioner of Taberg, N. Y., died at his home in that place after an illness of five weeks, aged 70.

W. M. Marshall Thompson, M.D. Tulane University of Louisiana Medical Department, New Orleans, 1872; for many years coroner of St. Landry Parish, La.; a member of the city council of Opelousas, died at his home in that city, October 28, after a long illness, aged 56.

John W. Farmer, M.D. College of Physicians and Surgeons, Baltimore, 1868; one of the oldest practitioners of Radford, Va., died in the hospital in that place, August 25, a few hours after being injured by the overturning of a wagonload of lumber.

Levinus W. Cornwell, M.D. Castleton (Vt.) Medical College, 1846; formerly a surgeon in the army, and for 38 years a leading practitioner of Alden, N. Y., died at his home in that city, October 22, after an invalidism of 10 years, aged 84.

Byron W. Hinds, M.D. University of Nashville Medical Department, 1866; county commissioner of Madison County, Ala.; a Confederate veteran, died at his home in New Hope, August 21, after an illness of several weeks, aged 71.

Elliot H. Wheeler, M.D. Missouri Medical College, St. Louis, 1880; a veteran of the Civil War and for many years a practitioner of Southern Illinois, died suddenly near Murphysboro, Ill., October 29, from heart disease, aged 66.

John Theodore Heard, M.D. Harvard University Medical School, Boston, 1859; of Boston; a surgeon throughout the

Civil War, died at his summer home in Magnolia, Mass., September 2, from organic heart disease, aged 70.

Irving Washington Hewit, M.D. Medical College of Indiana, Indianapolis, 1883; formerly a practitioner of Bellwood, Neb., died at his home in Spokane, Wash., August 21, from chronic nephritis, after a long illness, aged 52.

Thomas Palmer Jerman, M.D. Medical College of the State of South Carolina, Charleston, 1849; for many years a practitioner of Ridgeway, N. C., died at the home of his son in Raleigh, N. C., October 22, aged 80.

M. G. Hatcher, M.D. University of Michigan, Department of Medicine and Surgery, Ann Arbor, 1864; formerly of St. Louis, died at Ridgeley Farm, near Dorsey, Ill., from dropsy, after a long illness, October 12.

Archibald Fraser, M.D. New York Homeopathic College and Hospital, New York City, 1870, died at his home in Ypsilanti, Mich., from typhoid fever, October 27, after an illness of two months, aged 62.

Daniel W. Overholt, M.D. Medical Department of the University of Iowa at Keokuk, 1867, died suddenly from cerebral hemorrhage at his home in Columbus Junction, Iowa, October 28, aged 68.

Annie W. Martin, M.D. Hygeio-Therapeutic College of New York, New York City, 1865, died at her home in Elgin, Ill., October 24, from pneumonia, after an illness of six days, aged 79.

Jeremiah P. Smith, M.D. Jefferson Medical College, Philadelphia, 1887, died at his home in Linglestown, Pa., November 1, after an illness of two days, from cerebral hemorrhage, aged 38.

Thomas E. Cone, M.D. New York University, New York City, 1873; formerly a practitioner of Brooklyn, died from tuberculosis in Bellevue Hospital, New York, October 18, aged 53.

Julian H. Abbitt, M.D. College of Physicians and Surgeons, Baltimore, 1892, died suddenly from acute gastritis, at his home in West Appomattox, Va., November 1, aged about 38.

Howard M. Griffee, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1875, died at his home in Taylorsville, Pa., October 28, after a long illness, aged 56.

Harlan C. Baker, M.D. Starling Medical College, Columbus, Ohio, 1866, died at his home in New Salem, Ohio, October 29, from cerebral hemorrhage, after a brief illness, aged 65.

John W. S. Goudy (Examination, Ohio); died at his home in Newcomerstown, Ohio, October 13, after an illness of four months, from cerebral hemorrhage, aged 78.

Frank Beers, M.D. Jefferson Medical College, Philadelphia, 1881; of Bushkill, Pa., died suddenly in a theater in Lebanon, Pa., October 29, from heart disease, aged 47.

William H. Fayette, M.D. Chicago Medical College, 1875, died at his home in Nickerson, Kan., October 27, from cerebral hemorrhage, after an illness of five days.

Daniel Stoner Crumpacker (Years of Practice, Indiana); a veteran of the Mexican and Civil wars, died at his home in Union Mills, Ind., August 20, aged 83.

Charles Chandler Weaver, M.D. Hahnemann Medical College of Philadelphia, 1879, died at his home in Fox Chase, Philadelphia, November 1, aged 48.

John P. Hedrick, M.D. Keokuk (Iowa) Medical College, 1897, died suddenly from heart disease at his home in Loraine, Ill., October 28, aged 48.

George S. Scheiber, M.D. Rush Medical College, Chicago, 1895, died at his home in Chicago, October 30, from cerebral hemorrhage, aged 37.

Mary D. Dewey, M.D. Eclectic Medical College of the City of New York, 1870, died at her home in Saratoga Springs, N. Y., August 20, aged 84.

George W. Gustin (Years of Practice, Ohio), who retired from practice many years ago, died at Union Furnace, Ohio, August 24, aged 93.

David S. Stanton (Years of Practice, Indiana); for many years health officer of Portland, Ind., died at his home in that city, August 22.

Frank H. Morehouse, M.D. Detroit College of Medicine, 1901; of Detroit, died from heart disease in Jackson, Mich., September 5, aged 29.

The Public Service

Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending Nov. 10, 1906:

Heysinger, Jas. D., asst.-surgeon, ordered to Key West Barracks, Fla., for duty.

Stedman, Chester J., asst.-surgeon., leave of absence extended one month.

Whaley, A. M., asst.-surgeon, ordered to Fort Sam Houston, Texas for duty.

Boyer, Perry L., asst.-surgeon, relieved from duty at Fort Sam Houston, Texas, and ordered to Army and Navy General Hospital, Hot Springs, Arkansas, for duty.

Ragan, Charles A., asst.-surgeon, relieved from duty at Army and Navy General Hospital, Hot Springs, Arkansas, and ordered to Fort Monroe, Va., for duty.

Hereford, John R., contract surgeon, ordered from Fort Screven, Ga., to the Army and Navy General Hospital, Hot Springs, Ark., for treatment.

Stearns, Charles H., contract surgeon, left Fort Monroe, Va., for Fort Screven, Ga., for duty.

Hull, Alva R., contract surgeon, granted leave of absence for two months.

Reagles, James, contract surgeon, relieved from duty at Fort Keogh, Mont., and ordered to Fort Ontario, N. Y., for duty.

Van Kirk, Harry H., contract surgeon, relieved from duty at Fort Sill, Okla., and ordered to Fort Logan, Colo., for duty.

Slater, Ernest F., contract surgeon, relieved from duty at Fort Hancock, N. J., and ordered to Fort Banks, Mass., for duty.

Pinquard, Joseph, contract surgeon, ordered from Fort Robinson, Neb., to Fort Meade, S. D., for temporary duty.

Richardson, William H., contract surgeon, granted leave of absence for fourteen days.

Mason, George L., dental surgeon, left Fort Moultrie, S. C., and arrived at Fort McPherson, Ga., for duty.

Hughes, Leonard S., contract surgeon, granted leave of absence for one month.

Phelan, Henry du R., contract surgeon, ordered to Fort Rosecrans, Cal., to Presidio of Monterey, Cal., for duty.

Purnell, Julius M., contract surgeon, relieved from duty at Presidio of Monterey, Cal., and ordered to the Department Rifle Range, Point Bonita, Cal., for duty.

Brown, Wilmont E., contract surgeon, left Fort Walla Walla, Wash., on leave of absence for three months.

Navy Changes.

Changes in the Medical Corps, U. S. Navy, for the week ending Nov. 10, 1906.

Streets, T. H., medical director, to duty in command of the Naval Hospital, Washington, D. C.

Dickinson, D., medical director, detached duty in command of Naval Hospital, Washington, D. C.; to continue other duties.

Payne, J. H., Jr., P. A. surgeon, to duty at Navy Recruiting Station, Providence, R. I.

Hart, G. G., acting asst.-surgeon, to duty with Marine Recruiting Party, Atlanta, Ga.

Garrison, P. E., asst.-surgeon, detached Naval Medical School; to duty as medical zoologist for the Bureau of Science, Manila, sailing from Seattle, Nov. 28, 1906.

Morse, E. T., pharmacist, to duty at the Naval Medical School Hospital, Washington.

Rixey, P. M., surgeon general, to special temporary duty in connection with the President's trip to Panama and Porto Rico.

Langhorne, C. D., surgeon, detached *Brooklyn* when placed in reserve; to home and wait orders.

Kennedy, J. T., P. A. surgeon, detached duty at the Naval Station, Guantanamo; home and wait orders.

Chapman, R. B., asst.-surgeon, detached *Supply;* to Naval Station, Cavite, P. I.

Backus, J. W., P. A. surgeon, detached from *Texas* when placed in reserve; to duty Naval Station, Guantanamo, Cuba, and additional duty on the *Amphitrite.*

Phillips, T. N., pharmacist, detached Naval Medical School Hospital, Washington, Nov. 14, 1906; to the U. S. Naval Hospital, New Fort Lyon, Bent County, Colo.

Berryhill, T. A., surgeon, detached duty U. S. Naval Medical School, Washington, Nov. 14, 1906; in command of Naval Hospital, New Fort Lyon, Bent County, Colo.

Field, J. G., surgeon, detached from duty in the Bureau of Medicine and Surgery, Nov. 14, 1906; to duty at the U. S. Naval Hospital, Bent County, Colo.

Webb, U. R., P. A. surgeon, detached duty on the *Brooklyn* when that vessel is placed in reserve; to the Naval Torpedo Station, Newport, R. I.

Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and noncommissioned officers of the Public Health and Marine-Hospital Service for the seven days ended Nov. 7, 1906.

Wertenbaker, C. P., surgeon, relieved from Quebec and directed to proceed to St. John, N.B., for duty.

Grubbs, S. B., P. A. surgeon, leave of absence granted for one day, October 30, revoked.

Parker, H. B., P. A. surgeon, granted leave of absence for two months and fifteen days, from Nov. 29, 1906.

Goldberger, Joseph, P. A. surgeon, detailed to represent the service at the meeting of the American Public Health Association, to be held in the City of Mexico, Dec. 3, 1906.

Amesse, J. W., P. A. surgeon, relieved from duty at Gulfport, Miss., and directed to proceed to Washington, D. C., for temporary duty in the Hygienic Laboratory.

Francis, Edward, P. A. surgeon, granted leave of absence for ten days from Nov. 20, 1906.

Boggess, J. S., asst.-surgeon, directed to proceed to Buffalo, N. Y., for special temporary duty, on completion of which to rejoin his station at Stapleton, N. Y.

Collins, George L., asst.-surgeon, granted leave of absence for one day, Nov. 3, 1906, under Paragraph 189 of the Regulations.

Steger, E. M., asst.-surgeon, relieved from duty on the Revenue Cutter *Algonquin*, and directed to proceed to New York, N. Y., reporting his arrival by wire.

Ashford, F. A., asst.-surgeon, granted leave of absence for one month and fifteen days, from Nov. 15, 1906.

Light, S. D. W., acting asst.-surgeon, granted leave of absence for thirty days from Nov. 3, 1906.

Lyall, R., acting asst.-surgeon, granted leave of absence for one day under Paragraph 210 of the Regulations.

Sinks, E. D., acting asst.-surgeon, granted leave of absence for five days, from Nov. 7, 1906.

Wetmore, W. O., acting ast.-surgeon, relieved from duty at Buffalo, N. Y., and assigned to duty at Ellis Island, N. Y.

Wetmore, W. O., acting asst.-surgeon, granted leave of absence for two days, from Nov. 1, 1906.

Holsendorf, B. E., pharmacist, granted leave of absence for twenty-eight days, from Dec. 4, 1906.

Kepler, G. K., pharmacist, directed to proceed to Chicago, Ill., and report to the medical officer in command for duty and assignment to quarters.

BOARDS CONVENED.

A board was convened to meet at Ellis Island, N. Y., upon the call of the chairman, for the purpose of examining Pharmacist George Neves, to determine his fitness for promotion to pharmacist of the Second Class. Detail for the board: Surgeon G. W. Stoner, Chairman; P. A. Surgeon John McMullen, Recorder.

A board was convened to meet at the Bureau on Nov. 7, 1906, for the physical examination of officers of the Revenue-Cutter Service. Detail for the board: Asst.-Surgeon-General W. J. Pettus, Chairman; Asst. Surgeon-General J. W. Kerr, Recorder.

A board was convened to meet at San Francisco, Cal., on Nov. 1, 1906, for the purpose of examining applicants for cadetships in the Revenue-Cutter Service. Detail for the board: Surgeon H. W. Austin, Chairman; Asst-Surgeon F. H. McKeon, Recorder.

A board was convened to meet at Seattle, Wash., on Nov. 1, 1906, for the purpose of examining applicants for cadetships in the Revenue-Cutter Service. Detail of the board: Asst.-Surgeon H. G. Ebert, Chairman; Acting-Asst.-Surgeon F. R. Underwood, Recorder.

A board was convened to meet at San Francisco, Cal., on Nov. 12, 1906, for the purpose of making physical examinations of officers of the Revenue-Cutter Service. Detail for the board: Surgeon H. W. Austin, Chairman; P. A. Surgeon C. H. Gardner, Recorder.

A board was convened to meet at Port Townsend, Wash., on Nov. 12, 1906, for the purpose of making a physical examination of an officer of the Revenue-Cutter Service. Detail for the board: Surgeon W. G. Stimpson, Chairman; P. A. Surgeon J. H. Oakley, Recorder.

A board was convened to meet at Stapleton, N. Y., on Nov. 12, 1906, for the purpose of making physical examinations of certain officers of the Revenue-Cutter Service. Detail for the board: P. A. Surgeon J. A. Nydegger, Chairman; P. A. Surgeon H. W. Wickes, Recorder.

A board was convened to meet at Boston, Mass., on Nov. 12, 1906, for the purpose of making a physical examination of certain officers of the Revenue-Cutter Service. Detail for the board: Surgeon R. M. Woodward, Chairman; P. A. Surgeon B. S. Warren, Recorder.

A board was convened to meet at Wilmington, N. C., on Nov. 12, 1906, for the purpose of making a physical examination of certain officers of the Revenue-Cutter Service. Detail for the board: P. A. Surgeon C. H. Lavinder, Chairman.

A board was convened to meet at San Juan, P. R., as soon as practicable, for the purpose of making a physical examination of certain officers of the Revenue-Cutter Service. Detail for the board: P. A. Surgeon M. H. Foster, Chairman; Acting Asst.-Surgeon P. del Valle Atilles, Recorder.

A board was convened to meet at Juneau, Alaska, as soon as practicable, for the purpose of making a physical examination of an officer of the Revenue-Cutter Service. Detail for the board: P. A. Surgeon M. W. Glover, Chairman.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service during the week ended Nov. 9, 1906:

SMALLPOX—UNITED STATES.

District of Columbia: Washington, Nov. 3, 1 case.
Louisiana: New Orleans, Oct. 27-Nov. 3, 2 cases (1 case imported).
Wisconsin: Milwaukee, Oct. 20-27, 14 cases.

SMALLPOX—FOREIGN.

Africa: Cape Town, Sept. 15-22, 2 cases.
Brazil: Bahia, Sept. 22-29, 9 cases.
Canada: Moncton, N. B., vicinity of, Nov. 1, 100 cases.
Chile: Antofagasta, Sept. 12-26, 30 cases, 10 deaths; Coquimbo, Sept. 8-22, 30 cases, 1 death.
Ecuador: Guayaquil, Oct. 7-14, 6 deaths.
India: Bombay, Sept. 25-Oct. 2, 1 death; Madras, Sept. 29-Oct. 5, 3 deaths.
Italy: General, Oct. 11-18, 2 cases.
Mexico: Vera Cruz, Oct. 6-13, 1 case, 1 death (imported from Mexico).
Persia: Ispahan, Aug. 31, present.
Russia: Moscow, Sept. 30-Oct. 6, 5 cases; Odessa, Sept. 30-Oct. 6, 2 cases.

YELLOW FEVER.

Cuba, Havana, Oct. 31-Nov. 6, 9 cases, 1 death; Neuva Paz, Nov. 2, 1 case; Rodas, Nov. 6, 1 case; Santa Clara, Nov. 1, 1 case.
Mexico: Merida, Oct. 14-20, 1 case.
Ecuador: Guayaquil, Oct. 7-14, 1 case, 3 deaths.

CHOLERA.

India: Bombay, Sept. 25-Oct. 2, 12 deaths; Calcutta, Sept. 15-29, 44 deaths; Madras, Sept. 29-Oct. 5, 65 deaths.

PLAGUE.

India: General, Sept. 15-29, 11,381 cases, 12,702 deaths; Bombay, Sept. 25-Oct. 2, 40 deaths; Calcutta, Sept. 15-29, 11 deaths.
Persia: Seistan, Aug. 1-17, 2 cases, 2 deaths.
Peru: Lima, Sept. 14, 1 case.

Medical Education and State Boards of Registration.

COMING EXAMINATIONS.

MISSOURI State Board of Health, Kansas City, November 26-28. Secretary, J. A. B. Adcock, Warrenshurg.

NEW MEXICO State Board of Health, Santa Fe, December 3. Secretary, Dr. B. D. Black, Las Vegas.

PENNSYLVANIA State Medical Examining Board, Industrial Hall, Philadelphia, December 4-7. Secretary, Dr. Joseph E. Willetts. Pittsburg.

WYOMING Board of Medical Examiners, State Capitol, Cheyenne, December 5. Secretary, Dr. S. B. Miller, Laramie.

DELAWARE State Medical Society Examining Board, Dover, December 6, and by the Homeopathic Board at Wilmington on same date. Secretary of the Medical Council, Dr. P. W. Tomlinson, Wilmington.

OHIO State Board of Medical Registration and Examination, Columbus, December 11-13. Secretary, Dr. Geo. H. Matson, Columbus.

IOWA State Board of Medical Examiners, Office of State Board of Health, Des Moines, December 11-13. Secretary, Dr. J. F. Kennedy, Des Moines.

VIRGINIA Medical Examining Board, Richmond, December 11-14. Secretary, Dr. R. S. Martin, Stuart.

MARYLAND Board of Medical Examiners, 847 N. Eutaw St., Baltimore, December 12-15. Secretary, Dr. J. McP. Scott, Hagerstown.

CALIFORNIA State Board of Medical Examiners, San Francisco, December 18. Secretary, Dr. Chas. L. Tisdale, Alameda.

OKLAHOMA Board of Medical Examiners, Guthrie, December 26. Secretary, Dr. J. W. Baker, Enid.

Colorado College Report for 1905.—From correspondence with Dr. S. D. Van Meter, secretary of the Colorado State Board of Medical Examiners, we learn that two of the failures charged against the Denver and Gross College of Medicine in the Educational Number of THE JOURNAL, Aug. 25, 1906, were undergraduates and, therefore, the college is not to be held responsible for them. Hereafter graduates of Colorado schools will be examined before being licensed in Colorado, and the schools of that state will doubtless make a better showing in the examination statistics, since formerly the best students were licensed without examination, and were, therefore, not considered in figuring the percentage of failures.

Washington July Report.—Dr. C. W. Sharples, secretary of the State Medical Examining Board of Washington, reports the written examination held at Tacoma, July 3-5, 1906. The number of subjects examined in was 17; total number of questions asked, 100; percentage required to pass, 75, and 70 for those having had 10 years' practice. The total number of candidates examined was 109, of whom 84 passed and 25 failed. The following colleges were represented:

PASSED. College.	Year Grad.	Per Cent.
University of California	(1904)	80.9
University of Southern California	(1906)	87.6
College of P. & S., San Francisco	(1906)	80
California Med. Coll.	(1896)	79.5
Cooper Med. Coll.	(1896) 69.8; (1898)	84.4
Denver and Gross Med. Coll.	(1904)	91.9
Gross Med. Coll.	(1888) 74.8; (1902)	89.8
Colorado School of Med.	(1896)	79.9
Yale University Med. School	(1904)	84.6
College of P. S., Chicago (1900) 78.3; (1901) 75.7, 81.2; (1906) 79.3, 82.4, 85.		
Northwestern Univ. Med. School (1902) 80.2; (1904) 93.6; (1905) 91.6; (1906) 89.8.		
American Med. Miss. Coll.	(1904) 86; (1905)	83.6
Bennett Med. Coll., Eclec., Chicago	(1897)	71.4
Dunham Med. Coll., Homeo., Chicago*	(1898) 79.3; (1901)	79.6
Rush Med. Coll. (1897) 87.4; (1901) 75, 80.7; (1902) 84.2; (1903) 83.4, 90.7; (1904) 86.5; (1906) 91.3.		
Hahnemann Med. Coll., Chicago	(1884)	70.1
Medical Coll. of Indiana	(1905)	80.4
Central Coll. of P. & S., Indianapolis	(1897)	76.8

Indiana Med. Coll.	(1906)	85.3
University of Iowa (1885) 72.3; (1892) 75; (1896) 76.8; (1905) 81.2.		
University of Louisville	(1906)	85.5
Tulane University	(1906)	85.4
Tufts Coll. Med. School	(1902)	80.1
University of Michigan	(1894) 77.1; (1905)	86.7
University of Minnesota	(1904) 81.9; (1905)	75.3, 82.5
Kansas City Med. Coll. (1892) 75.4; (1893) 77.3; (1898) 76.3; (1904) 78.4.		
Barnes Med. Coll.	(1906)	78.2, 79.2
St. Louis University (Marion-Sims-Beaumont Med. Coll.) (1898) 81; (1904) 79.5.		
Washington University, St. Louis	(1893) 74.2; (1898)	80.5
University of Nebraska	(1904)	78.2
College of P. & S., New York	(1904)	82
University of Buffalo	(1901)	83.3
Bellevue Hosp. Med. Coll.	(1891)	81.2
Starling Med. Coll.	(1895)	70.7
College of P. & S., Cleveland	(1904)	78.1
University of Oregon (1904) 79.5; (1905) 82; (1906) 77.6, 81.2, 82.9, 86.7.		
Jefferson Med. Coll.	(1906)	82.7
Woman's Med. Coll. of Pennsylvania	(1892)	72.3
University of Pennsylvania	(1895) 91.2; (1904)	80.4
Vanderbilt University	(1905)	83
University of the South	(1901)	82.3
University of Nashville	(1902)	79
University of Virginia	(1904)	82.1
University of Vermont	(1904) 77.7; (1905)	79.3
University of Jurjev, Dorpat, Russia	(1902)	77.5
Laval University, Quebec	(1896)	73.2

FAILED.

College of P. & S., San Francisco	(1902)	73.2
College of P. & S., Chicago	(1898)	63.7
Howard University	(1892)	68.4
Hahnemann Med. Coll., Chicago	(1896)	68.1
Hering Med. Coll.	(1906)	58.9
Northwestern Univ. Med. School	(1884)	62.7
Bennett Med. Coll., Eclec., Chicago	(1906)	74.1
College of P. & S., Kansas City	(1901)	57.7
University of Louisville	(1871)	53.8
Louisville Med. Coll.	(1904)	67.2
College of P. & S., Baltimore	(1893)	68.2
University of Michigan	(1904)	72.9
Saginaw Valley Med. Coll.	(1900)	71.1
University of Minnesota	(1905)	72.3
Missouri Med. Coll.†	(1889)	59.8
Lincoln Med. Coll.	(1897)	63.5
Columbia University	(1893)	69.
Willamette University	(1906)	72, 74.4
Barnes Med. Coll.	(1906)	60
Chattanooga Med. Coll.	(1906)	71.3
Vanderbilt University	(1895)	66.2
Dallas. Med. Coll.	(1903)	47.5
Toronto University	(1904)	73.8
Imperial University, Tokio, Japan	(1900)	72.2

* Merged with Hering Medical College in 1902.
† Merged with Washington University in 1889.

Rules Governing Examinations in Wisconsin:—Dr. J. V. Stevens, secretary of the State Board of Medical Examiners has sent us a statement showing the number of questions asked in the various branches and the rules governing the licensing examination. These are as follows:

QUESTIONS.

In the examination a total of 100 questions are asked, divided among the various subjects as follows: General surgery, 8; laryngology, 2; ophthalmology, 3; anatomy, 8; pediatrics, 4; obstetrics, 8; gynecology, 4; pathology, 8; bacteriology, 2; histology, 2; materia medica and therapeutics, 7; medicine, 8; neurology, 5; dietetics, 4; medical jurisprudence, 3; physiology, 7; hygiene, 2; physical diagnosis, 3; chemistry, 7; toxicology, 3 and urinalysis, 2.

RULES FOR EXAMINATION.

First: Questions will be given out and answers collected punctually at the time specified for each section. No papers will be accepted unless the examination be actually held at the appointed time. The time allowed for each examination shall be limited to one hour for every five questions.

Second: If any candidate withdraws *without* permission from the sight of the examiner, his or her examination shall be closed.

Third: A general average of 75 per cent. shall be necessary to license a candidate (he or she having otherwise complied with the law) provided, that in no one branch shall he percentage be less than 60.

Fourth: Each applicant shall register his or her name opposite a number in a book kept by the secretary for that purpose, and shall mark his or her paper with said number, and shall be known to the members of this board only by said number until his or her papers have been examined and marked, and any paper having any other mark or device shall be thrown out without further examination.

Fifth: All examinations shall be in writing and in the English language.

Sixth: Each candidate shall be seated at least four feet distant from those adjoining.

Seventh: Any prompting, talking, passing of paper or cribbing may be deemed sufficient to exclude candidate so doing from completing the examination.

District of Columbia July Report.—Dr. George C. Ober, secretary of the Board of Supervisors in Medicine, reports the written examination held at Washington, July 12, 1906. The number of subjects examined in was 17; total number of questions asked, 80; percentage required to pass, 75. The total number of candidates examined was 36, of whom 24 passed and 12 failed. The following colleges were represented:

PASSED.

College.	Year Grad.	Per Cent.
George Washington University	(1906) 76.2, 77.6, 78, 78.6, 78.9, 80.5, 80.7, 81.1, 81.7, 82.7, 84.3, 85, 86.1, 88, 94.	
Howard University	(1906)	80.1, 85.8, 89.5
Georgetown University	(1905) 92.6; (1906)	84, 87.4
Baltimore Med. Coll.	(1905)	83.1
Hahnemann Med. Coll., Philadelphia	(1904) 81; (1906)	80.5

FAILED.

George Washington University	(1905) 71.7; (1906) 65.9, 68.5, 72.8, 73.7, 74.2.	
Georgetown University	(1903) 71.5; (1905)	66.3
National University, Medical Dept.*	(1902)	32.3
University of Louisville	(1878)	74.2
Southern Homeo. Med. Coll.	(1906)	64.5
University of Virginia	(1906)	68.8

* Merged with Columbian (now George Washington University) Medical Dept., in 1903.

Medical Organization

Washington.

ASOTIN COUNTY MEDICAL SOCIETY.—At a meeting held recently in Asotin a permanent organization of this society on the standard plan was effected and the following officers elected: President, Dr. Lafayette Woodruff, Asotin; vice-president, Dr. Paul W. Johnson, Clarkston; secretary, Dr. Isaiah U. Temple, Clarkston, and treasurer, Dr. Stephen D. Brazeau, Asotin.

CLARKE COUNTY MEDICAL SOCIETY.—With the assistance of Drs. James R. Yocum and Charles McCutcheon, Tacoma, the physicians of Clarke County met at Vancouver and organized a society on the standard plan, electing Dr. J. Randolph Smith, Vancouver, president, and Dr. Edward F. Hixon, Vancouver, secretary.

West Virginia.

BERKELEY COUNTY MEDICAL SOCIETY.—Dr. William W. Golden, president of the Medical Society of the State of West Virginia, met the physicians of Berkeley County at Martinsburg and assisted in the organization of a society on the standard plan. The following officers were elected: Dr. J. McKee Sites, president; Dr. W. T. Henshaw, vice-president; Dr. Clifford R. Sperow, secretary, and Dr. Newton D. Baker, treasurer, all of Martinsburg.

Wisconsin.

DOOR COUNTY MEDICAL SOCIETY.—A county medical society was organized in Sturgeon Bay recently with the following officers: Dr. Herbert N. Leete, Sturgeon Bay, president; Dr. L. E. Gotham, Sawyer, vice-president, and Dr. Gustave R. Egeland, Ephraim, secretary and treasurer; Dr. George F. Hilton, Sturgeon Bay, delegates to the state society, and Drs. Nicholas Z. Wagner, Sturgeon Bay; J. E. Bingham, Sawyer, and Thomas C. Proctor, Sturgeon Bay, censors.

DANE COUNTY MEDICAL SOCIETY.—At the reorganization of the county medical society at Madison the following officers were elected: President, Dr. Charles S. Sheldon, Madison; vice-presidents, Drs. Louis R. Head, Madison; Peter C. Gilberson, Mount Horeb, and Byron W. Shaw, Waunakee, and secretary and treasurer, Dr. Julius Noer, Stoughton.

Society Proceedings

COMING MEETINGS.

Southern Surg. and Gyn. Assn., Baltimore, Dec. 11-13.
American Public Health Assn., Mexico City, Dec. 3-7.

MISSISSIPPI VALLEY MEDICAL ASSOCIATION.

Thirty-second Annual Meeting, held at Hot Springs, Ark., Nov. 6-8, 1906.

The President, DR. J. HENRY CARSTENS, Detroit, in the Chair.

Officers Elected.

The following officers were elected for the ensuing year: President, Dr. H. H. Grant, Louisville, Ky.; vice-presidents, Dr. Barr, Hot Springs, Ark., and Dr. T. C. Witherspoon, St. Louis; secretary, Dr. Henry Enos Tuley, Louisville, Ky.; treasurer, Dr. Samuel C. Stanton, Chicago.

Columbus, Ohio, was selected as the place for holding the next annual meeting, October, 1907.

Addresses of welcome were delivered by Mayor George R. Belding, Dr. S. P. Collings and Hon. Charles D. Greaves. The response to these addresses was delivered by Dr. J. M. Mathews, Louisville, Ky.

Future of the Medical Profession.

President Carstens in his address referred to the early history of medicine. Great advances have been made during the last 35 years. By gradually increasing the requirements, only the best minds have been able to enter the practice of medicine. Only men with the best mental caliber should be allowed to practice medicine.

In referring to organization, he said that as the country is large it is desirable to have larger societies in different parts of the country. The American Medical Association, however, should not establish a rule and force certain states to join together in the form of a branch, but this should be left to the members to organize in any way they desire. If the East, the West or the South desires to form an association, all right. If either should run over the border into some other branch, what is the difference? We can have a Mississippi Valley Medical Society, a Southern society or a New England society and a Rocky Mountain society, and still any member of the American Medical Association should have a right to belong to any one or all of them. He feels sure that at the next meeting of the American Medical Association this point will be settled.

The great men of the medical profession are working unselfishly for the good of the race. The moral tone has been materially elevated.

President Carstens then devoted considerable attention to liars in the medical profession, saying that they have diminished materially, and with a higher standard he hopes they will soon be eliminated entirely. There are still some liars in the profession, but in his experience there are few among the young members. Some of these liars are of the pious order. One variety of liar is the man who claims to be a surgeon, but who treats typhoid fever and pneumonia if the patients are wealthy. He will even treat measles and cholera infantum if the grandfather is a millionaire.

He closed his remarks with an eloquent plea for thorough general knowledge on the part of the medical profession. The days when the medical man only knew something about drugs, or how to treat some diseases, are past. The physician should take an interest in everything that affects the community in which he lives. He should be first and foremost and all the time a physician, but still he should be informed on all kinds of questions. He should thoroughly understand the workings of the inner mind, quickly grasp the weakness and the strength of an individual's mentality, and thus be able to shape the course of the individual and of the community.

(To be continued.)

PHILADELPHIA BRANCH OF THE AMERICAN PHARMACEUTICAL ASSOCIATION.

Regular Meeting, held Nov. 6, 1906.

The regular November meeting was held in the College of Physicians and was devoted to the discussion of "The Work of the Council on Pharmacy and Chemistry of the American Medical Association."

The meeting was attended by over forty members and visitors, all of whom manifested a keen interest in the subject matter under discussion, many of them taking an active part in the discussion itself.

The Proprietary Medicine Question and the Council on Pharmacy and Chemistry.

The program that had been prepared to introduce the subject matter included the following communications:

S. P. Sadtler, Ph.D., professor of chemistry in the Philadelphia College of Pharmacy, and also a member of the Council on Pharmacy and Chemistry of the American Medical Association, described "The Work of the Council."

Dr. Alfred Stengel, professor of clinical medicine in the Medical Department of the University of Pennsylvania, spoke of "Endorsement of the Council by Medical Men."

Chas. H. LaWall, assistant professor of pharmacy in the Philadelphia College of Pharmacy, spoke of "The Effect of Publicity on the Standing and the Use of Nostrums."

Prof. W. A. Puckner, Chicago, secretary of the Council on Pharmacy and Chemistry of the American Medical Association, contributed a paper on "The Needs of the Council," which, in the absence of the author was read by the secretary of the local branch.

Approval of the Council.

The subject was further discussed by Messrs. Thum, Apple, Kramer, Lowe, Potts, Riegel, Vanderkleed and others, and the following resolutions were adopted:

RESOLUTIONS FAVORING EXHIBITIONS OF PHARMACOPEIA AND FORMULARY PREPARATIONS.

Whereas, It appears to be desirable that physicians be made more fully acquainted with the contents of the U. S. Pharmacopeia and of the National Formulary and that they be given some practical demonstration of the resoruces and the abilities of present day pharmacists; therefore, be it

Resolved, That the Philadelphia Branch of the American Pharmaceutical Association favors the holding of a scientific exhibition, of U. S. P. and N. F. preparations, in connection with annual or stated meetings of medical societies, in its territory; and, be it further

Resolved, That a committee of five members be appointed, by the chair, to cooperate with the executive committee in obtaining permission for and in organizing such exhibtions.

RESOLUTIONS ENDORSING COUNCIL ON PHARMACY AND CHEMISTRY.

Whereas, The practice of pharmacy constitutes an important branch of the science of medicine; and

Whereas, Secrecy in any one department or branch of a science must of necessity be a menace to and detract from accurate observation and rational progress in other departments and branches of the same science; and

Whereas, The American Medical Association, in establishing the Council on Pharmacy and Chemistry, has recognized and endorsed this underlying principle of true progress, in the science of medicine, through the department of pharmacy; therefore be it

Resolved, That we, the members of the Philadelphia Branch of the American Pharmaceutical Association, heartily endorse the objects and the aims of the Council on Pharmacy and Chemistry of the American Medical Association; and, be it further

Resolved, That, individually as well as collectively, we pledge our active support and cooperation, to the Council, in the work now in hand.

Future Meetings.

It was announced that the remaining meetings of the Philadelphia Branch of the American Pharmaceutical Association have been arranged for on the following evenings, at the College of Phyiscians, 15th and Locust Sts.

December.—Wednesday, Dec. 12, 1906.
The Federal Pure Food and Drug Law.
January.—Friday, Jan. 4, 1907.
The Debasing Influences of Fraudulent Nostrums.
February.—Tuesday, Feb. 5, 1907.
Higher Educational Requirements for Pharmacists.
March.—Tuesday, March 5, 1907.
The Indiscriminate Renewal of Prescriptions.
April.—Tuesday, April 2, 1907.
Popularizing U. S. P. and N. F. Preparations.
May.—Tuesday, May 7, 1907.
The Proposed Reorganization of the American Pharmaceutical Association.

It was also announced that as pharmacists will find the subject matter to be discussed at these meetings of direct importance to them, they are invited to come and bring their friends.

MEDICAL SOCIETY OF VIRGINIA.

Thirty-sixth Annual Session, held at Charlottesville, Sept. 9-11. 1906.

Under the Presidency of Dr. Lomax Gwathmey, Norfolk, Va.

Officers Elected.

The following officers were elected for the ensuing year: President, Dr. Paul B. Barringer, Charlottesville, Va.; vice-presidents, Drs. B. B. Bagby, Walkerton, F. H. Hancock, Norfolk, and Dr. C. F. Rinker, Upperville; recording secretary, Dr. Landon B. Edwards, Richmond (re-elected); corresponding secretary, Dr. John F. Winn, Richmond (re-elected); treasurer, Dr. R. M. Slaughter, Theological Seminary (re-elected). Delegates to the American Medical Association: Dr. Stuart McGuire, Richmond; Dr. W. E. Anderson, Farmville; Dr. W. F. Drewry, Petersburg.

Chase City was chosen as the next place of meeting.

Life Insurance Fees.

The Committee on Fees for Life Examinations made the following recommendations:

That a minimum fee of $5 be charged by members of the society when urinalysis is required on all policies of $5,000 or less. That a minimum fee of $3 be charged on all policies of $3,000 or less, when a urinalysis is not required. That no discrimination be made in favor of fraternal or benevolent organiza-

tions. That this society express in no uncertain language its disapproval of the actions of insurance companies toward their examiners; and further, that it determine the status of members that submit to a reduction of fees; and further, that it ask all local societies to prescribe the status of members who act in opposition to the views of the majority. That this society use its influence, collectively and individually, in behalf of all companies paying a straight $5 fee.

This report was accepted and adopted, and the delegates to the American Medical Association were instructed to use their best efforts to get a strong committee appointed from that body to take the matter up with the various life insurance companies and to secure a regular schedule of fees.

Proprietaries and "Patent Medicines."

On motion of Dr. Edward McGuire, Richmond, a committee was appointed to draft a bill requiring all proprietary preparations and "patent medicines" sold in the state to have printed on the label of the bottle or package their formula—this bill to be presented at the next session of the state legislature.

Clinical Reports.

DR. W. S. GORDON, Richmond, reported a case of myxedema in a child seventeen months old. The child was treated with thyroid extract (desiccated) in ½ gr. doses and recovered.

DR. L. G. PEDIGO, Leatherwood, mentioned a case in which a diagnosis of cholecystitis was made and where the clinical history was perfect. On operation, it was found to be a case of chronic pancreatitis. He called attention to this case as illustrating the difficulty of diagnosing disease of the pancreas.

DR. I. S. STONE, Washington, D. C., spoke of the great work that is being done by surgeons who explore the upper abdominal cavity in throwing light on these troubles. He referred to two cases that illustrated the point brought out by Dr. Pedigo. He reminded the society that from one to five per cent. of the cases of jaundice where the attacks are so much like those accompanying gallstone disease turn out to be cases of chronic pancreatitis.

DR. HUGH M. TAYLOR, Richmond, said that chronic pancreatitis must be much more common than it is thought to be on account of the intimate anatomic relationship of the gall bladder, intestines, and pancreas; and an infection involving one of these structures is very liable to affect the others.

DR. JACOB MICHAUX, Richmond, reported a case of probable arrested development of the skin, in which epidermization was incomplete in symmetrical lines on opposite sides of the body. These raw places healed in a short time under antiseptic dressings.

DR. W. L. ROBINSON, Danville, reported a case of bowel obstruction in which the cecum and appendix were found in the scrotum. Six inches of the bowel were resected, with recovery of the patient.

Home and Office Treatment of Inebriety.

DR. T. D. CROTHERS, Hartford, Conn., does not think that the seriousness of alcohol intoxication is recognized by the average practitioner. Alcohol intoxication is a profound toxemia and paralysis, with coma, pressure on certain brain centers, and other grave pathological changes. It is a question how often a person may become intoxicated and still live. One author says five hundred times; another one thousand; while a careful study of the subject shows that the majority of the inebriates seldom become intoxicated more than one hundred times.

The treatment requires skill and study. The first thing is to recognize and remove any causal agents; such as exhaustion from over-work, bad hygienic surroundings, night work, etc. In the acute stage, elimination is the important thing—salines, the hot pack, alternate hot and cold applications to the spine. Along with this use nerve sedatives—sodium bromid, 50 to 100 grains at a time, and then wait for a day or two before giving more, lupulin, valerian, etc. The most important thing in the after treatment is to impress the patient with the fact that he has a disease which requires a long course of treatment, and treat him with tonics. An aqueous solution of quassia, two ounces, every hour, for a day or two before an expected spree, will destroy the craze for drink and even render it distasteful.

The Modern Treatment of the Toxemia of Pregnancy.

DR. JOHN F. WINN, Richmond, emphasized two points: (1) The value of prophylaxis and elimination; (2) the importance of early, unremitting, and systematic medical supervision of every pregnant woman. He accepts as the most plausible theory for the cause of this condition, a disturbance of nitrogenous metabolism because of the failure of the oxidizing capacity of the liver. He believes also that enough evidence has been adduced to warrant the statement that the clinical manifestations of the toxic state; viz: Hyperemesis gravidarum, eclampsia, and acute yellow atrophy are one and the same disease whose kidney lesions are secondary to the lesions in the liver, and whose danger signal is not so much the loss of urea as the excess of ammonia. He is of the opinion that we should no longer trust wholly to the urinalyses as ordinarily made, but, in all cases of doubtful diagnosis, we should avail ourselves of the modern methods of a thoroughly equipped pathologist or chemist for determining the ammonia co-efficient. He regretted that too often there is an indifference to the dangers of pregnancy that is appalling and well-nigh culpable. He pleaded earnestly for a complete revolution in this regard, and urged that the most rigid prophylaxis be observed from the time pregnancy is suspected. He would make it obligatory on patients to report promptly the earliest symptoms of the toxic state. They should be made to realize the importance of engaging and consulting their physician at the earliest period in pregnancy, and not to defer this duty until headache and edema develop. Especially, would he advise earlier and more frequent urinalyses, and the more liberal drinking of water. The treatment is elimination; special emphasis was placed on active purgation, and repeated and persistent colonic irrigation in large quantities. The author advocates emptying the uterus by some safe and rapid method before it is too late, preferably by the Voorhees' hydrostatic bags, and manual dilatation.

Medical Treatment of Gallstones.

DR. CHAS. S. WEBB, Bowling Green, gave his treatment as follows: The patient is first given this prescription:

℞. Chloroformi (pur) 3i 4
Olei olivæ
Mucil. acaciæ, āā.....ʒii 60

M. Sig.: Two teaspoonsful every four hours. After taking these doses for about forty-eight hours, and after the patient has fasted ten or twelve hours, he gives

℞. Spts. eth. comp.....3i 4
Olei olivæ .....ʒviii 240

at one dose. The patient is then directed to lie on the right side with hips slightly elevated (about three or four inches) for one hour; then lie on the left side with hips elevated ten or twelve inches, the spinal column being kept as straight as possible so as to form the hypotenuse of a triangle. This position, if possible, is kept for an hour and a half. After three or four hours, a large dose of castor oil is given.

DR. HUGH M. TAYLOR, Richmond, said that it is generally conceded that the large stone ulcerated either through the bladder into the intestines or through a sacculated duct. He does not believe that there is any medical treatment for gallstones. The medical treatment should be aimed at their prevention, but when once formed it is a question whether they should be interfered with, since according to statistics only 5 per cent. of gallstones give trouble.

Value of Hospitals as Educational Institutions.

DR. JOSEPH PRICE, Philadelphia, emphasized the importance of small private hospitals because they save life in acute surgical cases where delay means death; they return to domestic life many people who are incapacitated for work by some trouble requiring a trivial operation, but who will not go to a distant hospital for operation though they would allow the work to be done at home. The private hospital serves as an educational institution for the community physicians. It enables the local physician to reap some of the benefit of modern advancement of surgery. He urged that every county poor house have an operating room attached where the county society should hold clinics from the abun-

dant material always to be found there, for the benefit of its members.

Dr. Price called attention to the magnificent work that has been done by a number of small private hospitals that have come under his observation. He said that Virginia gave the pioneer in abdominal surgery, and also the third great private hospital and training school, polyclinic and postgraduate school (McGuire's, St. Luke's), where young men serve their apprenticeship in good numbers and become prominent operators. He said that all hospitals should be clinical schools. That the visiting staff, surgeons, physicians and specialists should be compelled to teach the residents and community physicians. That the residents throughout the country should be doubled and quadrupled, that all graduates may have a hospital apprenticeship. The large clinics, or matinees, are a waste of valuable material.

Treatment of Pleurisy and Empyema.

Dr. W. P. Carr, Washington, D. C., emphasized the importance of an early recognition and removal of fluid from the pleural cavity to prevent compression of the lung; the frequency of pleurisy as a complication of pneumonia; the remarkable success of simple drainage, which is the only indication in acute cases and which is indicated in chronic cases where the patient is not in condition to stand a more serious operation. Dr. Carr usually prefers to make the opening a little anterior to the mid-axillary line, about the seventh rib, where there is little muscle over the rib and where it is convenient to get at for dressings. The anterior opening drains just as well as one made posterior because pus never flows out of such a cavity by gravity, but is pushed out by the contracting walls of the chest. The important thing is to have a large drainage tube through which pus and clots of lymph may be extruded. It is not necessary to wash out the pleural cavity at first, but it may be done later with saline solution, followed by the antiseptic solutions.

Uncinariasis.

Dr. B. B. Bagby, Walkerton, called attention to the frequency of uncinariasis in Virginia. He showed a number of specimens of the parasites and also two or three of his patients.

Treatment of Cancer.

Dr. J. Shelton Horsley, Richmond, called attention to the peculiar apathy of the medical profession to this disease, and attributed this apathy partly to the fact that the cause of cancer is still unknown, in spite of the work that has been done by numerous cancer commissions, and partly to the fact that the greater percentages of cures have been accomplished only after extensive and radical operations in the hands of skilled surgeons or specialists. He urged the necessity of the surgeons having an accurate knowledge of the structure and macroscopic appearance of malignant growths, and does not think that it is well always to wait for the report of a pathologist because the incision of the growth in order to get a specimen for microscopic examination involves the danger of a rapid metastasis, and may make a later operation useless.

In treating cancer, it is necessary to recognize the fact that all malignant growths are not of the same malignancy, and the agents that will destroy one may only stimulate another to greater activity, for the difference between destruction and stimulation is only one of degree. For instance, chemicals or the *x*-ray may remove a superficial epithelioma of the face while they would only cause increased activity in the case of a malignant growth of the breast. These facts show the rich field that is open to the cancer quack while at the same time it shows the danger to which the victim is subjected, for the quack does not recognize the distinction above referred to. Dr. Horsley called attention to the catchy way the quacks have of advertising, especially their guarantee to cure or refund the fee. He says that the so-called cancer hospital is nothing more than a third-rate boarding house which at $5 per week would be run at a profit, whereas they charge $20 per week. At the end of three to six months, when they have been clearing more than $15 per week, it is not such liberality after all if they return the "fee" and tell the patient that he waited too late to come to them.

VERMONT STATE MEDICAL SOCIETY.

Ninety-third Annual Meeting, held at Barre, Oct. 11-12, 1906.

The President, Dr. M. L. Chandler, Barre, in the Chair.

Officers Elected.

The following officers were elected: President, Dr. D. C. Hawley, Burlington; vice-president, Dr. C. W. Strobell, Rutland; secretary, Dr. George H. Gorham, Bellows Falls; treasurer, Dr. B. H. Stone, Burlington; auditor, Dr. John H. Blodgett, Saxton's River; and delegate to the American Medical Association, Dr. J. Henry Jackson, Barre.

The next annual meeting will be held at St. Johnsbury in October, 1907.

The society formally disapproved of contract practice.

At the annual banquet, the governor and lieutenant governor and their wives were the guests of honor, and Dr. Walter L. Havens, Chester Depot, acted as toastmaster.

Nephrolithiasis.

Dr. M. L. Chandler, Barre, in his presidential address, said that although nephrolithiasis frequently takes place in infants and small children it is not recognized. Large calculi may form in the pelvis of the kidney and obstruct the mouth of the ureter and thus lead to hydronephrosis or pyonephrosis. In some cases they require removal by surgical means. They generally commence as uric acid or oxalate deposits. In the male the differential diagnosis must be made between intestinal obstruction, floating kidney and gastric pain. When pain is on the right side in the female the diagnosis is sometimes very difficult. The pain may be due to gallstones, pleurisy, floating kidney, intestinal colic or obstruction, appendicitis, ovarian inflammation, uterine colic, lumbago, neuralgia, tubal pregnancy and aneurism.

Treatment consists in hypodermic injections of morphia and atropia, hot applications locally and large warm enemata. General treatment is dietetic and hygienic. The patient should take large quantities of distilled water. Alkaline mineral waters are good, except when the stone is phosphatic. Benzoic acid and boric acid are good in the later cases. A small amount of nitrogenous foods should be taken. Eggs and milk are good; not so any food that is rich in lime. It is very important to make frequent examinations of the urine.

Treatment of Fractures.

Dr. E. S. Allbee, Bellows Falls, stated that he never operates on fractures of the skull unless there are symptoms of depression. In fracture of the clavicle in children, strap a compress over seat of injury. In adults use Dr. Phelps' apparatus. In Colles' fracture he advised the use of an anesthetic in all cases. Use Carr's splint for adults and anterior and posterior splints for children. He recommended Scudder's splint for fractured fingers and hands. In compound fracture of the patella, wire together. In closed fractures use long posterior pulp splint and strap a pad at the seat of injury. In fractured condyle of the humerus put a hard compress over the seat of the injury and flex the arm at a right angle. In fracture of the thigh use coaptation splints with weight and pulley. In fracture of the neck of the femur use Hodgkin's splint. In Pott's fracture apply adhesive plaster around the malleolus and then put on a plaster-of-Paris splint. In fracture of the upper part of the humerus put a compress in the axilla, and apply a light shoulder splint and coaptation splints. Bandage together and put arm in sling.

DISCUSSION.

Dr. C. M. Campbell, Rochester, thought it better to use the sandbag and fracture box at first in fractures of the lower extremities, and passive motion early in fracture of the elbow joint.

Dr. J. M. Allen, St. Johnsbury, advised the use of an anesthetic in all cases of fracture of the long bones. Put them up in the proper position at first and do not examine for a week.

Dr. C. W. Strobell, Rutland, thought that Moore's method, with a slight modification, gives the best results in Colles' fracture. In these cases commence passive motion early, even the next day.

Treatment of Chronic Cardiovascular Diseases.

DR. EGBERT LE FEVRE, New York, showed conclusively that it is necessary for the physician to thoroughly understand the underlying causes of the disease. He should try and find out the cause of the increased blood pressure and the arteriosclerotic changes that are taking place in the blood vessels. He cautioned against indiscriminate use of vasomotor dilators and heart tonics.

DISCUSSION.

DR. J. N. JENNE, Burlington, spoke of the importance of understanding all the pathologic conditions involved. He cautioned physicians against the unlogical use of the nitrites in many diseases of the heart. Nearly all drugs, he said, are disappointing in cardiac incompetency.

Arteriosclerosis.

DR. H. D. ARNOLD, Boston, said that it is very important to recognize the disease in the early stages, as it is very complex in its various manifestations. The clinician and pathologist do not agree as to whether renal disease is the cause or the effect of sclerosis of the blood vessels. The aorta and splanchnic arteries may be affected and the superficial vessels show no change. The four essential factors in blood pressure are the volume of the blood, the cardiac energy, the vasomotor contraction and the elasticity of the vessel walls. An increased blood pressure means more work on the heart, which leads to either hypertrophy or dilatation. The causes for increased blood pressure are toxic and nervous influences and excessive muscular work. The most important factor is toxic: poisons from without, such as alcohol, tobacco and lead; imperfect metabolism, as in gout, diabetes and excessive ingestion of food; imperfect elimination. Syphilis is also a cause. The mental element is seen in the intense application, responsibilities and worries of modern business life. The same causes that affected the blood vessels may also cause changes in the heart and kidneys. It is very important to find out the cause of the high pressure in the first stages of the disease. The dict should be regulated. He said not to give vasodilators and advised the use of the sphygmomanometer to estimate the pressure. It is important to estimate the relation between the degree of blood pressure and the capacity of the heart for work.

The Care of Surgical Cases.

DR. H. C. TINKHAM, Burlington, thought that the evolution of surgery had been along the lines of antisepsis and asepsis. Text-books say but little about the preparation of the patient or the after-treatment, although of vital importance. Toxemic conditions may arise owing to faulty secretion and elimination due to the nervous system. Sedatives, like valerian and asafetida, and, if necessary, bromid may be given to insure good sleep. To empty the bowels give calomel for two days previous to operation, and, if necessary, salines and enemata. Give no food for eight hours previous to operation, although a cup of clear tea or coffee three hours previously is sometimes advisable. Put the patient in bed after the operation and surround the body with hot-water bottles. Before the patient comes out from under the anesthetic use a high enema of hot normal salt solution and give a cup of water to clear out the stomach. After the patient has recovered from the anesthetic give calomel ½ grain to 1 grain, and repeat every two hours until from 3 to 6 grains have been taken. Twenty-four hours afterward give an enema of 2 ounces of glycerin to the quart of water. Hot water or weak tea only are to be given the first 24 hours. Give enough opium to keep the patient quiet. One-half grain codein, hypodermically, is the best and, if necessary, give morphia. Strychnia is indicated for a few days. Digitalin for weak heart. For shock give adrenalin chlorid. Rare beef, chops and chicken can be given in most cases in three or four days. Twenty-four hours after the operation the patient can be raised to a half-sitting position.

Tetanus, with Special Reference to Fourth of July Injuries.

DR. C. A. PEASE, Burlington, showed that the severity of the wound has nothing to do with the development of tetanus. The bacilli are more prevalent in the summer, and the small pieces of dirty skin carried into the wound by the wad are the cause of the infection in injuries from blank cartridges. The toxin is one of the most powerful known, a very small quantity only being enough for infection. It acts on the motor cells of the cord, pons, medulla and cortex. The prognosis is unfavorable if the disease develops within nine days. In 1903 THE JOURNAL A. M. A. reported 415 cases of tetanus, with 406 deaths. In 1906 only 89 cases, with 75 deaths. There were many more cases of tetanus from blank cartridge wounds than from any other cause. He gave the results of his experiments on guinea-pigs and rats with the powder and wads from blank cartridges, but only got a positive reaction in one case. The mortality in subacute cases treated with tetanus antitoxin is 43 per cent. and in acute cases 63 per cent. All wounds that are liable to be infected should be treated in the most antiseptic manner, and immunizing doses of at least 10 c.c. of tetanus antitoxin should be injected around the seat of injury.

DISCUSSION.

DR. A. L. MINER emphasized the importance of a thorough examination of the wound and to see that it is cleaned out to the very bottom.

DR. S. E. MAYNARD, Burlington, advocated the use of peroxid of hydrogen as an antiseptic and giving 20 c.c. of antitoxin at first in all gunshot and penetrating wounds.

DR. B. H. STONE, Burlington, stated that bichlorid will not destroy tetanus germs, but peroxid of hydrogen will.

Trichinosis.

DR. C. H. BEECHER, Burlington, gave a report of 23 cases that had come under his observation the past winter. Only about 900 cases have been reported in the United States in the past 45 years. The parasite, *Trichina spiralis*, has been found alive after 15 months in pickle. It resists a freezing temperature for two months, and sometimes a temperature as high as 180 F. has failed to kill the trichina. About 2 per cent. of all pork is infected. In 505 unselected cases of autopsies that had not died of trichinosis the parasite was found in 5.3 per cent. There is no constant relation between the number of trichinæ and the symptoms. The symptoms are divided into three stages, corresponding to the life of the parasite: 1. The stage of gastrointestinal irritation. 2. The stage of myositis. 3. The stage of subsidence. The first stage usually takes place within a few hours after the ingestion of the infected meat. Vomiting and diarrhea are favorable for the patient. The second stage takes place from a week to ten days after infection. Muscular pains and weakness are the prominent symptoms. The pain is rheumatic in character, and may affect the diaphragm, pharynx and larynx. Edema is very characteristic. Fever is usually present. Sweating is profuse. A marked leucocytosis is present. The increase in white cells may reach 30,000. Convalescence is slow. The mortality varies from 1 to 30 per cent. Involvement of respiratory muscles is very unfavorable. Must make the differential diagnosis of this disease between cholera morbus, ptomain poisoning, rheumatism and typhoid fever. Microscopic examination of the blood and muscle will clear up the case. All pork should be thoroughly cooked. Thorough salting and hot smoking will also kill the parasites. The treatment consists in washing out the stomach and colon with glycerin. Give purgatives, also glycerin, in dram doses, every hour. Hot baths are good for the relief of pain. Sustain the strength of the patient.

Nephritis.

DR. W. H. LANE, Brattleboro, said that there is no trouble in making a diagnosis in acute Bright's disease with the edema and effusions into the serous cavities, increased blood pressure, scanty, high-colored urine, specific gravity 1025 or 1030, and albumin. The interstitial form begins very insidiously, but usually the first symptoms are swollen feet at night, and a tense and bounding pulse. By examination of the urine the diagnosis can be made. Large amount of acid urine, light colored, low specific gravity, albumin (small in amount), a few hyaline and pale granular casts. Later the urine lessens in quantity, casts and albumin are increased; there is some blood; the urea is diminished. There is slight edema about the ankles, hypertrophy of the left side of heart, without valvular disease. The pulse is hard and resisting. Later there is palpitation, dyspnea and dropsy. Frequently a retinitis develops.

Complications and Sequelæ of Nephritis.

Dr J. H. Blodgett, Saxtons River, said that bronchitis and pneumonia are frequent complications, the latter occurring after ether administration. Changes always occur in the blood vessels, Bright's disease being one of the chief causes of miliary aneurism and cerebral hemorrhage in persons between 30 and 40. Anemia, sometimes the pernicious form, may be one of the complications. Uremia is one of the most important complications. The direct cause of this condition is still unknown, although it is thought to be the toxic action of a variety of nitrogenous metabolic products retained in the system. In this condition we get the cerebral symptoms, mania, convulsions, coma and palsies. Uremie dyspnea and gastrointestinal symptoms may be present.

Treatment of Nephritis.

Dr. S. W. Hammond, Rutland, emphasized the importance of hygienic and dictetic treatment as well as of the medicinal. Patients should lead a quiet, tranquil life and, if possible, should avoid the cold, stormy weather of the North. Daily warm baths are beneficial. Chlorid of sodium is injurious; also all forms of alcohol. Milk is usually well borne and should be given in quite large quantities; so, too, stale bread, fruits and even eggs. If the urine is small in quantity, give the citrate or acetate of potash, or infusion of digitalis. If there is a small amount of urea excreted, make the skin and bowels do the work of the kidneys. The nitrates are beneficial in the chronic interstitial form. In gouty and syphilitic subjects give the iodids. Kidney decapsulation is still in the experimental stage. The results thus far achieved in this line of treatment have not been flattering.

Commercial Therapeutics and Commercial Therapeutists.

Dr. George L. Bates, Morrisville, mentioned as of special interest to the physician the question of professional ethics, of life-insurance fees and the proprietary medicine and nostrum evils. He felt that the latter is the cause of the ruin, physically, mentally and morally of more people than is realized. It is the prime factor in the production of many diseases, and it helps to increase the death rate yearly. It is a curse on the nation on account of the hundreds of morphin, cocain and alcohol inebriates it has developed. He commended in the highest terms the work that the Council on Pharmacy and Chemistry of the American Medical Association is doing for the physicians, the druggists and the public. He said it is much better for the physician to depend on his own knowledge than to rely on the ready-made prescriptions sent out by the drug houses.

DELAWARE STATE MEDICAL SOCIETY.

Annual Meeting, held at Wilmington, Oct. 9-11, 1906.

The President, Dr. John Palmer, Jr., Wilmington, in the Chair.

Urges Higher Standard of Education.

Hon. Levin I. Handy gave the address of welcome. He referred to the spirit of jealousy that had in times past existed between the members of the profession, and believed that closer association would tend to remove this jealousy and cultivate the *esprit du corps* so much to be desired among the profession. He favored the adoption of the laws now being urged by the society and the profession throughout the state for the raising of the standard of the preliminary education of the physician, and also advocated the adoption of a four years' course in a medical school, which is required by all the surounding states, believing that unless this is done Delaware will be receiving the rejected from the neighboring states.

President's Address.

Dr. John Palmer, Jr., Wilmington, reviewed the progress of medicine, the establishment of schools, hospitals, etc., and urged the necessity for organization. He said that the society should endeavor to enroll every eligible physician in its ranks. He stated that there is a tendency to give less medicine and to improve the sanitary conditions. He also dwelt on the antitoxins and similar agents. He deprecated the use of headache powders and other "patent medicines."

Early Diagnosis of Tuberculosis.

Dr. A. Robin, Wilmington, said that until recently this condition has been regarded as a fatal disease. Ninety per cent. of all autopsies reveal healed lesions of tuberculosis, and in many cases the disease, he said, could be cured, if taken in the incipient stage. He particularly emphasized the importance of early diagnosis. The susceptibility varies with the individual and has much to do with the nutritional power of the patient. The curability depends largely on the stage of the disease, and the treatment should be directed toward increasing the individual's resistance, careful regulation of the diet and mode of life being essential factors. There may be a predisposition to the disease, and it may be based on anatomical or physiological defects. The most valuable diagnostic signs are rise of temperature in the afternoon, loss of appetite and weight, weakness, dyspnea on exertion, and in the absence of sufficient of these to warrant a diagnosis, the tuberculin test may be resorted to. Microscopic examination frequently will not show the tubercle bacilli until late in the disease, and, while the tuberculin test is difficult of application in private practice, it is generally reliable.

DISCUSSION.

Dr. Peter W. Tomlinson, Wilmington, stated that if tuberculosis could always be recognized in its incipiency it would be well to advise the patient to pursue that life which is demanded for the betterment of his condition, and that, even in cases of doubt, it is, perhaps, better to give the patient the benefit of the doubt and advise such measures. He believes that more depends on proper nourishment, fresh air and hygienic measures than on drugs.

Dr. Philip Marvel, Atlantic City, N. J., referred to the necessity for more thorough primary physical examinations, in suspected cases, or even in cases of doubt, repeated at short intervals, in order to determine the presence or absence of the disease in its incipiency, when treatment will be of the most avail. In regard to tuberculin, he stated that there is a feeling against its use, and that, while there must be a certain amount of experimental work in order to establish a diagnosis, yet the public desire as little as possible.

Some Remarks on Gastric Ulcer.

Dr. H. A. Cleaver, Wilmington, stated that there are few diseases of the gastric tract that exceed in importance gastric ulcer. Social history, occupation, climate or nationality seem to have but little influence, although there does seem to be a slight predisposing influence among workers in glass, metal and porcelain. The pyloric region is thought to be the most susceptible to this condition, and among the predisposing factors are embolism, thrombosis, venous stasis, interstitial hemorrhage, ecchymosis of the gastric mucosa, etc. He discussed as causative factors the infectious diseases, such as typhoid, puerperal fever, etc., and also the theory of its causation by digestion, being due to the diminution of resistance in the walls of the stomach or increase in the digestive activity of the gastric juice. The differential diagnosis between gastric ulcer and carcinoma, erosion, duodenal ulcer, hysteria, gallstone colic, etc., was discussed in detail. He contrasted the various kinds of medical treatment with the operative procedures of pyloroplasty and gastroenterostomy.

The Necessity for Careful and Accurate Diagnosis.

Dr. E. S. Dwight, Smyrna, deprecated the practice of jumping at conclusions, or the too frequent diagnosis of a disease which happens to be the practitioner's particular hobby. Vague terms should not be employed, but the physician, after a thorough examination, should decide definitely on the conditions present. Urinalysis, and examination of the vagina and rectum should, whenever necessary, be resorted to, and he believes that they are very valuable assistants in many cases.

Anesthesia: With Report of Five Hundred Cases.

Dr. Harold L. Springer, Wilmington, stated that age seems to make but little difference, with the exception that it is more favorable in persons under fifty. Ether was used in 88 per cent. of the cases, and chloroform in the remaining 12

per cent., 2 per cent. of the former being started with chloroform. The average amount of ether administered was 2½ ounces; the average time under ether was 15 minutes; vomiting occurred in 25 per cent. of the cases. He believed that the vomiting was due to the direct action of the ether on the stomach, as it did not occur when the anesthesia was produced by chloroform. Oxygen was necessary in 4 per cent. of the cases, and the return to consciousness was more rapid in these cases than where no oxygen was employed. He believes that the use of oxygen with any anesthetic eliminates a large percentage of the danger. Seventy-five per cent. of the anesthesias were for major operations; no patient died from the effects of the anesthetic, and most of the fatal cases were *in extremis* when the patient was placed on the table. Urinary examination was made both before and after the anesthesia. Chloroform, he stated, is more dangerous than ether, especially in the hands of the inexperienced. In all cases, there should be a thorough examination of the heart, lungs and kidneys prior to operation, and in cases of threatened death artificial respiration should be resorted to.

Newspaper Advertisements.

Resolutions deprecating the fact that the newspapers permitted the advertisement of irregular physicians and quack remedies were taken up, and it was decided that the secretary should communicate with the various newspapers, calling their attention to the improper publications and asking their discontinuence.

DR. EMERY MARVEL, Atlantic City, N. J., referred to the action of the New Jersey State Medical Society in reference to the use of nostrums, and stated that the action of the lay papers, particularly *Collier's Weekly* and the *Ladies' Home Journal*, in exposing these remedies have been productive of good results. He recommended that the Delaware State Medical Society express its feeling in regard to this matter.

He also referred to the matter of life insurance examination fees, which were discussed at the last meeting of the New Jersey State Medical Society, and the unanimous consensus of opinion seemed to be that examinations would not be made for such small fees as are now being paid. He also referred to and strongly condemned contract practice.

Requirements for Licensure to Be Raised.

The society then endorsed a bill to be presented to the next session of the legislature, increasing the standard of requirements for a license to practice medicine, and instructed the secretary to communicate with the members, urging them to elect members favorable to the proposed law.

The work of the Delaware Tuberculosis Society was endorsed.

Officers Elected.

The following officers were elected: President, Dr. John W. Clifton, Smyrna; vice-presidents, Dr. Frank L. Springer, Newport, and Dr. Luther S. Conwell, Camden; secretary, Dr. George W. K. Forrest, Camden; treasurer, Dr. William G. Winner, Wilmington.

Therapeutics

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulæ and outlines of treatment are answered in these columns.]

Burns.

The treatment of burns, according to Prager, in the *N. Y. Med. Jour.*, may be divided into the local and general treatment.

LOCAL TREATMENT.

The indications are: 1. To overcome the shock and to relieve the pain. 2. To guard against congestion and inflammation of internal organs. 3. To prevent sepsis from the absorption of the toxins of the sloughing tissue. 4. To counteract the exhaustion incident to such suppuration. In the treatment of burns of the first degree the author recommends some application which will tend to soothe the injured part. For this purpose olive oil or linimentum calcis (Carron oil, a mixture of linseed oil and lime water), serves a good purpose.

The best and simplest remedy, according to Prager, in the treatment of burns of the first degree is powdered sodium bicarbonate dusted freely over the surface of the wound. It is well to exclude the air in all cases by the application of a protective dressing.

As an emergency dressing in burns of even the second degree, ordinary molasses is recommended, which is best applied by soaking pieces of blotting paper one-half inch by two inches in the molasses and laying them evenly on the surface. They must overlap each other, and when sufficiently dry they serve as an excellent covering. Sodium bicarbonate may be added to this dressing by dusting over the surface after the dressing has been applied. The sugar in the molasses, according to Prager, serves as an excellent antiseptic. When vesication is present with inflammation of the skin with the formation of bullæ, strict asepsis must be employed. These vesicles must be punctured at the base, drained of their contents as the serum is irritating in character. The cuticle, however, should not be removed, as it serves as a protection. The area should be thoroughly cleansed with a bichlorid solution from 1-10,000 to 1-20,000, and after such cleansing it should be covered by sterilized rubber tissue over which gauze and bandage are applied. The dressing should be changed only once in every two or three days unless the odor is distinct or the discharge great.

When the area is extensive and is of the second or third degree, the author commends very highly the value of a continuous hot bath at a temperature of 100 F., and kept at such temperature for several days. It gives almost instant relief to the sufferer by protecting the surface from the air and prevents decomposition.

In the treatment of lesions of the third degree which are local in extent, the area should first be thoroughly disinfected with a 1-2,000 bichlorid solution or a 1-40 carbolic acid solution, and at the same time all the necrosed tissue should be removed. This procedure, according to this author, will have to be carried out under an anesthetic. An antiseptic powder in burns of such a degree is preferable to ointments as a dressing, as it has greater power to prevent suppuration.

For this purpose he recommends the following combination:

℞.	Iodoformi 3i	4
	Acidi borici 3vii	28

M. Sig.: Apply locally over the area involved.

This powder can not be used over extensive surfaces for fear of iodoform poisoning, especially in cases of young children. In addition, the author recommends zinc oxid or bismuth as of value as a local dusting powder.

In the treatment of *x*-ray burns the lesion must be kept clean, and all dressings must be thoroughly aseptic, as the weakened condition of the adjoining areas renders these cases much more susceptible to infection. He recommends in these cases an application of a 1 per cent. watery solution of picric acid which lessens the pain and assists in healing. In severer cases the treatment should be along the lines of ordinary burns.

Leweson, in the same periodical, recommends the ordinary lead and opium lotion as a local application in burns of the first degree. In more extensive burns he recommends a solution of aluminum acetate which is very cooling, antiseptic and astringent in its action. This may be used in strength of 6 per cent., applied on gauze and kept moist in order to prevent the gauze from adhering. After applying this solution for 24 hours a powder should replace it as a dressing. For this purpose Leweson recommends the following:

℞.	Zinci oxidi 3ii	8
	Bismuthi subnit. 3iv	15
	Lycopodii 3i	4

M. Sig.: To be applied locally freely.

In burns of the second degree he recommends the linimentum calcis (Carron oil), and after from 24 to 36 hours changing to the boric acid ointment, which should be applied until the upper layer is repaired, to be followed by the application of the foregoing dusting powder or bismuth subgallate.

In burns of the third degree the wounds must be treated as any ordinary wounds. Wet dressings of saturated solution of boric acid are useful. If sloughing is present the wounds should be trimmed, and if stimulation is necessary to hasten healing, the author recommends a dressing of balsam of Peru around the edges as follows:

℞. Balsami Peruviani 3i 4
Olei ricini 3v 20

M. Sig.: Apply locally along the edges of the burns.

If the wounds are clean he recommends the use of silver foil, covering the area completely and in some cases skin grafting must be resorted to.

T. P. Dale, in the same periodical, states that the important things to keep in mind in the treatment of burns are: 1, The relief of pain; 2, absolute cleanliness; 3, the promotion of healing.

In severe cases a hypodermic of morphin may be necessary to relieve the pain, and after the initial shock the following combination will, as a rule, be sufficient to give relief:

℞. Chloralis hydratis.....gr. x 65
Sodii bromidi .....gr. xx-xxx 1|30-2

M. Sig.: To be given at one dose and repeated every three hours in water until relief is obtained.

In some cases a general anesthetic may have to be given on account of the pain. Usually a hypodermic injection of morphin administered 15 minutes before the time for dressing will suffice.

In order to preserve cleanliness moist applications must be applied. The following is recommended for this purpose, the aluminum acetate solution made up as follows:

℞. Plumbi acetatis.....ʒss 15
Aquæ q. s.

And:

℞. Alumini sulph. 3i 4
Aquæ q. s.

M. and add to the lead solution. Sig.: Pour off the solution from the precipitate and apply to the burn on antiseptic dressings.

A saturated solution of boric acid may be substituted for the foregoing, applied lukewarm, and keeping the dressings constantly moist.

Dale recommends that the wound be cleansed daily with a 50 per cent. solution of hydrogen peroxid to aid in the removal of any secretions, to be followed by the application of moist dressings.

To promote healing, when the granular surfaces are fairly healthy he recommends an astringent ointment as follows:

℞. Zinci oxidi 3i 4
Petrolati liq. q. s. ad.....ʒi 30

M. Fiat unguentum. Sig.: Apply locally to the part involved.

The following combination is also recommended as a similar dressing:

℞. Ichthyoli 3i 4
Zinci oxidi
Petrolati liq., āā.....3iv 15

M. Fiat unguentum. Sig.: Apply locally.

CONSTITUTIONAL TREATMENT.

In severe cases Prager states that stimulants may have to be administered, such as strychnin gr. 1/30, every four hours, or alcohol and ether given hypodermically. Leweson advises aromatic spirits of ammonia; alcohol in some form; strong coffee; attention to elimination, and the application of heat.

Administration of Lupulin.

As a substitute for opium, which is contraindicated in the treatment of enteralgia on account of the constipation it is liable to produce, Stern, in the *Medical Record*, recommends the employment of lupulin in the treatment of colicky pains. In mild cases he recommends the following combination:

℞. Lupulini .....gr. iiss 15
Acetanilidi .....gr. iss 09

M. Fiat capsula No. i. Sig.: Three such capsules every three hours. Or:

℞. Lupulini .....gr. xl 2|65
Hyoscyaminæ salicylatis .....gr. 1/100 |0006

M. Fiat capsulæ No. xx. Sig.: One capsule every three or four hours.

In nervous individuals suffering from severe attacks of enteralgia the following combination is recommended:

℞. Lupulini .....gr. iv 25
Codeinæ sulph. .....gr. 1/6 01
Atropinæ sulph.....gr. 1/200 0003

M. Fiat capsulæ No. xx. Sig.: One capsule every hour if necessary.

In cases of nervous diarrhea the following combinations are advised:

℞. Lupulini
Strontii bromidi, āā.....gr. iiss 15

M. Ft. capsula No. i. Sig.: Two such capsules three to five times a day. Or:

℞. Lupulini .....gr. v 30
Pulv. ipecacuanhæ.....gr. 1/3 02

M. Fiat capsula No. i. Sig.: One such capsule four to six times a day.

In order to lessen tenesmus and decrease the pain the following combination is recommended:

℞. Argenti iodidi.....gr. iii 20
Pulv. belladonnæ fol.....gr. iss 09
Lupulini .....gr. xv 1

M. Ft. suppos. No. x. Sig.: One suppository at bedtime and, if necessary, one also at midday, to be inserted as high up in the rectum as possible.

Medicolegal

Malpractice and Aggravation of Damages in Injury Cases.

The Supreme Court of Minnesota says, in the personal injury case of Viou vs. Brooks-Scanlon Lumber Company, that the mere fact that injuries caused by the negligence of the person sought to be charged have been increased by the negligence of an attending physician does not relieve that person of consequent liability. The defendant and the physician in such a case are not joint tort-feasors (wrongdoers); there is concert neither in project nor in action between them. Each is individually liable. Their several liabilities do not prevent recovery from either or both, although they may necessitate separate proceedings to enforce the injured person's right to sue. Indeed, there are authorities which hold that the injured person may recover from the negligent defendant the full amount of his actual damages, although they may have been aggravated by the malpractice of the physician whom he employed, and whose directions he followed in the exercise of due care. The court, however, finds it unnecessary in this case to pass on the correctness of this rule, but it holds that the fact that, before suit is brought against the negligent defendant, the injured person settles a claim against his attending physician for malpractice does not operate to relieve the party originally guilty of negligence of liability.

In this case the plaintiff had a tram car fall on him, striking him across the back and hip. He settled a claim for malpractice by the physician who treated his injuries caused by the defendant's negligence for $242.40. The judge charged the jury: "The plaintiff having settled with his attending physician for alleged improper treatment, he can not recover of the defendant for any aggravation of damage caused by the doctor's improper treatment. The plaintiff can only recover such damages as proximately result from the defendant's negligence aside from any aggravation of damages caused by the negligence of the attending physician. For any condition from which the plaintiff is now suffering and which is to be referred to improper treatment by his attending physician, he has received satisfaction and he can not recover of this defendant therefor." A verdict of $12,500 was reduced by the trial court

to $8,500, which was accepted by the plaintiff. The Supreme Court holds that the charge quoted contained no just ground of complaint by the defendant, and that the final award of damages was not excessive nor void, because the plaintiff did not bear the burden of tracing his damages to the defendant as their proximate cause.

Nor was the verdict void because it rested on mere conjecture. The difficulty of eliminating from the aggregate damages that part which is due to the malpractice of the physician is admittedly great; but it is not greater than occurs, for example, in actions against joint tort-feasors. Nor is it greater than is involved in more nearly analogous cases of aggravated damages, as where the plaintiff was guilty of negligence in failing to exercise due care in securing medical or surgical aid (Louisville, etc. R. Co. vs. Falvey, 104 Ind. 409), or as where he has negligently failed to comply with the directions of his attending physician (Keyes vs. Cedar Falls, 107 Iowa, 509), or as where his own negligence generally has increased his damages (C. & E. R. R. Co. vs. Meech, 163 Ill. 305; Fullerton vs. Fordyce, 144 Mo. 519; Plummer vs. City, 79 Mo. App. 439; Throckmorton vs. M. K. & T. Ry. Co., 14 Tex. Civ. App. 222), and see Strudgeon vs. Village, 107 Mich. 496. In all these cases cited there has been allowed recovery of damages of which the defendant was the proximate cause, excluding the aggravation of damages due to negligence of the plaintiff. It is inevitable that the determination of damages in all cases of personal injuries is indefinite and unsatisfactory. In no such case is a mathematical calculation possible. The matter must rest largely in the exercise of good judgment by the jury and of the sound discretion of the courts. The result is as close an approximation to justice as is permitted by our system of jurisprudence. The charge was within the spirit of the authorities cited and of the authorities on the general subject.

Points About Law Relative to Vaccination.

The Supreme Court of Pennsylvania, speaking through Chief Justice Mitchell, says that the substantial question in the case of Stull vs. Reber and others, was whether the act of 1895 requiring the exclusion from the public schools of children who have not been vaccinated, is a valid exercise of the police power of the state. It has been twice so decided by this court. In Duffield vs. School District of Williamsport, 162 Pa. 476, a similar regulation, not even enacted by the legislature, but enforced by the school directors under an ordinance of the city of Williamsport, was held valid. And in Field vs. Robinson, 198 Pa. 638, this very statute was held constitutional. However, it appeared to be thought that because the decision was given in a brief opinion "per curiam" (by the court) the subject was not fully considered. But the proper inference is precisely the reverse, that the conclusion was so perfectly clear to the whole court that it did not require any extended argumentative support. After these two decisions the question ought to have been considered as closed.

The terms of the act applying expressly to the "several municipalities" of the state, it was argued that they did not include school districts in townships and, therefore, made an unwarranted distinction in regard to such districts. But the separate classification of school districts in cities and boroughs with reference to public health where population is dense and the danger of contagion great would not be unconstitutional. However, this act is in no proper sense a regulation of school districts. What bearing it has on schools and school districts is altogether incidental to them as constituents of the community. The constitutional restrictions on special legislation apply to direct legislation, not to the incidental operation of the statutes constitutional in themselves on other subjects than those with which they directly deal.

As to the contention that the constitutional provision requiring the maintenance of an efficient system of public schools wherein all children above the age of 6 years may be educated is violated, it is sufficient to say that this article, like all others, must be construed and applied in connection with other fundamental governmental powers. The schools and school children, important as they are, are only fractions of the community and the police power of the commonwealth in the preservation of the public health must, if necessity arises, sacrifice the less to the greater interest. Salus populi suprema lex (the welfare of the people is the supreme law). If a child manifestly suffering from smallpox in its contagious state should be excluded from school, it is hardly conceivable that the propriety of such action should be questioned. At what period before or after the outbreak of the disease the right of exclusion should arise is a legislative, not a judicial question.

Nor does the court think that sections 11 and 12 of the act, which act is entitled "for the more effectual protection of the public health in the several municipalities of the commonwealth," should be read together, and the right under section 12 to exclude unvaccinated children be confined to the schools in the districts mentioned in section 11, namely, those in which smallpox is actually prevalent. There was a finding in this case that there was not, and had not been for a period of about 40 years, any person in the borough, or within many miles thereof, suffering from smallpox (variola or varioloid). It was argued that this feature distinguished the case from those before decided by this court. But the court thinks that the legislature may well have had in mind that the good fortune of such a community may not continue indefinitely. Immunity for 40 years in the past affords no guaranty of immunity for even 40 days in the future if a chance visitor from an infected locality or a borough resident returning from a visit to such locality, should bring with him the germs of infection. Section 12 is precautionary and preventive, and it is an old and sound maxim that an ounce of prevention is worth a pound of cure.

There is one hardship in section 12 that may deserve consideration with a view to possible remedy. The court below found as a fact "that occasionally it is beyond the power of children of school age, as well as adults, to be vaccinated, although they may not previously have had smallpox nor previously been vaccinated; that even repeated attempts to perform the operation of vaccination on such children or adults is without effect, and vaccination will not take. In such cases vaccination is not successful and a physician can not certify that such child or adult has been successfully vaccinated." The health authorities, state or local, might well consider whether they have power to make a regulation as to what should be deemed a successful vaccination or its equivalent; whether the ratio of such immune children is of sufficient importance to justify the exercise of such power if possessed, and whether such regulation would be undesirable as affording opportunity for the evasion of the statute. The latter, however, are medical and administrative, rather than judicial, questions.

Lastly; it was argued that, construing section 12 as the court has done, it authorizes a trespass on the reserved rights of the individual which are beyond the reach of even the police power. Vaccination, it was said, is the infliction of a disease, cowpox, on the subject, and if that can be done irrespective of his consent, then the next step may be to require submission to inoculation with antitoxin or serum for diphtheria, tuberculosis, cancer, etc. But it will be time enough to consider such matters when they arise. At present the vast preponderance of opinion among intelligent and educated people, under the guidance of the best medical authority, is that vaccination is a highly useful ameliorative if not always a preventive of one of the greatest scourges that have in past times afflicted humanity, and that the regulation of it by statute is not only a justifiable but a wise and beneficent exertion of the police power over the public health. When the legislature goes beyond that into new or more debatable fields, it will be time enough to consider the limits of its power.

One expression of the court below, and in some of the cases cited in the argument, requires a passing note. The act is not a penal statute. It is a broad, general act relating to the health of the whole population of the commonwealth. It is not, therefore, to be construed or administered by the rigid technical rules applicable to penal laws, but fairly according to its intent, neither narrowing it to the letter, to the exclusion of cases clearly within such intent, nor stretching it beyond its legitimate scope to cover matters not clearly meant to its intent, neither narrowing it to the letter, to the exclu-

rights and privileges and, therefore, specially requiring a common sense administration.

Current Medical Literature

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

Medical Record, New York.

November 3.

1 *The X-ray in the Study of Congenital Malformations. J. W. Pryor, Lexington, Ky.
2 *Importance of the Treatment of Chronic Otorrhea. S. Oppenheimer, New York.
3 *Suppression of Tuberculosis. J. B. Nichols, Washington, D. C.
4 *Enucleation; Some Uncalled-for Disfiguring Operations Resulting from Failure to Recognize Accessory Sinus Disease. H. M. Fish, New York.
5 *Contractures and Muscular Atrophy. G. Norström. New York.
6 When is "Early" in Operating for Appendicitis? A. M. Pond, Dubuque, Iowa.
7 *Modern Treatment of Intracapsular Fractures. W. L. Hunt, Bangor, Me.
8 *Method of Operating on the Lip. C. F. Buckley, Brooklyn, N. Y.

1. **X-Ray in Study of Congenital Malformations.**—Pryor declares that it would be difficult to estimate the value of the *x*-ray as a means of diagnosis. This method is particularly useful in the case of bone injuries; and in congenital malformations it is the only positive means of making an exact anatomic diagnosis. He has examined two cases of polydactylism.

2. **Importance of Treatment of Chronic Otorrhea.**—Oppenheimer states that destruction of the mastoid interior is by far the most frequent result of untreated otorrhea. A not uncommon result is phlebitis and thrombosis of the smaller veins related to the diseased parts. Either the large venous channels, such as the sigmoid sinus or the jugular vein lower down in the neck, may become the seat of purulent thrombosis. Again, the brain tissue with its covering and blood vessels is often affected. Caries and necrosis of the ossicles or temporal bone are present in the larger number of cases of chronic aural suppuration which have not received proper care. The walls of the tympanic cavity, especially of the attical regions, may become involved. The general health of the individual is usually below par.

3. **Suppression of Tuberculosis.**—Nichols declares that the maintenance of sanatoriums accomplishes results along the line of quarantine. Proper care and disposal of the sputa should be rigidly and universally practiced and enforced. Another means of preventing access of the bacilli consists in the control of milk and food supply. As to the efficacy of the registration and allied measures the final criterion must rest on the results of actual trial. Both the health department and practicing physicians have had a part in the reduction of the tuberculosis death rate. The task of stamping out tuberculosis, however, offers enormous difficulties.

4. **Results of Failure to Recognize Accessory Sinus Disease.**—Fish declares that were the ophthalmologist to regard a retro-ocular edema, the involvement of an external muscle, a sluggish pupil, and an idiopathic inflammatory condition about the orbit or within the globe as a symptom of disease of the accessory sinuses, unfortunate enucleations might be avoided, and in many instances the function of the eye be preserved. Fish cites the history of several cases in which failure to recognize accessory sinus disease resulted in the unnecessary disfiguring operation of enucleation.

5. **Contractures and Muscular Atrophy.**—Norström attributes most of his success in the treatment of muscular atrophy to massage.

7. **Treatment of Intracapsular Fractures.**—Hunt reports three cases of intracapsular fracture, in which the Maxwell method of treatment was practiced. By this method a severe injury is turned into a milder one that is not usually fatal, except in the very debilitated. The treatment consists in the old downward extension with adhesive straps with side traction at the groin, carrying a pull upward, outward and forward. This takes up the weight of the thigh to a certain extent, holds it opposite the point of fracture, and draws the capsule like a tight sleeve over the fragments, holding them in place.

8. **Method of Operating on Lip.**—Buckley illustrates his method by a diagram. It is especially useful in cases in which local anesthesia is employed for the removal from the lip of benign growths or of those which are malignant without glandular involvement. A pair of Murphy intestinal anastomosis clamps, with their blades sheathed in rubber tubing to protect the engaged skin and mucous membrane, are employed. The edges of these clamps are placed about three-eighths of an inch from the line of proposed incision. After the anesthetic is injected, the growth is excised. Sutures are inserted, the clamps are removed and the dressing is applied. In this operation no assistant is required.

New York Medical Journal.

November 3.

9 The Scientific Foundation of Modern Treatment of Disease. J. V. Shoemaker, Philadelphia.
10 Plea for Conservatism in Electrotherapeutics, with Remarks on Dosage. A. D. Rockwell, New York.
11 *Rational Treatment of Chronic Constipation. D. H. Murray, Syracuse, N. Y.
12 *Two Unusual Cases of Varix. De W. Stetten, New York.
13 Four Cases of Chronic Atrophic Paralysis. W. W. Lesem, New York.
14 Case of Ruptured Tubal Gestation Sac, with Secondary Attachment of the Ovum to the Cecum. W. H. Wells, Philadelphia.
15 Use of the Cold Wire Snare in the Removal of Faucial Tonsils. H. P. Moseley, New York.
16 *Possible Dissemination of Tubercle Bacilli by Insects. S. E. Weber, Lancaster, Pa.
17 Artificial Cycloplegia in Errors of Refraction. M. L. Benoit, New York.

11. **Treatment of Chronic Constipation.**—When operations do not cure and when surgical procedures are unnecessary, Murray employs the following treatment, which is given every fourth day: The patient is placed in the Sims position, an electrode after the pattern of Ewald with a perforated soft rubber shield is passed into the sigmoid. The rectal electrode is connected from its binding post to the positive pole of the battery, and rubber tubing connects it also with an irrigator, filled with normal saline solution, which is elevated about three and a half feet above the patient. The rapidity of the flow of normal saline is controlled by a stop cock in the electrode. The negative electrode is made of sheet lead large enough to cover the abdomen, and is well padded with a towel wrung out of hot normal saline solution. The electric saline douche washes all fecal débris and mucus from the intestinal mucosa, leaving a clean surface for medication.

This part of the treatment occupies from ten to twelve minutes, and from 30 to 64 ounces of normal saline solution is thrown into the sigmoid and descending colon. The patient is then allowed to go to the toilet, where a free evacuation takes place, leaving the intestinal mucosa clean. After this the patient returns to the table for the last half of the treatment. This consists in throwing one ounce of an emulsion of olive oil (1 pint), iodoform (1 dram), bismuth subnitrate (2 ounces) into the descending colon through a Wales bougie or a special tube which Murray has devised. This is followed by from one to two ounces of some dilute astringent or antiseptic solution of hydrastis. The iodoform is omitted from the emulsion if the patient has an idiosyncrasy that would make its use inadvisable. After throwing the medicament into the sigmoid, the patient is kept for about ten minutes on the table, which is so tipped that the hips are elevated considerably, allowing the emulsion to gravitate high up in the colon.

When this treatment is begun, patients are ordered to stop the use of all laxatives. They are instructed to go to the toilet at a regular hour each day and to make an honest effort to stool, taking 15 or 20 minutes, if necessary, using gentle pressure, but never to strain. Failing in this, the patient is directed to use an enema of plain water or normal saline in order that the bowel may be educated to empty itself at a regular time. While under this treatment patients are allowed liberal diet. Excess of pastry, confections and condiments are prohibited; and they are directed to drink at least six glasses of water daily.

12. **Unusual Cases of Varix.**—The first case reported by Stettan is one of progressive phlebectasis of the lower extremity which had existed since birth. The development of painful and sensitive purpuric spots and edema of the ankle, with slight interference in walking, were the main symptoms at first. Later, the patient suffered considerably from the forma-

tion of painful thrombi in the dilated veins. The second case was one of obliterating endophlebitis secondary to typhoid.

16. **Dissemination of Tubercle Bacilli by Insects.**—Weber is convinced that tubercle bacilli after being expelled from the respiratory tract of a cow through the act of coughing may be disseminated by insects, especially the *Clothilla occlloria*. In a series of microscopic examinations of the contents of the stomach and alimentary canal of these insects Weber confirmed his suspicions by finding a specimen harboring the tubercle bacilli. The discovery was made only after patient search through some 3,000 specimens which were taken from mangers, feed chests and other surroundings where tuberculosis was present in cows. Weber says:

As an example in the transmission in bacteria, let us watch the manger of a tuberculous cow depositing sputum containing tubercle bacilli mixed with meal, and drying on the woodwork about her stall. Now if a swarm of these insects comes along, what happens? They are voracious feeders, and in a remarkably short time will chew up and fill their stomachs with the crusted admixture of saliva, sputum, and meal attached to the troughs and other surroundings, as the case may be. These insects are very shy and run very rapidly if disturbed, and may be followed to the farthest corner of the barn, or even to the haymow and granary above it in a very few minutes. They are extremely delicate and may be easily crushed, which occurs in the hay and other feed. By that means the contents of their stomachs may be conveyed to other animals. If such ingestion of contaminated material happens to be about the time of hibernation, the danger is much increased, for then we find them in the hay by myriads and also in straw. At this period they may also be found in the stem of timothy and in clover heads, where they are protected from losing their resting place by handling of the hay. I have found the species of the genus *Clothilla* (Westwood) and *Lepinotus inquilinus* (Hayden) common in all kinds of buildings, but less abundant in the stables of cities than in the country barn.

Boston Medical and Surgical Journal.

November 1.

18 The Growth of Truth as Illustrated in the Discovery of the Circulation of the Blood. W. Osler, Oxford.
19 *Classical Symptoms of Hysteria. P. Janet.
20 *Flexible Balancing Shoes. L. R. G. Crandon, Boston.
21 *Epidemic Cerebrospinal Meningitis. E. L. Hunt, Worcester, Mass.

19. **Classical Symptoms of Hysteria.**—In this paper Janet discusses the fugues or ambulatory automatisms, and the polyideic somnambulism; the double personalities, and the fits, sleep states and artificial somnambulisms.

20. **Flexible Balancing Shoes.**—Crandon makes a plea for wiser shoeing, to establish a method of shoeing which will allow free and natural foot action. Such a shoe should be flexible. The crutch or splint effect must be eliminated. The shank of the shoe should be of leather only. This flexibility, he says, allows the foot to accommodate itself to uneven surfaces, and gives freedom to plantar motion, which is desired. Fixed planes in the shoe should be abolished. The shoes should always be low cut to allow free ankle movement. Crandon places main dependence for reform and foot education on barefoot walking in the grass, barefoot toe and heel exercises morning and night, exercises of grasping action with bare feet in the air, and passive motion and massage to restore flexibility. For the patient who is not carrying too much weight for his muscles, for the patient who has potentiality left in foot and calf muscles, this treatment suffices.

21. **Epidemic Cerebrospinal Meningitis.**—The results of Hunt's study are summarized as follows: 1. The *Diplocoecus intracellularis meningitidis* of Weichselbaum is the essential etiologic factor in epidemic cerebrospinal meningitis. 2. The diagnosis may be made positively in nearly all cases by the examination of the spinal fluid obtained during life by lumbar puncture, and in no other way. 3. It is probably an inhalation disease and is, therefore, preventable.

St. Louis Medical Review.

October 27.

22 Note on Boric Acid Relative to Appendicitis. R. Harrison, London.
23 Origin of the Custom of Salutation After Sneezing. J. Knott, Dublin, Ireland.

Lancet-Clinic, Cincinnati.

November 3.

24 Cystic Irritation in Women—Some Considerations for its Management. C. D. Palmer, Cincinnati.

Annals of Surgery, Philadelphia.

October.

25 *Filariasis. J. H. Cunningham, Jr., Boston.
26 Radical Cure of Femoral Hernia. W. B. Coley, New York.
27 *Cysts of the Urachus. W. R. Weiser, Springfield, Mass.
28 *Value of the Indigo-Carmin Test as an Aid in the Diagnosis of Partial and Total Ureteral Occlusions. E. Beer, New York.
29 *Arterlovenous Anastomosis. J. C. Hubbard, Boston.
30 *Prostatectomy in Two Stages. C. H. Chetwood, New York.
31 *The Female Prostate. C. E. Barnett, Ft. Wayne, Ind.
32 *Teratomata of the Inguinoscrotal Region. D. C. Hilton, Lincoln, Neb.
33 *A Method of Drainage of the Ankle Joint. P. R. Bolton, New York.
34 *Sarcoma and Myoma of the Stomach. J. L. Yates, Milwaukee, Wis.

25. **Filariasis.**—Cunningham reports a case which was treated surgically. He says that the relatively large number of cases treated medically, and the little benefit so obtained, leads one to hope that more cases may receive surgical treatment. Even though the parent worms are not found, as in Cunningham's case, they may be retained within the diseased mass and escape detection, the embryos disappearing from the blood, and the individual remaining free from his symptoms. On the other hand, when the parent filariæ are known to be left, alleviation of the symptoms has followed by overcoming the stasis and regurgitation of chyle.

27. **Cysts of Urachus.**—Weiser reports three cases which are typical of the more serious type of these cases by reason of their considerable size and their dipping down into, and being adherent to, the pelvic viscera. Their being in each case extraperitoneal, with bladder attachment, makes the diagnosis conclusive. Weiser says that Tait's technic is naturally depended on largely in the treatment. Incision and drainage are the first essentials. A large proportion of these cysts can not be extirpated, and Tait used irrigation and mopping with iodin. In two of his cases Weiser simply irrigated and drained, with good recovery. The detached peritoneum is troublesome, but, as suggested by Douglas, may be sutured back to the parietes, then to omentum, or excised and spread over the gap.

28. **Indigo-Carmine Test of Ureteral Occlusions.**—According to Beer, the cystoscopic study of the behavior of the ureteral orifices does not suffice for the diagnosis of ureteral obstructions. The cystoscopic study of the ureteral jet, especially if the urine is normal, is equally insufficient. Ureteral catheterization *per se* can not determine the presence of ureteral obstruction. Similarly the indigo-carmin test *per se* is as adequate as ureteral catheterization *per se*, because though the ureter be patent, indigo-carmin may not be excreted if the kidney under examination is diseased. On the other hand, ureteral catheterization conjoined with the indigo-carmin test is a very satisfactory method of determining the presence or absence of a ureteral obstruction as well as the degree of patency of the ureter.

29. **Arteriovenous Anastomosis.**—Hubbard reports a case of arteriovenous anastomosis in a man, 80 years old, who came to the hospital for gangrene of the middle toe of the right foot. The gangrene was kept dry, but slowly progressed so that the middle toe sloughed off and the neighboring toes became involved in the process. An arteriovenous anastomosis was done, but an amputation of the leg had to be done four weeks later to remove the gangrenous portion of the foot. Both anterior and posterior tibial arteries contained arterial blood, which spurted out from the cut ends with fairly good force. The veins did not appear to contain any arterial blood.

30. **Prostatectomy in Two Stages.**—Chetwood reports his observations made during the past year in a class of cases of prostatic surgery which may be described as bad risks, or those which go to make the mortality rate of any operator high. A summary of these cases shows that the ages of the patients were, respectively, as follows: 80, 53, 79, 77, 67, 69, 65, 70, the average being three score years and ten. Two of them, in the neighborhood of 80 years, were exceedingly feeble, and were considered questionable risks on this score. One gave evidence of advanced renal implication. Three others were emergencies, in that they had for several days suffered from acute retention relieved by aspiration. One of these had infiltration of urine in the prevesical region and two of them intravesical hemorrhage. Three other patients were soft, flabby, neurotic and more or less broken down in health, and would be classified as poor surgical risks on this account. All of them were submitted to complete radical removal of the prostate, after preliminary drainage, with one exception, in

which instance, on account of the serious kidney complication, the galvano-cautery technic was employed. All of them, up to the present, have done remarkably well, the last reports dating from several weeks to twelve months after operation. Chetwood lays particular stress on the great value of formaldehyd gelatin as a local hemostatic. It is his custom to employ it after all perineal operations, and since its use he has never had serious hemorrhage.

31. **Female Prostate.**—Barnett found, after having made a number of female bladder dissections, that the deep urethral glands of the female were located midway between the neck of the bladder and the external urinary meatus; placed laterally to the urethra, above the vesicovaginal fascia, and having ducts which empty just internal to the external meatus. When hypertrophic, the gland encroached on the bladder neck, the changes in shape during hypertrophy being similar to the male prostate during its outcroppings of lobules. He reports three cases in which these glands were inflamed.

32. **Teratomata of Inguinoscrotal Region.**—Hilton reports one case and reviews the cases previously recorded in the literature.

33. **Drainage of Ankle Joint.**—The plan adopted by Bolton in several more recent cases consisted in excision of the astragalus and the drainage of the ankle through the space so created. The astragalus itself is most accessible through an incision over its head parallel to and to the outer side of the extensor tendons made with the foot strongly adducted. Through this the neck is seized by heavy forceps and drawn on while the attached ligaments are divided and the bone freed and removed. Counter openings can now be made behind on either side of the tendo Achillis and drainage tubes placed in them. After thoroughly cleansing the joint cavity and taking care of the bone injuries, the space is packed with gauze through the anterior opening, and the latter kept open by the end of the gauze packing. The foot is then brought into proper position and enveloped along with the leg in a bulky dressing and placed in a gutter splint. The first dressing is made about the fourth or fifth day, not sooner, unless special reasons develop, and subsequent dressings at intervals of about three days. The final result shows an ankle in which there is slight motion, the foot at right angles to the leg, and the distance from the knee to the under surface of the heel shortened from about three-eighths to one-half inch. Since adopting this method Bolton has not seen a cellulitis of the leg develop and he has not been compelled to amputate in a single instance.

34. **Sarcoma and Myoma of Stomach.**—Yates reports three cases from Ochsner's clinic which illustrate the early development of a myoma as well as the two main clinico-pathologic groups into which primary gastric sarcoma may be divided, the one clinically indistinguishable from carcinoma, the other relatively benign and at times capable of preoperative recognition. Yates concludes that sarcoma of the stomach, though an uncommon affection, is less rare than has been supposed. The diagnosis of the round-cell varieties is practically impossible, though its existence under certain conditions might be suspected. Those of the spindle-cell type should be frequently recognized and often suspected. In either case the early recognition of a purely surgical condition is in the majority of instances easy. Since prompt radical treatment offers not alone the best, but also the only hope of permanent relief, without a forbidding immediate mortality (which now should not exceed 10 per cent.), procrastination here, as in all cases of suspected malignant disease, is in keeping neither with science nor humanity.

University of Pennsylvania Medical Bulletin, Philadelphia.
October.

35 *Abscess of the Brain. W. G. Spiller, Philadelphia.
36 Mett's Method for Estimating the Activity of Pepsin. J. Sailer and C. B. Farr, Philadelphia.
37 *Aneurism of the Arch of the Aorta Producing a Broncho-Esophageal Fistula. A. O. J. Kelly and R. S. Lavenson, Philadelphia.
38 *Floating Kidney: Its Significance and Treatment, with Special Reference to a Method of Performing Nephropexy. H. D. Beyea, Philadelphia.
39 *Study of the Nature of the Micro-Organisms Found in the Mouths and Throats of Healthy Persons. J. B. Rucker, Jr., Philadelphia.

35. **Abscess of the Brain.**—Spiller reports five cases. The first case, one of sinus thrombosis with the symptoms of brain abscess, occurred in a young man, 15 years of age, who made a complete recovery after operation. The second case, one of otitis media of long standing with symptoms of brain abscess of short duration, occurred in a man of 68 years of age. Death ensued three days after the evacuation of a cerebral abscess in the sphenotemporal bone. The third case, a cerebellar abscess from occlusion of the posterior interior cerebellar artery, was not recognized during the patient's life. At the autopsy there was found embolism and aneurism of the left posterior inferior cerebellar artery, with fibrosis of the left cerebellar hemisphere and two abscesses of the left cerebellar lobe. The fourth case also came to the postmortem table, when it was found that there was a tuberculous meningitis, with miliary tuberculosis of both lungs, which had caused symptoms of brain abscess. The fifth case was one of abscess of the left temporal lobe. The abscess was evacuated, but the patient died.

37. **Aneurism of Arch of Aorta.**—The patient, whose case is reported by Kelly and Lavenson, was a woman 37 years of age, who began to have pain in the right side of the chest about two and one-half months before entering the hospital without any known cause. This pain was worse on exertion and was especially aggravated by using the right arm. It was at times relieved by lying down, but grew progressively worse. About six weeks before entering the hospital the patient first noticed a protuberance of her chest which was very tender. There was some dyspnea, palpation and a little cough. All the symptoms in the case were characteristic of an aneurism of the arch of the aorta. The patient died almost a year after the onset of her trouble. As the sternum was removed there was found to be adherent to it, at the junction of the second costal cartilage with the sternm, an aneurism arising from the junction of approximately the ascending and the transverse portions of the arch of the aorta. Its main axis was anteriorly in the direction of its attachment to the sternum. It contained a grayish-red laminated clot which projected into the left ventricle, where it was attached to the musculi pectinati. On the posterior wall of the ascending arch and considerably nearer to the aortic leaflets than the preceding aneurism, was a second aneurism, which, extending posteriorly, compressed the trachea at the level of the bifurcation. The aneurism had broken down the arch of the tracheal rings and had exerted such pressure on the posterior wall as to produce necrosis with a resulting fistula between the left bronchus just below the bifurcation and the esophagus.

38. **Floating Kidney.**—The principle which Beyea believes is demanded in the operation of nephropexy is that in the technic of performance of the operation neither the kidney, parenchyma or fibrous capsule of the kidney should be injured or disturbed by suture or other means, and that no extensive pericapsulitis should follow to form tissue which will contract, press on, or involve the underlying parenchyma. Further, the operation should avoid any cicatricial change in the lumbar incision. The adhesions to the external capsule of the kidney should be just sufficient to maintain the kidney in permanent normal position. Beyea has modified his operation, first described in 1901, by placing the one rubber tube at the extremity of the lower pole so as to secure the kidney in a higher position, just below where it would be impinged on by changes in the size of the liver, therefore, in normal position. This operation has now been performed in at least 50 cases, and a period of from seven and one-half years to a few weeks have elapsed, and in no instance has a recurrence or symptom referable to the operation been reported. There has been no mortality.

39. **Micro-organisms in Mouths and Throats of Healthy Persons.**—All the throats examined by Rucker contained streptococci and diplococci, showing them to be normal inhabitants of the normal mouth and throat. *Streptococcus mucosus* was found in 70 per cent. of all cases. Atypical pneumococcus occurred in 50 per cent. of the 20 cases. Typical pneumococcus was present five times or in 25 per cent. of the number of cases examined. Organisms of the same species may behave differently in their action on starch if the organisms are from different sources.

Pennsylvania Medical Journal, Athens.

October.

40 *Address of the President, Medical Society of Pennsylvania; Duties and Advances of the Medical Profession. W. H. Hartzell, Allentown.
41 *Oration on State Medicine, Medical Society of Pennsylvania. S. G. Dixon, Ardmore.
42 The Trained Nurse in the Public Schools, as a Factor in the Education of the Children. S. W. Newmayer, Philadelphia.
43 *Salt-Free Treatment of Epilepsy Apropos of Thirty-Seven Cases. A. Gordon, Philadelphia.
44 Prophylaxis and Management of Prostitution. D. Lewis, Chicago.
45 *Abscess of the Brain. W. G. Spiller, Philadelphia.
46 Heart Tonics and Stimulants. R. Myers, Huntingdon.
47 Infant Feeding. R. J. Hemminger, Meyersdale.

40.—See THE JOURNAL, Sept. 29, 1906, page 1048.

41, 43.—See THE JOURNAL, Oct. 20, 1906, page 1322.

45.—This article also appeared in the *University of Pennsylvania Medical Bulletin;* see abstract No. 35.

Colorado Medicine, Denver.

October.

48 *President's Address, Colorado State Medical Society. H. G. Wetherill, Denver.
49 Diagnosis of Acute Abdominal Disorders. J. N. Hall, Denver.
50 Tertiary Syphilis. F. G. Mohlan, Pueblo, Colo.

48.—See THE JOURNAL, Oct. 27, 1906, page 1403.

Illinois Medical Journal, Springfield.

October.

51 Cytodiagnosis of Pleuritle and Perieardial Fluids of All Sorts. A. A. Goldsmith, Chicago.
52 Empyema. L. C. Taylor, Springfield.
53 *General Symptomatology and Physical Signs of Pleuritis. C. S. Williamson, Chicago.
54 Perieardltis; General Symptoms and Physical Signs; Mechanical Effects of Fluid Distension of the Sac. C. A. Elliott, Chicago.
55 Diagnosis of Effusive Pleurisy and Perieardltis. E. F. Wells, Chicago.
56 Treatment of Pleurisies and Pericarditis. N. S. Davis, Chicago.
57 Pathogenesis of Ascites. T. Tieken, Chicago.
58 Symptoms and Physical Signs of Peritonitis. C. L. Mix, Chicago.
59 Differential Diagnosis of Peritonitis and of Its Various Forms. E. K. Kerr, Chicago.
60 Pathogenesis, Etiology and Pathology of Peritonitis. W. A. Evans, Chicago.
61 *Disease in the Aged. W. H. Curtis, Wilmington.
62 Surgical Aspects in the Aged. G. E. Rosenthal, Quiney.
63 *Manifestations of Rheumatic Infection in Children. C. M. Wood, Decatur.
64 *Hemangioma and Its Treatment. C. Beck, Chicago.

53, 61, 63.—See THE JOURNAL, June 9, 1906, page 1787.

64.—See THE JOURNAL, June 23, 1906, page 1965.

The Laryngoscope, St. Louis, Mo.

October.

65 *Results Obtained from the Radical Operation for Chronic Purulent Otitis Media. E. B. Dench, New York.
66 Cavernous Sinus Thrombosis in Children Following Mastoid Inflammation. H. G. Langworthy, Dubuque, Iowa.
67 What Is the Present Status of the Operative Treatment of Deviation of the Nasal Septum? J. R. Winslow, Baltimore, Md.
68 *Climatic Treatment of Tuberculosis of the Upper Air Tract. W. Freudenthal, New York.
69 *Is It Necessary to Open the Antrum in Every Case of Mastoid Operation? G. F. Cott, Buffalo, N. Y.
70 Case of Xanthoma Multiplex, with Interesting Throat Complications. J. E. Rhodes, Chicago.
71 Two Cases of Radical Operation on the Maxillary Sinus and Ethmold. L. R. Culbertson, Zanesville, Ohio.
72 Sarcoma of the Nose. R. F. Miller, Sherman, Texas.
73 Nasal Sarcoma. J. A. Watson, Minneapolis.
74 A Trocar-Pointed Antrum Drill. H. R. Boetteher, Chicago.
75 The Maxillary Sinus Operation that Has Yielded Me the Best Results. C. Jackson, Pittsburg, Pa.
76 A Practical Tongue Depressor. W. W. Bulette, Pueblo, Colo.

65.—This article appeared in the *Annals of Otology, Rhinology and Laryngology* for September; see also abstract in THE JOURNAL, July 21, 1906, page 230.

68.—This article also appeared in the *Annals of Otology, Rhinology and Laryngology* for September.

69.—See THE JOURNAL, Sept. 22, 1906, page 959.

Annals of Ophthalmology, St. Louis, Mo.

July.

77 Cases of Associated Coloboma Oculi and Arteria Hyaloidea Persistens. D. De Beek, Seattle, Wash.
78 Ophthalmic Sins of Hospitals. G. M. Gould, Philadelphia.
79 Hysterical Binocular Amaurosis. F. L. Henderson, St. Louis.
80 A Life and Career Blighted by Ignored Eyestrain. G. M. Gould, Philadelphia.
81 Case of Choroidoretinal Selerosis with Spontaneous Dislocation of the Lenses, Complete and Incomplete. W. T. Shoemaker, Philadelphia.
82 A New Contribution to Congenital Pigmentation of the Cornea. A. Kraemer, San Diego.
83 Progress of a Year in the Recognition of Eyestrain Reflexes. G. M. Gould, Philadelphia.
84 Center of Motion and the Angle Alpha. L. Howe, Buffalo.
85 Gummata of the Cornea. A. Terson, Paris.

Annals of Otology, Rhinology and Laryngology, St. Louis, Mo.

September.

86 Results Obtained from the Radical Operation for Chronic Purulent Otitis Media. S. Mac. Smith, Philadelphia.
87 *Id. E. B. Dench, New York.
88 Ocular Symptoms of Nasal Origin. H. Hastings, Los Angeles, Cal.
89 *Herpes Zoster Auris. D. T. Vail, Cincinnati.
90 *Sarcoma of the Nasopharynx—Treatment by Injections of Adrenalin. J. E. Rhodes, Chicago.
91 *Infective Sigmoid Sinus Thrombosis. H. B. Ellis, Los Angeles.
92 Three Fatal Cases of Meningitis with Peculiar Ear Symptoms. W. H. Roberts, Pasadena, Cal.
93 The Nasal Turbinate as a Vasomotor Index. J. A. Babbitt, Philadelphia.
94 Postoperative Meningitis. T. J. Harris, New York.
95 Modified Blood Clot in Mastoid Surgery. W. S. Bryant, New York.
96 *Medical Treatment of Tuberculosis of the Upper Air Passages and the Ear. W. C. Bane, Denver.
97 Climatic Treatment of Tuberculosis of the Upper Air Tract. W. Freudenthal, New York.
98 Aspiration of the Tympanic Cavity in Otitis Media. P. Fridenberg, New York.
99 Morphology and Embryology of the Nasal Fossæ of Vertebrates. L. Dieulafe.
100 Surgical Treatment of Tuberculosis of the Upper Air Passages and the Ear. R. Levy, Denver.

87 and 91.—See THE JOURNAL, July 21, 1906, page 230.

89.—See THE JOURNAL, July 28, 1906, page 299.

90.—See THE JOURNAL, Aug. 11, 1906, page 430.

96.—See THE JOURNAL, July 28, 1906, page 300.

Philippine Journal of Science, Manila.

September.

101 *Studies in Beriberi. M. Herzog, Manila.
102 Notes on Four Birds from Luzon and on a Species of Doubtful Occurrence in the Philippines. R. C. McGregor, Manila.
103 A New Genus and Species of Culicidæ. C. S. Banks, Manila.
104 Change of Name in Coccidæ. C. S. Banks, Manila.

101. **Beriberi.**—Herzog concludes that beriberi, kakke or neuritis multiplex endemica is an acute, subacute or chronic disease, generally only prevalent in certain well-defined territories. It is clinically characterized by disturbances of circulation, of motion and of sensation. Its most pronounced anatomic lesions are, first, hypertrophy and degeneration of the myocardium and degeneration of the peripheral nerves and skeletal muscles, and second, localized or more or less general edema, parenchymatous degeneration of the kidneys, liver and interstitial hepatitis. Beriberi is neither primarily a nutritional disturbance nor a simple intoxication like lead, alcohol, arsenic or similar intoxications accompanied with multiple peripheral neuritis, but is an infectious disease. Herzog states that his animal experiments and blood examinations appear to indicate very strongly that none of the claims brought forward for the discovery of a specific micro-organism for the disease can be looked on as substantiated. He expresses the belief that beriberi is due to an organism which gains entrance into the human body, either directly or through food, and there produces a toxin which in character and effect is similar to the diphtheria or tetanus toxin and which by an accumulative action gives rise to the well-characterized anatomic and histologic lesions of beriberi.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal.

October 20.

1 *Management of Advanced Heart Disease. R. Saundby.
2 *Rubber Teat and Deformities of the Jaws. T. F. Pedley.
3 *Combined Antrum Plug and Artificial Denture. A. S. Hayman.
4 Filarial Larva in the Blood of a Blackbird. W. St. C. Symmers.
5 Observation of Spirochetes in Yaws and Granuloma Pudendi. A. MacLennan.
6 Blood Pressure in Relation to Disease. P. M. Dawson, G. A. Gibson, W. Broadbent, T. C. Allbutt, J. Mackenzie, etc.
7 Clinical Manifestations, Visceral and General, of Arteriosclerosis. A. Stengel.
8 *Treatment of Typhoid Fever. W. B. Thistle.
9 *Influence of Early Feeding in Treatment of Typhoid. F. J. Smith.
10 *Syringomyelia. W. G. Spiller.
11 Bearing of Philosophy on Psychiatry. J. J. Putnam.
12 Experimental Cerebrospinal Meningitis and Its Serum Treatment. S. Flexner.
13 Paracentesis of the Pericardium. G. Dock.

14 *Influence of Bodily Posture on the Position of the Heart. R. D. Rudolf and S. Cummings.
15 Gastric Neurasthenia. H. A. MacCallum.
16 Pre-Insane Stage of Acute Mental Disease. C. Meyers.

1. **Management of Advanced Heart Disease.**—Saundby states that so long as a patient with heart disease is well enough to take exercise it is better that he should do so than be confined to bed. He has seen the best results in the treatment of a weakened myocardium from the systematic use of the Nauheim baths and the exercises devised by the Brothers Schott. Heart disease should be treated by rest in a more or less recumbent position: 1, when there is a certain amount of dropsy present; 2, if walking brings on severe dyspnea or pain; 3, if the state of the circulation is so bad as to cause danger of syncope. The meals should be small in bulk, composed of non-irritating and easily digestible food containing a small quantity of proteid. A mixed diet is preferable. These indications are fulfilled by five small meals daily at intervals of about two and a half hours, avoiding the use of smoked and salted meats, cooked fats, fried and greasy dishes, uncooked fruits, raw vegetables, condiments and spices, and restricting the use of animal food to four ounces daily, which should be easily digestible, such as whitefish, chicken, partridge, lamb, mutton, calves' head and feet, or sweetbreads. If the patient's teeth are defective, the meat must be minced or pounded, as there is no more frequent cause of indigestion than insufficient mastication. Tea and coffee must be prescribed with caution. Alcohol should be used sparingly as an article of diet. It is unnecessary and often does more harm than good. The use of tobacco should be forbidden.

Among the heart tonics employed Saundby mentions digitalis, strophanthus, nux vomica and strychnin, caffein and theobromin, and tincture of convallaria which, in 15-minim doses in combination with caffein or theobromin, he has found very useful in advanced cases of aortic disease. To produce a permanent unloading of the weight on the heart, Saundby employs erythrol tetranitrate, ½ grain, every four hours, while the patient is awake. Sometimes he combines it with digitalin, giving the drugs alternately, with four hours interval between the doses of each. He has no confidence in belladonna. When the abdominal cavity is full of fluid he says it is better to tap than to waste time with drugs. The judicious use of purgatives is of the greatest service in the treatment of cardiac dropsy, but their action needs watching. Saundby prefers elaterium, ⅛ grain, twice a day. In his experience the value of oxygen is small.

2. **Rubber Teat and Deformities of Jaws.**—Pedley writes on the use of the rubber teat and baby comforter and their giving rise to certain deformities of the jaws, irregularities of the teeth, nasal obstruction and other diseases in infancy and childhood.

3. **Antrum Plug.**—Hayman describes a procedure which he employs in cases of antral empyema which for some reason are unsuited for radical treatment. In these cases all that can be done is to trephine. He prepares a gold plate, fitting absolutely closely to the palate and alveolar ridge, taking special care that the plate is closely applied to the buccal surface of the alveolar ridge, thus preventing access of food to the plug and antral opening. On the upper surface of this closely fitting gold plate is soldered a solid gold pin, one-eighth of an inch thick, of sufficient length to pass freely up into the antrum. On the lower surface of the antral bridge is fitted the necessary tooth to supply the place of the missing first and second molar, and such other teeth may be added to the plate as are required in the ordinary manner. The patient is instructed to syringe with the ordinary antiseptic lotions as may be prescribed by the surgeon, every time the plate is removed and replaced, at least three or four times a day.

8. **Treatment of Typhoid.**—Thistle looks on the early use of purgatives in typhoid as the surest protection against perforation and hemorrhage, and the continued use of them as the most efficient means against dangerous intoxication. When a case of typhoid comes under his care he immediately gives 2 grains of calomel, following by one-half ounce of magnesium sulphate or other saline. This process is repeated day after day, the object being to prevent additional infection and to abstract toxins from the body.

9. **Early Feeding in Typhoid.**—In 113 cases of typhoid treated by Smith 24 patients died, a mortality of 21 per cent. In 4 cases food had been given before the patient died. In the remaining fatal 20 cases no food had been given. The average day of the disease on which eggs and bread and butter were given was the twenty-fourth. The average day of the disease on which fish was given was the thirty-second. The average day on which meat was given was the forty-first. Feeding in the cases treated by the rest of the staff was begun on the thirty-seventh, forty-fourth and fifty-fith days respectively. Dr. Smith's patients remained in the hospital on an average of 48 days. In the cases of the rest of the staff this was 57 days. The rest of the staff treated, during the same period, 1,429 cases, with 235 deaths, a mortality of 16 per cent. Among them 12 patients had had food before death; 223 died before food was given. Among Smith's 113 cases, thrombosis of veins, periostitis and abscess formation occurred in only 2 per cent. In the cases treated by the rest of the staff these complications occurred in over 10 per cent. Among Smith's cases there were 16 relapses, 14 per cent. In the case of the rest of the staff there were 203 relapses, 14 per cent.

10. **Syringomyelia.**—Spiller reports a case of syringomyelia in which the lesion extended from the sacral region of the spinal cord through the medulla oblongata, right side of the pons and right cerebral peduncle to the upper part of the right internal capsule.

14. **Posture and Position of Heart.**—The points brought out by Rudolf and Cummings are summarized as follows: 1. The normal heart tends to change its position in the chest under the influence of gravity, being nearer to the sternum in the vertical and prone postures than in the recumbent one. 2. As a result of this, the cardiac dulness is altered in the different postures, being lower and wider in the upright than in the recumbent positions. Also the sounds of the heart tend to become louder in the vertical than in the recumbent position. 3. The degree of mobility of the heart is very different in different individuals, in some being scarcely apparent while in others it is marked. Adults show it more than children, and it is especially evident in certain diseases—for example, chlorosis, neurasthenia and hypochondriasis. 4. In all cases in which accuracy is necessary the heart should be examined in both the vertical and the recumbent postures.

The Lancet, London.

October 20.

17 Then and Now, in Surgery. C. A. Ballance.
18 Medical Books. N. Moore.
19 *Enlarged Veins in Children. A. G. Gibson.
20 *Strangulation of the Appendix Vermiformis in Hernial Sacs. H. S. Clogg.
21 Detection of Sugar in Urine and Its Significance in Connection with Life Assurance. A. M. Kellas and F. J. Wethered.
22 *New Aspect of the Pathology and Treatment of Leprosy. R. S. Black.
23 *Method of Taking Impressions of the Weight-Bearing Surface of the Foot. W. D. Lawrie.
24 Oral Sepsis in Operations on the Throat. W. Wingrave.

19. **Enlarged Veins in Children.**—Records have been kept by Gibson of 14 cases showing visible venules together with dilated jugulars which behave abnormally on respiration. All these patients suffered from general debility, wasting and listlessness. Seven cases occurred in males and 7 in females. The ages ranged from 4 to 10 years. In 57 per cent. there was a history of tuberculosis in the family; visible veins on the chest were present in 92 per cent.; downy hair in 42 per cent.; a Eustace Smith retraction murmur in 71 per cent., and palpable glands in the neck in 64 per cent.

20. **Strangulation of Appendix in Hernial Tract.**—Clogg states that of the 53 reported cases of this kind only 3 occurred in males, and of these 3, 2 were children, one, a baby, 5 weeks old, and the other 22 months old. Both were inguinal hernias. Fifty cases occurred in women and in every case the appendix was strangulated in a femoral hernia. Twenty-two of these 50 patients were known to have a hernia before strangulation occurred. The characteristics of these hernias are said to be that they are of small size, generally early reducible, and only present on occasions and not constantly, sometimes only having been observed once or twice previously to strangulation. The author's three cases are reported in full.

22. Leprosy.—Black thinks that there can be hardly any doubt that leprosy in its early stages begins as a small ulcer on some part of the nasal mucous membrane, and that this ulcer may heal and pass entirely away. This, he thinks, is the explanation of the maculo-anesthetic cases. During the time the ulcer exists leucocytes get detached from the ulcerating spot and along with the bacilli which they are attempting to devour are carried by the blood stream and lodged in various situations in the peripheral nerves, where they become entangled, and the bacilli then proceed to grow, causing pressure on the fine nerve fibrils and consequently setting up nutritive changes in the skin which these axis cylinders supply, thus causing the patches of discoloration and anesthesia.

In the nodular and mixed cases the progress of the disease is quite different. Instead of the nasal ulcer healing up it proceeds to grow apace, causing extensive destruction of the nasal mucous membrane, causing it to swell up and ultimately attacking the nasal bones themselves. The accumulating swelling of the mucous membrane extending into the numerous interstices of the nasopharyngeal cavity causes the face to assume its characteristic appearance of this clinical variety of the disease, assisted, of course, by the leprotic infiltration from the festering nasal ulcer. But the festering sore has other consequences. As in maculo-anesthetic leprosy the leucocytes get entangled in the peripheral nerve and cause anesthesias and discoloration of the skin and also form accumulations in other organs and tissues. Black thinks that if the disease is diagnosed early, curetting and antiseptic washes will do much to destroy the initial lesion and to prevent the spread of the disease to other parts of the body. He says that it has been clearly shown that the disease in the natural course of events tends rapidly to die out in the body unless reinforced by a continual supply of the bacilli as is the case of nodular epilepsy from the extending nasal ulcer.

23. Method of Taking Impression of Foot.—Lawrie describes a method recently advocated by Schuman of Leipsic. The foot is painted with a 5 per cent. solution of ferrocyanid of potash and it is then placed on a sheet of paper which has been thinly coated with a solution of ferric chlorid. This leaves a good impression which is permanent and requires no after-treatment.

Intercolonial Medical Journal of Australasia, Melbourne.

September 20.

25 Theory and Technic of Cerebrospinal Drainage. R. H. Russell.
26 Tumor of the Brain, with Meningitis, Probably Tubercular—Relief and Rest of the Symptoms by Trephining. R. R. Stawell and J. W. Barrett.
27 Bacteriologic Examination of the Melbourne Water Supply. R. J. Bull.
28 Pericarditis in Children Considered Surgically. W. Mackenzie.
29 *Resuscitation of a Patient Apparently Dead from Primary Heart Failure. J. Ramsay.
30 Two Cases of Optic Neuritis. J. W. Barrett.
31 The Radical Mastoid Operation. J. W. Barrett.
32 *Epithelioma of the Tongue—Operation by McCormick's Method. W. Moore.

29. Resuscitation from Heart Failure.—Ramsay reports the case of a woman who was practically dead, following an operation for uterine prolapse, in which massage of the heart resulted in a return to life. The right hand was passed through an epigastric incision and inserted between the liver and diaphragm. Bimanual squeezings with the left hand in the precordial region, and with the right under the diaphragm, were made about every second. After about a dozen squeezes a slight quiver was felt, and after another dozen or so of squeezes a fetal heartbeat was felt. The pulse could be felt at the wrist after an absence of about five minutes. Spontaneous respiration then commenced and a regular circulation and respiration were restored. Further progress was uneventful.

32. Epithelioma of Tongue.—The chief interest of Moore's case is the good result that was obtained in a case that appeared to be altogether hopeless.

Glasgow Medical Journal.

October.

33 *Two Cases of Syringomyelia. T. K. Monro and H. M'Laren.
34 Case of Anastomosis Between the Femoral Veins Subsequent to Thrombosis of the Left External Iliac Vein During Typhoid Fever. A. N. M'Gregor.
35 Nasal Headache. W. S. Syme.
36 Case of Mixed-Celled Leukemia. L. Findlay.

33. Syringomyelia.—Monro and McLaren report 2 cases, one of which came to autopsy. They found a cavity in the spinal cord extending horizontally into each posterior horn, and vertically from the second cervical to the middle lumbar region, constituted throughout the greater part of its length by the dilated central canal, but separate from that canal at both its upper and its lower extremity. Widespread sclerosis of the cord was present in almost the whole of its extent. Degenerative changes in nerves of the lower limbs were also noted.

The Australasian Medical Gazette, Sydney.

September 20.

37 *Treatment of Pulmonary Tuberculosis. C. Reissmann.
38 Treatment of Tubercular Disease of the Upper Respiratory Tract. T. K. Hamilton.
39 Open-Air Treatment of Consumption. A. A. Lendon.
40 Pressure Forceps in Abdominal Cavity for Ten and One-half Years. J. E. F. Stewart.
41 *Notes on Some Anesthetic Sequences. A. G. McGowan.
42 Gonorrheal Infection in Children. W. J. Plomley.
43 *An Unusual and Unique Case of Toxemia. A. E. Randell.
44 *An Unusual Case. F. C. S. Shaw.

37. Treatment of Pulmonary Tuberculosis.—Reissmann believes that the opsonic treatment in conjunction with the sanatorium method will soon be recognized as the appropriate treatment of every early case of pulmonary tuberculosis.

41. Anesthetic Sequences.—Unless specially contraindicated, McGowan's routine practice for general anesthesia is to use ethyl chlorid and ether first, till the operation is well advanced, giving the ether with the bag off the inhaler as much as possible, as he does not believe in too much rebreathing after the early stages. When the worst of the operation is over he changes to C.E. mixture on a Silk's mask, giving abundant air suply therewith, and toward the end a few drops of chloroform on an open mask will suffice for the cleaning up and suturing. This is an ethyl-chlorid-ether—A.C.E.—chloroform sequence; cumbersome, but in McGowan's experience quite satisfactory.

43. Unusual Case of Toxemia.—Randell reports the case of a woman who was complaining of a swollen and very painful lower lip. She thought a fly must have stung it, but could not say that such was certainly the case. Randell regarded it as a "bunged" lip, but he had never before seen one in which the swelling had occurred so rapidly, nor one in which the patient complained of so much pain. The lip was very much swollen and edematous, and almost as stiff as a bit of wood. It was pale, and there was no indication of any inflammation. The patient was incessantly retching and complained of great pain in the lip and in the parts immediately around it. It was very painful when touched. The lip was inclined to be cold rather than hot. The body temperature was slightly subnormal; the pulse was 120 a minute, and respiration about 25. The swelling greatly increased and extended to the upper lip, the right eye was closed, and there was a good deal of swelling under the chin.

The following morning the swelling had completely surrounded the mouth, had nearly reached the right ear, and had passed down the front of the neck as far as the episternal notch; there was a mottled appearance of the lips and right cheek, but no crepitant sensation, patches being purplish, but no greenish discoloration. Under the chin were a few blebs containing clear serum. The swelling spread down the chest to the third rib, half-way out to the shoulders, around to the back of the neck, and on to the left cheek; the epidermis had left the right side of the lower lip. All sensations had gone from the lips and adjacent parts, and the mottling discoloration had spread nearly as far as the right ear and to the point of the chin. The patient died, very quickly and quietly, a little over 26 hours after the appearance of the first symptoms, having retained perfect consciousness up to the last moment.

44. Probable Rupture of Liver Abscess into Bronchus.—Shaw reports a case in which the diagnosis was doubtful. The patient, a man, aged 27, had been ailing about 12 months. He first felt some pain in the right side over the liver and lower part of the lung, and later he had ague-like attacks, in which he shivered and sweated freely. Every evening he would become hot and feverish. These attacks continued until six months previous to consulting Shaw, when the man stated that

the pain became so severe that he had to lie in bed. He noticed also at this time that his right side, over the liver region, was more swollen than the left. He now suffered also from a slight cough, and a fortnight after going to bed, during an attack of coughing, something broke, and he coughed up a great quantity of thick, creamy fluid, streaked with blood. He coughed up several quarts of this matter for two days, and then the color changed to brownish-green, and the fluid became thinner and the paroxysms of coughing not so frequent. These paroxysms of coughing continued for about six months. Recovery was to a marked extent due to the antiseptic effect of the free flow of bile.

The Bristol Medico-Chirurgical Journal.

September.

45 Adaptation of Means in the Prevention of Disease. D. S. Davies.
46 *Treatment of Tabetic Ataxia by Methodical Exercises. M. Faure.
47 Case of Mesenteric Thrombosis. C. M. Smith.
48 Treatment of Diabetes with Secretin. J. R. Charles.
49 The Doctor as Expert and Pioneer. C. J. Whitby.
50 Uses of Static Electricity as an Aid to Recovery. P. King.
51 Explanation of Alveolar Cleft Palate. E. Fawcett.

46. Treatment of Tabetic Ataxia by Methodical Exercises.—Faure states that if one succeeds (and this is possible with exercise and special care) in keeping respiration, defecation and micturition in a normal condition, the health of the tabetic may be prolonged almost indefinitely. He has succeeded in combining in one system the re-education in walking with that of equilibrium and maintenance of movements of the trunk, and the walk that he teaches is effected in such a manner that while insuring the maximum of stability with the minimum of effort, it serves at the same time, and with slight modifications, for walking up or downhill, on the level or on irregular ground, all points which the ideal walk and the military march fail to accomplish. Faure has fixed on a method for the compensatory treatment of the ataxia of tabetics, taking into consideration not only the motor disturbances of the arms and the legs, but also the incoördination of the trunk, the defects of sensibility, the insufficiency of inspiration, of micturition and defecation, the difficulties in equilibration, and the sense of position, completely modifying the health and duration of the life of the tabetic, and the prognosis and the evolution of tabes. A full description of the method is promised later.

Bulletin de l'Académie de Médecine, Paris.

52 (Year LXX, No. 33.) *Chloroform in the Blood.—Procédé de dosage du chloroforme dans le sang et dans les tissus. M. Nicloux.
53 *La syphilis des honnêtes femmes (wives infected by their husbands). A. Fournier.

52. Dosage of Chloroform in Blood and Tissues.—Nicloux solves the problem by distillation in the presence of a large excess of alcohol. The chloroform is eliminated from the blood, but is dissolved at once in the alcohol. He has found that the chloroform is taken up most by tissues containing fats or lecithin. The adipose tissue, when it is well vascularized, can hold enormous quantities of chloroform.

53. Wives Infected with Syphilis by Their Husbands.—Fournier's previous communication on this subject was mentioned on page 1600. He here expatiates on the frequency of unmistakable secondary lesions occurring after the tertiary period is long established, 15, 20, 30 or even 39 years after infection, especially in the mouths of smokers. These lesions are as contagious as those occurring early, and he cites numerous instances of infection of the wife after a dozen or more years. One of his patients, infected in 1868, married 15 years later, but he frequently had lesions in his mouth, as he was an inveterate smoker. These lesions sometimes were mere erosions and sometimes secondary syphilides, the result being that in spite of constant warnings he infected his wife at the seventeenth year. Neisser insists that the age of the infection has nothing to do with its infectiousness. Fournier preaches the importance of educating patients in regard to the dangers of tardy syphilitic contagion, and also that every syphilitic who wishes to marry is under the moral obligation to refrain from smoking. Out of 19,000 syphilitic patients he has encountered 533 who were affected with tardy secondary lesions in the mouth and only 110 with the same on the genitals. He gives a diagram showing the frequency of these mouth lesions up to the twentieth year, as a basis for his condemnation of tobacco for syphilitics who think of marrying. Wives infected by their husbands generally run the risks of ignored syphilis. One of the gravest dangers is that the physician may fail to recognize it. In conclusion Fournier declares that when one has syphilis it is well to know it, first, to ensure adequate treatment, and, secondly, to refrain from giving it to others. Ignored syphilis, he adds, is nowhere so common as among married women of irreproachable character.

Presse Médicale, Paris.

54 (XIV, No. 73.) *De l'occlusion intestinale par volvulus de l'intestin grêle. P. Alglave.
55 (No. 74.) Les nouvelles théories des solutions dans leurs rapports avec la médecine. L'electrolyse des tissus vivants (of living tissues). S. Leduc (Nantes).
56 (No. 75.) *Le kraurosis vulvæ. F. Jayle, see page 1333.
57 (No. 76.) Les médications electrolytiques. Id.
58 *Sensibilité hépatique. Point épigastrique. Point xiphodien. V. Raymond.
59 Du rôle de la physique et de la chimie en médecine. H. Delaunay.
60 (No. 77.) Twin Ova.—Les oeufs gémellaires. C. Jeannin.
61 *Les injections d'eau de mer isotonique dans Phêmophilie des nouveau-nés (injections of sea water in hemophilia of the new-born). Pelissard and Benhamou.
62 Traitement des conjonctivites purulentes aigues. Caillaud.
63 (No. 78.) Notions générales sur les anticorps (antibodies). L. Hallion.
64 *Tuberculose et glande thyroide. Morin.
65 (No. 79.) *Des douleurs tardives de l'estomac et de leur traitement (tardy gastric pain). L. Meunier.
66 Corps étrangers superficiels de l'oeil (foreign bodies in eye). H. Joseph.
67 (No. 80 *L'habitation. Hygiène de l'aération. A. A. Rey.

54. Intestinal Occlusion from Volvulus of Small Intestine.—In the case described and illustrated by Alglave the symptoms developed suddenly after the patient, a robust porter, 63 years old, had ingested a large amount of a very cold drink while much heated. A purgative was given 24 hours after the first symptoms, and this materially aggravated the condition. The volvulus was easily reduced through a laparotomy, but the patient succumbed the same night.

56.—This article appeared in the *Revue de Gynécologie* and was summarized on page 1333.

58. Local Tenderness of the Liver.—Raymond has been studying on 161 patients the local tenderness of the liver and tabulates the results. The principal point where pressure is painful is in the epigastrium, a little to the right of the median line. The pain is not intense, but it distresses the patient; he holds his breath, and sometimes he coughs or experiences nausea. Sometimes the pain elicited by pressure at this point lasts for hours. Pressure on the xiphoid appendix is also liable to elicit the same kind of distressing pain. The patients frequently discover this for themselves by the pressure of the table as they bend forward to write. These points of local tenderness enable the entire extent of the free margin of the liver to be outlined, and reveal the pathologic condition of the organ, the stage of the process, and its acute or chronic character. If the liver feels hard, springy, without tenderness, the process is essentially chronic with predominance of sclerosis. If the liver is enlarged but soft and only slightly sensitive, the process is less advanced and there is hypertrophy or hyperplasia. If the liver feels hard or elastic but quite sensitive, the process may be assumed to be an acute one in a chronically affected organ. If the liver feels soft, is difficult to palpate, and is very sensitive to pressure, the morbid process is a recent one and the organ is congested. If the liver is painful and soft, and the epigastric and xiphoid points painful both spontaneously and on pressure, the process is an acute infective one, with congestion, or it is an acute phase of a chronic affection. Study of the epigastric and xiphoid points will reveal the participation of the liver in cases of dyspepsia. He found the liver sensitive to pressure in 57 cases of chronic malaria out of 60 examined; in 37 out of 44 of dyspepsia; in 23 out of 24 of biliary lithiasis; in 12 out of 16 cases of diabetes; in 6 out of 10 of renal lithiasis, and in 1 out of 2 patients with gout. Tenderness of the liver is an early sign of trouble in this organ, preceding hepatalgia and enlargement.

61. Injections of Sea Water in Hemophilia.—Pelissard and Benhamou report the case of an infant with hemorrhages from the nose, ears, skin and digestive tract, the second day

after birth. The child seemed to be otherwise healthy, but grew weaker under this constant loss of blood, which persisted notwithstanding energetic treatment with antipyrin, peroxid of hydrogen, gelatinized serum, etc. For 24 hours the hemorrhages continued, when 10 c.c. of isotonic sea water was injected as a last resort. The hemorrhages ceased almost at once; by the end of three hours there was no further bleeding, the child wanted to nurse, and there has been no recurrence of the hemophilic tendeney to date. The day afterward and again a week later the injection of sea water was repeated as a precautionary measure. They call the sea water "Quinton's plasma," as Quinton is responsible for its use in therapeutics.

64. **Tuberculosis and the Thyroid Gland.**—Morin has been impressed with the frequency of atrophy of the thyroid gland in cases of pulmonary tuberculosis. He reasons that the antitoxic function of the thyroid secretion and the presence of iodin in this secretion justify the use of iodin in tuberculosis to supply the iodin missing in the insufficient thyroid secretion. His experience has been favorable with treatment on this principle.

65. **Tardy Pain in the Stomach.**—Meunier believes that the efficacy of sodium bicarbonate in relieving the pains that appear from two to four hours after a meal is not due to its neutralizing the hydrochloric acid, as generally assumed. By this time the secretion of hydrochloric acid has passed its maximum and begun to decline. The relief is due to its generation of carbonic acid. The same result can be obtained more effectually by administering carbonates and tartaric acid in fractional doses which ensure a slow and continuous generation of carbonic acid, while the combination of the drugs forms a neutral salt incapable of modifying the acidity of the gastric juice or checking its digestive action. In fact, the nascent carbonic acid not only arrests the pain, but seems to promote the natural gastric digestion and the evacuation of the stomach. He uses two powders. No. 1 contains 1 gm. of tartaric acid and No. 2 three carbonates of varying solubility, so that one dissolves before the other. The second powder, therefore, contains 0.4 gm. of sodium bicarbonate, 0.3 gm. of calcium carbonate and 0.2 gm. of magnesia hydrocarbonate. The patient is told to dissolve the two powders in half a glass of water each, and then to take a tablespoonful from one glass and then at once a tablespoonful from the other glass every ten minutes until the pain has ceased. His experience has been very satisfactory with this technic.

67. **Reform in Construction of Dwellings.**—Rey is an architect, and he protests against the application of theories to the building of houses, as theories are liable to be overthrown by new ones to-morrow. Established facts should be the bases for reforms, and houses should be constructed to conform to the fact which has been incontrovertibly established, namely, the vital necessity of light and air even to the remotest part of our dwellings. In the first place, he says, all shut-in courts should be abolished. They are no aid to ventilation as the air in them is stagnant air. He gives diagrams showing how the same space as is now given up to these inside, shut-in, worse than useless courts and yards, could be utilized to supply ample ventilation to all parts of the building. The courts should open on the street, and the building should stand in the center of the space, instead of the present plan of building the structure around a central well of stagnant air. His diagrams show that cities would gain immensely in beauty by doing away with the solid rows of buildings fronting the street, and having each building stand alone, with small open spaces around it, allowing opportunity for artistic, graceful outlines in the ground plan, even of tenement houses. The Antituberculosis Congress of 1905 adopted a resolution to the effect that yards and courts should open on the street, acting on Rey's suggestion, but the matter has not yet been brought sufficiently to public attention.

Beitraege z. Klinik der Tuberkulose, Würzburg.

Last indexed, page 1421.

68 (VI, No. 1.) *Die Tonsillen als Eingangspforten der Tuberkel-Bazillen. Bandelier (Cottbus sanatorium).
69 *Die Maximal-Dosis in der Tuberkulin-Diagnostik. Id.
70 *Der diagnostische Wert der Tuberkulin-Inhalation. Id.
71 Zur Heilwirkung des Tuberkulins. Heilung eines Lupus durch Perlsucht-Tuberkulin. Id.
72 (No. 2.) *Ueber Russ-Inhalation bei Tieren (experimental inhalation of soot). H. Bennecke. Id. L. Aschoff.
73 *Tuberkulin-Reaktion und Tuberkulin-Immunität. H.. Lüdke.
74 *Ueber den diagnostischen Wert des alten Kochschen Tuberkulins. W. Roth-Schulz.
75 *Agglutination bei Lungen-Tuberkulose. F. Jessen (Davos).

68. **The Tonsils as Entering Point for Tuberculosis.**—Bandelier summarizes the principal communications previously published on this subject, and then gives the details of 100 cases in which the tonsils were found enlarged and tuberculous among 900 tuberculous inmates of the Cottbus sanatorium. Tubercles were found in some of the tonsils when outside they were apparently sound in appearance. A tuberculous process in the tonsil is a frequent accompaniment of tuberculosis of the lungs, and a primary tuberculous process in the tonsil is occasionally encountered, the result of infection from inhaled or swallowed germs. The tonsils as an entering point for tuberculous infection have not much importance for adults, but in children they may serve as well as abrasions of the skin, carious teeth, etc., to allow the entrance of the bacillus.

69. **Maximal Dose in Diagnostic Use of Tuberculin.**—Bandelier's extensive experience at Cottbus has confirmed the importance of Koch's technic for the use of tuberculin in diagnosis. He affirms that the maximal dose of 10 mg. gives the only reliable findings.

70. **Diagnostic Value of Inhalation of Tuberculin.**—Bandelier has been giving the method of inhalation of tuberculin in the form of a spray, advocated by Kapralik and H. von Schroetter, a thorough trial at the Cottbus sanatorium. The results confirm their assertions in regard to the convenience and reliability of this method of tuberculin diagnosis, although further experience is needed to determine some of the practical points, especially the minimal dosage. They used the Bulling vaporizer and found that 30 mg. of tuberculin was necessary to induce the reaction, even with active tuberculosis of the lungs, as only a small proportion of the amount inhaled is absorbed, the rest not being retained but swept out again by the expired air. In case of an inactive or latent process, in the non-tuberculous in the clinical sense, and in case of tuberculous processes elsewhere than in the lungs, the amount of tuberculin necessary to induce a reaction averaged 250 mg. Tuberculous individuals who react to a small dose show that they have an active process in the lungs, while this is excluded if no reaction occurs without a very large dose. In case of tuberculous processes in the bronchial glands, with lungs still intact, a reaction to the tuberculin and the absence of a reaction when the amount is reduced, would show that the lungs are still sound, while the occurrence of the lung reaction when the test is repeated later would indicate that the process in the glands had spread to the lungs. The method might also prove important to exclude a pulmonary focus before a contemplated operation for some tuberculous process elsewhere. It may also prove useful to indicate the progress of transformation of an active into a latent process when, after the first reaction to 30 mg., larger and larger quantities are required to induce the reaction. Bandelier does not agree with them, however, in regard to the possibility of inducing immunity by way of inhalation of tuberculin. He gives in tabulated form the details of 38 cases in which the diagnostic inhalations of tuberculin were given.

72. **Experimental Inhalation of Soot.**—Bennecke and Aschoff describe experiments which, they think, disprove the statements of Calmette and his school in regard to the intestinal origin of anthracosis of the lungs.

73. **Tuberculin Reaction and Tuberculin Immunity.**—Lüdke writes from von Leube's clinic that clinical observation has demonstrated that specific treatment with tuberculin does not cure directly, but merely arrests the processes or improves them. The production of antituberculin can not be extensive when small amounts of tuberculin induce a reaction again after weeks or months. The immunity induced by an injection of tuberculin is thus only a relative immunity, limited both quantitatively and in its duration. He ascribes the curative action of tuberculin exclusively to its action on the diseased tissue. It seems able sometimes to fan the tuberculous process into a more acute course, and thus to render healing possible in some cases.

74. **Tuberculin Test.**—Roth-Schulz states that the experiences at the great Beelitz sanatorium show that the sensitiveness to the tuberculin test is independent of the age and weight, debility and anemia not exaggerating the response to the test. There does not seem to be any regular connection between the stage of the disease or its duration and the degree of sensibility to tuberculin. The mild, "closed," initial cases seem to be especially susceptible. An argument in favor of the specific character of the reaction is the frequency with which adults give a positive reaction, even without clinical signs of a tuberculous process, but autopsy reveals the latent focus, and, on the other hand, the rarity of a positive response in infants, corresponding to the rarity of tuberculous processes at this age. Repeated administration of small, slightly increasing doses (0.5 to 2.5 mg.) gives as frequently a positive response, he found, as the original Koch dose of 10 mg., owing to the cumulative action of the tuberculin.

75. **Agglutination in Pulmonary Tuberculosis.**—Jessen of Davos has investigated the agglutinating property of the serum of 86 tuberculous patients, making 122 tests in all. He found that the agglutinating power increased, after arrival in the mountains, without any specific treatment, and that the patients treated with tuberculin failed to show higher agglutinating power than those without. As a rule, increased agglutinating power paralleled clinical improvement, but it declined as the case progressed to complete recovery. Agglutination at 1 to 25 is the least proportion with diagnostic significance.

Berliner klinische Wochenschrift.

76 (XLIII, No. 40.) *Ueber Hydrops toxicus. H. Quincke.
77 Experimentell-kritische Untersuchung über die Sahli'sche Desmoid-Reaktion. S. Salto.
78 *Improvement of Leukemia by Intercurrent Infections.—Zum Verständniss der Besserung der Leukämie durch intercurrente Infektionen. C. Funck.
79 *Zur Behandlung des Trachoms mit Radium. A. N. Dinger (Amsterdam).
80 *Present Status of Epidemic Cerebrospinal Meningitis.—Stand unserer Kenntnisse von der übertragbaren Genickstarre. M. Westenhoeffer. (Concluded.)
81 (No. 41.) Experimente über hämatogene Lymphdrüsen-Tuberkulose (of glands). P. von Baumgarten.
82 *Ueber Heissluft-Therapie bei Emphysem, chronischer Bronchitis und Asthma bronchiale (treatment with superheated air). E. Cohn.
83 *Barberio's Reaktion auf Sperma. J. B. Levinson (Moscow).
84 Care of Abdominal Walls After Delivery.—Zur Pflege der Bauchdecken nach der Entbindung. P. Brose.
85 Ueber die topographische Perkussion des kindlichen Herzens (of child's heart). A. Mayer and R. Milchner (Senator's clinic, Berlin). Concluded.
86 Aetiologie und Epidemiologie der übertragbaren Genickstarre (epidemic meningitis). K. H. Kutscher.

76. **Toxic Dropsy.**—Quincke believes that the action of toxins is responsible for the development of hydrops. Myxedema is the most striking example, showing unmistakably the influence of autointoxication from some still unknown poison. A toxic action is also evident in many affections accompanied by cachectic and essential hydrops, such as cancer, phthisis, scarlet fever, gastrointestinal disturbances and pernicious anemia. In nephritis, the tissue waste of the diseased kidneys is superposed on the stagnating metabolic products. The poison acts not only on the walls of the vessels but probably also on the connective tissue, causing it to draw increased amounts of water out of the vessels. In certain cases of nephritis salt may have this effect on the connective tissue, making it more avid of water. Unknown local factors must favor the development of the edema at certain points, as in the face and eyes, in case of iodin intoxication. The poison probably acts on the walls of the vessels, on the tissues themselves, on the nerves of the affected region (central or along their course), affecting the nerves of the vessels, especially those which regulate the size of the lumen and the permeability of the walls, and the trophic nerves which act on the tissue itself. His article is based on the case of a man of 57 with pernicious anemia who suddenly developed general hydrops while showing marked improvement in his general health and in the composition of his blood. The hydrops reached its maximum and declined again in the course of two weeks; in the third week there was a general scaling off of the epidermis, similar in every respect to that after scarlet fever. The heart and kidneys were sound, and he regards the scaling as the expression of the general nutritional disturbances, the same as in scarlet fever, in which the scaling can not be regarded as merely the effect of the erythem.

78. **Improvement of Leukemia by Intercurrent Infections.**—Funck's patient was a man of 28 who had exhibited symptoms of myelemia for three months when signs of infection of a hydronephrosis developed. This subsided under treatment and with it the signs of myelemia. The glands and the spleen returned to normal size while the blood picture showed marked improvement. These facts Funck accepts as sustaining his conception of leukemia as a malignant neoformation in the blood-forming apparatus. An intercurrent infection summons the leucocytes to enhanced physiologic activity.

79. **Radium in Treatment of Trachoma.**—Dinger has given radium bromid a trial in the treatment of 16 cases of trachoma. Seven patients were entirely cured; all the granulations have vanished. The younger the patients the more rapid and perfect the cure. In the older cases and in those with pannus the recovery proceeds more gradually. He regards the radium treatment as an improvement over caustics and mechanical measures as it is painless. He used 5 mg. of radium bromid, applying it for a minute once or twice a week, then lengthening the applications up to five minutes. The total length of treatment ranged from one to three months. All the patients had already been under treatment with other measures for from two to six years or more. Not the slightest by-effects were observed in any instance although scrupulous watch was kept for them.

80. **Epidemic Cerebrospinal Meningitis.**—Westenhoeffer closes his long study of the present status of our knowledge in regard to this disease with the statement that the inefficacy of all known methods of treatment justifies surgical interference. It may be possible, he asserts, to ward off the subsequent hydrocephalus by evacuation of the pus collecting in the posterior and descending cornua. This can not be done by lumbar puncture, only by drainage of the descending cornu, continued for several days, with thorough rinsing out of the cornua. He advises operating at the middle or end of the second week, as the defensive reaction of the organism may be assumed to be then at its height. As hydrocephalus in these cases almost invariably entails imbecility or death, he affirms that surgical treatment based on these rational grounds is justified and even demanded.

82. **Superheated Air in Treatment of Emphysema and Bronchitis.**—Cohn has become convinced by examination of animals that the application of hot air to the chest draws the blood to the surface and takes it away from the air passages. He found that this process had a favorable effect on bronchial asthma, chronic bronchitis and emphysema, and gives an illustrated description of a chair and chest for application of superheated air to the entire thorax.

83. **Barberio's Reaction for Spermatic Fluid.**—Barberio announced last year that the addition of a concentrated aqueous solution of picric acid to spermatic fluid causes the deposit of yellowish, rhombic crystals. A drop of a saturated aqueous or alcoholic solution of picric acid is added to the suspected substance on the object glass, which is carefully heated until nearly dry, then another drop is added and heated, and so on, thus producing a concentrated solution. Levinson has been testing the reaction and has found that the crystals can not be due to spermatozoa, but must be from the secretions of the prostate or seminal vesicles, as the reaction was positive even in cases of known azoospermia. This confers great medicolegal value on the test, as it is the only one known to date which indicates the derivation of the suspected substance from the male genital organs in the absence of spermatozoa.

Deutsche medizinische Wochenschrift, Berlin and Leipsic.

87 (XXXII, No. 39.) Treatment of Affections of Conjunctiva.—Behandlung der Bindehauterkrankungen des Auges. Horstmann. Clinical lecture.
88 Ein neues aseptisches Tropfglas (dropper and bottle). Peschel (Frankfurt a. M.).
89 Functional Tests of the Arteries.—Zur Funktionsprüfung der Arterien. O. Müller. (Concluded.)
90 Reply to Uhlenhuth. Deviation of Complement and Differentiation of Albumin—Komplementablenkung und Bluteiweiss-Differenzierung. M. Neisser and H. Sachs.
91 Zum saprophytischen Vorkommen hämoglobinophiler Bacillen. C. Klieneberger.

92 *Russo's Methylene Blue Test.-Ersatz der Ehrlichschen Diazo-Reaktion durch die Methylenblauprobe nach Russo. R. Dunger.
93 *Influence of Injections of Choiin on Pregnancy.—Zur Beeinflussung der Gravidität mit Choiininjektionen. R. Werner and A. von Lichtenberg.
94 *Treatment of Bladder Wound After High Incision.—Ueber die Methoden der Behandlung von Blasenwunden nach hohem Steinschnitte. P. Baratynski.
95 Two Stab Wounds of Diaphragm.—Zwei Stichverletzungen des Zwerchfells. T. Eichei.
96 (No. 40.) Frühdiagnose und Behandlung der progressiven Paralyse. K. Heilbronner (Utrecht). Clinical lecture.
97 *Ueber primäre Tuberculose und über die Anthrakose der Lungen und der Bronchialdrüsen (bronchial glands). H. Ribbert.
98 *Zur Differentiai-Diagnose otitischer und metastatischer Hirn-Abscesse (of brain). E. Oberndörffer.
99 *Zur Behandlung mediastinaler Tumoren mit Roentgen-Strahlen. J. von Elischer and K. Engel (Budapest).
100 Ueber Eventratio diaphragmatica. K. Lotz.
101 *Zur Kasuistik des Gallen-Stein-Ileus (from gallstones). O. Hermes.
102 *Ueber die Kuhnsche Tubage (intubation). A. Dirk.
103 Fall von Pruritus vulvæ geheilt durch blaues Bogenlicht (cured with blue arc light). E. Rothschuh.
104 Der Nachweiss von Crenothrix polyspora im Trink-Wasser (in drinking water). O. Rössler.

92. **Russo's Methylene Blue Test.**—Dunger states that this test can by no means take the place of the diazo reaction as some have claimed.

93. **Influence of Injections of Cholin on the Embryo.**—Several illustrations are given showing the destructive action on the embryo of repeated injections of cholin in gravid rabbits. The results resemble those observed under the influence of *x*-ray exposures of gravid rabbits, and are cited as striking arguments in favor of the assumption that the biologic action of the rays can be imitated by chemical means.

94. **Treatment of Bladder Wound After High Incision.**—Baratynski reports the details of 4 cases to sustain his views that the wound in the bladder should be sutured at once after a high incision for stone in case the urine is normal and the mucosa of the bladder is healthy. This should also be done when the urine is comparatively normal, with a neutral or slightly alkaline reaction, and even in case of mild cystitis, on condition that the latter receives thorough systematic treatment. The bladder wound, however, should be left open in all cases of pronounced cystitis and with alkaline urine.

97. **Primary Tuberculosis and Anthracosis of the Lungs and Bronchial Glands.**—Ribbert argues that anthracotic foci in the lungs and anthracotic indurated bronchial glands are the terminal stages of healed tuberculous processes. He also affirms that they must be the result of air-borne inhaled infection. He is convinced that the overwhelming majority of human beings are infected at some time with tuberculosis, but that only in the predisposed does it develop into a serious affection. The majority recover and become comparatively immune.

98. **Differential Diagnosis of Metastatic and Otitic Abscesses in the Brain.**—In the case reported a young man with chronic otitis media for seven years and a gonorrheal bronchial affection for four years exhibited signs of an abscess in the brain. It was assumed to be in the temporal lobe, but no pus could be found, and autopsy revealed the abscess in the vicinity of the central sulcus in the parietal lobe. Oberndörffer gives his reasons for assuming the abscess to have been of metastatic origin from the bronchial affection rather than from the otitis, especially the sudden onset of the symptoms, the afebrile course and the sudden appearance of contractions in the left arm, followed by paresis of the arm and leg on this side. These symptoms appeared before there were any signs of compression of the brain. Comparatively little attention was paid to these motor symptoms as they were not very pronounced, and there was no characteristic progression of the spasmodic contractions. The paresis in this case and the lack of involvement of the facialis might suggest a lesion of the internal capsule. Another misleading symptom in the case was the paralysis of the ocular muscles, a frequent accompaniment of otitic abscesses in the frontal lobe.

99. **Roentgen Treatment of Mediastinal Tumors.**—Elischer describes 3 patients with mediastinal tumors much benefited by Roentgen exposures. A fourth case proved refractory. He urges Roentgen treatment in all such cases, as the improvement sometimes approximates an actual cure, although always more or less temporary. Pure malignant lymphoma proved most amenable to the rays in his experience, much more than tuberculous hyperplasia of the glands and lymphosarcoma.

101. **Gallstone Ileus.**—Hermes reports 3 cases which illustrate the freakishness of gallstone affections. The patients were men or women in the seventies, two without any history of gallstone or gastrointestinal trouble. In one case the intestine was found ulcerated and necrotic with several perforations and the patient succumbed soon after the operation. The rapid development of these ulcerations, the first symptoms having been observed only three days before death, warns against too prolonged expectant treatment in such cases.

102. **Kuhn's Peroral Intubation.**—Kuhn's method of administering the anesthetic through a tube reaching into the trachea has been duly described in these columns. Dirk has used it in seven severe operations on the head. The operator is rendered entirely independent of the anesthetist. There is none of the coughing, strangling or retching observed with other modes of anesthesia. Asphyxia need not be feared, as the upper air passages are always free, and no blood can flow into the larynx or esophagus. No bronchitis or pneumonia was observed afterward, and the anesthesia proceeded even and continuous without the usual ups and downs.

Jahrbuch f. Kinderheilkunde, Berlin.

Last indexed, page 1063.

105 (LXIV, Supplementary No.) Residual Nitrogen of Human Milk.—Ueber den Reststickstoff der Frauenmilch. H. Rietschel.
106 Digestion of Albumin in Infant's Stomach.—Die Eiweissverdauung im Magen des Säuglings. L. Langstein.
107. Eiweissabbau und-aufbau bei natürlicher und künstlicher Ernährung (albumin metabolism). Id.
108 Zur Kenntnis der stickstoffhaltigen Bestandteile der Säuglingsfäzes (nitrogenous constituents of infant's feces). H. M. Adler (New York).
109 Die Fettspaltung im Magen des Säuglings (splitting of fat in infant's stomach). J. Parker Sedgwick (Minneapolis).
110 Die physiologische Bedeutung und der klinische Wert der Ehrlichschen Dimethylaminobenzaldehyd-Reaktion im Kindesaiter (in children). A. Bookman (New York).
111 Zur Kenntnis der Beschaffenheit des Urins bei der Rachitis. L. Baumann (New York).
112 Ueber den Wert orthodiagraphischer Herzuntersuchungen bei Kindern (the heart in children). P. Reyher.

Münchener medizinische Wochenschrift.

113 (LIII, No. 34.) *Ueber Pessar-Behandlung (pessaries). M. Hofmeier.
114 Neutrophile Findings in Infant's Blood.—Das neutrophile Blutbild beim natürlich und beim künstlich ernährten Säugling, Esser.
115 Bile as Culture Medium for Typhoid Bacillus.—Ueber Züchtung von Typhusbazilien aus dem Blut mittels der Gallenkultur. H. Conradi.
116 *Passive Congestion in Treatment of Suppurative Ear Affections.—Die Stauungshyperämie bei der Behandlung von Ohreiterungen. Hasslauer.
117 *Peroxid of Hydrogen Test of Sputa.—Ein Sedimentierungsverfahren des Auswurfs mit Wasserstoffsuperoxyd. Sachs.
118 Ein neues Instrumentarium für Lumbalanästhesie. B. R. v. Arlt.
119 Ein Apparat zur schnellen und beinahe kostenlosen Beschaffung von sterilem Verband- und Tamponade-Material. A. Schmidt.
120 *Die Prognose und Therapie der Choleilithiasis im Lichte der Statistik und Erfahrung. A. Ritter. (Concluded).
121 Zur Physiologie und Pathologie der vertikalen Blick-Bewegungen (movements of eyes). H. Steinert and A. Bielschowsky.
122 Tasks of Historian of Medicine.—Theodor Puschmann und die Aufgaben der Geschichte der Medizin. K. Sudhoff.
123 (No. 35.) Alkohol und Neurosen. L. Loewenfeld.
124 Studien mit einem neuen Hemmungskörper (new inhibiting body). W. Weichardt.
125 *Giebt es einen intestinalen Ursprung der Lungen-Anthrakose (possibility of intestinal origin). W. H. Schultze.
126 *Importance of Intramuscular Nerve Tracts in Tendon Grafting.—Der Verlauf der intramuskulären Nervenbahnen und seine Bedeutung für die Sehnenplastik. A. Wollenberg.
127 *Zur Frage der Heilbarkeit und der Therapie der tuberkulösen Meningitis. G. Rieboid.
128 Ueber das Vorkommen von Netzhautblutungen bei Miliar-Tuberkulose (retinal hemorrhages). H. Marx.
129 Epidemic Cerebrospinal Meningitis.—Ueber 7 Fälle von epidemischer Genickstarre im niederrheinischen Industriabezirk. E. Krober. Die Genickstarre beim 1. Train-Bataillon München, Dieudonné. Wöscher and Würdinger.
130 Epileptiforme Krämpfe bei Diabetes mellitus. A. Stauder.
131 Der Alkoholismus in München (Munich). Vocke.

113. **Pessaries.**—Hofmeier regards the pessary as a necessary evil under certain conditions, but says that a hard, smooth surface is indispensable, that the woman should be re-examined every five months and oftener at first, and that the vagina should be frequently rinsed with salt water or a weak disinfectant. It is not necessary to have this done daily, but it should be done often. The wearer of a pessary must be

thoroughly impressed with the possible evil consequences if she does not present herself for examination at stated intervals.

116. **Artificially Induced Hyperemia in Treatment of Suppuration of the Ear.**—Hasslauer reports extensive experience with Bier's technic, his opinion being that it represents a decided progress in the treatment of suppurative affections of the ear.

117. **Peroxid of Hydrogen in Examination of Sputum.**—Sachs-Müke states that neither peroxid of hydrogen nor a 1 per 1,000 solution of corrosive sublimate interferes with the examination of sputum. He preserves the entire day's output of sputum for examination. It is treated with peroxid of hydrogen, which loosens up the mass completely, and it is then disinfected with the sublimate solution. The whole can then be safely kept for examination, the sediment containing the essential elements of the sputum. No further neutralizing or boiling is required.

120. **Prognosis and Treatment of Gallstone Affections.**—Ritter is in favor of internal treatment of gallstone affections, and cites an array of statistics from Erlangen and Munich which show that the mortality is actually higher now in these operative days than it was when internal treatment and Carlsbad water were the mainstays. A little oil or fat in the course of a rational diet is generally beneficial, probably mostly from its effect on the generally accompanying constipation and on the frequent hyperacidity. The various remedies vaunted on all sides have one favorable point in common—they gain time. Time is the great healer, but its beneficent effects are frequently ascribed to the remedy the patient happens to be taking at the moment.

125. **Possibility of Intestinal Origin of Anthracosis of the Lungs.**—Schultze has been repeating the experiments of Calmette and his assistants at Lille in regard to the depositing in the lungs of particles of charcoal, etc., ingested by the mouth. His results disprove their conclusions *in toto*, he asserts. While the charcoal, etc., was being mixed with the food, the animals must have inhaled enough particles to account for the deposits in their lungs. In his experiments, insoluble particles fed to the animals were found distributed through all the organs, never restricted to the lungs; in fact, the lungs contained less than the spleen and liver.

126. **Importance of Intramuscular Nerve Tracts in Tendon Transplantation.**—Wollenberg ascribes to the severing and other interference with the continuity of the intramuscular nerve tracts the variability in the results obtained in tendon transplantation. The nerves follow the same course as the vessels, generally intimately interwoven with them, and in very few muscles is the direction parallel with the longitudinal axis of the muscle. In most of the muscles the nerves and vessels run across the muscle, and consequently when a slice is taken off for transplantation, numerous nerves and vessels are injured. He gives illustrations of the transverse nerve tracts in the biceps femoris and of the longitudinal nerve tracts in the gracilis muscle. The practical conclusions of his research are that in slitting a muscle for transplantation, the part cut off must not be too small, except possibly in those muscles in which the main nerve tracts are parallel to the longitudinal axis, and, further, that the muscle should not be slit higher than the middle of its belly.

127. **Curability and Treatment of Tuberculous Meningitis.**—Riebold reports a case of severe tuberculous meningitis with a favorable termination in the course of two or three months. The patient was a girl of 16 and tubercle bacilli were found in the cerebrospinal fluid. Treatment included lumbar punctures, repeated 24 times, daily during the first two weeks. A total of 574 c.c. of cerebrospinal fluid was thus removed. The syndrome was typical, plus marked disturbances in speech, probably due to local compression by the meningeal effusion, especially in the left fissure of Sylvius. In every instance the general condition improved remarkably after each lumbar puncture. Riebold thinks that the punctures should be repeated every day so long as the pressure is over 25 to 30 cm. water, so long as 25 or 30 c.c. of cerebrospinal fluid still escape with a terminal pressure of from 10 to 12 cm., and so long as symptoms indicate pressure on the brain, headache, etc. In a second case the patient, a lad of 7, was treated with 11 punctures, about 355 c.c. of cerebrospinal fluid being thus withdrawn, under a pressure of from 27 to 45 cm. The patient seemed to be much improved by the fifth and sixth punctures, but after this his condition grew rapidly worse and he succumbed at the end of the third week. Autopsy showed tuberculous infiltrates of the soft membrane, as thick as 0.5 cm., almost exclusively localized in the vicinity of the hypophysis and of the fissure of Sylvius. The tuberculous process seems to have been concentrated at this point and developed there with great intensity. As a rule, the patient dies before the infiltrates have reached this stage.

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

A PRIMER OF PSYCHOLOGY AND MENTAL DISEASE. For Use in Training Schools for Attendants and Nurses and in Medical Classes, and as a Ready Reference for the Practitioner. By C. B. Burr, M.D., Medical Director of Oak Grove Hospital (Flint, Mich.) for Mental and Nervous Diseases, etc. Third edition, thoroughly revised. Cloth. Pp. 183. Price, $1.25 net. Philadelphia: F. A. Davis & Co., 1906.

TEXT-BOOK OF COMPARATIVE GENERAL PATHOLOGY for Practitioners and Students of Veterinary Medicine. By Prof. Dr. Th. Kitt, of Munich. Authorized Translation by Dr. William W. Cadbury, Assistant Demonstrator of Pathology in the University of Pennsylvania. Illustrated with 4 colored plates and 131 illustrations. Cloth. Pp. 471. Price, $5.25 net. Chicago: W. T. Keener & Co., 1906.

THE EAR AND ITS DISEASES, a Text-book for Students and Physicians. By S. S. Bishop, B.S., M.D., LL.D., Honorary President of the Faculty and Professor of Diseases of the Nose, Throat and Ear in the Illinois Medical College, etc. Illustrated with 27 colored lithographs and 200 additional illustratios. Cloth. Pp. 439. Price, $4.00 net. Philadelphia: F. A. Davis & Co., 1906.

A TREATISE ON THE MOTOR APPARATUS OF THE EYES, Embracing an Exposition of the Anomalies of the Ocular Adjustments and Their Treatment with the Anatomy and Physiology of the Muscles and Their Accessories. By G. T. Stevens, M.D., Ph.D. Illustrated with 184 engravings, some in colors. Cloth. Pp. 496. Price, $4.50 net. Philadelphia: F. A. Davis & Co., 1906.

RETINOSCOPY (or Shadow Test) in the Determination of Refraction at One Meter Distance, with the Plane Mirror. By J. Thorington, A.M., M.D., Author of "Refraction and How to Refract," etc., Fifth edition, revised and enlarged, with fifty-four illustrations, ten of which are colored. Cloth. Pp. 67. Price, $1.00 net. Philadelphia: P. Blakiston's Son & Co., 1907.

ATLAS OF CUTANEOUS MORBID HISTOLOGY, Consisting of Fifty-three Colored Figures on Twenty-Four Plates and Text. By Dr. Max Joseph, Physician for Skin Diseases in Berlin, and J. B. Van Deventer, Oberstabsarzt of the Netherlands East Indian Army in Batavia-Java. Cloth. Pp. 48. Price, $5.00 net. Chicago: W. T. Keener & Co., 1906.

RECENT ADVANCES IN THE PHYSIOLOGY OF DIGESTION. Delivered in the Michaelmas Term, 1905, in the Physiological Department of University College, London. By E. H. Starling, M.D., F.R.S., Jodrell Professor of Physiology. With twelve illustrations. Cloth. Pp. 156. Price, $2.00 net. Chicago: W. T. Keener & Co., 1906.

ESSENTIALS OF HUMAN PHYSIOLOGY. By D. N. Paton, M.D., B.Sc., F.R.C.P., Ed., Superintendent of the Research Laboratory of the Royal College of Physicians of Edinburgh. Second edition, revised and enlarged. Cloth. Pp. 444. Price, $2.75 net. Chicago: W. T. Keener & Co., 1905.

A HISTORY OF THE BOSTON CITY HOSPITAL, from its Foundation Until 1904. Authorized by the Trustees and Edited by a Committee of the Hospital Staff, David W. Cheever, M.D., George W. Gay, M.D., and others. Cloth. Pp. 422. Boston: Municipal Printing Office, 1906.

PRACTICAL TEXT-BOOK OF MIDWIFERY FOR NURSES. By R. Jardine, M.D., M.R.C.S., F.F.P., and S., F.R.S., Professor of Midwifery in St. Mungo's College, Glasgow, etc. Third edition. Cloth. Pp. 276. Price, $1.50 net. Chicago: W. T. Keener & Co., 1906.

ESSENTIALS OF MEDICAL ELECTRICITY. By E. R. Morton, M.D., C.M., Trinity University Toronto. with eleven plates and seventy illustrations. Cloth. Pp. 192. Price, $1.50 net. Chicago: W. T. Keener & Co., 1905.

STUDIES IN THE PSYCHOLOGY OF SEX. Erotic Symbolism, the Mechanism of Detumescence, The Psychic State in Pregnancy. By H. Ellis. Cloth. Pp. 285. Price, $2.00 net. Philadelphia: F. A. Davis & Co., 1906.

TRANSACTIONS OF THE MEDICAL ASSOCIATION OF THE STATE OF ALABAMA (State Board of Health). Organized 1847—meeting of 1906. Cloth. Pp. 688. Montgomery, Ala.: Brown Printing Co., 1906.

COOK COUNTY CHARITY SERVICE, Fiscal Year, 1905. Description of New Court House, Annual Message of President, Board of Commissioners, and Reports of Departments. Paper. Pp. 127.

THIRTY-SEVENTH ANNUAL REPORT OF THE STATE BOARD OF HEALTH OF MASSACHUSETTS. Public Document. No. 34. Cloth. Pp. 626. Boston: Wright & Potter Printing Co., 1906.

The Journal of the American Medical Association

Published under the Auspices of the Board of Trustees.

VOL. XLVII. CHICAGO, ILLINOIS, NOVEMBER 24, 1906. No. 21.

Original Articles

THE CAUSATIVE FACTOR IN THE PRODUCTION OF THE DERMATITIS OF GROUND ITCH (UNCINARIASIS).*

CLAUDE A. SMITH, M.D.

Vice-President Fulton County Medical Society: Pathologist to Grady Hospital and Tabernacle Infirmary; Professor of Pathology and Bacteriology, Southern Dental College; Demonstrator of Pathology and Bacteriology, Atlanta College of Physicians and Surgeons; Bacteriologist to City of Atlanta.

ATLANTA, GA.

In studying the inflammation produced by the larvæ of the *Uncinaria americana* in their passage through the skin, the question arose as to whether the mechanical irritation produced by the presence of the larvæ would account for the vesicular eruption and the intense swelling of the tissues. As previously reported,[1] it was noticed that the eruption of ground itch, while very angry looking, showed very little tenderness on pressure, but was accompanied by an excruciating itching, and the inflammation did not appear to be due to bacterial infection. After considering the eruption and the accompanying symptoms, it appeared that possibly the eruption, the swelling and the intense itching might be due to some substance secreted by the larvæ and poured out into the skin. If such a substance were excreted, might it be present in the bodies of the larvæ before they begin to make their way into the skin, or are they stimulated to secrete this substance after entering the tissues?

If an irritating substance exists in the body of the larvæ before they enter the skin, then might it be possible to extract this substance from the larvæ (provided they can be obtained in pure culture and in considerable quantity) and produce the eruption by placing this substance in contact with the skin or by injecting it subcutaneously?

Even if an irritant existed in the body of the larva, when we remember that the larva is such a minute organism, barely visible to the naked eye when placed on a transparent substance and viewed in a strong light, it would not appear to be a simple matter to attempt the extraction of such a substance, which must necessarily exist in extremely small amount, and the larvæ must be obtained in pure culture to be sure that any substance which might be obtained had come from them. To hatch the eggs and obtain the larvæ mixed with the soil is, as I have previously shown,[1] comparatively easy; and when the eggs are hatched in Petri dishes the larvæ crawl up on the under side of the lid of the dish where there is slight precipitation of moisture.[2]

Bearing this fact in mind, it was decided to take advantage of this trait and to endeavor to obtain great numbers of the larvæ in pure culture. As only a comparatively small number of the larvæ can be hatched in the Petri dishes, and as it would require too great a number of Petri dishes to hatch a quantity of the larvæ, it was determined to employ large specimen jars and hatch the larvæ on a large scale. Therefore, a quantity of sand was obtained and thoroughly washed so as to free it of all fine sediment, and it was then thoroughly baked to be sure that it did not contain any living organisms. This sand was then mixed with semi-liquid feces containing great numbers of the eggs of the *Uncinaria americana,* and the mixture placed in the bottom of the specimen jars.

In this connection I wish to state that the thorough mixing of the feces with the soil (which is necessary for the hatching of the eggs) is greatly facilitated by the larvæ of flies. This was first called to my attention by my friend, Dr. H. F. Harris. I found that the larvæ of the flies would mix the feces and soil far more thoroughly than I could do, and so I made use of them to a great extent. If the feces are left in an open vessel for a short time, even where no flies appear to be present, yet a few are almost invariably attracted to the spot, and there they deposit their eggs, and as they hatch out they begin their almost ceaseless crawling through the mixture. After crawling through the soil in every direction for a few hours and thoroughly mixing it, they usually crawl up on the sides of the jar, and they can then be transferred to another jar, where they will repeat the performance in this second jar. As a result air is carried to all parts of the mixture and all of the eggs hatch at the same time. The mixture of soil and feces was placed in the bottom of eight or ten specimen jars to the depth of one to three inches (Fig. 1). The sides of the jars above the soil were then cleansed of any small particles of soil or sediment so that when the larvæ should begin to climb the sides of the jar they would be uncontaminated.

The larvæ are very sluggish when first hatched, and they are not very lively until about the fourth day, when the first sheath appears, and so do not appear on the sides of the jar until about the fourth or fifth day, as I have explained elsewhere.[2] To be sure that the larvæ will climb up the sides of the jar, certain points must be borne in mind. The jars are closed with tight fitting tops so that the moisture will not pass out of them. The jars must then be placed where they will be in a cool draft of air. This draft will precipitate a thin film of moisture on the sides of the jar, and in this film of moisture the larvæ are able to crawl up the sides. If too much moisture is precipitated it will collect in drops and run down the sides, washing the larvæ back into the soil. If the jars are not placed so as to precipitate this moisture, the larvæ can not be coaxed from the soil, as they are unable to climb the sides of the jar where the

---

* Read in the Section on Pathology and Physiology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

1. JOURNAL A. M. A., vol. xlv, Oct. 14, 1905.
2. THE JOURNAL A. M. A., vol. xliii, Aug. 27, 1904.

glass is dry. Where the proper amount of moisture is precipitated the larvæ will begin to swarm up the sides of the jar about the fourth day, and the masses and network which they form can readily be seen with the naked eye (Fig. 2).

When they have collected on the sides of the jar in this way, if one end of a probe is wrapped with a small piece of gauze and this moistened with water, the larvæ can easily be scraped from the sides of the jar, and if the end of the probe is then shaken into some water in a test-tube, the larvæ are easily washed off into the water. When all of the larvæ have been collected in the test-tube, if the tube is put aside for about an hour, at the end of that time all of the larvæ will have sunk to the bottom of the tube and are readily seen as a flocculent mass. The clear water above this mass can then be removed with a small pipette. The larvæ are thus collected in a small amount of water, free from all sediment. Masses of the larvæ were collected in three or four test-tubes.

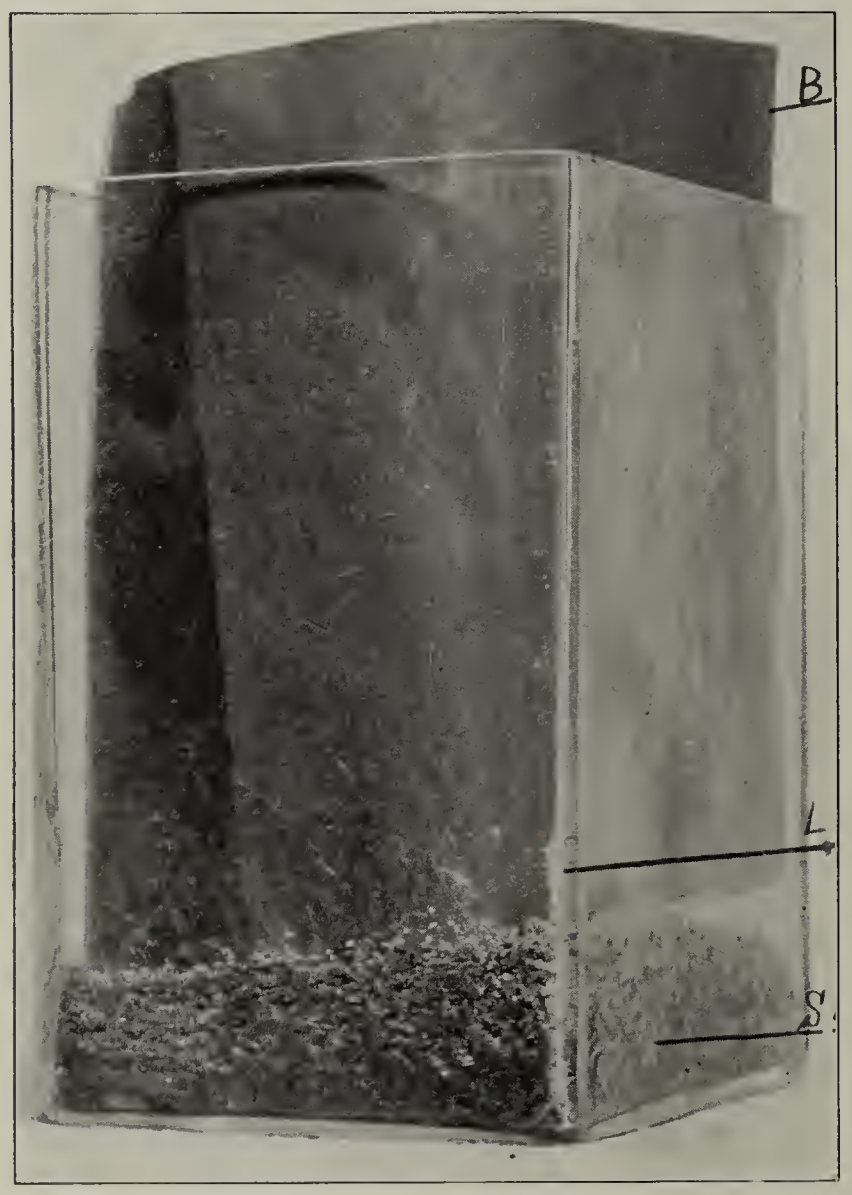


Fig. 1.—B, black paper to serve as background for sides of jar; L, larvæ crawling up the sides; S, sand in bottom.

TREATMENT OF WRISTS.

The next step was to see if it were possible to extract any substance from them which would produce an eruption when placed in contact with the skin. The contents of one test-tube were emptied in a small glass dish, and this was placed in an open window where there was a strong draft of air, and all the water rapidly evaporated. When dry the larvæ formed a thick film over the bottom of the dish. A small amount of absolute alcohol was next added to the dish, the cover was placed over the dish and put aside for a few hours. When the alcohol was poured into the dish it was noticed that the film of larvæ remained tightly stuck to the bottom of the dish, and was not dissolved loose by the alcohol. The alcohol was next poured over a small piece of absorbent cotton, just enough to absorb all the alcohol, and this cotton was placed on the wrist, covered with a small piece of rubber, and wrapped with gauze to hold it in place. After an hour's time this was removed, and the area covered by the rubber was found to be reddened in spots. There was very slight itching. After removing the application the redness disappeared to a certain extent. The application appeared to have very little effect until about twenty-four hours after applying it, when small pimples appeared over the area covered by the rubber, accompanied by a very decided itching. By the third day there was a slight tendency toward vesicle formation. While this was very slight the elevations could be distinctly felt by passing the tips of the fingers over the area. The irritation reached its height about the fourth day. There did not appear to be any swelling of the subcutaneous tissue. The eruption had practically disappeared by the sixth day.

A larger mass of larvæ than the foregoing was dried and then ground up in a small mortar, treated with absolute alcohol as before, and then the entire mass taken up on a small piece of gauze and applied to the other wrist. The result was the same as in the first experiment, except that after twenty-four hours the papulo-vesicular eruption was more pronounced and itching much more intense, the papules being closer together and a much larger area involved. By the fourth day there appeared to be a slight thickening of the subcutaneous tissue and the epitrochlear gland was slightly enlarged and somewhat tender. After the fifth day the eruption rapidly disappeared and was practically gone by the eighth day. Figure 3 is from a photograph of this eruption as it appeared on the fourth day.

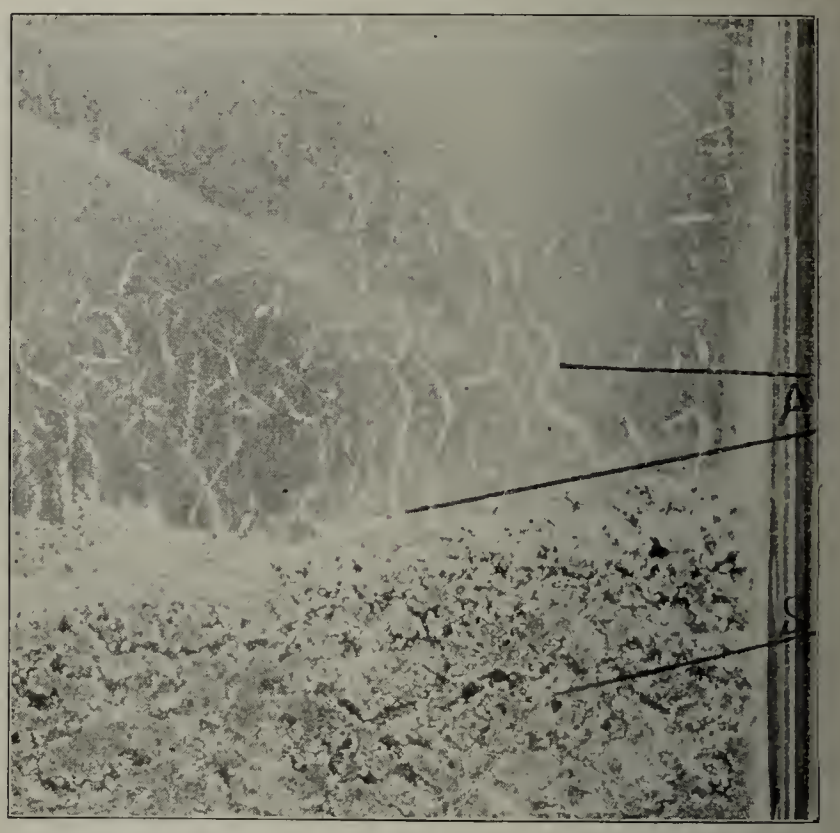


Fig. 2.—A, closer view of masses of larvæ on side of jar; S, sand.

As a control the plain absolute alcohol in a bit of absorbent cotton was placed on the wrist, covered with rubber, and wrapped with gauze, but when removed after an hour's time had not produced any effect on the skin. This would indicate that the irritating substance in the first two experiments was extracted from the larvæ of the uncinaria. A mass of larvæ was treated

with ether and the ether then applied to the skin in the same way as was the alcohol, but without result. Larvæ which were treated with water also gave negative results.

SUMMARY.

From these experiments it would appear that the larvæ of the *Uncinaria americana* produce some substance which is very irritating to the skin, producing severe itching, with a tendency toward vesicle formation.

The eruption produced by these experiments was not so severe as that produced when the living larvæ penetrate the skin; there is not the extreme swelling of the subcutaneous tissues; the itching is not excruciating; there are no severe constitutional symptoms; the eruption disappears in a shorter time. It appears to be a mild form of ground itch, and the two can readily be differentiated when we remember that in these experiments the substance was simply placed on the surface of the skin, while when the living larvæ penetrate the skin they evidently secrete this substance directly into the subcutaneous tissues, as well as into the skin; and while in the experiments the substance was applied only once

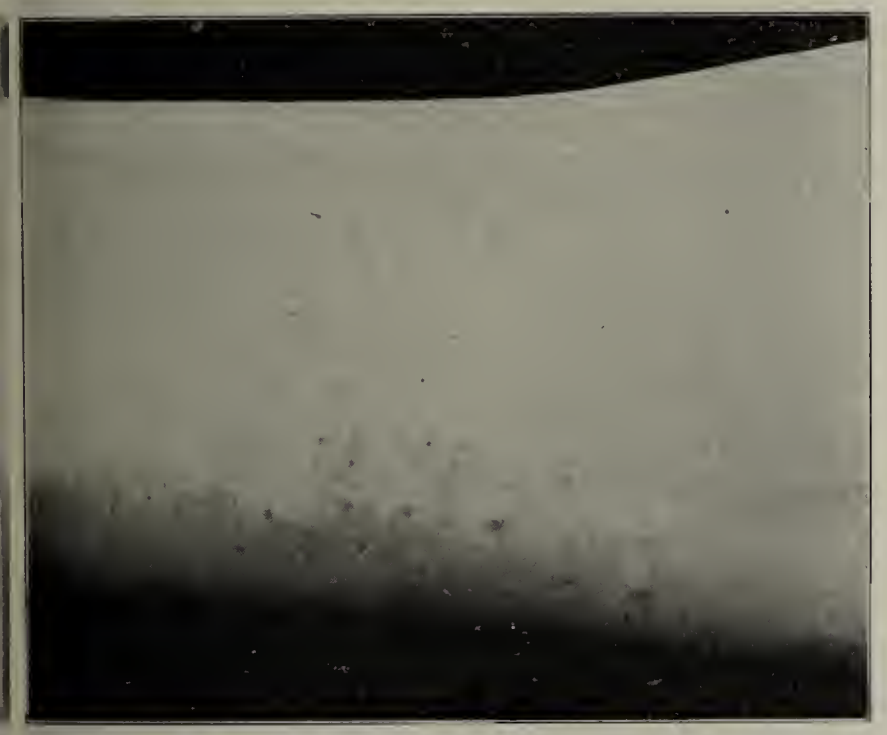


Fig. 3.—Fourth day of an eruption on the wrist produced by alcoholic extract of uncinaria.

and was not replenished from time to time, on the other hand the larvæ probably continue to excrete this substance for some time, and thus produce the excruciating itching.

Nature appears to supply this substance to be used as an irritant to the tissues so that the patient will continue scratching the area as long as the larvæ are in the immediate locality, and the scratching and rubbing of the area no doubt facilitates the passage of the larvæ through the tissues.

The eruption produced in these experiments resembles very closely the mild form of ground itch, when only a few larvæ penetrate the skin, producing the discrete form of the eruption, the difference being readily accounted for by the continued activity of the living larvæ.

The substance which produces the eruption has not as yet been obtained in sufficient quantity to attempt to recognize it. It appears to act somewhat as the toxicodendrol which was isolated from the *Rhus toxicodendron* by Professor Pfaff, Harvard University.

THE EXAMINATION AND SURGERY OF THE UPPER END OF THE ESOPHAGUS..*

HARRIS PEYTON MOSHER, M.D.
BOSTON.

Owing to its nature and position, the surgery of the esophagus is limited. In many conditions all treatment is simply palliative. The distress caused by interference with the functions of the esophagus, however, is so great that palliative measures are worth while and we should welcome any increase in their efficiency. Until recently the diagnosis of diseases of the esophagus has been made from the patient's history and the general symptoms, supplemented by the findings obtained from passing bougies. The treatment has been along restricted lines, and consisted of the use of bougies, with an occasional operation through the front or the side of the neck on the only accessible part of the esophagus, the upper half. Since the introduction of light-bearing tubes the diagnosis of diseases of the esophagus is no longer made by inference, but by sight and the removal of suspected tissue for the microscope.

Fig. 1.—Cross section of the neck through the sixth cervical vertebra: C. Cricoid cartilage. E, Esophagus. V. Sixth cervical vertebra.

This paper will take up briefly certain necessary points in the applied anatomy of the esophagus and will present a speculum and a set of instruments for examining the upper end of the esophagus and the larynx, and for working in this locality.

APPLIED ANATOMY.

Congenital Anomalies.—The esophagus may be divided or double. It may open into the trachea; the lower part being absent. Fistulas between the trachea and the esophagus occur and annular strictures which are congenital are found. True diverticula are acquired. In the upper part of the esophagus they are due to a hernia of the esophagus through the inferior constrictor muscle. They may be due also to the contraction of scar tissue which joins the esophagus to neighboring structures.

---

* Read in the Section on Laryngology and Otology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

* Models made in the Anatomic Laboratory of the Harvard Medical School.

Structure.—The esophagus has an outer museular coat of two layers and an inner glandular eoat eovered with pavement epithelium. A eonnective tissue layer joins the two ehief layers. The outer layer of the museular part consists of longitudinal fibers and the inner layer of eireular ones. The anterior longitudinal fibers are attaehed to the baek of the erieoid eartilage. The inner layer of eireular museular fibers is a eontinuation downward of the fibers of the inferior eonstrietor musele. The upper end of the esophagus is the lower end of the pharynx, so that voluntary museular fibers predominate in it. From this it happens that a foreign body ar-

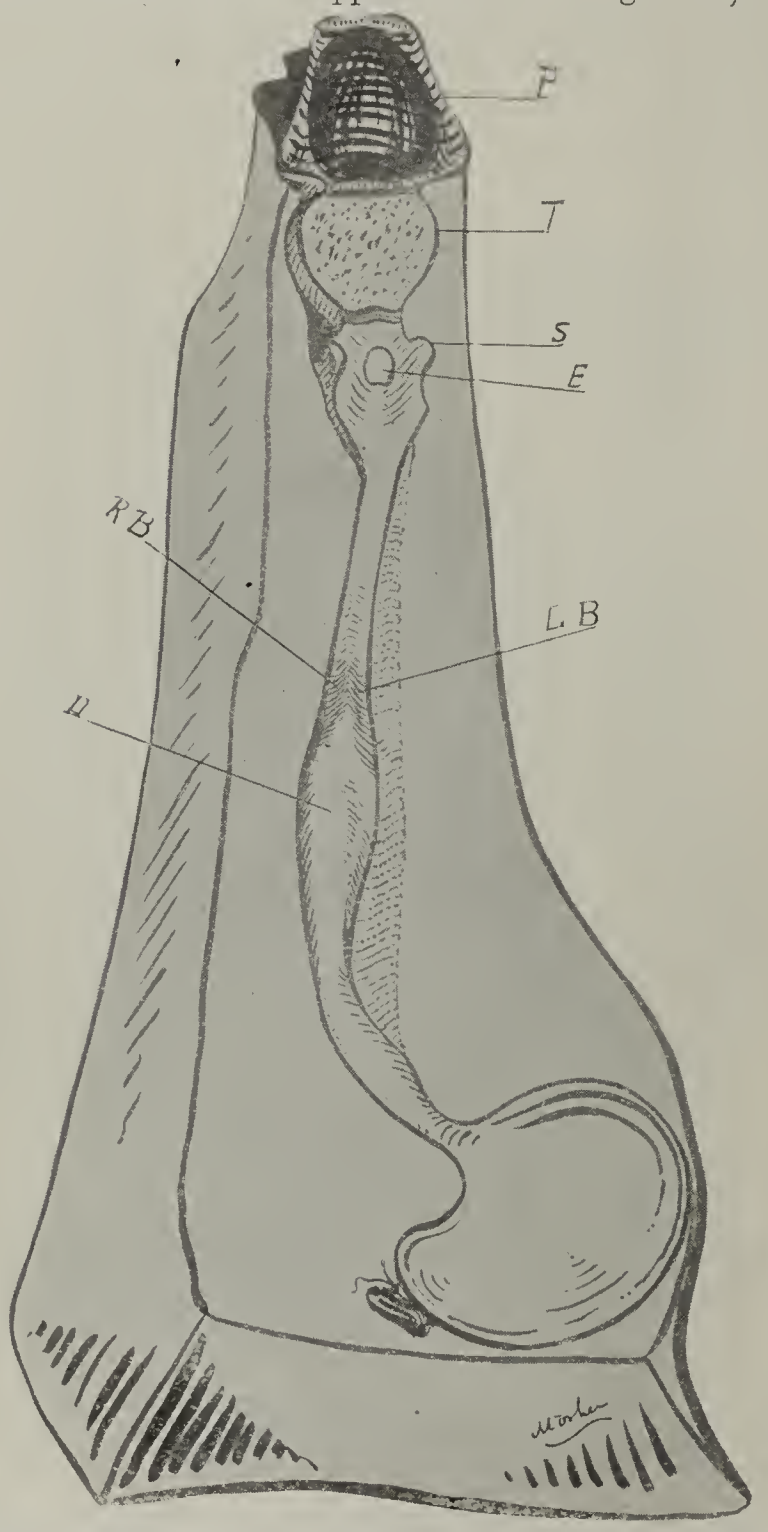


Fig. 2.—Wax cast of the esophagus; P. Hard palate. T. Base of tongue. S. Pyriform sinus. E. Epiglottis. L. B. Oblique line made by left main bronchus. R. B. Oblique line made by right main bronchus. D. Dilatation back of the heart.

rested at the entranee of the esophagus often is thrown back into the pharynx and into the mouth.

Lymphatics.—The lymphaties of the pharynx enter both the mediastinal and the cervieal glands so that in suspeeted cancer of the esophagus the glands at the root of the neek should be examined.

Direction.—The esophagus is plaeed in the greater part of its course a little to the left of the middle line. In the middle of its eourse, at the fourth thoraeic vertebra, it swings to the middle line, back of the arch of the aorta, but at onee goes to the left again and enters the stomach to the left and in front of the aorta, at the eleventh thoraeic vertebra. This deviation from the middle line does not interfere with the passing of bougies or tubes except at the lower part where the esophagus passes through the diaphragm. Here the point of a metal tube has to be swung to the left if its passage is to be painless.

Position.—The esophagus has the vertebral eolumn behind it and the traehea in front and lying on it. At the fourth thoracie vertebra the arch of the aorta makes a transverse constriction in it and a vertebra lower down the left main bronehus, at the fifth thoraeic, makes an oblique line aeross its front surfaee. Below this point the heart lies on it like a weight. In the lower part, the right and left pneumogastrie nerves lie on the sides of the esophagus, and back of the areh of the aorta the thoraeic duet erosses from right to left behind it, on the front of the vertebral eolumn.

Lumen.—At the beginning the esophagus is a transverse slit slightly less than an ineh wide (Fig. 1). The width inereases somewhat on the way down, and the esophagus beeomes more of a tube until at the point where it goes through the diaphragm it is nearly round and measures a little over an ineh in both diameters (Fig. 2). The most important eonstriction of the esophagus is at the beginning, back of the erieoid eartilage. The narrowing next in importanee is at the cardiae end. The constrictions back of the areh of the aorta and behind the left main bronehus are less important. The upper narrowing is due to the erieoid (Fig. 1). The lower eonstriction is eaused by the fibers of the diaphragm as they surround it (Fig. 2). One of the two wax casts of the esophagus whieh I made shows these measurements nieely (Fig. 2). In the other the eonstriction at the diaphragm is mueh narrower than one ineh. Both easts show a marked dilatation of the esophagus back of the heart. This is limited above by two oblique lines, a right and a left, made by the right and left main bronehus. The V made by the bifurcation stamps itself on the esophagus. In both easts this dilatation lay markedly to the right of the median line. The esophagus begins 6 ineches from the incisor teeth, back of the crieoid eartilage at the sixth eervieal vertebra. It is 10 ineches long, and goes through the diaphragm at the tenth thoracic vertebra, 16 inches from the teeth. It is erossed by the areh of the aorta baek of the middle of the first piece of the sternum, 10 inches from the teeth. The measurements to be remembered in connection with it are, then, 6 and 10.

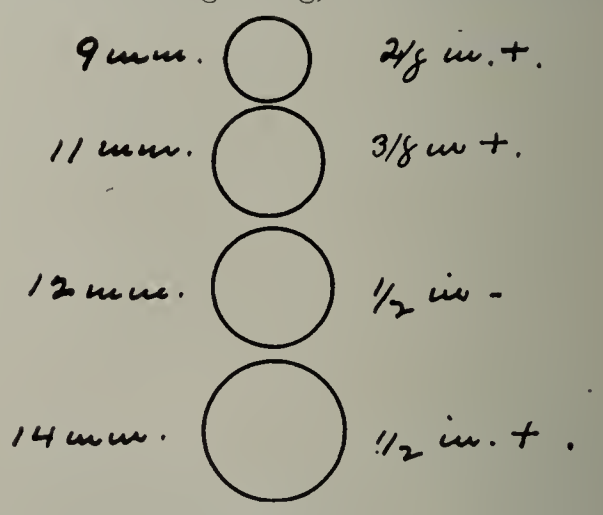


Fig. 3.—Diameter of esophagus for different ages.

Distensibility.—A half-ineh bougie should pass easily everywhere. Its failure to pass is a sign of

stricture. A ¾-inch bougie is the largest which should be used to dilate the esophagus. The distensibility of the esophagus is much greater in the living than in the dead. On the dead, when the esophagus is stretched transversely only, it dilates to 40 mm., or 1½ inches. The ordinary full-sized tooth plate is 2¼ inches (57 mm.) broad. A 50-cent piece is 1⅛ inches (30 mm.) wide. Since the transverse diameter of the esophagus hovers round 1 inch it would seem as if this coin should pass readily in an adult. The direction in which the esophagus will stretch the most is from side to side. For this reason oval tubes take up the slack in the esophagus along anatomic lines better than round ones.

The following tables are compiled from Stark. They are of use for reference:

DIAMETERS OF THE ESOPHAGUS AT THE FOUR CONSTRICTIONS.

Constriction.	Diameter.	Vertebra.
Cricoid.....	Transverse 23 mm. (1 in.)..... Antero-posterior 17 mm. (¾ in.).	Sixth cerv.
Aortic.....	Transverse 24 mm. (1 in.)..... Antero-posterior 19 mm. (¾ in.).	Fourth thor.
Left bronchus.	Transverse 23 mm. (1 in.)..... Antero-posterior 17 mm. (¾ in.)	Fifth thor.
Diaphragm....	Transverse 23 mm. (1 in. +)..... Antero-posterior 23 mm. (1 in. —)	Tenth thor.

LENGTH OF THE ESOPHAGUS AT DIFFERENT AGES.

Teeth to Cricoid.	To Bifurcation.	To Cardia.	Length of Whole Esophagus.
Birth, 7 cm. (2¾ in.)..	12 cm. (4¾ in.)	18 cm. (6¾ in)	10 cm. (4 in.)
1 year, 10 cm. (4 in.)..	14 cm. (5½ in.)	22 cm. (8¾ in.)	12 cm. (4¾ in.)
2 years, 10 cm. (4 in.)..	15 cm. (6 in.)	23 cm. (9 in.(	13 cm. (5⅛ in.)
5 years, 10 cm. (4 in.)..	17 cm. (6¾ in.)	26 cm. (10¼ in.)	16 cm. (6⅜ in.)
10 years, 10 cm. (4 in.)..	18 cm. (7 in.)	28 cm. (11 in.)	18 cm. (7 in.)
15 years, 14 cm. (5½ in.)..	23 cm. (9 in.)	33 cm. (13 in.)	19 cm. (7½ in.)
Adult, 15 cm. (6 in.)..	26 cm. (10¼ in.)	40 cm. (15¾ in.)	25 cm. (10 in.)

For memorizing the length of the esophagus at different ages the following approximate figures are given: Birth, 7 inches; 5 years, 10 inches; 15 years, 13 inches; 25 years or adult, 16 inches (Stark).

DIAMETERS OF TUBES FOR DIFFERENT AGES (see Fig. 3).

To 8 years	9 mm.
From 9 to 15 years	11 mm.
From 17 years	12 to 14 mm.
Adults	14 mm. (average).

CLASSIFICATION OF DISEASES OF THE ESOPHAGUS.

I have tabulated the cases of diseases of the esophagus which have been treated in house patients for the last 19 years at the Massachusetts General Hospital. An attempt was made to get the end results of cases for the last 10 years. Out-patient cases were not investigated because the information which could be obtained was too fragmentary. In the list thus compiled there is one case of abscess of the esophagus and there are three of diverticulæ. Stricture gave the greatest number of cases. Of these there are 106.

Stricture.—Of the 106 cases of stricture the nature of 88 was not determined. The answers to the letters of inquiry show that very many of these were cases of cancer. There are 16 strictures due to swallowing some corrosive fluid. Such cases, therefore, make about 16 per cent. of all. One stricture was classed as syphilitic and one as congenital. In the future, with our more exact methods of examining the esophagus, time will not be relied on so often to settle the diagnosis in such a large number of cases.

Carcinoma.—Thirty-six cases are entered as carcinoma or about two a year. The reports from these cases are tragic in the extreme. They show that the surgery of carcinoma of the esophagus is simply palliative.

Foreign Bodies in the Esophagus.—In marked contrast to the cases of carcinoma of the esophagus the cases of foreign bodies in the esophagus often have an element of comedy. The surgery of foreign bodies is generally successful so that a smile at some of these cases is pardonable. There are 57 cases of foreign bodies in the esophagus. They are divided as follows:

Coins	14	Peach stone	1
False teeth	12	Button	1
Round whistles	6	Collar button	1
Bits of bone	4	Spoon	1
Common pins	3	Suspenders (a pair)	1
Buckles	3	Objects not named	6
Safety pins	2		
Stones	2		57

From this list it is evident that the two most common foreign bodies are coins and false teeth. Next comes the round penny whistle. Babies crawling on the floor pick up coins and bits of bone and stone. They must also pick up pins and buttons, but these, as a rule, go on and out without causing trouble. Buttons give trouble more often in the nose and pins in the trachea. The case, therefore, might be stated as follows: the toothless baby swallows coins and whistles; the toothless man swallows his false teeth. The majority of foreign bodies cases occur in infants or children. After 5 or 6 years of age the esophagus is of sufficient size and distensibility to take care of smooth objects with great ease. I know of one child where all small coin passes readily. When she was 8, a half-dollar was swallowed and passed. She is now 9, but silver dollars are kept away from her for prudential reasons. The great distensibility of the adult esophagus is shown by the sword swallowing of the juggler. Once entered in the esophagus, a foreign body has to be of very considerable size and rough in order to keep from going down. False teeth are the commonest foreign body to meet these requirements. In these cases Nature often works wonders. In one of the cases tabulated above, the teeth were never found, but the end of the probang broke off in the attempt to find them and was passed a few days after. In another case the plate was passed in a few months after the patient left the hospital. In the light of these 2 cases, the man who left the hospital untreated and against advice, preferring to trust Nature rather than the surgeon, was not so insanely foolish as it would seem. Among the demented the beginning of the intestinal canal, the same as the end, is the receptacle of queer articles. My list includes two cases of this kind. In the first a spoon was swallowed; in the second a part of a ball of string, three buckles and a pair of suspenders. The following man could not be classed as demented, but he surely was unfortunate. He went to a party and ate some candy. The candy stuck to his false teeth. He swallowed the candy and his teeth, too.

Treatment.—In surgery 20 years is a long time. One would expect in this period, therefore, great changes in treatment. In the surgery of the esophagus, however, there have been but few. The greatest change and advance is the safe laparotomy of to-day, which allows the stomach to be opened in order to reach foreign bodies lodged in the thoracic part of the esophagus, or to establish a permanent gastric fistula as the last resort of palliative treatment. In most of the coin and whistle cases the records show that the bristle probang and coin catcher failed to remove the foreign body, so that most of these cases were treated by opening the esophagus from the side. The great majority of the patients recovered without incident and had no subsequent trouble. Pneumonia followed the operation but rarely. This

method must be regarded as heroic, perhaps, but satisfactory. With our light-bearing tubes of to-day, I feel that the majority of such cases should be managed without the external operation. Smooth foreign bodies predominate with children, but with adults rough ones are commonest. With adults, therefore, the case is different. The sharp angles of tooth plates imbed themselves so firmly in the esophagus that prolonged attempts at extraction with tubes often make matters worse. The esophagus is a septic tract, so that it is not advisable to connect it with the tissues of the neck or with the pleural cavity.

From a review of the cases, the treatment of strictures of the esophagus due to swallowing corrosive fluids seems to be fairly satisfactory. The majority of such cases need to have bougies passed at intervals for life. The severest cases are made livable by cutting the stricture with fish line. Some of these desperate cases require the repetition of this procedure a number of times and then, when as much has been gained as possible, this gain must be maintained by bougies. It would seem as if, with our light-bearing tubes which allow us to come down on the stricture and examine it, that some method of cutting and dilating the stricture based on the methods used in the urethra ought to be devised for the esophagus. Speaking of the use of string in cutting strictures of the esophagus brings up another use of string in the esophagus which we who are using tubes might take advantage of more than we do. I refer to the procedure of having the patient swallow a string until one end is well entered in the upper part of the intestines. The free end comes out of the patient's mouth and is worn over the ear. When the lower end is well down in the alimentary canal, the upper end can be pulled on with considerable force without coming up. Such a taut string can be used for a perforated olive tipped bougie to run on. It is a sure guide, of course, to the lumen of the stricture. A similar string could be employed equally well to guide an esophageal tube to the opening of a stricture. As far as I know it is a matter of theoretical interest only to remember that a string fed to a patient in this way has been known to appear at the anus.

As the esophagus is covered with flat pavement epithelium, most of its malignant growths are epitheliomata. It has a liberal supply of glands, so that a new growth can start also from these. When the growth deeply infiltrates, palliative treatment is all that is possible, no matter whether the growth is in the upper or the lower portion of the esophagus. In the rare cases in which the growth occurs in the upper part of the esophagus and does not infiltrate, there is a chance of successful removal. One very pretty case of this kind went out of the hospital some months ago. Examination under ether by esophageal tubes showed a hard annular stricture just back of the cricoid. A small projecting knob was removed from this, which proved the growth to be

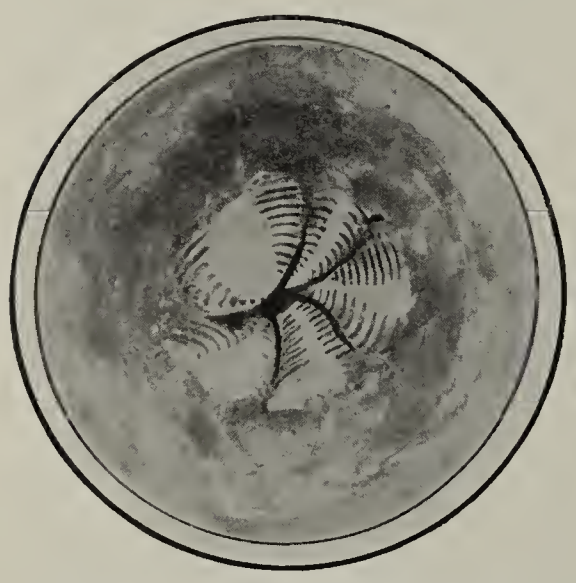


Fig. 4. — Normal esophagus, quiet breathing.

Fig. 5. — Normal esophagus, deep breathing.

Fig. 6.—Scars from acid burns radiating from the lumen of a stricture.

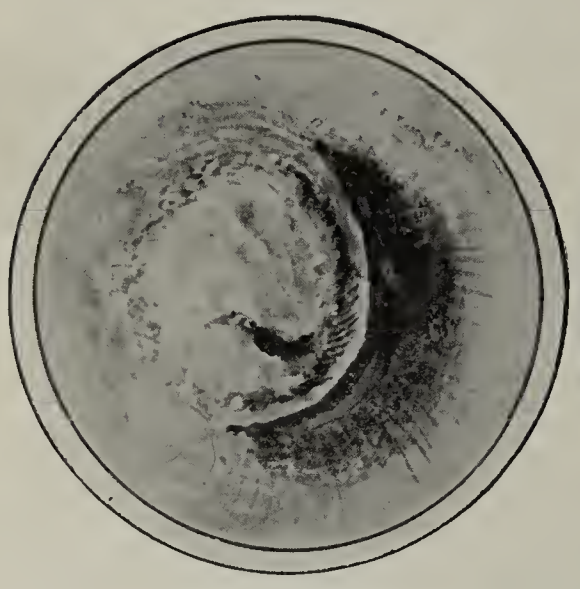


Fig. 7.—Carcinoma.

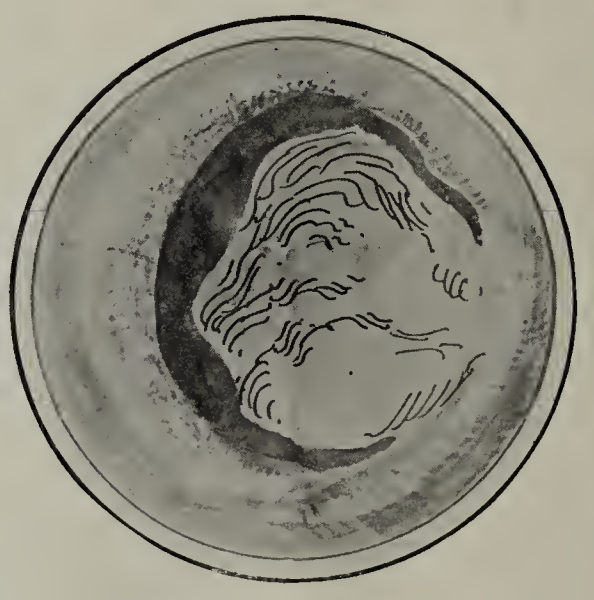


Fig. 8.—Carcinoma.

Fig. 9.—Fishbone.

PICTURES OF THE ESOPHAGUS OBTAINED THROUGH THE ESOPHAGEAL TUBE.

carcinoma. The case was transferred surgical and the growth was removed through the neck by the left lateral route. It did not infiltrate and so was dissected out readily. The end of the divided esophagus was brought to the surface of the side of the neck and stitched there. The patient was fed through this by funnel and tube. The patient chewed her food and spit it into the funnel. In this case the esophageal tube located the place of stricture and determined its character. This was well worth while. Perhaps, by means of the tubes, we can soon determine oftener what cases are operable and what are not. Figures 4, 5, 6, 7, 8, 9 are pictures of the esophagus as seen through the esophageal tube (after Stark).

From the surgical standpoint, the most satisfactory esophageal cases are cases of diverticula of moderate size. A thorough dissection cures the case at once. Two such cases are in the house records.

SURGERY OF UPPER END OF ESOPHAGUS.

I have been somewhat long in getting to the second part of my paper, namely, the examination and the surgery of the upper end of the esophagus. I have indicated already, to a certain extent, the character of the surgery which is possible in this locality. The upper end of the esophagus is the most accessible. This is fortunate, because the majority of pathologic conditions are found here. The cricoid cartilage acts as a cartilaginous stopper and makes the beginning of the esophagus the narrowest part. Foreign bodies lodge first back of the cricoid; corrosive fluids are delayed longest at this point, so that strictures are commonest and most extensive here; congenital clefts choose this locality from embryologic reasons; diverticula are commonest here, and, finally, cancer is located, as a rule, at the upper or the lower end of the esophagus, seldom in the middle. All this is especially fortunate, because, even if palliative measures are all that are left in so many cases, they are vitally important for the comfort of the patients, since starvation is not an easy form of death.

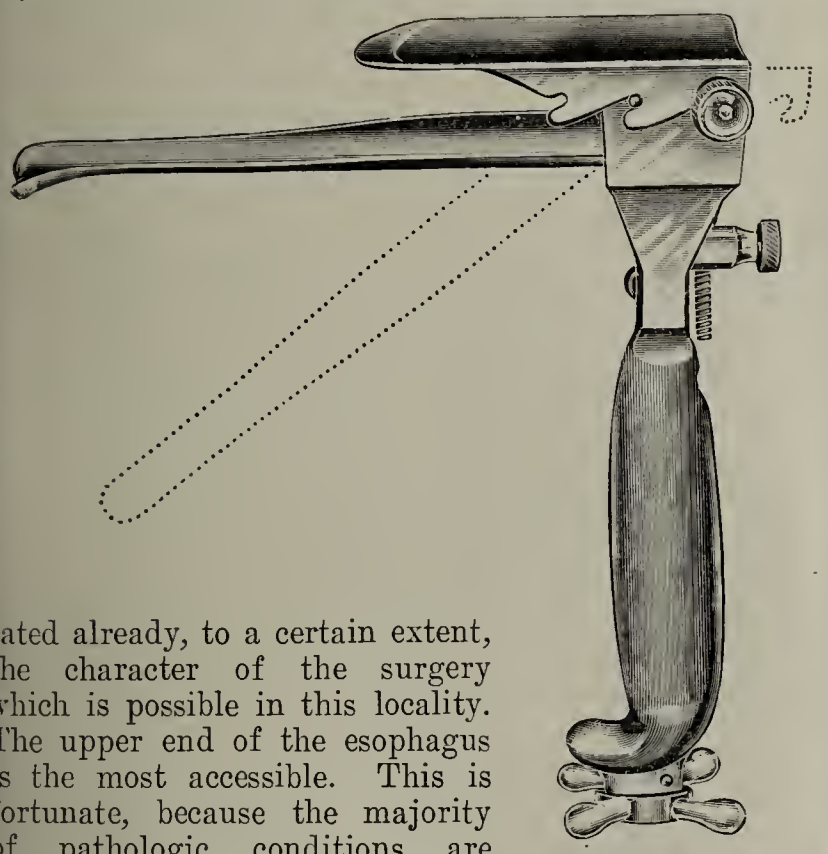


Fig. 10. — Author's speculum.

The two methods of reaching the upper end of the esophagus by external operation are subhyoid pharyngotomy and lateral esophagotomy. Subhyoid pharyngotomy has a very evil reputation so many patients die in a few days of pneumonia. If the patient is operated on in the sloping position and kept in this position or the upright position afterward and not allowed to lie flat in bed, and, further, is fed by rectum for the first few days, the danger of pneumonia from secretions getting into the trachea is much lessened. The foreign body cases show that lateral esophagotomy is much safer than subhyoid pharyngotomy. When lateral esophagotomy is done for carcinoma, feeding by mouth is shut off forever, because the upper end of the esophagus is usually brought to the side of the neck.

Subhyoid pharyngotomy is a tempting operation for growths at the beginning of the esophagus; it is so direct. In a recent case in which I operated by this route for cancer back of the cricoid, the patient escaped immediate pneumonia from the operation, but did not regain the ability to swallow, so that after feeding by rectum for the first few days food was given partly by rectum and partly by the stomach tube. At the beginning of the third week the patient died of pneumonia. Lateral esophagotomy would have simplified the feeding in this case and possibly would have prevented the pneumonia.

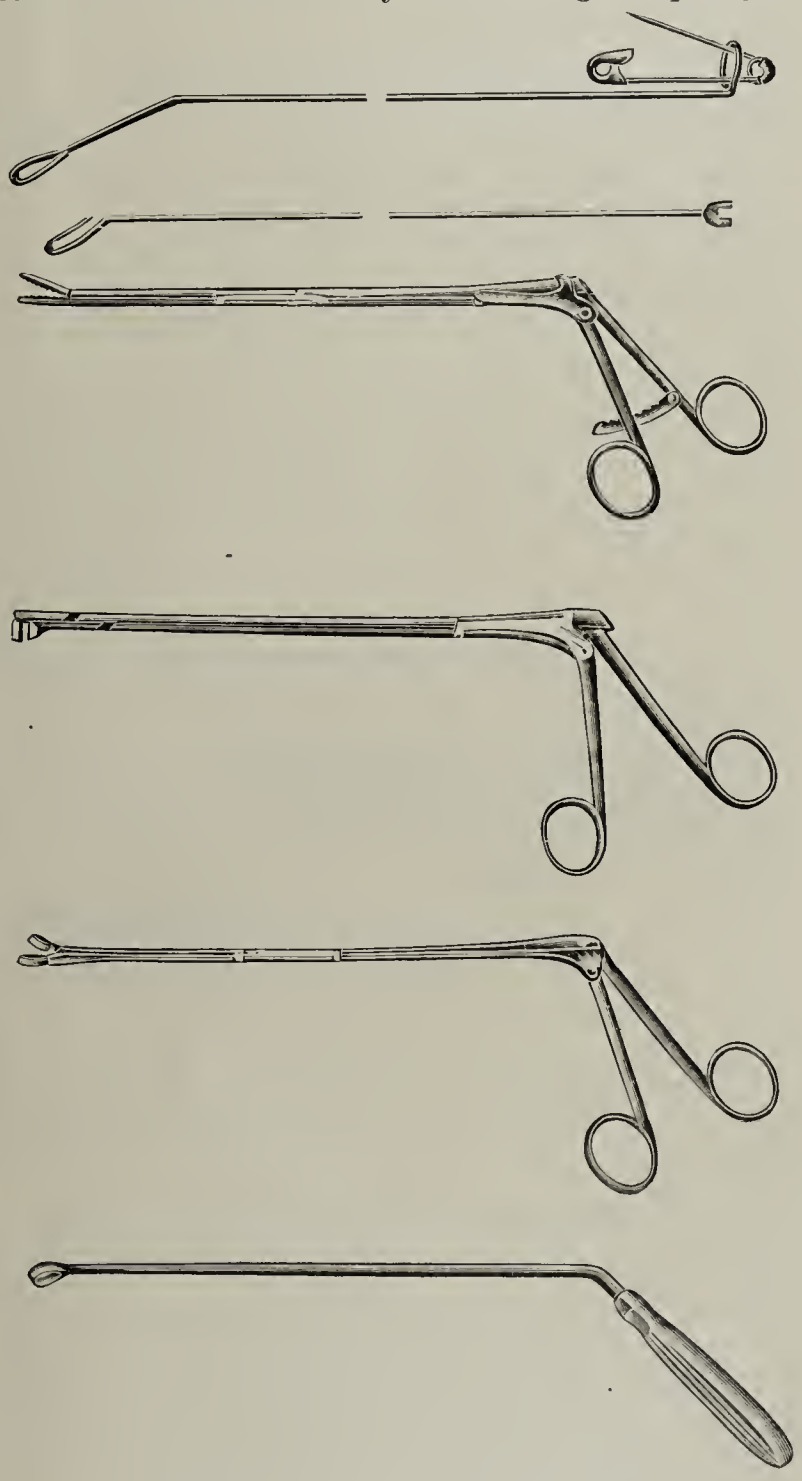


Fig. 11.—Instruments used by author.

Much can be done in the examination of the esophagus under cocain, but for exact examination, for the rapid dilatation of a stricture or for curetting a carcinomatous growth either for the purpose of diagnosis or for enlarging its lumen, ether is preferable. The cricoid cartilage is the great obstacle to the free passage of instruments into the esophagus. The constrictor mus-

cles draw it back against the cervical vertebræ so that the opening of the esophagus becomes a transverse slit. If the head is bent back too far, the soft tissues are put so much on the stretch that the cricoid can be moved forward but little. On raising the head somewhat, however, the tension of the cricoid is released. It is important to remember this, especially in introducing esophageal tubes under cocain. The sides of the upper part of the esophagus do not have the rigid boundaries of the central part. The natural pathway for food into the esophagus is at the sides by way of the pyriform sinuses. Often it is easier to engage a bougie or a tube in the esophagus by placing it first in the pyriform sinus and not to bring it to the middle line until the cricoid has been passed (Fig. 2).

Figure 10 represents a speculum which I designed and which facilitates the examination of the lower pharynx and the upper end of the esophagus and the pyriform sinuses and extends the scope of the palliative measures which are possible in this locality. With the speculum there is a set of instruments of the proper length and shape for carrying out such procedures (Fig. 11). The speculum is Kirstein's tongue spatula developed into a bivalve speculum. In place of three hoods, the instrument has a single adjustable hood. Both the width and length of this can be regulated (Fig. 12). The long arm of the speculum is of sufficient length to pass by the epiglottis and to

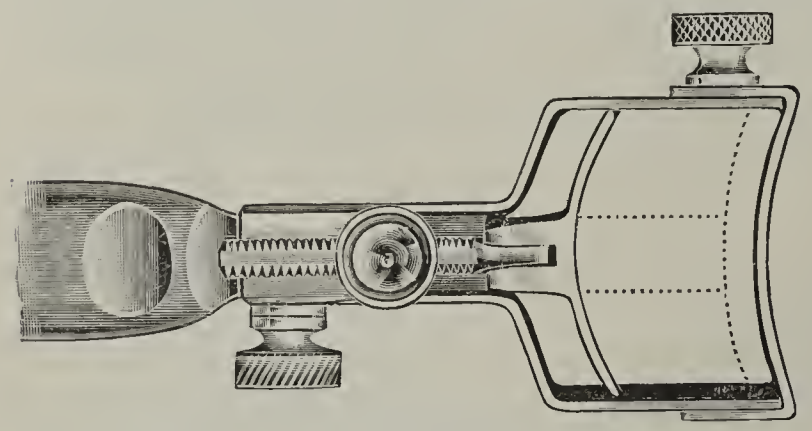


Fig. 12.—Adjustable hood for speculum.

reach the middle of the back of the cricoid cartilage. This arm can be elevated so that the cricoid cartilage is pushed forward and the upper inch of the esophagus exposed. This instrument is of use also for examining and operating on the larynx by the direct method. It will always give a view of the arytenoids and the posterior half of the cords. In the majority of the cases in which it has been tried it has given a view of the anterior commissure. In trying to get a view of the anterior ends of the vocal cords I have found that it is better to work through a moderate opening of the hood. With a large opening of the hood the larynx is pushed forward and the tissues of the neck are so stretched that the esophagus balloons widely, but the front of the larynx is pushed out of the line of vision.

The advantage of examining and working on the lower part of the pharynx and the upper end of the esophagus through a speculum of this kind rather than to work through an esophageal tube is that you have the whole field in view at once. With the tube you work through a keyhole; with the speculum, through a window.

828 Beacon Street.

DISCUSSION.

Dr. E. Fletcher Ingals, Chicago, said that Dr. Mosher did not go into the operations that are spoken of in recent works on surgery. He was pleased with what was said about carcinoma of the esophagus, because he believes it is worse than useless to attempt to remove such growths from this position. There may be exceptions, but they are very rare. In recent works on surgery it is recommended that effort be made to open the constricted esophagus by various methods of dilatation, even in carcinoma, and as a last resort gastrostomy is recommended. It seems better to do this operation early and not worry the patient with efforts to open the esophagus, because certainly it will not stay open, and the patient will live as long and more comfortably than by the latter procedure. He did understand how the string is passed in stricture of the esophagus, but it undoubtedly would aid much in passing the stricture. Internal cutting of the esophagus similar to the internal cutting of the urethra, is attended by so much danger from hemorrhage that he did not think it could be advised. More particularly, since the *x*-ray has come into use he has observed that flat bodies, like coins, lodge in the esophagus with the flat surface anteroposteriorly. This is a point of interest in their removal with the common esophageal forceps. In such cases, it is generally fairly easy to remove such bodies by passing the blades down to the point where the body is located, then opening them and passing them a half-inch further, when the foreign body is almost sure to be caught. Old-fashioned forceps answer the purpose for these bodies very well. The pictures of the esophagoscopic images are valuable, as when one first uses the instrument he is wholly unprepared to understand the picture. It was a surprise to him to find that the esophagus is an open tube, from just below the larynx down nearly to the stomach.

Dr. Emil Mayer, New York City, said that the bivalve speculum which Mosher has devised will undoubtedly never be of great value. The bend in the lower end of this speculum will turn a curve into a straight angle and enable the surgeon to get a view of what he is looking for. Regarding stricture of the esophagus, Dr. Mayer spoke of the importance of making haste slowly. It was his good fortune to see one of the two rarest cases in the literature of the world; the other case being recorded in Ziemsen's Encyclopedia. It was congenital stricture of the esophagus. The child, whose case he reported about 15 years ago, he saw when she was 10 years old. She had never swallowed solid food, and it was rather amusing to see her attempts to get food down. She would take a cake and lie down on the sofa with her heels where her head ought to be, and after the food was well masticated she would make an unsuccessful attempt to swallow it. The only thing she could swallow was slow sips of liquid. One single stretching and passing of a bougie cured her, although she had a number of them afterward, and came every six months to have a tube passed and to see that it was still patent. But immediately after the passing of the first esophageal bougie she was entirely well. On the other hand, there are large numbers of cases of stricture of the esophagus of very frequent occurrence, such as the swallowing of concentrated lye. He presumed that all had seen such cases, particularly in the South. When stricture occurs in that way it becomes of such density that it is necessary to be extremely careful in passing the esophageal bougie. The main point of advance, as far as laryngology is concerned, is in the question of diagnosis, and Dr. Mosher has helped to make a diagnosis of the condition present, whether a diverticulum, stricture of the esophagus, a foreign body, or malignant disease. The treatment of stricture of the esophagus is a matter of surgical interest, and external operation must be considered.

Dr. R. C. Myles, New York City, said that last year three cases came under his observation that illustrated some points in regard to diagnosis and the manipulative technic and how far it should be carried out. One of these was published several times. It was that of a man whose teeth lodged in the esophagus beneath the sternum. He saw the patient two months afterward and made a diagnosis by both sounding and the *x*-ray. In his opinion it was improper and inexpedient to attempt to remove it by force. He succeeded in engaging it several times with the instrument, but always desisted when the resistance was a certain amount, because he felt that a traumatism would be almost certain death without proper drainage, and he turned the case over to a general surgeon. Dr. John A. Wyeth made an incision in the left side of the

neck, extending beneath the clavicle, and an incision in the esophagus, in which he found the teeth embedded deeply in the walls with granulation tissue around them. The teeth were extracted and for a while the patient's food passed through this esophageal opening, but it gradually filled up and the man to-day is practically well without evil consequences. If he had pulled with more force, the patient might have been injured. Last year a man came to him suffering from great pain and difficulty in swallowing, with edema of the posterior part of the larynx and esophageal opening, a history of having swallowed half of the wishbone of a chicken. By simply making the patient say o, a, e, and moving the larynx, he succeeded in seeing a white substance, and with the forceps seized the bone. It was two inches long, with sharp edges. It had penetrated the tissues between the opening of the esophagus and the interarytenoid space and extended through the neck almost to the skin. The man had edema of the larynx, and for several days it was a question whether tracheotomy would not have to be performed, but he finally recovered. About a week afterward a woman, a friend of the last patient, while sitting at the table joked about his swallowing the chicken bone, when she swallowed one herself. Her physician sent for Dr. Myles and he removed part of a breast bone from the upper part of the esophagus. It was about as large as a 25-cent piece, with sharp edges. In both cases the swallowed bones were hidden in the ordinary position of the larynx, but in the act of moving the throat, singing and making noises, they could be seen. A few years ago he had an interesting case in a patient who swallowed a piece of the joint of a bone that had been slashed with a knife and was part bone and part gristle, about as big as a 50-cent piece. He engaged it with an umbrella bougie, but could not turn it loose. He held on to one end of the instrument until finally she jerked and pulled bone and instrument out together. It was too large to come without tearing its way out. Fortunately, she got well. He supposed it was high enough up not to have done much damage. It would seem better to rely on general surgery when teeth or anything of that kind is swallowed, because if too much force is used, it may easily happen that the parts are torn irreparably.

DR. C. M. ROBERTSON, Chicago, spoke of spasm of the larynx in cases of foreign bodies in the esophagus. The lower end of the esophagus belongs to the general surgeon, but the laryngologist's territory extends down to the bifurcation of the bronchus. He had several cases in elderly people who had swallowed large pieces of food, meat or something of the kind, which usually lodges in the first ten inches from the teeth. As soon as the bolus of food gets into the esophagus there is a contraction of the muscles, both above and below the foreign body, and these muscular contractions are so strong that it is almost impossible to remove the foreign body. That has given rise to a so-called stricture of the esophagus when no stricture really exists. In these cases a large bougie will do better than a small one as the contraction of the muscle is overcome by greater pressure. If it does not resolve in some such way spasm of the larynx occurs as a secondary condition and patients sometimes succumb to spasm of the larynx from a foreign body in the esophagus. He thought the surgery in these cases should be limited to dealing with the diverticula. If the foreign body is small the use of the tube with illumination would be the proper treatment. If the foreign body is too large to remove by forceps through the tube then the use of the bougie is indicated.

DR. H. P. MOSHER, Boston, said that he tried not to mix general surgery with special work on the upper end of the esophagus. A good deal of encroaching on general surgery may be legitimately done in the upper end of the esophagus; for instance, in carcinoma. He had the good fortune to be able to curette down a polypoid growth at one sitting with esophageal tubes. He does more in one sitting than can be accomplished in many sittings by the other methods. If anything can go through a stricture a string can; it has been found that a string will find its way where nothing else will. It takes from three or four days to a week or more to find its way down. The fact that coins usually lie transversely in the esophagus emphasizes the fact that the esophagus is flat at the beginning and dilates best transversely. In removing coins many old instruments will work well. That is illustrated by an amusing experience Dr. Mosher had with a foreign body, a coin in the upper end of the esophagus. He passed a tube directly by it. His house officer later took an old-fashioned corn catcher and presented the coin to him. He had had no personal experience with electrolysis, but was glad to know that it has worked in the cases spoken of. It should be remembered that in sword swallowing the sword has six inches to go before it gets to the esophagus. Somebody might take an *x*-ray picture and see how far it really goes. He did not, by any means, advocate the use of the speculum for passing the tube. The tube can be passed under cocain very readily, in the majority of cases. His instrument is to be used when it is necessary to see the pyriform sinus and the beginning of the esophagus, and to do definite work in this locality.

MODIFICATION OF THE SIMPLE MASTOID OPERATION WHICH SHORTENS CONVALESCENCE BY FACILITATING WOUND REPAIR.*

DRS. E. M. PLUMMER AND H. H. GERMAIN.
Professor of Otology and Assistant Professor of Anatomy, respectively, in Tufts College Medical School.
BOSTON.

It is the purpose of this paper to draw attention to a new method of operative procedure on the mastoid process, which we have employed with most successful results. We will briefly describe its technic, consider its peculiar problems, and state in detail such personal experience as will give a clear idea of its theory and practice.

For a long time we had been convinced that the simple mastoid operation now in vogue for the mechanical relief of acute suppurative mastoiditis, with its accompaniment of unremitting pain, was greatly inadequate, and that there must be some means of improving on it. We refer especially to the long and tedious convalescence that invariably follows it, as shown by the statistics of the duration of wound repairs in our large aural clinics. Even if the case goes well, the time before cicatrization takes place varies from 4 to 8 weeks, and very frequently we are called on to do a secondary operation.

Under any circumstances, prolonged convalescence must be regarded as a hardship; but when the patient is poor it may be a serious calamity. Whether or not he be a worker himself, an additional burden falls on the working members of his family; worse still, if it be the chief breadwinner who is thus incapacitated, the result can be only suffering and privation for those who are dependent on him.

An operative process, then, that can mitigate such conditions, or the possibility of such, is unquestionably a blessing. Fortunately for humanity, the duration of wound repair in the field of general surgery is much shorter than in the field we are considering. We now observe complete recovery after removal of the breast, with extirpation of the contents of the axillary space, in 14 days, and in cases of amputation of the thigh the surgeon deplores having to detain the patient in the hospital over the third week.

Believing that the unfortunate contrast to these conditions furnished by all cases of mastoid surgery was due mainly to a defect in the accepted method of operation, we set ourselves the task of studying its problems

---

*Read in the Section on Laryngology and Otology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

with a view to remedying this defect if possible. Accordingly, we made a series of experiments on the cadaver in the anatomic department of Tufts College. Its result was an operation which seemed so rational that there appeared to be ample justification for performing it on the living subject. Following is a brief description of its technic.

TECHNIC.

The usual cutaneous incision is made posterior to and parallel with the general direction of the auricle, extending from the extreme tip of the mastoid process upward to a point ½ inch above the upper insertion of the auricle. If possible, we cut at once down to the bone, and make the entire incision with one sweep of the knife, the exception to this one sweep being in cases of babies and young children with large subperiosteal abscesses, in which there may be great destruction of the outer table of the mastoid. In these cases we work our way carefully through the abscess with the blade of the knife held horizontally so as to avoid injury to important structures.

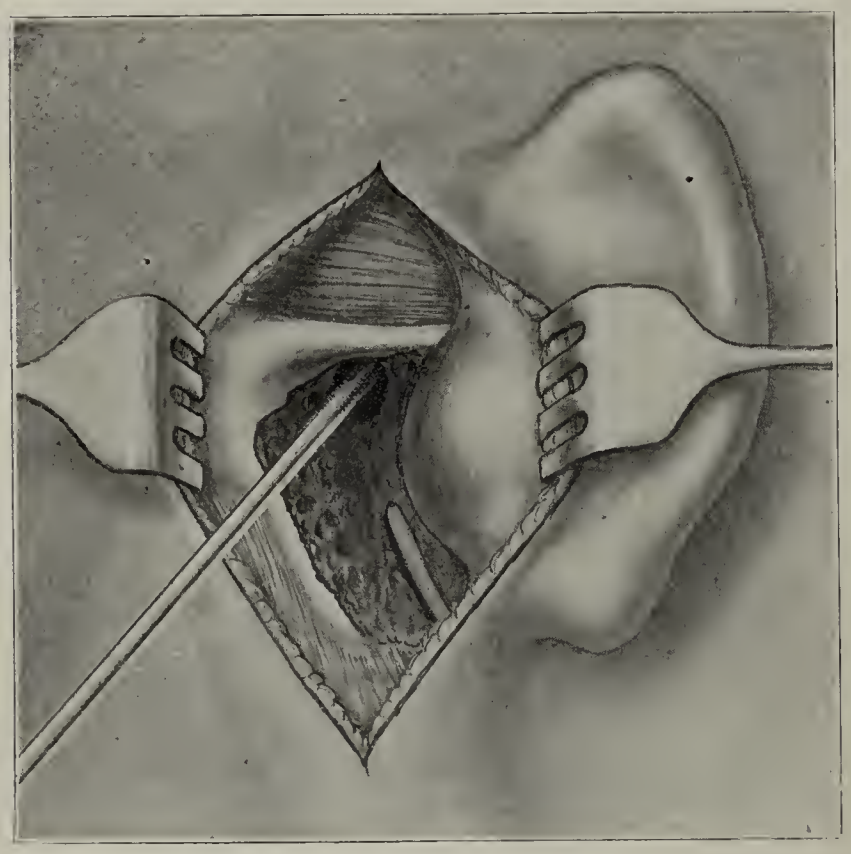


Fig. 1.—Modification of the simple mastoid operation, illustrating a radical departure from the classical operation of Schwartze. The exposure of the facial nerve in its osseous canal is incidental and not a necessary accompaniment of the operation.

To avoid mutilating the periosteum and thereby destroying its value as an agent in the repair of bone, it is now carefully pushed forward and backward with Langenbeck's periosteotome, so that the planum mastoideum is freely exposed and the hemorrhage controlled. The soft parts are now retracted with a self-retaining retractor, thus exposing the underlying bone and the operative field and at the same time the superior posterior segment of the bony meatus with the spina suprameatum and fossa. The exposed surface of bone is now carefully examined for a carious spot or sinus and for the minute dark-blue points over the cortex in the vicinity of the antrum—the so-called "shaven beard" appearance. The anatomic and surgical landmarks, as the spina suprameatum and fossa, linea temporalis, the squamomastoid suture, etc., are carefully noted. The primary opening in the bone is made with a gouge of large width, driven by blows from a suitable mallet.

Within the mastoid cavity the operation was continued by means of large strong curettes and Rongeur forceps. Every portion of the mastoid process that seemed to be affected to a serious degree was removed. After removal of the extreme mastoid tip with the Rongeur, the cells as far back as the posterior border of the sigmoid groove, together with the diploic cells at the posterior root of the zygoma, were carefully removed with the curette.

The next step in the operation was the removal of the parallel with the general direction of the auricle, ex- the roof and floor of the canal. This is a distinct feature of the modified operation. Under a brilliant illumination the bone is removed with the Rongeur forceps as deeply as the facial ridge, after which the electromotor burr is employed to smooth the facial spur. There is practically no danger of wounding the facial nerve by this procedure if performed carefully.

Fig. 2.—The original Schwartze operation.

It is presupposed that the surgeon, before attempting to perform a mastoid operation on a living person, has rehearsed it many times on the cadaver and is familiar with the anatomic and surgical landmarks of the temporal bone. It is also highly important that the surgeon should familiarize himself with the use of the chisel and gouge before attempting to perform such an operation. There is probably no other surgical feat which requires a more perfect knowledge of the technic of chiseling than does this one.

The final step in the process consists in packing the posterior membranocartilaginous canal wall firmly backward into the osseous cavity, in close contact with its walls, where it is securely held in position by a tampon of iodoform gauze inserted into the auditory canal. This is an extremely important step, since by this procedure we have a cavity, one-half of which is composed of soft tissues, instead of a cavity in the mastoid whose walls are entirely of bone, as is the case in the classical operation.

ADVANTAGES OF METHOD.

By this method bony cavity is practically disposed of, and hence we have union by first intention, instead of healing by granulation. When the gauze packing has

been completed, the mastoid incision is closed with sutures and the usual dressings are applied; the small gauze wick being allowed to remain in position until the soft parts are adherent to the bony walls. Adhesion is usually looked for at the first dressing subsequent to the operation.

It is evident that this process differs materially from Schwartze's original operation, first, from the fact that the posterior osseous canal wall, together with a part of the roof and floor of the bony canal, is removed, and, secondly, from the fact that the soft structures are carefully pressed back into the cavity thus made. In the simple mastoid operation, as performed to-day, the osseous cavity is allowed to fill up by granulation tissue from the bottom, or with a blood clot, according to the method of Dr. Clarence J. Blake. But in the modified operation, as before stated, the wound cavity is obliterated by the soft structures, which are snugly fitted back into it in much the same manner as a hand fits into a glove, thus leaving no space in which to granulate.

The objection has been raised repeatedly that the antrum is not properly drained by this method, to which we answer that the wound is drained by inserting a small gauze tape or cigarette drain into the antrum. We drain the middle ear by a free paracentesis, beginning in the attic, so as to drain that cavity as well as the aditus ad antrum, thence sweeping through the posterior fold of the membrana tympani, and terminating on a level with the floor of the annulus tympanicus. With the exception of the tampon in the external auditory canal and gauze pad within the concha, the dressing of the wound differs in no material way from the dressing employed in the Schwartze operation. It is often advisable to remove the outer dressings on the following

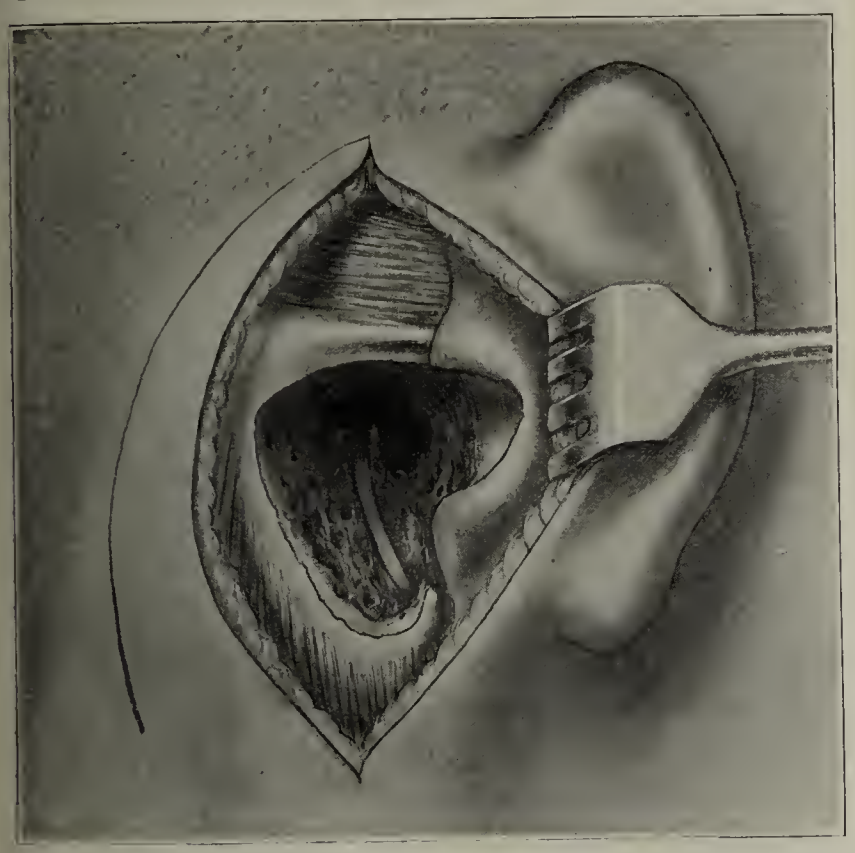


Fig. 3.—The radical mastoid operation (tympanomastoid exenteration or Stacke-Schwartze operation). The mastoid cells, antrum, tympanum, attic and auditory canal are converted into one large osseous cavity with smooth and healthy walls.

Fig. 4.—The Panse flap operation, with flap of skin dissected from the posterior edge of the mastoid opening and turned into the osseous cavity, thus covering the floor of the mastoid and entire facial ridge with skin.

CASES ILLUSTRATING MODIFIED METHODS.

Age.	Patient. Sex.	Diagnosis.	Duration of Disease, Days.	Time of Subsidence of Tympanic Inflammation After Operation, Days.	Time of Complete Healing of Primary Mastoid Wound, Days.	Condition of Hearing.	Remarks.
58.	F. G., female....	Otitis media suppurativa subacuta sinistra complicated with acute mastoiditis.....	112	6	8	Unimpaired.	Patient refused operation for long time.
38.	J. M., female....	Otitis media suppurativa acuta sinistra complicated with acute mastoiditis....	49	9	9	Unimpaired.	Patient refused operation for some time.
28.	C. L., female....	Otitis media suppurativa acuta dextra complicated with acute mastoiditis....	6	12	10	Slightly impaired..	
28.	M. F., male.....	Otitis media suppurativa acuta sinistra complicated with mastoiditis.....	60	17	17	Slightly impaired..	Patient presented himself for exam. on 8th week of disease.
12.	P. G., male.....	Otitis media suppurativa acuta sinistra complicated with mastoiditis.....	6	4	10	Unimpaired.	
26.	H. S., male.....	Otitis media suppurativa acuta sinistra complicated with mastoiditis.....	80	28	16	Slightly impaired..	Patient first came for treatment in 8th week of disease.
14.	D. G., male.....	Otitis media suppurativa acuta sinistra complicated with mastoiditis.....	7	7	7	Unimpaired.	
40.	L. A., female....	Otitis media suppurativa acuta sinistra complicated with mastoiditis.....	25	8	8	Unimpaired.	
40.	H. S., female....	Otitis media suppurativa acuta sinistra complicated with mastoiditis.....	18	3	10	Unimpaired.	
38.	B. L., female....	Otitis media suppurativa acuta dextra complicated with mastoiditis.....	35	6	12	Unimpaired.	

day if they have become saturated and stiffened with secretions from the wound. Unless the patient has pain, with a sharp rise in temperature, or there is a foul odor about the wound, or other unfavorable manifestations, the tampon in the auditory canal and the gauze tape in the mastoid should remain undisturbed for three or four days. When the gauze tampon is removed from the external auditory canal at the first dressing, it will generally be found moistened with secretions. If the secretion is profuse, the canal should be douched with a warm corrosive sublimate solution (1-5000). If slight it may be dried out with sterile cotton on a cotton-tipped probe, after which the iodoform gauze tampon is again introduced. At the third dressing, in from 10 to 12 days, the tampon is removed from the canal and the middle ear is dusted with thymoliodid (aristol), when the patient is generally discharged cured.

The great benefit derived from this legitimate operative procedure is the unquestioned shortening of convalescence, and this advantage alone entitles it to careful consideration. As to its cosmetic effects, no deformity whatever results from it.

We report 10 cases illustrative of the practical results of the operation described. Of these cases the best results as to time of recovery, including complete healing of the wound, were obtained in 7 days in one instance. The longest period of convalescence was 17 days, demanded in only one case. There were three cases of recovery in 8 days, two in 10 days, two in 12, and one in 16.

DISCUSSION.

Dr. F. B. Sprague, Providence, R. I., said that Dr. Plummer's operation is certainly useful if healing can be obtained in the short time Dr. Plummer says. Last year at the American Otological Society, Dr. Sprague said he reported 200 operative cases of mastoid and gave the length of time of healing of the different cases. He did not remember the exact figures, but in round numbers about one-third were healed in less than 14 days; one-third between 14 and 20, and the other third beyond that time. When he began mastoid work the method in vogue was to leave the wound open to heal by granulation. By this method many wounds would heal slowly and fill with granulation tissue which needed frequent curetting, and occasionally a secondary operation. The principal thing which induced him to close the mastoid was the large area exposed to infection. The open wound is long and gaping, according to the length of the incision, and perhaps three-eighths to one-half an inch on both sides and consequently a constant secreting surface open to infection. His first mastoid operations in private work were in 1892, and he sewed up the wound and put in drainage, using the blood clot method as described. He has also used the blood clot method Dr. Blake described. This, however, is applicable only to a limited number of cases and under certain restrictions. Some things in the use of the blood clot which must be regarded are the preparation of the patient, the technic of the operation, and the conditions found on the inner wall. If there is an inflammatory condition, or necrosis of the inner wall which shows an inflammatory condition of the outer or sinus wall or meninges, it is not safe to close the wound for primary blood clot because there is secretion which is infectious and will invade the blood clot, which will become infected and break down. On the other hand, the modified blood clot is perfectly safe, because, after the wound has been thoroughly cleaned, the cigarette drain is placed in it, and the blood clots around the wick. The wick is removed in three or four days, and if it is clean it is left out. If there is any pus it will show, and it may be necessary to treat by drainage. In these cases the blood clot must not be wet, the mastoid wound must not be irrigated, or the blood clot will be broken down and healing delayed. The use of so-called antiseptics at the operation is one of the hindrances. A solution of 1/2.000 bichloride, or strong carbolic is apt to cause necrosis and interfere with the healing of the wound. Dr. Sprague has given up these antiseptics and uses nothing but a sterilized saline solution. He believes in asepsis to keep the organisms away. Saline solution is non-irritating and does away with the danger of causing irritation and soreness around the wound, as do most antiseptics. Another thing; after the wound has been closed there will be a discharge of blood serum from the blood clot when the modified blood clot is used and this must be wiped away with sterilized cotton. This will continue for two or three days, when the wound does not need to be touched again. In this condition the wound is perfectly open and, if any infection takes place in the tympanum, drainage through the mastoid can be taken care of easily. It is rare to have anything further to do with operative procedures. An important thing in mastoid operation is to open the tympanic membrane first, no matter how many times it has been opened previously, and slit it from bottom to top, getting thorough drainage of the tympanum.

Dr. J. F. Barnhill, Indianapolis, referred to Dr. Plummer's statement that he sometimes removes the bone very widely, in one case he even included the zygomatic cells. It is well known how extensively within the mastoid structure the infection may spread, and how extensive must be the operation in order to cure the case. Hence, in such cases as Dr. Plummer described in which there is a large postoperative wound, Dr. Barnhill said he could not understand how it is possible for Dr. Plummer, by means of gauze tampons inserted into the external meatus, to place the posterior wall of that meatus into a position so far posterior to its normal situation. The difficulty sometimes met in the postauricular flaps, when cut as in radical mastoid operation, in keeping them in place against the denuded bone until adhesion takes place, is well known. This difficulty arises because the flaps contain resilient pieces of cartilage, and on this account it is becoming more and more the practice to remove all portions of the flaps with the exception of the skin itself. Indeed it seems to Dr. Barnhill that it would be impossible (in view of the fact that Dr. Plummer's operation requires no incision of the posterior meatal wall), even when only a small opening in the bony structures of the mastoid has been made, for the operator to crowd the posterior meatal wall backward far enough to bring it into close opposition with the posterior wall of the mastoid cavity, and to hold it there until a union of the two takes place. Since Dr. Plummer reports the successful performance of this feat which seems to Dr. Barnhill to be entirely impossible, he would appreciate it greatly if Dr. Plummer would explain this step of the technic more fully.

Dr. G. L. Richards, Fall River, Mass., objected to Dr. Plummer's use of the word paracentesis. Incision of the drum membrane is meant. He would like to have the term incision of the drum membrane take the place of the word paracentesis.

Dr. E. M. Plummer, Boston, said that in the 10 operations, which he had performed, no deformity of the auricle was noticed. Neither did he notice any facial paralysis. It has been only five or six months since he commenced performing the operation in this way, but so far he had not been called on to do a secondary operation. The value of this procedure in cases of acute mastoiditis is well established. In many of the chronic cases on the other hand, in which there is caries of the ossicles and attic, complicated with cholesteatomatous masses, he should prefer the tympano-mastoid exenteration or radical operation. The average time of healing of the middle ear has varied from three to four days. Unless the patient has pain or there is decided rise in temperature, the cigarette drain should remain undisturbed for three or four days. In reply to Dr. Richards, he said that by the word paracentesis he means a free incision of the membrana tympani, beginning in the attic and terminating on a level with the floor of the annulus tympanicus. The posterior membrano-cartilaginous canal wall is pushed backward into the osseous cavity, where it is held in position by a tampon of idoform gauze inserted into the auditory canal and a gauze pad is applied to the concha and a pressure bandage applied. So far he has had no difficulty in securing adhesion between the cartilaginous canal and the osseous cavity.

A PATHOLOGIC STUDY OF SEVEN CASES OF PARALYSIS WITHOUT GROSS ANATOMIC CHANGE

IN RELATION TO THE CAUSE OR CAUSES OF UREMIC HEMIPLEGIA.*

JOHN H. W. RHEIN, M.D.
Neurologist to the Howard Hospital.
PHILADELPHIA.

The following report embodies the results of a pathologic study of seven cases of paralysis associated with chronic kidney disease, such as are not infrequently regarded as of uremic origin, in which no gross anatomic change was found to account for the paralysis. These cases were studied with a view of determining, if possible, the cause, or causes, of paralysis, as we observe it, in persons brought to the hospital who lived under observation but a short time, and who present paralysis which can not be attributed to cerebral hemorrhage, with which the evidences of grave nephritis are often associated.

In Cases 1, 2, 3, 4, 5 and 7, the findings warranted a diagnosis of cerebral syphilis, and in Case 6 the lesion, although not entirely characteristic of syphilis, pointed to a similar diagnosis. In this case there was much arterial change, and the perivascular spaces of the paracentral cortex were markedly distended. In Cases 4 and 2 microscopic areas of softening were found in the cortex. In one section from the paracentral region in Case 4 only one of these areas was observed. In a section from the paracentral region from Case 2 two small areas were found in one field. In all probability these cases were of syphilitic origin.

The microscopic areas of softening just referred to have an important bearing in explaining cases of paralysis in which no gross lesion is observable. Even in a microscopic study of the nervous system they could readily be overlooked. Though these areas are very small, perhaps only the size of a point of a pin, it is conceivable that if numerous, they could bring about some distinct alterations in the functions of the cortical nervous tissue, and sufficient indeed to cause paralysis. It seems highly probable that this lesion is responsible for at least some cases (what proportion it is impossible to state) of so-called uremic hemiplegia.

In a previous communication[1] I described these necrotic foci in connection with double hemiplegia. They were present in the paracentral region, and were associated with a disease of the wall of the blood vessels, round cell infiltration of the pia, and other syphilitic lesions. While it is well known that areas of softening occur in various portions of the brain, they are usually extensive enough to be recognized by the naked eye. More interesting and important are the minute areas of necrosis which are visible only under the microscope. These findings must modify the views previously held about uremic hemiplegia and other forms of hemiplegia in which there is no gross cause demonstrable at the autopsy.

Several theories have been offered to explain the paralysis occurring during uremia, but convincing pathologic evidence is lacking to a great extent. In few of the cases reported careful histologic studies have been made, and the reports of cases without such studies are valueless as evidence.

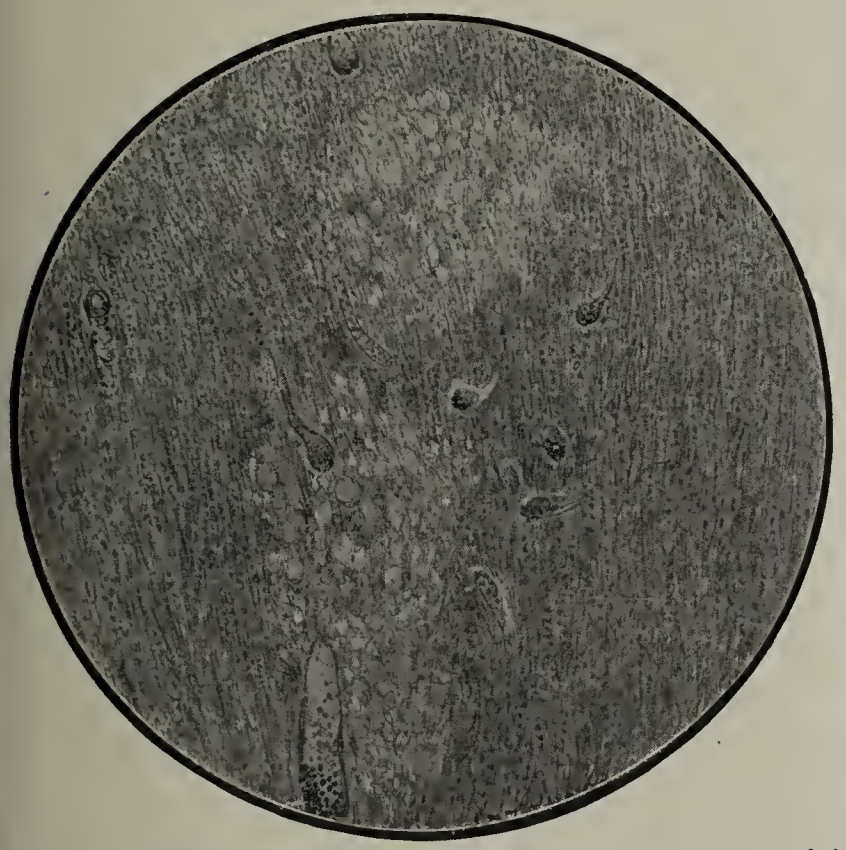


Fig. 1.—Case 2. Two microscopic areas of softening in the left paracentral region.

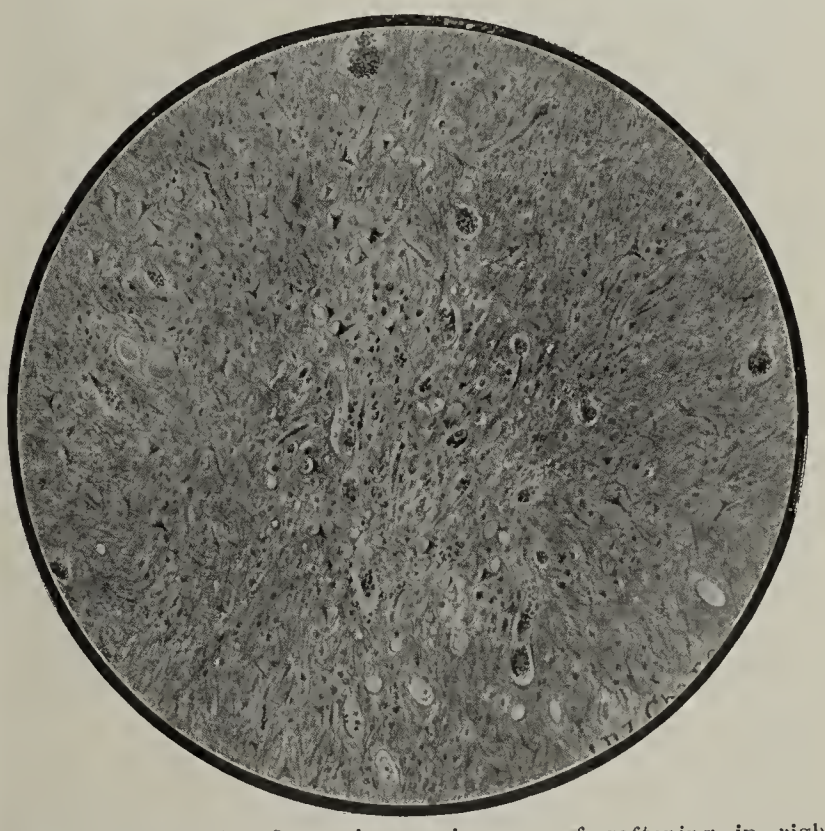


Fig. 2.—Case 4. One microscopic area of softening in right paracentral region.

The mechanical theory, which explains the paralysis of uremia as due to cerebral edema, was first advanced by Traube. Raymond,[2] Tenneson,[3] Chantemesse,[3] Leichtenstern,[4] and others found cerebral edema at the autopsy. Le Corche[4] and Tallamande[4] claimed that the edema is sometimes localized, a view supported by Pätsch[5] and Charpentier.[6] Le Calvé[4] believed that the paralysis is caused by a fugacious edema.

The toxic theory, which holds that the cerebrospinal fluid is toxic and elective for the nerve cells, was ad-

* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

* From the Philadelphia General Hospital and from the Department of Neurology and Laboratory of Neuropathology, University of Pennsylvania.

1. Am. Jour. Med. Sci., May, 1906.
2. Rev. de Med., 1895, p. 705.
3. Rev. de Med., 1885, p. 935.
4. Article by Le Calvé: Arch. gen. de Med., 1903, p. 577.
5. Ztschr. f. klin. Med., 1881, p. 209.
6. Arch. gen. de Med., 1887, p. 1.

vaneed by Bouchard,[7] and supported by Landois,[4] Lanbuseher[4] and Ziehen.[4] Castaigne[8] claims to have demonstrated by certain experiments that the cerebrospinal fluid taken from patients suffering from nervous uremia eontained elements which were toxie for nerve cells. He injeeted into the eerebral hemisphere of guinea-pigs fluid obtained by lumbar puneture in cases of nervous uremia. Four pigs thus treated with 1¼ or 1 cubic eentimeter of this fluid, died in eonvulsions in one to ten hours. The researehes of Leane, Siearde and Widal are quoted by Castaigne[8] as showing that normal eerebrospinal fluid injeeted in a similar manner was not toxie.

It is well-known that many eases of uremie hemiplegia have been reported without demonstrable lesions. Baillet[9] examined 37 eases and found no lesion in 29. This faet has led to the eonelusion by some that the paralysis is due to autointoxieation. Sueh was the eonclusion of Brodier,[9] who reported 2 eases.

The paralysis of uremia has been attributed to arteriosclerosis by some observers, and this is in some cases undoubtedly the cause.

D. J. McCarthy[10] believes that many of the cases diagnosed as uremie hemiplegia, in which the autopsy shows extensive eerebral arteriosclerosis, the paralyses are not the result of a toxemia of the eortex, but rather of a malnutrition of the eortical eells due to the obliteration of the vessels supplying the eortex. The nerve eells under these conditions being badly supplied with nourishment on aeeount of the defieient eireulation, may beeome temporarily exhausted and thus produee, when situated in the motor areas, a temporary hemiplegia.

In a number of eases reported by Raymond[2] atheroma of the cerebral arteries was present. Raymond believed that uremic paralysis is due to an edematous state of the brain substanee, whieh either awakens an old lesion, or produees eertain vaseular phenomena. The edema causes, in his opinion, at the site of the eapillaries, a suffieient constraint in the eireulation, in eonjunetion with the anemia which is always present in kidney disease, to bring about apopleetic attaeks. His experiments in this conneetion are interesting and worthy of quotation.

Experiment 1.—He removed the left superior eervical ganglion of a rabbit and on the following day ligated the ureters. Four days later convulsions appeared on the right side of the rabbit's body. At the autopsy a notable quantity of fluid was found in the ventricles, and a slight degree of edema which was of a uniform degree on both sides.

Experiment 2.—In a seeond rabbit he removed the right eervical ganglion and six days later tied the ureters. In 4 days convulsions oeeurred on the left side of the body. In other words, convulsions appeared on that side of the body eontrolled by that half of the brain which had been deprived of the influenee of its vasomotor nerves.

Experiment 3.—This experiment consisted of trephining a dog and introducing into the cortical region a small crystal of silver nitrate. The animal was paralyzed in the right leg on the following day. A month later the paralysis had completely disappeared. The jugular vein was then ligated on the left side, when shortly the paralysis of the right leg beeame as marked as on the day of the primary experiment. From this the animal finally recovered, and at autopsy 2½ months later an area of softening was observed at the site of the operation, and there was slightly more congestion of the left side of the brain than on the right.

Experiment 4.—This experiment consisted in trephining a dog and injuring part of the cortex on the left side by means of a thermoeautery. Paralysis of the right posterior leg followed, gradually disappearing after 30 days. At the end of a month the jugular vein was ligated on the left side. Following this operation there was a recurrence of slight paralysis of the right leg whieh diminished at the end of a month and finally disappeared. At autopsy a lesion of the eortex was observed, but no difference between the two hemispheres from the point of view of the state of the eireulation.

These experiments, he elaimed, demonstrate that circulatory disturbances have an influenee on the reappearanee of old paralyses of cortical origin.

Weisenberg[11] coneluded from the study of a ease diagnosed as uremie hemiplegia that ehanges may be produced in the nerve eells of the brain and spinal cord by toxie proeesses like uremia. He has demonstrated aeute degeneration of the motor filters of the brain and cord in assoeiation with eellular degeneration of the eortex.

In a few autopsies aetual lesions have been demonstrated. Fürstner[12] reported a ease with a history that five months before eoming under observation the patient suffered from two attacks of right-sided paresis following the uremie state. At the autopsy two small foci of softening in the eorona radiata and in the pons were found, and in this ease he also demonstrated degeneration of both erossed pyramidal traets and one direet pyramidal traet. In the case reported by Raymond[2] an old hemorrhagic focus was found in the right lenticular nueleus. No secondary degeneration was observed.

The ehanges in the nerve eells have been studied with a view to throwing some light on this subject. Lugaro[13] found in a ease of uremia, with symptoms simulating tumor of the frontal lobe, ehromatolysis and pigmentation of the eortieal eells. Ewing[14] examined the eentral nervous system in two eases, and the cord in three eases of eelampsia, but was unable to find any peeuliar cellular lesion exeepting some nuelear changes of the Purkinje cells in one ease. He reports also the eellular lesions found in six eases of uremia, in only one of whieh was there paralysis. He was able to conelude that uremia in the human subjeet is assoeiated with ehange in the chromatie substance of the nerve cells. The spinal eells do not show any change as a rule, the greatest change appearing in the medullary nuelei, espeeially in the tenth nuclei. Ewing[14] quotes the experiments of Aequisto, Sacerdotti, Cerletti and Sambalino. Aequisto[14] and Pusateri[14] found different stages of ehromatolysis in the eortieal eells of the brains of dogs suffering from experimental uremia. Sacerdotti[14] and Ottolenghi[14] did not eonfirm these findings. The results obtained by Donetti[15] closely eorrespond to those described by Acquisto and Pusateri. Ewing[14] quotes also the experiments of Gabbi, who demonstrated a perinuelear chromatolysis with a homogeneous condition of the nuclei in the eells of the eerebral eortex of guinea-pigs and rabbits after bilateral ligation of the ureters. Marinesco is quoted by Chauffard[16] as having discovered chromatolysis of the nerve eells, and alteration of the nuclei by the Nissl method in uremia. The original reference could not be found.[17]

(*Continued on page 1713.*)

7. Jour. des practicien., 1904, p. 131.
8. Comp. rend. de la Soc. de Biol., 1900, p. 907.
9. Article by Brodier: Arch. gen. de Med., 1900, p. 475.
10. Proc. Coll. Phys. Phila., 1904, p. 248.
11. Jour. Nerv. and Ment. Dis., July, 1904.
12. Neurol. Centrbl., 1898, p. 607.
13. Rev. Neurol., 1900, p. 669.
14. Article by Ewing: Arch. of Jour. Neurol. and Psycho-Pathol., 1898, p. 351.
15. Comp. rend. de la Soc. Biol., 1897, p. 502.
16. La Bull. Med., 1902, p. 203.
17. For further literature the reader is referred to: Lancereaux: L'Union Med., 1887, p. 705; and Colleville: Gaz. Hebdom., 1900, p. 673.

HERNIA OF THE OVARY AND TUBE.*

FRANK T. ANDREWS, M.D.

CHICAGO.

Having already published an artiele on hernia of the tube without the ovary,[1] and having presented a paper on hernia of the uterus to the Amerieau Gynecologieal Soeiety, I wish now to submit, tabulate and analyze the recorded eases of hernia of the ovary and Fallopian tube, leaving the subjeet of hernia of the ovary without the tube for a future paper.

Through the kindness of my friend, Dr. Cullen of Baltimore, I am able to present the following ease with a drawing of the eontents of the sae.

M., Cambridge, March 26, 1902. Chiid eight years of age suffering from left inguinal hernia. The hernial opening was about 1.5 cm. in diameter. The ring was exposed with considerable difficulty. A small oval mass was felt in the ring and the presence of the ovary immediately thought of. On opening the sac the ovary and tube were found adherent to it(Fig. 1). It was impossible to return them to the abdomen without removal. They were tied off and removed with the adherent sac. The operation was completed in the usual way.

HISTORICAL SKETCH.

The first mention of hernia of the pelvie organs was made by Soranus, of Ephesus, early in the seeond century. His work on "Diseases of Women," written in Greek, was translated into Latin by Cælius Aurelianus in the fifth century. It is the only gyneeologie work preserved from antiquity. He deseribes a ease in whieh "the intestine, preceded by the ovary, deseended into the labium," evidently an inguinal hernia.

The literature of the subjeet really begins with Döring,[2] followed by Oelhafen[3] and Oneidas.[4] In 1716 Louis Leger de Gouey, of Rouen, described a ease of intrahernial tubal pregnaney. In 1755 Haller[5] quoted a case of Bessiere, a celebrated surgeon of Paris a eentury before, who found the ovary and the fimbriated portion of the Fallopian tube, together with intestine, in an inguinal tumor. He also eited a case of ischiatic hernia of the uterus, ovary and tube on whieh Papen operated. Petit, in his anatomie works, also quotes an early ease by Verdier. A case of double inguinal hernia suceessfully operated on by Percival Pott in 1756 has been freely quoted. In 1759 Camper, at Amsterdam, showed the left ovary escaping from the abdomen by the isehiatic noteh, and, aeeording to M. Rougemont, he noted a ease in 1765 of the ovary in an inguinal tumor.

In 1768 Balin[6] speaks of the ease of a woman on whose body an autopsy was performed at the Salpètrière. One of the ovaries, in whieh there was "a germ of feeundity," was found engaged in the ring. In 1779 Desault found in the eadaver of a woman the left ovary, the tube of the same side and the womb enelosed in one sae. Again, twenty years elapsed before Lallement makes a similar observation at the Salpètrière. Then Lassus, in 1809, cites three examples of hernia of the ovary in the inguinal canal.

The illustrious surgeon, Deneux, in 1813, having sueeessfully treated an inguinal ovarian hernia, made it the subjeet of a treatise, in which he eites twelve eases, of whieh nine were inguinal. He lays speeial stress on the congenital nature of the affection and the diffieulties of diagnosis. In 1840 Velpeau deseribed this eondition under the name *"ovarioncie."*

Eduard Hufsehmid[7] reported a ease of femoral hernia of ovary and tube. T. W. Hulke[8] deseribed the tearing of a hernial sae by taxis and the subsequent finding at autopsy of the eontents, ineluding the uterus, in a new-formed extraperitoneal spaee. Schillbaeh[9] deseribes an ineareerated right isehiatie hernia, with details of the autopsy. Observations were published by Maisonneuve, Guersant, Wibaille and Loumaigne.

In his thesis (1869) Loumaigne dwells at eonsiderable length on symptoms and diagnosis, and in 1870 Frank Hamilton and Terry[10] published twelve new observations, followed shortly by more eomplete works. Antonin Martin reported a case of inguinal hernia of the right ovary before the Société de Médieine, Nov. 3, 1871, and Courty[11] mentions three eases of ovarian hernia. In 1871 Engliseh[12] eolleeted thirty-eight eases of ovarian hernia, of whieh twenty-seven were inguinal. His work eontains interesting deduetions on the pathogeny of congenital and acquired hernia. In 1873 Puech[13] published his first memoir. In 1874 Wibaille (Paris) brought out a thesis on the subjeet of the various forms of hernia of the tube and ovaries. In 1878 (November) and in 1879 (June) Puech published a seeond

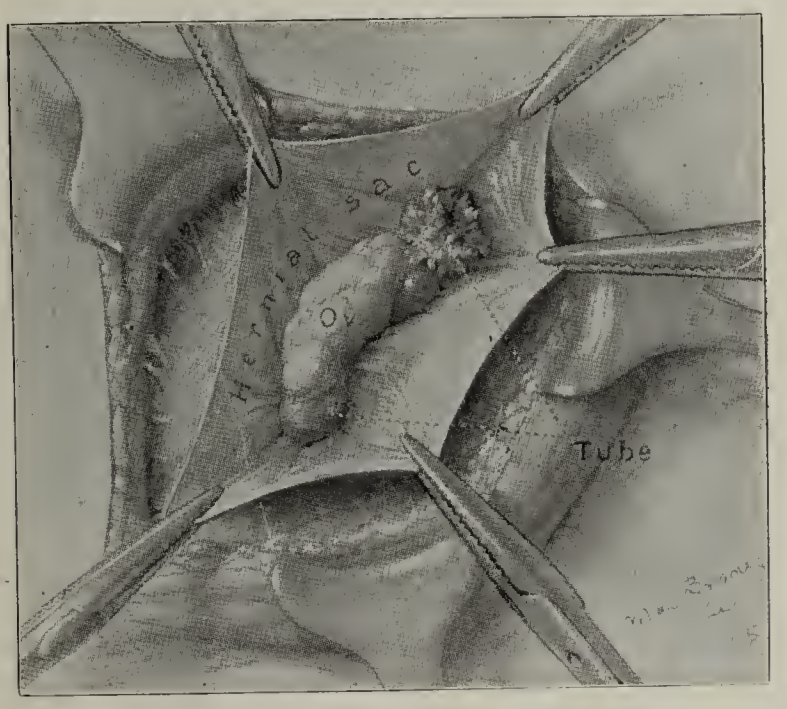


Fig. 1.—T. S. Cullen's case. Ovary and tube in an inguinal hernia

artiele in the *Annales de Gynécologie,* which is without doubt the most eomplete work ever published up to this time on this subjeet.

In 1882 Barnes read a paper before the Medieal and Surgieal Society of London on the physiology of ovarian hernia. This was inspired by observations already made by others. In the same year appeared a work on hernia of the ovary by G. Langton,[14] based on sixty-seven eases whieh he had observed almost exelusively among ehildren, of whieh twenty-seven were aeeompanied by enteroeele. In 1887 Thomas made inguinal and ovarian hernia the subject of his inaugural thesis (Paris), and devotes a few pages to the differentiation of ovary and testiele in subjeets suffering from a vieious eonformation. Mieroseopie examination justified the diseussion.

In 1889 Lejars[15] published a work on neoplasms of the herniated ovary. Brunner[16] published a very complete work on hysteroeele in 1889, and in the same year Hagner[17] published an artiele on the same subject. In 1890 Boudaille (Paris) made a further mention of inguinal hernia. Roux,[18] of Lausanne, published an artiele on hysteroeele in 1891, whieh was followed by one by Ed. Sehwartz[19] in 1892. Works on the same order

* Read in the Section on Obstetrics and Diseases of Women of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

have since been published by Jules Boeekel,[20] by Brohl,[21] by Defontaine, Rosanoff[22] and Legueu.

In 1893 Lejars[23] published a second article on hernia of the Fallopian tube without the ovary. The history of a patient operated on by Jaboulay comes next in order, the histologic examination having demonstrated the complete absence of ovaries. Inguinal hernia of the ovary was the subject of a memoir by Manega,[24] and in 1895 of an interesting treatise by Kousmine, of Kasan. Work by de Vaueher,[25] of Lyons, and others followed.

In recent years special attention seems to have been given to hernia of the genital organs in children. In 1897 Meneiere[26] published five observations on hernia in very young children and laid special stress on the facility of mistaking the diagnosis. In three articles, published in 1897 and 1899, Wiart makes a special study of the pathogeny of hernia of the adnexa, particularly that of the tube. In 1897 Charon records a case of hernia in a child 3 years of age. He speaks of the absence of danger attending an operation at this age.

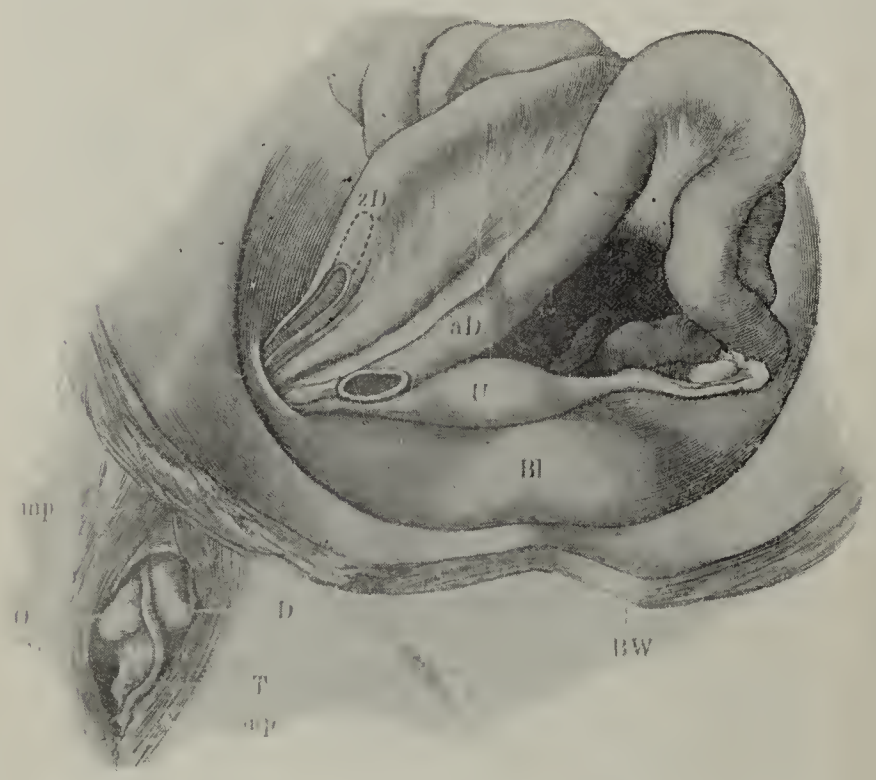


Fig. 2.—Gusenthal's case of obturator hernia of the ovary and tube with intestine. The uterus is drawn down toward the ring. The drawing was made from findings at the operation and at the autopsy. D, Strangulated intestinal loops; O, Ovary; T, Tube; m. p., Pectineus muscle; B. W., Abdominal wall; Bl., Bladder; U, Uterus; aD, Abducent portion of the intestine; zD, Deferent portion of the intestine.

In 1898 Professor Bernier[27] published a comprehensive work, embodying all the works of his predecessors and two new observations on hernia of the ovary. At the same time Moser, of Berlin, made this the subject of his inaugural thesis, and H. Bernard Browne[28] made his valuable contribution to the subject.

In 1899 Martin[29] published an elaborate article on hernia of the ovaries and adnexa. An extensive thesis on hernia of the uterus and adnexa was delivered in 1900 by Ogé (Paris). In 1901 Dr. Paul F. Morf[30] published a valuable article. He reports twenty-four cases, including one of his own.

ETIOLOGY.

It is self-evident that three factors are necessary to the production of any hernia:

1. There must be a port, sufficiently patent or sufficiently dilatable, through which an organ may become herniated. Such an opening is the primary cause of every hernia.

2. There must be an organ so situated and sufficiently mobile that it may be forced into that port. This determines also the contents of the hernial sac.

3. There must exist a force sufficient to move the organ into the port. This force is the intra-abdominal pressure. It is present in all individuals, but is subject to sudden and extreme variations. It may be termed the immediate cause.

Since a weak or patulous ring is the primary cause of hernia, it is of interest to note that the inguinal and umbilical rings are frequently patulous at birth, and that a large proportion of herniæ through these rings are congenital or occur at an early age. On the other hand, the femoral, obturator and ischiatic herniæ are usually acquired at a late period of life. Of particular interest are the causes which determine the entrance of the ovary, tube or uterus into a hernial sac. The testis in its descent normally passes through the inguinal ring, but the descending ovary passes the orifice on its way to its position in the pelvis. Sometimes this descent is very slow, in which event the organ remains for a considerable period in a position favoring hernia. The Fallopian tube and even the uterus may follow the ovary into a sac or may precede it.

Congenital herniæ of the ovary other than inguinal do not occur, for the reason that the anatomic relations do not favor patulous orifices and that the ovary comes near to these openings only at a considerable period after birth. That the position of the ovary may be a factor favoring hernia is evidenced also by the large number of ovarian herniæ occurring in cases of congenital malformation, as in cases of hermaphroditism, bicornate uterus, absent uterus, etc. In these cases the descent of the ovary is retarded or arrested in a position favoring entrance to the inguinal ring.

In some cases of hermaphroditism, in which the individual approaches the male type in other respects, it may also approach that type in this, that the ovary is affected by the same influences that determine the normal descent of a testicle into the inguinal ring. Indeed, this is a reasonable supposition when we consider that many of the ovaries resemble testicles so closely that a microscopic examination is necessary to make a differentiation. Many times in such cases have supposed ovaries been proven to be testicles.

In an older person atrophy of the tissues with fat reduction, as in the connective tissues about the vessels, accounts for the weakening of the various hernial orifices, in which case muscular exertion, either long continued or violent, may produce a hernia. Pregnancy or tumor by distension of the abdominal wall may favor hernia formation through the usual rings and even produce diastasis of the muscles of the wall, with a resulting ventral hernia. Pregnancy, tumor or uterine displacement may also so displace the ovary, tube or fundus uteri that its entrance into one or other hernial orifice is facilitated.

By adhesion to intestine or omentum the pelvic organs may be fixed in a position favoring entrance into a preexisting sac. It is probable, also, that in many cases of hernia, either acquired or congenital, the intestine and omentum may have occupied the sac for a period, and, having slipped back into the abdominal cavity, may have allowed the ovary, tube or uterus to occupy the sac prepared for its reception.

It is not impossible, when the Fallopian tube is the organ first herniated, that the hydatid of Morgagni is the object first crowded through the ring. This small cyst is more freely movable than the tube and is of a size and consistency well adapted to be forced through a small opening. The tube would readily follow.

MORBID ANATOMY, COMPLICATIONS, SIGNS, SYMPTOMS AND DIFFERENTIAL DIAGNOSIS.

These have been so thoroughly treated by the authors mentioned in the historical sketch and others, and furthermore are so diverse, that I shall speak only of the general facts involved.

Morbid Anatomy.—The morbid anatomy is that of any hernial sac into which an ovary, tube or uterus has passed. The genitals in the sac and those in the abdomen may be normal, except as to position, or any of the known pathologic conditions may exist. There may be malformation, strangulation, adhesions, inflammation, infection, suppuration, serous or sanguinous exudation, tumor or pregnancy, either tubal or uterine. Also these conditions may be complicated by the presence of other organs, normal or pathologic, in the sac.

Signs.—The signs are the presence of something in a hernial sac that might be a pelvic organ, verified by information as to the position of those organs gained by bimanual and instrumental examination.

Symptoms.—The symptoms are the general ones usual in patients suffering from pelvic disturbances and those due to the special conditions. These special conditions are so various that their symptomatology can not be detailed here with profit. They depend on (1) the variety of hernia, the inguinal being the most frequent; (2) the genital involved, the ovary being oftenest found and being the organ that during functional activity gives the most characteristic symptoms; (3) the age of the patient, because between puberty and the menopause the symptoms are likely to be most pronounced.

Any of the special morbid conditions, as malformation, adhesion, infection, strangulation, tumor or the presence in the sac of other organs, will often produce such marked disturbances as completely to overshadow and mask those produced by the incarcerated uterus, tube or ovary.

Differential Diagnosis.—The conditions which may be mistaken for hernia of ovary, tube or uterus are (1) undescended testicle in an hermaphrodite; (2) small intestinal hernia; (3) epiplocele; (4) tumors in the sac, as fibromata, lipomata, carcinomata, etc., especially tumors of the round ligament; (5) hydrocele of the canal of Nuck; (6) inguinal or femoral tumors.

The treatment should be the radical cure of the hernia by operation. Special conditions may make reduction by taxis and the subsequent use of a truss or abdominal supporter advisable. The results of operation in uncomplicated cases should be good. The danger of operation in complicated cases will usually be much less than the danger involved in the persisting condition.

CASES OF INGUINAL HERNIA CONTAINING BOTH OVARY AND TUBE.

BALIN:[6] The case of a woman on whose body an autopsy was performed at the Saltpètrière, and where one of the ovaries, in which there was a germ of fecundity, was found engaged in the ring (evidently a tubal pregnancy).

BELBIN:[31] Patient, aged 7 months; irreducible inguinal hernia, strangulated; operation; opening the sac; bloody fluid escaped, and left ovary was found in the sac, engorged with blood; sac contained also the fimbriated extremity of the tube, which was black and swollen. The entire mass was removed. Recovery.

BILHAUT (M.):[32] Infant of 3 months; left inguinal hernia. Strangulation and mortification of ovary and tube. Ovariotomy, salpingotomy, radical cure. Recovery.

BLACK (CARL):[33] Patient, aged 40; six children. Attacks of pain in right inguinal region, and small tumor. Usually reducible by dorsal position. Final attack, irreducible and painful. Operation. Sac contained right ovary and tube, Meckel's diverticulum, appendix and intestines in a pus cavity (organs partly necrotic). Removed organs, including about six inches of intestine. Recovery.

BLOODGOOD:[34] Case 1.—Patient, aged 45; acquired inguinal hernia; operation; sac contained right tube and ovary; reduced; recovery.

Case 2.—Patient, aged 38; acquired inguinal hernia; operation; sac contained left ovary and tube; reduced; recovery.

BOECKEL:[35] Patient, aged 6 months; left inguinal hernia; irreducible; operation; sac contained left ovary, and a portion of the corresponding tube. The herniated mass was removed and patient recovered.

BRAUN:[36] Case 1.—Right inguinal hernia in a child aged 6 weeks; irreducible. Sac contained right ovary and fimbriated extremity of tube. Right ovary in state of degeneration; removed. Recovery. Several weeks later a swelling (probably containing the ovary) was noticed on the left side. The child died later of an intercurrent disease.

Case 2.—Right inguinal acquired hernia; woman, 47 years old; irreducible. Contained right ovary and tube. Excised. Recovery.

BRISTOW:[37] Patient, aged 44; acquired left inguinal hernia; strangulated; operation; sac contained ovary, tube in which there was an abscess cavity, and round ligament. Sac and contents removed. Recovery.

BROCA:[38] Case 1.—Patient, aged 11; congenital hernia of the left tube and ovary; inguinal; herniotomy. Both organs were replaced, being healthy. Recovery. This case was hereditary, both mother and grandmother having had an inguinal hernia.

Case 2.—Child, aged 3; double congenital inguinal hernia; left hernia of the tube and ovary; excision of sac and adnexa; the tube was surrounded by tuberculous granulations; the right hernia was reducible. Death. Autopsy: No peritonitis. Peritoneal and pleural granulations.

Case 3.—Patient, aged 2; left congenital inguinal hernia of the tube and ovary; radical cure of hernia.

Case 4.—Patient, aged 4; double inguinal hernia; left hernia of the ovary and tube; at the operation the tube was found near the internal ring and the ovary just below the tube; these organs being healthy, were replaced. Recovery.

Case 5.—Inguinal hernia of the left ovary in a child several months old, operated on for inguinal hernia of left kidney. Microscopic examination showed the supposed kidney to be the left ovary accompanied by the tube.

BUCURA:[39] Patient, aged 34; acquired right inguinal hernia; operation; sac disclosed besides small intestine, atrophied right ovary, and over two-thirds of the distal portion of the right tube. Recovery. This hernia was discovered during left-sided ovariotomy.

BULLITT:[40] Young woman, who had never menstruated; double inguinal tubo-ovarian hernia, with congenital absence of vagina; the right ovary contained small blood cyst and was enlarged about three times its usual size. The ovary and tube were tied off and cut away. The left tube and ovary were returned into abdominal cavity. Recovery.

CAHEN:[41] Patient, aged 2 months; congenital right inguinal hernia; operation; sac contained right tube and discolored ovary; both organs were removed; the pedicle of the ovary was twisted to an angle of 180 degrees.

CHAMPIONNIERE:[39] Patient, aged 52; right inguinal hernia; small, always painful; left; voluminous, containing ovary, tube, and a small portion of epiploon. Operation first for right; no organs in sac. Recovery. Six months later operation for left. Sac contained left ovary and tube, as well as the round ligament. These organs were excised. Recovery.

CHARON:[42] Patient, aged 3 months; left inguinal hernia; irreducible; operation; sac contained left ovary and Fallopian tube; they were returned into the abdomen. Recovery.

CHIARELLI:[43] Patient, aged 35; had worn a truss since childhood for right inguinal hernia; irreducible; operation; bloody serous fluid in sac containing ovary and abdominal end of tube. They were removed with sac. One-third of the extirpated ovary was normal in structure; the rest was converted into a blood cyst. Recovery.

Coote (Holmes):[44] Young woman; symptoms of strangulated hernia; left ovary and part of Fallopian tube were found in sac. Similar formation on right side. Left ovary removed; thickened omentum cut away; patient died on fourth day. Both ovaries were developed; uterus quite absent.

Damianos:[45] Infant, aged 14 months. Left inguinal hernia, containing ovary and tube with torsion of the pedicle. Brownish-red fluid in the sac. Excision. Recovery.

Duplay and Wiart:[46] Patient, aged 33; left inguinal hernia; first noticed at the age of 7; irreducible; operation; sac contained left ovary and tube; both organs reduced; sac excised; recovery.

Englisch:[12] Patient, aged 39; acquired inguinal hernia; irreducible; symptoms of strangulation; herniotomy; sac contained cystic degenerated left ovary and tube. Both were removed. Death from peritonitis.

Fleischmann:[47] Patient, aged 8 days; congenital left inguinal hernia. At postmortem found to contain tube and ovary.

Gaugele:[48] Patient, aged 8 months; congenital inguinal hernia; operation; opening of sac, serous contents escaped, disclosing left ovary; abdominal end of tube with firmbriæ; torsion of the pedicle; ovary and end of tube were excised, on account of beginning neurosis; recovery.

Gentil:[49] Patient, aged 34; left inguinal hernia; congenital; operation; sac contained extrauterine fetus, also outside of the abdominal cavity. Since this operation tumefaction still felt, which is without doubt an ovary.

Gofey:[50] Patient, aged 34; left inguinal region tumor size of a hen's egg, painful. Had tumor since childhood, small, movable and gave it no attention. Had three previous pregnancies; no menstruation for last two months; in two months more the tumor increased to five inches long and four inches wide. Operated. Removed a four months' fetus (female). Recovery. Afterwards a body could be felt, probably ovary.

Grunert:[45] Infant, aged 5 months. Congenital left inguinal hernia of ovary and tube. Torsion of the pedicle and strangulation. Excision. Recovery.

Guersant:[51] Patient, aged 10; inguinal hernia; operation; sac contained an ovary and part of the tube; it was removed and organs found cystic. Peritonitis and death.

Guinard and Dudefoy:[52] Patient, aged 24; acquired inguinal hernia; celiotomy; a sausage-shaped mass adherent to peritoneal sac; mass connected with left uterine horn by a portion of healthy Fallopian tube. Traction on tube drew down corresponding ovary. Tumor was enucleated together with ovary, sac ligated and resected. Recovery. Examination showed tube to have the volume of a large sausage and to have undergone the changes of parenchymatous salpingitis.

Habs:[53] Patient, aged 5 months; strangulated inguinal hernia; operation; sac contained left tube and ovary, with twisted pedicle, and both were in state of beginning gangrene. Herniotomy. Recovery.

Halley:[54] Young lady; left congenital inguinal hernia; irreducible; symptoms of strangulation followed by operation. Sac found to contain ovary, broad ligament and fimbriated extremity of Fallopian tube. The tube was divided by ligature and the entire mass removed. Recovery.

Hawkins:[55] Elderly woman; death from peritonitis. Autopsy revealed elongated uterus, which, with the Fallopian tube formed a canal 14 inches long. The tube and ovary had been lodged for many years in the hernial sac.

Heegaard:[56] Case 1.—Patient, aged 4 weeks; congenital inguinal hernia of left ovary, strangulated on account of torsion of pedicle. Left ovary and tube removed. One month after operation there was a swelling in the scar which proved to be the right ovary; reduction was effected by incision into canal of Nuck, which was patent.

Case 2.—Patient, aged 6 months; for five days a tumor as large as a goose egg has been present in the right inguinal region; tumor uneven, dull on percussion, with normal integument; irreducible. Umbilical ring open to size of tip of little finger. Herniotomy disclosed dark fluid with discolored ovary. Further examination of the extirpated mass disclosed the fimbriated end of the tube and part of the broad ligament.

Hermann:[57] Infant, aged 3½ months. Right inguinal hernia ovary and tube. Torsion of pedicle. Extirpation. Recovery.

Holst and Tiling:[58] Patient, aged 38; right inguinal hernia; irreducible; herniotomy; sac containing tube and ovary removed; recovery. Recurrence of inguinal hernia in the right side about nine months later; radical operation; recovery.

Hulke:[59] Patient, aged 20; congenital hernia; inguinal of both ovaries; atresia of the vagina; left was reducible; truss support. Operation on right side. Sac contained right ovary and Fallopian tube. They were ligatured close to the uterine horn and cut off. Recovery. Probably bicornute uterus.

Jordan:[60] Patient, aged 37; left acquired hernia; operation; hernial sac was formed from ruptured tubal pregnancy; fetus 7½ cm. long, was removed, with its envelope; then tube and ovary of this side were removed; death twenty-four hours later; at autopsy adhesions between the abdominal ostium of the left tube and a loop of small intestine were found, and on the right side a similar condition existed.

Kössman:[61] This author reports the case of left inguinal hernia. Sac contained ovary and tube. They were reduced and the sac excised. The right ovary was converted into a large cystoma; the uterus was greatly displaced; recovery.

Krieger:[62] Patient, aged 26; right congenital inguinal hernia; irreducible; symptoms of strangulation; herniotomy; sac was found to contain ovary, tube, intestine, ileum, omentum majus; recovery. The sac was extirpated.

Larimore:[63] Patient, aged 35; left oblique inguinal hernia, probably congenital; irreducible; operation; sac contained ovary and tube and vermiform appendix; the entire mass was removed and recovery followed.

Launay and Wiart:[64] Case 1.—Patient, aged 2 months; right congenital hernia of the ovary and tube; dissection; tube and ovary were reducible. Condition found postmortem.

Case 2.—Patient, aged 33; left inguinal hernia of the tube and ovary; observed since the seventh year; operation; the tube and ovary were reduced, the sac dissected and excised; recovery.

Le Nouene (Leopold):[65] Patient, aged 39; acquired right inguinal hernia; pain and swelling at menstrual epoch; operation; sac revealed right ovary and tube; organs were reduced and sac removed; recovery.

Lentz:[66] Patient, aged 6 months; left congenital inguinal hernia of the ovary; irreducible; operation; the ovary with 1½ cm. of the tube, was first dissected, then extirpated; recovery.

Lockwood:[67] Patient, aged 6 months; inguinal hernia found at operation to be a cystic sac containing right ovary, with fimbriæ of the tube and ligamentum latum. All these organs infiltrated with blood. They were excised and recovery ensued. The pedicle was found twisted.

Lomer:[68] Mature girl; acquired inguinal hernia of the left ovary and tube found in sac at postmortem, patient having died twenty-one days previous from atrophy and gastrointestinal catarrh.

McCosh:[69] Congenital hernia of the Fallopian tube and ovary; when sac was opened, the round ligament and ovary were found in it; recovery.

Mace and Moncany:[70] Small tumor in the upper part of the right labium major, flattened, size of a small kidney bean, not tender nor sensitive; did not seem to be continued into inguinal canal. Cyst of the canal of Nuck diagnosed. Mother brought child to dispensary one day when tumor mass was enlarged, reddened and painful; local symptoms increased in severity, though the general state of the infant was good. Same diagnosis, with addition of infection. Operation; removal of strangulated ovary and tube. Child recovered. Microscopic examination showed the structure of tube and ovary markedly infiltrated with blood.

Malherbe:[71] Age 34; acquired inguinal hernia; symptoms of strangulation; herniotomy; sac contained left tube and ovary. There was tubal pregnancy. Tube and ovary removed. Recovery. The ruptured tubal pregnancy simulated strangulated hernia.

Manega:[24] Case 1.—Patient, aged 4 months; strangulated left inguinal hernia; operation; in the sac were found left inflamed ovary and an adherent tube. Excision. Recovery. The excised ovary weighed 2 gm.

Case 2.—Patient, aged 30; acquired inguinal hernia. Oper-

ation; sac contained small portion of epiploon, a portion of the left tube and the ovary. Being healthy, the organs were reduced and recovery took place.

MANLEY:[72] Infant, with right inguinal hernia, hereditary and congenital; irreducible; operation; sac was found to contain ovary, Fallopian tube and part of the broad ligament. Championniere's operation for radical cure was performed. Recovery.

MARIANI:[73] Patient, aged 10; acquired inguinal hernia; double; the sac was opened on the right side and found to contain the ovary and tube; the latter was separated from the sac wall and reduced. The ovary and sac were removed. Recovery.

MARTIN:[74] Patient, aged 5 years; right inguinal hernia; irreducible; operation; serous contents with discolored ovary, tube and round ligament. Extirpation; recovery. There was torsion of the pedicle in this case also.

MAY:[75] Patient, aged 7 months; left inguinal hernia of the ovary; irreducible; symptoms of strangulation; herniotomy; the mass contained ovary and fimbriated end of Fallopian tube. It was removed completely. Recovery.

MORGAN, J. H.:[76] Patient, aged 8 months; congenital inguinal hernia of the right ovary. Operation: Sac contained blood-stained fluid and right ovary. Attached to upper end of ovary was a slender pedicle, twisted on itself, which was found to be the right tube and broad ligament. The ovary, tube and broad ligament were removed as they were in congested condition. Recovery.

MUNIAGURRIA, C.:[77] Aged 3 months; right inguinal hernia; reducible; operation: Sac contained right ovary and tube in inflamed condition, necessitating excision. Recovery.

DE NAZARIS:[78] Woman, aged 40; acquired inguinal hernia following violent fit of coughing; irreducible; operation. After escape of liquid from the sac, the right ovary and tube were found in the bottom of the sac; they were totally removed. Recovery.

OWEN:[79] Patient, aged 11 months; right inguinal hernia of the ovary and tube; irreducible; herniotomy; the ovarian pedicle was found twisted inside the hernial sac; the part removed consisted of ovary, Fallopian tube and parovarium, of which the ovary comprised about two-thirds of the entire mass, and the rest one-third. Recovery.

PANAS:[80] Aged 7 months; strangulated inguinal hernia; celiotomy; right ovary and tube were found in the sac. Reduction of the organs followed by recovery. Patient died later, after leaving the hospital, from enteritis.

PARKER, RUSHTON:[81] Patient, aged 24; double inguinal hernia of ovary and Fallopian tube; absence of vagina and cervix uteri; no menstruation; herniotomy; reduction was impossible, therefore the entire sacs were removed. Hernias probably congenital.

PINKERTON:[82] Patient, aged 16 months; irreducible hernia of left Fallopian tube and ovary; mother stated that it appeared six months previously, after an attack of crying; the entire mass was removed. The walls of the tube were gelatinous and presented naked-eye appearances of tubercuious salpingitis. Recovery.

POLLARD:[83] Patient, aged 3 months; congenital hernia of the right ovary, situated over the external abdominal ring; irreducible; strangulated; laparotomy; sac contained ovary and fimbriated extremity of the Fallopian tube; sac and contents completely excised. Recovery.

PUECH:[84] Patient, aged 26; left inguinal hernia apparently congenital, containing ovary and tube; irreducible, sensitive and painful at menstrual epochs, increasing in size each time.

QUADFLIEG:[85] Patient, aged 41. In fourth month of pregnancy. For nine years an irreducible right inguinal hernia. Sac contained right ovary and tube. They were reduced and recovery followed.

REYMOND, E.:[86] Patient, aged 38; left inguinal hernia, existed since two years of age; also acquired umbilical hernia. Inguinal hernia, irreducible; operation; sac contained portion of intestine, left fibrocystic ovary and tube, and portion of bladder; return of bladder to abdominal cavity; recovery; operation for umbilical hernia; recovery.

RHEINSTAEDTER:[87] Patient, aged 68; sarcomatous ovarian tumor in right inguinal hernia excised; tube and portion of round ligament also removed from sac; intestine was likewise found in the sac. No trace of uterus found. Recovery. Hernia of the normal ovary, which appeared in the same side, was kept up by a bandage.

RIGBY:[88] Patient, aged 3 months; previous day mother noticed swelling in right groin; painful; increased in size; skin became inflamed. Irreducible. Contents had a narrow neck. Incision revealed dark fluid blood; ovary purple. Fallopian tube recognized by the fimbriæ; neck was acutely twisted; horn of uterus appeared at the ring. Ovary and tube excised. Recovery.

RIZZOLI:[89] Patient, aged 46; symptoms of strangulated inguinal hernia; irreducible; herniotomy; sac contained the tube and left ovary; on reduction an intestinal loop was found becoming gangrenous. Patient died six days after operation. Autopsy showed death due to the strangulated intestinal loop which had been reduced.

DE RUYTER:[90] Patient, aged 44; acquired inguinal hernia; irreducible; operation. Sac was found to contain right ovary, tube and round ligament. As the ovary had undergone cystic degeneration, it was removed with the tube. Recovery.

SCHMIDT, HEINRICH:[91] (Professor Dehner, operator). F. H., 25 years old; uterus absent; vagina a blind sac. Double inguinal hernia; reducible. Operation: Left side, April 20, 1895. Contents: Left ovary and tube and part of broad ligament as pedicle. Contents reduced. Ring closed with silk (Macewen). Recovery. Operation: Right side, May 7, 1895. Serous sac found empty at first, but by traction on same the right ovary and tube (exactly as in the other operation) presented themselves. Ring closed. Recovery.

SCHNITZLER:[57] Patient, aged 6 months, left inguinal hernia, irreducible; operation. Sac was opened, contained serous fluid, ovary, tube and ligamentous latum. Pedicle was twisted to an angle of 360 degrees. Whole mass was extirpated. Recovery.

STEINEL, NICOLAUS:[92] 1892, patient, aged 40; 8-para. Inguinal hernia for twenty years, increasing in size; no truss. On left side size of child's head. Operation: Replaced ovary, tube and broad ligament. Recovered.

SUTTON, BLAND:[93] Patient, aged 4 months; inguinal hernia; irreducible; operation. Serous fluid escaped, when sac was opened; at the bottom left ovary and tube were found. They were removed with the adjacent parts. Recovery. A cyst occupied the uterine pole of the ovary and the ampulla of the tube.

TAIT, LAWSON:[94] Patient, aged 26; first observed rupture when six years old; irreducible. Operation; sac was removed; it contained fluid and several cysts, the walls of which were found to be those of an ovarian tumor and the end of the Fallopian tube protruded through the ring at the base of the tumor on its under aspect and was removed along with it. Recovery.

TRICOMI:[95] Case 1.—Patient, aged 14; right congenital inguinal ovarian hernia; reducible; operation. Sac contained ovary and tube. Reduction of hernia. Excision of sac. Recovery.

Case 2.—Patient, aged 40; left inguinal hernia; partly reducible. Operation; sac contained healthy left ovary, omentum, small portion of tube adherent to sac; removal of adhesion and reduction. Recovery.

TSCHERNING:[96] Patient, aged 6 months; born six weeks before full term. Since birth a right inguinal swelling; reducible and held by a truss. Now incarcerated for two days, with pain and increased temperature. Examination showed an olive-sized body in the right labium, not reducible; also a small left reducible hernia; herniotomy; wound healed in eleven days. Later died of enteritis.

Autopsy: On the right there was no hernia, but a small canal through which the round ligament and the tube passed. On the left was a small hernia containing none of the genitalia. Microscopic examination of the mass removed at operation showed ovary, fimbriated end of tube and some broad ligament. The hernia was into the canal of Nuck.

TUBBY:[97] Infant, aged 4 months. Operation disclosed both ovaries and both tubes in a left inguinal hernia. The organs

were partly covered by the peritoneal sac and were adherent to the surrounding structures. Operation. Left tube and ovary were removed. Right tube and ovary and tube were redueed. Suppuration in the abdominal wall. Death. Autopsy showed no peritonitis. Organs normal except as stated.

WRINCH, H. C.:[98] Patient, aged 26; acquired left inguinal hernia; pain during menstrual epochs; operation; sac contained left ovary and tube, firmly adherent to the sae; both were removed. Recovery.

ZOGBAUM:[99] Case 1.—Patient, aged 8 days. Congenital inguinal hernia. Child died of suffocative catarrh. At autopsy the sac was opened and found to contain the left tube and ovary.

Case 2.—Patient, aged 43 days. Congenital inguinal hernia; irreducible. Patient died of pneumonia. At autopsy the sac was opened and found to contain the left ovary and orifice of tube.

ZURHELLE, E.:[100] Patient, aged 44, married 21 years. Nine normal births, after last birth she had a left-sided parametric exudate. In 1903, operated on by median incision. Left cystic ovary and hematosalpinx removed and a small cyst punctured in right ovary. Right ovary and tube normal Feb. 19, 1906, operated on for right inguinal hernia of ovary and tube, of 6 months' duration. Recovery.

Analysis of eases of inguinal hernia.

Right	31	Not stated	5
Left	44		
Double	8	Totai	88

In five of these cases not classed as double there was double hernia, but one side only contained genitalia. In one case both ovaries and both tubes were in the same hernia.

		Results of operations:	
Found at Autopsy	7	Recoveries	69
Not stated	1	Deaths	7
Operated on	80	Not stated	4
Totai	88	Total	80

In 18 of the 80 cases operated on the ovaries and tubes were returned to the abdomen. In 2 cases the ovaries were removed and the tubes returned to the abdomen. In 2 cases the hernia recurred and the other ovary was found in the sac.

Malformation was observed in 7 cases. It was probably present in more. Herniotomy affords little opportunity for inspection of the pelvic organs.

Tubal pregnancy within the hernial sac occurred in 5 cases. In one case the uterus was pregnant in the pelvis, while the ovary and tube were in the hernial sac. There was strangulation in 11 cases, twisted pedicle in 13, cystic ovary in 6, tuberculosis of the tube in 2 and sarcomatous ovary in 1. In 8 cases intestine or omentum was mentioned in the sac and in 2 the vermiform appendix. The ages range from birth to 52 years.

CASES OF FEMORAL HERNIA CONTAINING BOTH OVARY AND TUBE.

BROCA:[101] Aged 40; left crural hernia of the ovary and tube strangulated. Sac was extirpated with the ovary, but the tube, being healthy, was returned to the abdomen. Recovery.

HALLER:[6] This author reports an enormous crural hernia in a woman, in whom the hernia was strangulated; the sac was opened; left ovary and a portion of the tube were found. Reduction followed and the patient made good recovery.

HAWKINS, CAESAR:[55] Patient, aged 65; right femoral hernia; symptoms of strangulation; bowel incarcerated; hernia was divided into two parts, one of which felt like omentum on opening sac; while Fallopian tube and broad ligament with a shriveled ovarium, with five or six inches of intestine, were found on dividing the stricture; the bowel readily went up, also the uterine appendages. Recovery.

HUFSCHMID:[7] A case of irreducible, crural hernia, the size of an egg. Sae contained the fimbriæ and part of right tube and ovary; operation; recovery.

PARKER:[102] Patient, aged 69. Right acquired strangulated crural hernia. Sac contained ovary and Fallopian tube; radical operation; recovery.

Analysis of the Cases of Femoral Hernia.—Of these five, three were right and two left. There was incarceration and strangulation, with operation and recovery in all. The ages range from 40 to 69 years.

CASES OF OBTURATOR HERNIA CONTAINING BOTH OVARY AND TUBE.

BLAZINA:[103] Patient, aged 66; died of pneumonia and at autopsy an obturator hernia was discovered. The sac contained the right tube and ovary.

LICKLEY, J. D.:[104] Patient, 87; death from hemiplegia. Autopsy; obturator hernia was discovered; the sac contained the whole right ovary, 1 cm. of the round ligament and 4.8 em. of the right tube.

ROGNER-GUSENTHAL:[105] Patient, aged 66. Incarcerated obturator hernia; death fifth day after exeision; at autopsy sac was found to contain right broad ligament, with tube and ovary, the uterus being drawn over to the obturator foramen; the condition had existed over 26 years; the ovary, tube and small portion of intestine were in a state of beginning gangrene, therefore could not be reduced (Fig. 2).

SCHOPF:[106] Patient, aged 68; acquired hernia of the left tube and ovary through the obturator canal; irreducible; herniotomy; ovary and all but 5 cm. of the tube removed. Death from collapse.

Analysis of Obturator Cases.—Right, 3; left, 1; total, 4. Found at autopsy, 2; death after operation, 2. The ages range from 66 to 87.

CASES OF ISCHIATIC HERNIA CONTAINING BOTH OVARY AND TUBE.

CHENIEUX:[107] This was a case of right ischiatic hernia; extirpation of ovary; ovary and tube in the sac.

ROUTIER:[108] Patient, aged 40; acquired hernia; at operation proved to be the cystic ovary which, together with the tube, had passed through the ischiatic notch. Recovery.

REFERENCES.

1. Andrews: "Hernia of the Tube Without the Ovary," THE JOURNAL A. M. A., Nov. 25, 1905.
2. Doring: "De herniæ uterinæ atque hane justo tempore subsequentis partis Cæsarei historia," Vitemberg, 1612.
3. Oelhafen: "De partibus abdomine contentis," Gedani. 1613.
4. Oneidas: "Diss. de hernia uteri," Lugd. Batav., 1680.
5. Haller. "Disputat. Chir. Select," 1755, vol. iii, p. 41.
6. Baiin: "L'Art de Guerir les Hernies," 1768.
7. Hufschmid: Schweizerische Zeitft. f. Heilk., vol. ii, 1863, p. 48; also Arch. f. klin., Chir., vol. viii, p. 637.
8. Hulke, T. W.: Medico-Chir. Trans., 1864, vol. xlvii, p. 97.
9. Schillbach: Jenaische Zeitft. f. Med. u. Naturwisft., 1864, vol. i, p. 242.
10. Hamilton and Terry: Bellevue Hospital Reports, 1876.
11. Courty: "Traité des Maladies de l'Uterus."
12. English: Oesterr. Med. Jahrb., Vienna, 1871, p. 335.
13. Puech: "Des Ovaires et leur Anomalies."
14. Langton, G.: St. Barth. Hosp. Reports, London, 1882.
15. Lejars: Gaz. des Hôp., 1889.
16. Brunner: Beitr. z. klin. Chir., 1889, voi. iv, p. 32.
17. Hagner: "A Case of Hernia of Parturient Uterus Through the Linea Alba," THE JOURNAL A. M. A., vol. xii, p. 302.
18. Roux: Congrès Français de Chirurgie, Fifth Session, 1891.
19. Schwartz, Ed.: Id., Sixth Session, 1892.
20. Boeckei, Jules: Gaz. Méd., Strasburg, 1892.
21. Brohl: Deut. med. Wochft., 1893.
22. Rosanoff: Arch. f. klin. Chir., 1895.
23. Lejars: Rev. de Chir., January and February, 1893.
24. Manega: Riforma Medica, Naples, 1894.
25. de Vaucher: These pour le doctorat, 1854, p. 49.
26. Mencière: Rev. mens. des Mal. de l'Enfance, 1897.
27. Bernier: Centbl. f. Gyn., 1898.
28. Browne, H. Bernard: Gynccological Trans., vol. xxiii, p. 1898.
29. Martin: See his work, "Krankheiten der Eierstöke und Nebeneierstöke," for article.
30. Morf, Paul F.: "Hernia of the Fallopian Tube Without Hernia of the Ovary," 1901.
31. Belbin: Brit. Med. Jour., 1898, vol. i, p. 1398.
32. Bilhaut: Ann. de Chir. et d'orthop., Paris, 1904, vol. xvii, p. 193-197.
33. Black, Carl: Ill. Med. Jour., 1904.
34. Bloodgood: Johns Hopkins Hosp. Rep., 1898, 1899, vol. vii, p. 318.
35. Boeckel: Rev. Med. et Chir. des Mal. des Femmes, 1882, voi. iv, p. 115.
36. Lemhofer: Inaug. Dissert., Leipsic, May, 1895, voi. xvii.
37. Bristow: Trans. Med. Soc. State of New York, 1902, p. 252.

38. Broca: Bull. Soc. Anat., Jan. 27, 1893 (Case 4). Rev. mens. des Mal. de l'enfance, 1897, vol. xv, p. 275 (Cases 1, 2, 3); L. Progres Med., 1904, vol. xix, 3rd series, p. 54.
39. Bucura: Zentbl. f. Gyn, 1904, No. 46, p. 1410.
40. Bullitt: Louisville Month. Jour. Med. and Surg., August, 1904, p. 97.
41. Cahen: Münch. med. Wochschr., 1900, No. 38.
42. Charon: Jour. de clin. et de therap. infant, Paris, 1898, vol. vi, p. 21.
43. Chiareili: Centbl. f. Gyn., 1883, p. 464.
44. Coote, Holmes: Lond. Lancet, 1864, vol. i, p. 96.
45. Damianos: Deutsch. Ztschr. f. Chir., Leipsic, vol, lxxx, Nos. 3 and 4.
46. Duplay and Wiart: Bull. Soc. Anat., June, 1897.
47. Fleischmann: "Liechenöffnungen," Erlangen, 1815.
48. Gaugele: Deut. Zeitft. f. Chir., 1904, vol. lxxiii, p. 216.
49. Genth: Verhandl. d Gesell. f. Geb., Berlin, 1855, No. 8, p. 97.
50. Schweigii, Martin: "Syllepsilogica histor. medica: Hoc est conceptionis muliebris consideration," Dresden and Leipsic, 1731
51. Guersant: Bull. Soc. Chir., Paris, 1851-1852, vol. ii, p. 127.
52. Guinard and Dudefoy: Bull. Soc. Anat., 1893.
53. Habs: Münch. med. Gesell., No. 3, 1901.
54. Halley: Kansas City Med. Rec., 1884, vol. i, p. 260.
55. Hawkins: See Barnes' Amer. Jour. Obstet., 1883, vol. xvi, p. 4.
56. Heegaard: Bibliotek. f. Läger, 1904, Nos. 5-8, p. 534 (Case 1); "Uber Ovarial hernien," Arch. f. klin. chir., 1904-1905, p. 487.
57. Schnitzier: Wien. klin. Rundschau, 1903, No. 42, p. 793.
58. Holst and Tiling: St. Petersb. med. Wochft., 1885, No. 36, p. 301.
59. Hulke: London Lancet, 1883, June 23, p. 1088.
60. Jordan: Münch. med. Wochft., 1897, vol. xliv, p. 7.
61. Kössmann: See Martin's "Krankheiten der Eierstocke und Nebeneierstöcke," 1899, vol. ii, p. 162.
62. Krieger's Handb. d. Chir., vol. iii, p. 342.
63. Larimore: Med. Rec., August 4, 1900, p. 192.
64. Launay and Wiart: Bull. Soc. Anat., Paris, 1897, Fifth series, vol. xi, p. 78.
65. Le Nouene, Leopold: Gaz. de Gyn., 1903, vol. xviii, p. 337.
66. Lentz: Gaz. Med., Strasgburg, 1881, No. 9, p. 97.
67. Lockwood: Brit. Med. Jour., 1896, June 3, p. 1442.
68. Lomer: Centbl. f. Gyn., 1884, vol. viii, p. 217.
69. McCosh: Trans. Amer. Surg. Assoc., 1895, vol. xiii, p. 481.
70. Mace and Moncany: Annales de Med. et Chir. Infant, Paris, 1905, vol. lx, pp. 501-503.
71. Malherbe: Münch. med. Wochft., 1897, vol. i, No. 44, p. 9.
72. Manley: Ann. Gyn. and Pediatry, 1893, vol. vi, p. 606.
73. Mariani: Il policlinico sez. prak. fasc., vol. vii, No. 17, 1901.
74. Martin: Rev. Med. de la Suisse Romande, Dec. 20, 1903.
75. May, Brit. Med. Jour., 1898, vol. i, p. 1389.
76. Morgan, J. H.: Lond. Lancet, 1897, vol. i, p. 1340.
77. Muniagurria, C.: Semana Med., 1902, p. 396.
78. de Nazaris: Rev. Med. Chir. des Mal. des Femmes, 1895, vol. xvii, p. 541.
79. Owen: Lond. Lancet, 1896, vol. i, 765.
80. Panas: Gaz. de Hop., 1868, p. 135.
81. Parker, Rushton: Brit. Med. Jour., 1893, vol. i, p. 68.
82. Pinkerton: Brit. Med. Jour., 1899, vol. ii, p. 853.
83. Pollard: Lond. Lancet 1889, vol. ii, p. 165.
84. Puech: Ann de Gyn., 1879, vol. i, pp. 415, 421; also Ann. de Gyn., 1878, vol. ii, p. 336.
85. Quadflieg: Münch. med. Wochft., 1901, No. 20, p. 790.
86. Reymond, E.: Bull. Soc. Anat., Paris, 1894, Nov., Dec., p. 842.
87. Rheinstaedter: Centbl. f. Gyn., 1878, vol. ii, p. 545.
88. Rigby: Lancet, 1905, August 5, p. 360.
89. Rizzoli: Mem. Chir. et Obstet., Paris, 1872.
90. De Ruyter: See Moser's "Zur Kenntnis der Ovarial-hernien," Inaug. Diss., 1898, p. 17.
91. Schmidt, Heinrich: Inaug. Diss., Wurzburg, 1896.
92. Steinel, Nicolaus: "Ueber Ovarial Hern.," Inaug. Thesis, Münch, 1896.
93. Sutton, Bland: Med. Press and Circular, 1896, Dec. 2, 582.
94. Tait, Lawson: Brit. Gyn. Jour., 1885-1886, vol. 1, p. 328.
95. Tricomi: Riforma Med., 1894, Nos. 42, 43, p. 507.
96. Tscherning: Med. Selskabs Forhandlinger Hospitalstid, 1898.
97. Tubby: Brit. Med. Jour., Oct. 9, 1897, p. 968.
98. Wrinch, H. C.: Canada Lancet, 1899-1900, vols. xxxii, and xxxiii, p. 665.
99. Zogbaum: Inaug. Diss., Jena, 1844, p. 20.
100. Zurhelle: "Zur Kasuistik der Hernia Ovarica inguinalis," Ztbilt. f. Gyn., Bonn, May 12, 1906, vol. xxx, No. 19, p. 541.
101. Broca: Bull. Soc. Anat., Jan. 17, 1893.
102. Parker: N. Y. Med. Times, January, 1855, p. 109.
103. Blazina: Prag. Viertljahrssch. f. Prakt. Hlk. 1848, vol. i,p. 126.
104. Lickley, J. D.: Glasgow Med. Jour., 1892, March.
105. Rogner-Gusenthal: Wien. Med. Presse, 1893, No. 26, p. 1010, illustration.
106. Schopf: Wien. klin. Wochft., 1903, No. 8, p. 207.
107. Chenieux: Bull. de Chir., May 21, 1895.
108. Routier: Le Mercredi Med., 1890, vol. i, p. 248.

DISCUSSION.

DR. J. H. CARSTENS, Detroit, declared that this is a very rare condition. He recently saw one case. A girl 16 years old had a swelling in the left side which she had had for a long time, but it grew larger and was painful during her menstrual periods. Dr. Carstens examined it and believed it to be a hydrocele of the cord. It was soft and fluctuating, so he said that the best thing was to remove it. When he opened it a very little fluid came out, and with it the tube and ovary, and the sac extended into the internal canal. The uterus was well pulled up and the other side was all right. He closed the sac in the usual way and the patient made a good recovery.

A PATHOLOGIC STUDY OF SEVEN CASES OF PARALYSIS WITHOUT GROSS ANATOMIC CHANGE.

JOHN H. W. RHEIN, M.D.

(*Continued from page 1706.*)

Notwithstanding all these studies the cause of uremic hemiplegia has not been satisfactorily explained. One is forced to the conclusion that it may be due not to any one cause in all cases, but to one of a number of causes; in some cases, perhaps, to autointoxication; in others to edema or arteriosclerosis; and in still others to the presence of microscopic areas of necrosis which have been described in this paper.

Some confusion seems to exist as to what really constitutes uremic hemiplegia. It is a mistake to diagnose all cases of one-sided paralysis occurring in a subject who suffers from chronic kidney disease, uremic paralysis. Strictly speaking, a diagnosis of uremic paralysis should be restricted to those cases which develop during uremia, transient palsy, or a palsy which may persist to the end in fatal cases. There is no way, however, that I know of, by which it can be foretold whether the paralysis is of syphilitic origin, or is due to arteriosclerosis, autointoxication, or to cerebral edema.

In making a diagnosis of uremic paralysis we must search for the signs of intoxication of renal origin, such as general edema, pulmonary edema; premonitory symptoms, such as vertigo and gastric disturbances; the presence of albumin and casts in the urine, and other well-known symptoms of uremia. The diagnosis in old people is more difficult on account of the resemblance to symptoms following hemorrhage and softening of the brain, affections which are common in the aged. The variability and transitory character of the paralysis should always make one think of uremia as its cause.

CASE REPORTS.

In none of the following cases was any gross lesion of the brain or cord demonstrable at the autopsy.

CASE 1.—W. N., aged 68, a minstrel by occupation, was admitted to the hospital, in the service of Dr. Charles K. Mills, September, 1905. Except for the fact that his father died as a result of an attack of apoplexy, the family and previous histories were entirely negative. He dated his condition on admission, from an accident which occurred two years before, though it is doubtful that this had much bearing on his condition when admitted. While trying to board a car he was knocked down, striking his right hip on the car step. He was unable to get up or to walk, and his urine was passed involuntarily.

Examination.—On examination, after his admission, it was found that both grips were weak, the left decidedly so. The gait was tottering, although he was able to move both legs well. The tongue was protruded in the median line. There was no paralysis of the external ocular muscles, and apparently no paralysis of the cranial nerves. The pupils were moderately dilated, and his mentality seemed good. The station was fairly good with the eyes closed. Both knee-jerks were quick and slightly spastic. On stroking the plantar surface of the feet

the toes were flexed. The radial and temporal vessels were distinctly atheromatous. Examination of the abdominal and thoracic viscera was practically negative. The specific gravity of the urine was 1,002 to 1,016; there was a trace of albumin, hyalin casts, leucocytes and epithelial cells. The patient died Dec. 9, 1905.

Autopsy.—Hypertrophy of the left ventricle was found, with general arteriosclerosis and interstitial nephritis. There was no gross lesion in the brain and cord.

Sections from the paracentral regions and the medulla oblongata were stained by hemalum, Weigert hematoxylin and thionin stains. The pia was moderately infiltrated with round cells. The blood vessels were distinctly thickened in the left paracentral region. This change was slightly more marked in the right paracentral region. No change could be demonstrated in the nerve cells when stained with thionin. There was a slight old degeneration of the pyramid on the right side of the medulla oblongata.

This case was not studied further as it was probably one of cerebral syphilis, and showed an old degeneration of the pyramidal tract.

Case 2.—W. L., aged 61, was admitted to the hospital in the service of Dr. Mills, Nov. 27, 1905. There was nothing worthy of mention in the family or previous histories.

Examination.—Patient was a somewhat emaciated old woman who was very dull of intellect and talked incoherently. She did not understand what was said to her, although she could recognize persons. The left arm was spastic and contractures were beginning to make their appearance. The grip of the left hand was very weak. The left lower extremity was held rigidly in an extended position, and there was some atrophy present. Contractures were beginning to make their appearance here also, and the foot was held rigidly. There was a marked contraction of the Achilles tendon, with a dorsal flexion of the great toe. Power and motion in the right arm were good, but there was apparently some weakness in the right leg. The face was slightly drawn to the right, and the nasolabial fold on the right was more distinct than on the left. The tongue was protruded slightly to the right, although this may have been due to the absence of teeth on that side. Stroking the plantar surface of the foot was followed by marked plantar flexion on the right and dorsal flexion on the left. The knee-jerk on the right was increased, and also on the left side, although not to the same degree. The Achilles jerk was absent on both sides. There was no ankle clonus on either side. Examination of the urine showed a specific gravity of 1,016, a trace of albumin, and microscopically numerous leucocytes and epithelial cells, but no casts. Patient died Dec. 18, 1905.

Autopsy.—Autopsy was performed the next day. The pathologic diagnosis was croupous pneumonia of both lobes, emphysema, mitral stenosis and parenchymatous nephritis.

Microscopic Findings.—Sections from the right and left paracentral regions, and from the peduncles were studied microscopically, by the Marchi and Weigert hematoxylin methods, and stained by eosin, hemalum and thionin. The pia in the left paracentral region showed a moderate amount of round cell infiltration. In the cortex of the left paracentral region two small areas were observed, evidently beginning softening. These areas were very small, but were undoubted areas of softening, as the compound granular cells were distinctly observed in places. None of these areas was observed in the right paracentral cortex, but here a moderate degree of perivascular distension was present. In the right foot of the pedunele, near the inner portion, or corresponding to the second fourth from within outward there was an acute degeneration by the Marchi method. Cells stained by Nissl's method did not appear to be abnormal. This was probably a case of syphilitic disease. The significance of these small areas of softening already referred to should not be underestimated.

Case 3.—H. G., aged 49, was admitted to the hospital in the service of Dr. William G. Spiller, April 15, 1905. The only facts in the family and previous histories which need be mentioned are the fact that her mother died of a "stroke" at the age of 71, and that the patient had two stillborn children and one miscarriage. A year previous to her admission to the hospital she was seized with a dizziness which made her stagger "like a drunken person," but at no time to fall. She had also had some occipital headache. Five months after admission she was forced to take to her bed, where she has been ever since, and during which time she suffered from incontinence of urine.

Examination.—When admitted to the hospital she was obese, and fairly well developed. The tongue was protruded promptly in the median line and was slightly tremulous. Although both arms were moved fairly well, there was distinct loss of power on both sides, more apparent on the left. No note was made of the power in the legs. The right pupil was larger than the left, and both were moderately dilated. Both biceps tendon reflexes in the arms were increased. Knee-jerks were increased on both sides. There was no clonus, and stroking the plantar surface was followed by flexion of the toes. No loss of sensation could be demonstrated. Speech was somewhat thick, but the mentality was good. The abdomen was extremely prominent from two inches below the epigastrium to three inches above the pubes, not extending to the flanks. This mass was tympanitic, painful to pressure, and could not be reduced. Examination of the lungs was perfectly negative. There was no abnormality of the heart, except that the second aortic sound was accentuated. The urine showed a specific gravity of 1.033, a trace of albumin, epithelial cells and hyalin casts. The pathologic diagnosis was congestion of the kidneys and lungs. The patient died 14 days after admission.

Microscopic Findings.—Sections from the right and left paracentral regions, the medulla and the cervical cord were studied by the Marchi and Weigert hematoxylin methods, and stained by hemalum, eosin and thionin. Round cell infiltration of the pia and left paracentral region was found, and very slight thickening of the blood vessels, which was more marked on the right side. There was some perivascular distension in the cortex on both sides. In the left paracentral region there was a good deal of perivascular distension, but no evidence of any acute or old degeneration of the pyramidal tracts. By the Nissl stain there was no demonstrable disease in the nerve cells. No disease of the motor tracts was demonstrable by the Weigert or Marchi methods.

The lesions in this case were probably syphilitic. The perivascular distension in this case is worthy of note, as there can be no doubt that this condition, when widespread, causes some functional changes in the cortical nerve cells.

Case 4.—A. B., aged 71, a laborer, was admitted to the hospital in the service of Dr. Mills, Dec. 11, 1905. His was probably a case of bilateral hemiparesis. No previous history was obtainable.

Examination.—There was loss of power in both arms, greater in the right than in the left. Both legs were weak. The arms and legs were markedly emaciated. There was a paralysis of the right side of the face, and he was unable to speak clearly. The pupils reacted to light and in accommodation, but vision was either entirely gone or greatly diminished. There was apparently no involvement of the motion of the eyeball. He could close both eyelids easily, the left better than the right. There was some weakness of the frontal portion of the occipitofrontalis muscle. The tongue was protruded toward the left and was tremulous. The pectoral muscles were wasted and were the seat of a fibrillary tremor. All the reflexes were exaggerated. Dorsal flexion of the toes of both feet followed stroking the plantar surface. The heart-beat was intermittent; the second aortic sound was scarcely audible. Moist, harsh râles were heard throughout the lungs but no other signs of disease were demonstrated. The specific gravity of the urine was 1,023; albumin was present and also hyalin casts, leucocytes, and a few epithelial cells. The patient died 9 days after admission.

Autopsy.—This was performed the following day. The pathologic diagnosis was croupous pneumonia, ulcerative endocarditis, primary cancer of the pancreas with secondary involvement of the liver, the right kidney and the mesentery; parenchymatous nephritis with interstitial change.

Microscopic Findings.—Sections from the right and left paracentral regions, the optic chiasm, the medulla, and the spinal cord from the cervical region, were studied by the Marchi method, and the Weigert hematoxylin method, and

stained by hemalum, eosin and thionin. The pia in the right paracentral region was infiltrated with round cells. There was also slight infiltration of the pia surrounding the medulla. In the right paracentral region small areas of softening were seen. The blood vessels were numerous, and a few compound granular cells were observed. There was a moderate amount of pervivascular dilatation in the left paracentral region. No areas of descending degeneration were made out. The paracentral cortex, stained by thionin, did not reveal any cellular change worthy of mention.

This was a case of syphilitic disease of the nervous system, and exhibited in one section a small area of softening, together with the usual round-cell infiltration of the pia of syphilis.

CASE 5.—L. R., a woman, aged 53, was admitted to the hospital, service of Dr. Spiller, June 6, 1904.

Examination.—Patient was brought to the hospital in a half-conscious condition, and when examined was muttering incoherently, responding slowly and indistinctly when addressed. She was apparently fairly well nourished, but showed signs of emaciation. She was unable to move the left leg in the slightest degree. The notes do not say whether there was any paralysis of the arms, but mention the fact that both arms were greatly emaciated, and both thenar and hypothenar eminences were flabby. The right foot was inverted to an extreme degree. The mouth was drawn to the right, but the nasolabial folds were of equal prominence, and she could wrinkle her forehead evenly on both sides. The tongue was pushed somewhat to the right, although she could not protrude it far beyond the lips. Both pupils were contracted and equal, but reacted to light in accommodation and convergence. Both eyeballs had good range of motion. There were no intraocular palsies. The reflexes were performed quickly and equally on both sides. The heart's action was regular; no adventitious sounds were heard, except that expiration was slightly prolonged at the left apex. The aortic and pulmonic second sounds were distinctly accentuated. There was incontinence of urine and feces. The lungs showed no abnormality. Specific gravity of the urine was 1,017; it contained hyalin and granular casts, besides epithelial cells, urates, and a trace of albumin. Patient died 12 days after admission.

Autopsy.—An anatomic diagnosis of bronchopneumonia of the left lung, general arteriosclerosis, and chronic interstitial nephritis was made.

Microscopic Findings.—Sections from the right and left paracentral regions, the pons, the cervical and lumbar cord, and the optic nerves and chiasm were studied by the Marchi method, the Weigert hematoxylin method, and stained by hemalum, eosin and thionin. In the pia of the left paracentral region there was a round cell infiltration. The blood vessels of the pia were markedly thickened. This was true also of the right paracentral region, where the change was slightly more marked. A moderate amount of perivascular distension was observed in the right paracentral cortex. The pia surrounding the medulla and spinal cord showed the same change as that seen in the cortical region, although it was not so intense. In a few Betz cells in the right paracentral region the nuclei were slightly eccentric without any other observable change. The Betz cells in the left paracentral region seemed to be intact. The cells from the lumbar and cervical enlargements appeared to be normal. There was no degeneration of the motor tracts in the medulla and spinal cord.

This was also a case of cerebrospinal syphilis, showing cellular infiltration of the pia, distension of the perivascular spaces of the cortex, and marked vascular changes, constituting lesions which satisfactorily explain the palsy present.

CASE 6.—M. C., aged 66, was admitted to the hospital, service of Dr. Spiller, April 10, 1904. The family and previous histories were largely negative, excepting for the fact that an uncle had died of "fits," and that the patient had been a steady, although not excessive, drinker of alcohol.

She presented a history of fits when she was 2 or 3 years of age, which continued up to the time of her admission, recently at intervals of one to three months.

Examination.—There was no loss of power in the legs. The right pupil was larger than the left; the tongue was protruded straight. There was no facial atrophy. The station and gait were good. The grips were normal. The biceps, triceps, and knee-jerks were increased on both sides. There was no clonus, and no Babinski.

No further notes were made in this case until June 18, when the patient was found unconscious with all the limbs spastic, although forced movements were possible. The biceps, triceps, wrist, patellar and Achilles jerks were prompt and equal, and the plantar reflex was normal. There was distinct ulnar deviation of the left hand, the last phalanges being extended, the others flexed. The appearance resembled rheumatoid arthritis, and was present on both sides in the hands, and to a less extent in the feet. Patient lay with the thighs flexed on the abdomen, and the legs flexed on the thighs. The left pupil responded slightly to light. There had been incontinence of urine since the previous day. Until one week before the patient had been an attendant in the out-wards of Blockley, when she had what was called a "spell." She had been bedfast since this, in a semi-stuporous state. Examination of the urine revealed a trace of albumin, hyalin casts, leucocytes and epithelium. The specific gravity was 1,005. This condition suggested some irritation of the motor tracts, and was probably uremic.

Autopsy.—The pathologic diagnosis was chronic interstitial nephritis; hypertrophy of the heart; endocardial hemorrhage; arteriosclerosis; and chronic pleurisy.

Microscopic Findings.—Sections from the right and left paracentral regions, the medulla, and the cervical and lumbar sections of the spinal cord were studied microscopically. These sections were stained by thionin, hemalum and eosin, and by the Weigert hematoxylin and Marchi methods. The pia of the right paracentral region was slightly thickened, and moderately infiltrated with round cells. There were found also in the pia numerous red blood cells. In the left paracentral region the pia showed the same change, but it was slightly more thickened and contained a few more round cells.

In the cortex of the left paracentral region a marked distension of the perivascular spaces of the small capillaries could be seen. This was also true on the right side, but to a less extent. The cells of Betz did not show any signs of degeneration, as shown by the thionin stain. No evidence of acute or chronic degeneration of the pyramidal tracts, either in the medulla or the spinal cord, could be demonstrated either by the Marchi method or the Weigert hematoxylin stain.

The only pathologic change of significance in this case, therefore, was the presence of thickened blood vessels and a marked perivascular distension, especially in the left paracentral region. A moderate round-cell infiltration of the pia suggested the possibility that this also was a case of specific disease.

CASE 7.—E. M., aged 65, a laborer by occupation, was admitted to the nervous wards of the Philadelphia General Hospital, service of Dr. Mills, Nov. 21, 1905. His mental condition precluded obtaining any previous history.

Examination.—On admission he was delirious, talking incoherently most of the time, although he occasionally appeared to comprehend when spoken to. The breath had a uremic odor. He was somewhat emaciated and very anemic. There appeared to be a slight loss of power in the left arm, which was also somewhat spastic. The left pupil was dilated and did not react to light, in accommodation or convergence. The notes state that he could not see out of the left eye. The right pupil was moderately dilated and reacted to light, in accommodation and convergence. The associated movements of the eyeballs were normal, excepting for a slight weakness of the external rotation of the left eye. Examination of the chest and abdomen was negative. There was a faint murmur at the aortic cartilage, systolic in time, and the second aortic sound was accentuated. Urinary analysis: Specific gravity, 1,020; albumin present; hyalin casts present; leucocytes and red blood cells. Clinical diagnosis was chronic interstitial nephritis, uremia, and endocarditis. Patient died 24 hours after admission.

Autopsy.—Hemopericardium, chronic interstitial nephritis, and beginning cirrhosis of the liver were diagnosed.

Microscopic Findings.—Sections from the paracentral regions, the cerebral peduncles, the optic chiasm, and the cervical regions were preserved and studied by the Marchi and Weigert hematoxylin methods, and stained by eosin, hemalum and thionin. In the right and left paracentral regions a moderate round cell infiltration of the pia was seen. This was also present in the pia around the medulla and pons. The blood vessels of the pia were markedly thickened, and in some places almost obliterated. The pia and blood vessels of the spinal cord showed a similar change. By the hematoxylin method degeneration was found in the right pyramid in the medulla, confined to the outer half. This degeneration was found also in the cervical region on the left side, and was diffuse and situated in the direct pyramidal tract on the left, and the crossed pyramidal tract on the right. There was no acute degeneration observable by the Marchi method. A small area of softening was found in the right lentieular nucleus, but otherwise the specimens showed practically no other abnormality.

This was a case of old lesion of the motor tracts, probably secondary to a necrotic process, of which one was found in one of the lenticular nuclei. Antemortem diagnosis of these lesions was impossible, and this case, a man of 65, illustrates how impossible it is to determine, without an autopsy, whether the paralysis occurring during a uremic state is due to syphilitic foci and softening, common in the old, or to some other cause the nature of which is at present speculative.

In the absence of previous history in this case it can not be stated whether there was any marked palsy apparent before the onset of the condition which was present on his admission to the hospital. Nor is there any way of determining whether this was a case in which an old lesion was awakened by the uremic state. The notes state that there was a slight weakness of the left arm, which was also spastic, and the probability is that this was a symptom that antedated the onset of the uremia. The diagnosis of uremic paralysis was entirely justifiable in this case, and only by a histologic study of the specimens could a correct diagnosis be made.

CONCLUSIONS.

I believe that the small areas of softening which I have described in this paper and elsewhere, are often the cause of hemiplegias or double hemiplegias, which have not been associated with any gross anatomic change. I wish also to emphasize the importance of careful and extensive histologic studies of the brain and spinal cord, which should be made before it is possible to exclude or determine the presence of demonstrable lesions in these cases.

Another cause for these paralyses which should not be overlooked is syphilis. I believe also that the perivascular distension, which is extensive in some of these cases, plays some part in the causation of the paralysis, probably by causing pressure on the cells of the cortex, a pressure which could come and go according to the amount of leakage from or absorption of the fluid into the perivascular spaces. This may be taken as a possible explanation of some of the cases of transient palsies with which every one is familiar as occurring in uremia and arteriosclerosis. I take this opportunity to express my sincere thanks to Dr. Charles K. Mills and Dr. William G. Spiller for the privilege of studying and reporting these cases.

DISCUSSION.

Dr. D. J. McCarthy, Philadelphia, said he is fully in accord with Dr. Rhein's findings in these cases of uremic hemiplegia. The confirmation of a diagnosis of uremic hemiplegia after death is as difficult as the clinical diagnosis, and anyone who has attempted to differentiate a case of uremia will recognize how extremely difficult this differentiation is. One is not justified at autopsy after making sections of the brain, in the absence of gross lesions, in diagnosing the case as one of uremia. The case should be studied with the greatest care, and even with an experienced eye the gross examination will frequently fail to reveal pathologic conditions which will appear under the microscope. In order to determine this matter sections should be made from the cortex, the internal capsule, the pons, the medulla and especially the spinal cord. As to the pathologic lesions described in Dr. Rhein's paper, some of the cases were undoubtedly cases of cerebrospinal syphilis, but Dr. McCarthy does not think the lesions described in one or two of the cases sufficient to justify such a diagnosis. In reference to the clinical diagnosis of uremic hemiplegia, Dr. McCarthy said that there are cases in which the differentiation from an organic hemiplegia due to hemorrhage or thrombosis is impossible. This is especially true of a group of patients admitted into the hospitals in an unconscious condition, and in which it is impossble to obtain a history of the patient. In these cases the Babinski reflex not infrequently is noted, or rather in cases of uremic hemiplegia the Babinski reflex is not infrequently present. A valuable means of differentiation is to place a careful watch on the patient, and in the uremic group the temporary disappearance of the paralysis is often noted. The difficulty of differentiating the uremic from the organic hemiplegia was well illustrated in one case recently under Dr. McCarthy's observation, in which a patient with croupous pneumonia complicated by an acute parenchymatous nephritis, suddenly became unconscious with convulsions localized to the paralyzed side, conjugate deviation, right hemiplegia, Babinski reflex, etc., and died within six hours after the onset of the nervous symptoms. At the autopsy the brain appeared to be normal to gross examination and after gross sectioning. A very careful examination later showed thrombosis in the Sylvian fissure with a recent lesion posterior and beyond the motor region. In this case the organic condition was accentuated and the symptoms complicated by the uremic intoxication.

The diagnosis of cerebral disease complicated by disease of the kidneys is influenced by the intoxication from the kidney in the production of the by-symptoms, which should always be considered. This is of especial importance in a large group of cases in which there is extensive general arteriosclerosis, cerebral arteriosclerosis and contracted insufficient kidney. When hemiplegia with unconsciousness develops in this group of cases it may be purely uremic when there is evidence of marked insufficiency of the kidney as determined by the urine examination (total quality, specific gravity, total urea, albumin casts, etc.), the pulse, cardiae and respiratory action, etc. It may, however, be caused by cerebral hemorrhage due to the increase of general blood pressure of nephritis acting on the weakened sclerosed vessels. In other discussions Dr. McCarthy has spoken of an extensive number of cases of hemiplegia presenting no gross cerebral lesions other than extensive cerebral arteriosclerosis with localized partial obstruction of vessels supplying the motor area. In this group of cases while there may be associated kidney disease, there is no evidence in the clinical examination of insufficiency of the kidney. The clinical picture of the case does not differ from the hemiplegia with unconsciousness due to uremia, or cerebral hemorrhage or thrombosis. When death occurs, which not infrequently happens, no gross lesion of the brain is found, but on careful study of the vascular system the blood vessels supplying the motor area on the affected side will be found to be the seat of an extensive endo-arterial obstruction which must necessarily cut down the blood supply to at least one-fourth to one-fifth of the normal blood supply of the affected area. When there is a general lowering of the blood pressure, this reduced blood supply becomes too little to supply the cerebral tissues which demand for proper functioning a free and full blood supply. The same condition obtains in the peripheral nerves due to the same cause in the condition which has been described as intermittent claudication affecting most fre-

quently the lower extremities, but at times also the upper extremities. In this condition there is an intermittent loss of power due to the deficient blood supply to the peripheral nerves. This group of cases, to which Dr. McCarthy has given the name of cortical exhaustion paralysis, should be entirely differentiated from another and much larger group of cases as a result of cerebral arteriosclerosis. In this latter group of cases a temporary loss of power on one side of the body occurs without loss of consciousness, and lasts, as a rule, only a short time. This is due to the small, even microscopic area of softening in the motor paths to which Dr. Rhein called attention in his paper. The clinical feature in this group of cases is so entirely different to that due to cortical anemia that there is no difficulty in separating them clinically, and no excuse for confusing them either clinically or pathologically. In this group of cases the diagnosis is made when there is a normal kidney function with the symptoms as above described. When there is kidney disease the degree of insufficiency of the kidney must be carefully determined before making the diagnosis. In patients with cortical exhaustion paralysis who recover, there may at first be no evidence of preceding paralysis, but after a period of motor activity (depending on the degree of vascular obstruction) from one to four to six weeks, there is a return of the paralytic phenomena. This return is independent again of any kidney disturbance.

Dr. Morton Prince, Boston, mentioned a case which very closely resembled one which Mr. McCarthy spoke of, and which in one respect is unique. It was a case of uremic hemiplegia, in which the hemiplegia shifted from one side of the body to the other and back again in the course of a few hours, thus alternating for a time from one side to the other. At the autopsy, which, it should be said, was not made by a pathologist, there were no gross lesions found or changes which would account for the alternating paralysis.

Dr. Herman H. Hoppe, Cincinnati, said that in considering these cases of uremic paralysis a sharp distinction should be made between that class of cases, purely transitory in character in which the lesion disappears very frequently with the disappearance of the uremic attack, and those in which the lesion afterward becomes permanent. At the Denver session of the American Medical Association he read a paper on a group of clinical cases, one of which was a case of motor aphasia. The patient recovered and lived a great many years afterward. Dr. Hoppe's personal opinion is that these cases are due to cortical weakness plus autointoxication. Very frequently in these cases, as Dr. McCarthy said, the cortical weakness progresses and leaves a permanent lesion. Two of the patients whose cases Dr. Hoppe reported at the Denver meeting remained well for several years and then developed into hemiplegics. They were private patients and he was not able to obtain any autopsy. The opinion which Dr. McCarthy expressed is probably true, viz., that there is often a condition of arteriosclerosis, diminishing the blood supply of the cortex. This leads to a passing hemiplegia or monoplegia, and then, in the course of years, when the arteriosclerosis becomes worse, probably a thrombosis, probably a hemorrhage develops; then what was formerly a transitory condition is changed into a permanent condition.

Dr. W. G. Spiller, Philadelphia, said that the condition of transitory paralysis, occurring in arteriosclerosis, has been recognized many years. There is one aspect of the subject Dr. Rhein brought forward in his paper, which Dr. Spiller mentioned at the recent meeting of the American Neurological Association—that is, the existence of minute areas of softening. Marie and some of his assistants have reported the finding of minute cavities in the brain, which are likely to be overlooked. They are about the size of a pea, sometimes smaller and sometimes larger; often they are not regarded as important, and yet occurring in the motor tracts they produce paralysis. The areas of softening which Dr. Rhein speaks of are different. Microscopically they are difficult to detect, and they are often invisible to the naked eye. When one minute area of softening of this kind is found it is certain there are many more; and when they are numerous in the brain they must produce symptoms of a diffuse character.

Dr. T. H. Weisenburg, Philadelphia, said that three years ago he reported in the *Journal of Nervous and Mental Disease* two cases of uremic hemiplegia with necropsy. In one the patient had persisting hemiplegia which lasted 14 days. In an examination of the motor cortex Dr. Weisenburg found the nerve cells intensely diseased, but especially so on the side opposite the paralysis. In association with this nerve cell degeneration there was primary degeneration of the motor tracts which he traced from the internal capsule to the sacral cord. A careful search, in which he was assisted by Dr. Spiller, failed to reveal any small areas of softening such as Dr. Rhein describes, to account for the degeneration. Dr. Weisenburg has no reason to change the opinion then expressed that any poison or toxin like that found in a uremic condition, if persisting long enough, may cause sufficient change in the nerve cells to give secondary degeneration of the motor tracts associated with it. In none of the cases Dr. Rhein reports did the paralysis last long enough to cause changes similar to those described by Dr. Weisenburg. Dr. Rhein's results are interesting and show the changes to be expected in arteriosclerotic conditions. Regarding the differential diagnosis clinically between the hemiplegia found in uremia and in arteriosclerosis, he is convinced that in the majority of cases it can be made. He has done this repeatedly in the wards of the Philadelphia Hospital to the satisfaction of others. He does not believe, however, that it is possible in most cases to make a differential diagnosis from the hemiplegia resulting from a hemorrhage.

Dr. John H. W. Rhein, Philadelphia, emphasized the point brought forward by Dr. McCarthy as to the necessity of making careful and exhaustive microscopic studies of the brain and spinal cord in those cases of hemiplegia in which there is no demonstrable lesion at the autopsy. He also called attention to the fact that syphilis plays an important part, in his opinion, in the production of the so-called uremic hemiplegias. At Blockley, in Philadelphia, in a large proportion of the cases seen in the nervous wards there is a history of syphilis, and many of these patients die during a uremic attack. In such cases Dr. Rhein believes it is impossible to tell whether the hemiplegia is of uremic or specific origin.

AFFECTIONS OF THE SPINAL CORD IN EPILEPTICS.*

WILLIAM N. BULLARD, M.D.
BOSTON.

In consideration of the immense amount of literature on the subject of epilepsy it is somewhat surprising that practically nothing has been written in regard to the condition of the spinal cord in this disease and that there are practically no observations on this subject. This may be accounted for in part by the fact that the source of the striking motor and mental symptoms has almost from the first been recognized as due to the brain, or at least of intracranial origin, and in part also because so long as no anatomic or pathologic change in the cerebrum or medulla could be demonstrated, it seemed useless to examine a portion of the body less affected and where the lesions, if such existed, were likely to be even more obscure. A third cause is that in this country, at least, it is only of late years that the spinal cords have been properly removed and examined after death and that even now but comparatively few observers are able to examine spinal cords thoroughly.

It has been my good fortune through the kindness of Dr. Flood, superintendent of the Massachusetts Hospital for Epileptics, to have at my disposal for examin-

* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

ation a considerable number of epileptics—over 500—and to be able to see what clinical evidence was offered in relation to any abnormal condition of the spinal system. A small number of cases presented definite evidence of disease of the spinal cord.

CLASS I.

We may divide these cases into the following classes: First, those in which a definite affection or lesion of the spinal cord occurred in an epileptic, apparently merely as a coincidence. There is no reason why a person subject to epilepsy should not at the same time be affected by a disease or disturbance of the spinal cord in the same way and manner as a healthy person might be. This undoubtedly occurs in a certain number of persons. In such cases the epilepsy and the spinal cord disease have distinct and separate origins and causes and there is no etiologic relationship in their occurrence in the same individual.

CLASS II.

The second class of cases is by far the most common; that in which the same cause or lesion produces both the epilepsy and the spinal cord lesion. This class has two subdivisions: *a,* That condition in which the same cause produces separately the epilepsy and the spinal cord affection, as when as a result of syphilis, both epilepsy and tabes are produced, but each lesion, though due to the same cause, is independent of the other. *b,* Those cases in which the affection of the spinal cord is secondary to some lesion in the brain, which lesion may be regarded as the source of the epilepsy. In other words, in these the same cerebral lesion produces both the symptom-complex epilepsy and the secondary degeneration of the spinal cord. This is by far the most common type. It is not at all infrequent to find not only hemiplegia connected with epilepsy, in which we should certainly expect to find well-marked secondary systemic cord lesion, but we also occasionally find other forms of spinal affection, possibly secondary to cerebral lesion.

The following case is interesting as an example of such conditions:

Case 1.—A. K., female, married, born in Ireland, was admitted to the State Hospital for Epileptics, May 6, 1905. Family history negative. The commitment paper was as follows: Very absent-minded. Difficulty in concentrating mind. Aphasia. Has two or three attacks (epileptic) a month in which she falls. Right limbs twitch at irregular intervals and afterwards are numb and tingle; the corners of the mouth are drawn up and twitch.

History.—She had been a bright girl, a fair scholar, and was married eleven years ago. Convulsions began one and one-half years ago and are limited almost wholly to the right limbs; consciousness is lost for a short time. The right limbs may shake for an hour or two after the convulsion. Difficulty in speech began about the same time as the convulsions (one and one-half years ago). She was a good writer but now writes poorly. Has had right hemiplegia at times recently (possibly exhaustion paralysis). Menstruation has been absent sixteen months. She is apathetic. Emotions are uncontrolled. Wets and soils clothes.

Physical Examination.—Right pupil is dilated; does not respond to light or accommodation. Vision is fair. Speech is scanning, slow. There is tremor and incoördination of tongue and incoördination of limbs. Sensation to touch and pain are normal. There is no astereognosis. She complains that right limbs are weaker than left and are numb and that she has a crawling sensation on the right.

October 1: Patient is more dull and stupid. Incoördination of limbs is more marked. Tremor of right limbs is intentional but not fully characteristic. Right lower extremity has become spastic. Knee jerks have increased. Triceps reflexes have increased. Right pupil is dilated, some lateral nystagmus. Fundi are normal. There are motor aphasia and paraphasia. Patient understands, but uses the wrong words and can not recall the words she wants. At other times talks moderately well. Can not write legibly. Can read and understand print and writing. Has had partial exhaustion paralysis of right limbs lasting several days and following the only severe attack since here. Urine is negative.

Examination made by me in January, 1906, was essentially the same. The head showed nothing abnormal: There was no tenderness and no scars. The right pupil was much dilated and the left pupil small; both reacted to light and accommodation. The external ocular muscles were normal. No nystagmus was seen. Face was symmetrical; no paralysis. The tongue was protruded straight and showed gross antero-posterior movements and some tremor. Submaxillary glands were enlarged; no other enlarged glands detected. Upper extremities were normal in appearance; there was no atrophy and no tenderness. Triceps reflexes normal (right not increased). Grasps fair; right less strong than left. No incoördination. No astereognosis. Slight tremor in right upper extremity when she raises a glass of water. Lower extremities showed no definite static ataxia. Patient can not walk well on a straight line. Grasps at objects for support in walking and especially in turning round, but does not stagger much in walking straight forward. Walks slowly—slightly lame on right; no varus. Puts both feet down flat. Knee jerks are exaggerated; about the same on either side. Slight knee clonus on right. No ankle clonus. No Babinski.

Sensation: The lesser differences can not be determined on account of the mental condition. Pin prick is felt everywhere and no difference can be found in its perception on the two sides.

February 15: There is no tremor of hands. In lifting glass of water to mouth there is an occasional jerk of the upper extremity, especially of the right, and in holding out the hands there is an occasional slight involuntary muscular contraction. To-day she raises the feet well in walking. Left lower extremity is weak. Left upper extremity of fair strength.

Diagnosis.—Disseminated sclerosis (probable).

Case 2.—E. W. H., female, 32, married, admitted to hospital, May, 1904, had been subject to epileptic attacks for eighteen years. She developed spastic paraplegia eight years ago, at the age of 24. At one time there was paresis of the left side of the face.

April, 1905: The spasticity has increased markedly during the past month. There is now loss of control of the bladder.

January, 1906: My examination shows a condition of spastic paraplegia. Increased knee jerks but no clonus and no Babinski.

The interesting point in this case is the increase in the spasticity in March and April, 1905, and their gradual increase since. This does not seem to be the immediate result of any attack or series of attacks. It is not an exhaustion paralysis in the ordinary acceptance of the term but is rather, as far as can clinically be determined, more of the nature of a slowly increasing degeneration. The real condition in such cases as this is only to be settled by autopsy.

CLASS III.

The third class is that in which the primary pathologic cause of the convulsions and other typical symptoms acts directly on the spinal cord as well as on the intracranial contents. The pathologic conditions produced in the brain would, in such case, be present also in the spinal cord, and we should find in the cord primary and not merely secondary lesions. It is probable that in typical idiopathic epilepsy lesions can be found in the cerebrum or cerebellum in practically all cases if the examination be sufficiently careful and extended. Are similar lesions to be detected in such cases in the spinal cord? I believe so.

Up to the present time, however, no definite evidence

of such lesions has been given. Chromatolysis and certain other changes in the cells of the spinal cord have been reported but the causation of these conditions is not yet so well settled that we can accept them as evidences of a primary organic disease. Chromatolysis may be caused, so far as yet appears, by a variety of causes and its significance is not determined. Whether the decubitus or bed-sores, which occur so suddenly and rapidly in epileptic status, can be considered as evidence of any spinal condition is also undecided. That they are connected with trophic disturbances there is no doubt. Even if the seat of this disturbance is in the spinal cord, it must be considered as a terminal condition rather than the outward manifestation of a well-defined organic affection of the cord which has been of the same character as that which produces the characteristic symptoms in the cerebrum. It is not a primary epileptic lesion, but a terminal affection.

CONCLUSION.

Since the paper was written I have received this statement from Dr. Southard: "Microscopic examination of a number of spinal cords from epileptics has yielded some interesting findings. These warrant more extended and systematic study." One case shows the effects of a terminal exhaustion state on the spinal cord. In the series of cords examined Marchi degenerations of a diffuse non-systemic character were found in almost every case. One case showed considerable fibrillar gliosis.

I believe that we have here an important field for further investigation and it is to call attention to this that this article is written.

DISCUSSION.

DR. HOWELL T. PERSHING, Denver, Colo., asked Dr. Bullard whether the cells of the anterior horns are more implicated than those of other parts of the cord. It is in these cells, Dr. Pershing said, that he would expect secondary changes such as are known to occur in the cortex of epileptics.

DR. W. N. BULLARD, Boston, said that up to the present examinations have been made of only about 15 of the cords. Dr. Southard stated that the cells of the anterior horn of the cord have shown the axonal reaction of Nissl. There was fatty degeneration of the nerve fibers in various places, but of such a character that the pathologist was inclined to believe that in many cases it might easily have escaped notice unless special search had been made in that direction.

MANIC-DEPRESSIVE INSANITY AND VISCERAL DISEASE.*

HENRY S. UPSON, M.D.

Professor of Neurology Western Reserve Medical School; Attending Physician to the Lakeside Hospital.

CLEVELAND, OHIO.

The recent consolidation of the different forms of mania and of melancholia into the one disease called manic-depressive insanity is a notable achievement and at the same time furnishes one of the most important of the recent problems of psychiatry. The fusion of so widely differing symptom complexes into one type, and their presentation as a definite disease can only be justified by showing that the same pathologic process or, what is quite different, that the same cause underlies the manifestations in all cases. It is important to investigate and group the cases of so common a difficulty as the so-called manic depressive type, to find out whether the diagnostic criteria are justified, whether the prognosis is hopeless, as to permanent cure, as is implied in the definition ordinarily given of the disease and the treatment restricted to care and palliation, or whether some cases of the disease being curable, efforts should be made to discover and eradicate the cause of the difficulty. The answer to these questions is of vital importance to every patient in whom either elation or depression is a prominent symptom.

According to Kraepelin, manic-depressive insanity is "that mental disorder which recurs in definite forms at intervals throughout the life of the individual and in which a defective hereditary endowment seems to be the most prominent etiologic factor." According to the older classification, the diseases which are included in the new one are recoverable mania, simple mania, simple melancholia, melancholia agitata, periodical mania, periodical melancholia and circular insanity. All of the melancholias are here included except the senile form, and all of the manias which are not episodes of elation in the course of other mental disorders, as for instance, paresis or dementia precox. As the essential element in all of the symptom-complexes is emotion, either elation or depression dominating the clinical picture in each of them, and as visceral conditions notably influence emotion in both health and disease, the attitude of modern psychology toward the emotions in health is of importance as a starting point for the consideration of visceral action in mental derangement.

In brief, modern psychologists consider emotion the cognition of visceral change. If, for instance, a cause of grief is followed by the corresponding emotion, this does not happen as a direct cerebral reaction. The sequence is as follows: As a result of the bad news or the misfortune the viscera, the stomach, liver, heart for instance, are depressed and changed in their functioning and the cognition of the change is apprehended as the emotion. If the viscera were non-existent or their nervous connections with the brain severed or shunted, misfortune might be apprehended intellectually but not as emotion.

This theory, which can not be further elaborated at this time, receives powerful support from observation of the simplest illnesses and departures from visceral health. As examples, depression from liver disease or dyspepsia and elation in tuberculosis have long been familiar. The rich dyspeptic who is depressed, and as a result has delusions of poverty and the loss of friends, and the emaciated consumptive who looks for speedy recovery and is better every day until he dies, are mild prototypes of the manic-depressive form of insanity which, in its severe forms, fills our asylums. The interval between mental health and delirious mania is bridged by transition forms which vary through all possible intervening states of mild depression, depression with agitation, depression with delusions, depression with suicidal impulses, with hallucination, simple exaltation, exaltation with delusions and incoherence of ideas until the most serious forms of all are reached, the cases of alternating or of rhythmically recurring mania and melancholia. The question whether the mild and the severe cases are essentially the same is not purely an academic one. If they differ from each other only in degree, and if the milder forms are dependent on visceral disease and are curable the severer cases need not be considered necessarily hopeless. If the severe cases differ in kind and are essentially incurable the dividing line should be determined.

* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

Turning now to the mild cases, it is to be remarked that the ordinary accompaniment of visceral disease is depression. Exaltation is less common, or at any rate less obvious, but may be found even in cases of gastric and intestinal disorders. One of the commonest examples is furnished by the dyspeptic who finds himself elated and working at higher pressure than normal, and recognizes the condition as the sign of an undigested meal. Such patients can foresee the ensuing mild melancholy, remediable by a purge and subsequent care in diet. Quite as typical and almost as common are the women who find their duties increasingly hard, who cry easily, find life a burden and their friends hard to face, and along with this simple melancholy may or may not have backache, headache, indigestion and loss of weight. Every neurologist who has a care for the physical well-being of his patients has referred many such to the gynecologist and seen simple melancholia cured never to return or to return only with the recurrence of the physical cause.

The following case is one of a type more severe but almost as common as is the preceding:

Case 1.—The patient, a woman, aged 28, after a summer spent in the woods camping and fishing and afterward in unusually good health, took up an amount of teaching that involved moderate over-strain. She soon began to be sleepless and depressed, she developed delusions that she was pregnant and that she had committed various unpardonable sins and procured a revolver with a view to committing suicide.

When seen she had grown steadily worse for two or three months. She had the usual coated tongue and pallor of the melancholic, tired easily, had no energy and no pleasure in life and was much occupied with her delusions. Examination revealed serious disease of both uterus and ovaries. Great improvement in the mental condition was apparent within a few days after an operation undertaken to relieve the pelvic conditions. The patient gained steadily in strength and cheerfulness for about a year and is now, two and one-half years after the operation, in good health.

My only excuse for citing so common a case is to point out the fact that it and similar cases are included in the group of manic-depressive insanities. In my experience such patients retain their mental health if the affected viscera do not again become diseased. One such patient, who made a good recovery from both her melancholy and her delusions, had a year or two after operation a recurrence of mental symptoms in connection with an attack of the grip. She specifically returned to mental health and remains well five years after pelvic treatment.

The clinical picture of agitated melancholy is, in my experience, often met in connection with gastric and intestinal disease. Mild melancholy is an almost regular accompaniment of indigestion, and this, under exceptional conditions, may rise to a condition of frenzied depression, with intractable nervousness and insomnia. One such patient, a man sixty-three years of age, in whom the attacks of mental alienation followed dysentery, responded readily and rapidly to purgation, milk diet and the salicylates, when hypnotics and sedatives were powerless to give more than the slightest relief. In this case agitation and depression were as extreme as I have ever seen them in an asylum case and the symptomatic diagnosis of melancholia agitata, in my opinion, amply justified by the conditions present.

Maniacal cases furnish the more intractable examples of the manic-depressive complex. Two patients have given interesting, although incomplete confirmation, of the suggestion that mania is visceral and sometimes due to curable visceral disease.

Case 2.—This patient presented the clinical features of acute mania in the puerperium. The flight of ideas, singing, rhyming, word salad and excitement, and elation day and night were typical of mania in the stage of delirium. After improvement had begun, supporting a heavy retroflexed uterus, was followed by sudden increase in lucidity. Three days later the patient had a relapse and it was discovered that she had removed the pessary. When it was inserted improvement was at once apparent. A curetting was refused by the relatives, and the patient was removed to an asylum and several years later was still there with chronic mania.

Case 3.—This was a case of recurrent mania, alternating with hebetude. Patient had been three times in an asylum for periods of five to six months, with intervals of a year to a year and one-half of mild depression. During her exacerbations she had typical exaltation, was violent and had delusions with rapid incoherent speech. She was seen at the beginning of an excited period, which came to an end, and the patient became calm after support of the uterus by a pessary. She was, however, far from normal, her general health being decidedly below par. She could bear little exertion, her digestion was poor and she was anemic and emaciated. Some months after the original operation she began to be excited and it was evident that she was again drifting into a maniacal condition. The uterus was discovered to be out of place, and reposition was followed by another subsidence of loquacity and elation.

Operations.—Five or six months later a recurrence of the same symptoms led to a more radical operation. The uterus was supported by being stitched to the abdominal wall and one ovary, which was discovered to be markedly selerosed, was removed. This operation was followed by an improvement which lasted for almost a year. Then the symptoms returned and a second operation was undertaken. The left ovary, which was previously found in a comparatively good condition, had become markedly sclerotic and was removed.

Postoperative History.—This operation was followed by complete relief. The mental condition became normal for the first time since my acquaintance with the case. The patient, instead of being, as heretofore, pale and emaciated, grew fat and rosy. Two years and one-quarter have elapsed since the last operation and about two years since her return to health. Even this short time has already furnished a complete justification for the operation by giving the patient complete relief from her previous distressing condition, although a mild relapse just inaugurated makes it clear that cure is by no means complete.

That these cases are simply illustrations in abstract scarcely needs statement. So far as melancholia is concerned they are such illustrative cases as may be furnished by any physician of wide, or even of moderate experience, in neurology. Relapse in these cases of melancholia has been in my experience rare, temporary, and due to recurrence of visceral disease or profound toxemia. Most of the patients have remained without relapse for periods varying up to twelve years.

With regard to the cases of mania criteria are more difficult. My own cases are so few in number as to be suggestive rather than conclusive. That mania is like melancholia, essentially visceral in origin, seems to me so well established as to make its cure by correction of the underlying lesion probable, *a priori*.

The recent introduction of the term manic-depressive insanity then marks what may be called the agglutinative period in symptomatology. The time is not yet ripe for a final judgment on this nomenclature. In the absence of a firm pathologic basis for either the division or the uniting of the different symptom-complexes that compose the group, it can still be said that the name does not probably represent an ultimate clinical fact, but rather a stage between the earlier imperfect divisions and a later and better classification on a pathologic basis.

The test of a theory is its ability to account for ob-

served facts. In proportion, as it does this, it possesses the weight of probability. If then, the visceral theory of the origin of mania or of melancholia, or both, is capable of furnishing an adequate explanation of their clinical features, it will be worthy, at least, of standing until it is supplanted by a better theory, on a basis of wider experience. What may we fairly expect if emotions in both health and disease are reactions from visceral change? Not that the same visceral diseases will always produce the same emotional result. This would be contrary to what we know of such effects of visceral disease, as fever and delirium. The absorption of toxins and the visceral irritation in typhoid, malaria and meningitis, carry with them reactions of fever, of pain and of delirium, the amount of the reaction varying as widely as possible in different individuals. The psychic pain of melancholy is like physical pain in being an individual reaction and only a little less widespread. The elation of mania is less common, it is a reaction of a different species but of the same family with pain and depression. So far then as concerns their variability, elation and depression are in accord with other modes of reaction to visceral disease. They resemble these too in being alike the result of disease of different viscera. There is no viscus of pain and none of depression, no viscus of pleasure and none of sorrow.

If manic-depressive states are modes of reaction to changes in the viscera we should expect some of them to be curable and others to be incurable. We should expect cases occurring in the old to be less hopeful than those in the young. We should expect some curable cases to occur even in the aged. We should expect cases of long standing to be less susceptible of cure than recent ones for two reasons, that the underlying disease has taken deeper root and the consequent changes in the cerebral tissues and the circulation have become more pronounced. These are all facts of common observation of which I have cited a few instances.

If the manic-depressive insanities retain their place as a clinical entity, this must be not as symptom-complexes, but on the basis of a common pathology. That pathology must be the broad one of visceral change in general, as both mania and melancholia occur as sequences of disease of many kinds, affecting any one or several of the viscera. The precise nature of the resulting symptom-complex does not depend on which particular viscus is diseased, but apparently on the reaction mode of the person affected; just as delirium depends, not on the location or the kind of the inflammation; but that it is caused by inflammation no one doubts; that it sometimes outlasts the inflammation which causes it is also true: that the nature of the delirium is determined by the predisposition of the individual will, I think, be admitted, delirium in all these ways running parallel with the manic-depressive reactions at present under discussion.

DISCUSSION.

DR. W. H. HUMISTON, Cleveland, gave the condensed histories of the six cases in which he was associated with Dr. Upson.

Five of the patients were operated on for pronounced pathologic conditions found in the pelvic organs; the recoveries have been complete and the results permanent up to the present time. The one patient who refused operative measures was finally removed to an asylum where she still remains unimproved. The bimanual examination in her case revealed a large tender retrodisplaced uterus, ovaries enlarged and prolapsed. By placing her in the knee-chest position and replacing the uterus and fitting a pessary, she was made temporarily better, but on her getting out of bed and walking about the tender, enlarged ovaries were irritated by the pessary and it was removed. Operation in this case, Dr. Humiston believes, would have given excellent results.

CASE 1.—Woman, aged 46, had had profound increasing melancholy for several years, with apathy, disinclination for society, warped views of her duties and of her relations with her family and friends, amounting to delusions. She also had lassitude, pallor, muscular weakness and retroverted, enlarged and tender uterus.

Purulent disease in tubes and ovaries was corrected by operation. The result was a return to physical and mental health, which persists after six years.

CASE 2.—Melancholia agitata, folowing dysentery, in a man aged 63. There was frenzied depression with insomnia and motor unrest and fear of insanity and the asylum, which might or might not, under the circumstances, be considered as an insane delusion. Steady recovery took place on purgation, restricted diet and intestinal antiseptics. There is no recurrence after 12 years.

CASE 3.—A woman, aged 28, had melancholia, with delusions of sexual and other crimes and preparations for suicide. She had had rheumatism for four or five months, with nervousness, pallor and weakness. The delusions and depressions were profound, constituting a complete psychic change from her former mental habit. Recovery was prompt and complete after pelvic operation undertaken 2½ years ago for sclerocystic ovaries, chronic catarrhal appendicitis and adherent glans clitoris.

CASE 4.—Woman, aged 58, had profound depression, with insomnia, motor unrest and evidences of intestinal indigestion following a period of anxiety. Purgation, milk diet, and intestinal antiseptics were promptly followed by subsidence of both the depression and the agitation. Insomnia also disappeared, although previously refractory to sedatives and hypnotics. Recovery persists after 11 years.

CASE 5.—An unmarried woman, aged 28, much depressed for about a year, made several attempts at suicide. She had marked delusions. Pelvic operation was performed eight years ago for sclerocystic ovaries and retroverted uterus. The result was complete and permanent recovery.

CASE 6.—Woman, aged 49, had profound melancholy with delusions of six or eight months' duration. Pelvic operation was performed three years ago for lacerated cervix, retroflexed uterus and sclerocystic ovaries; a small myoma in the posturine wall was not removed. One relapse of a few weeks' duration followed an attack of grippe, a few months after operation. Recovery was otherwise complete and the patient is now well after three years.

CASE 7.—Woman, aged 27, had delirious mania in the puerperium, accompanied by exaltation, singing, rhyming and ribald speech, night and day. Replacing the uterus with support of pessary was, on two occasions, followed by marked improvement, but operation was refused and chronic mania with delusions remains after seven years.

CASE 8.—Unmarried woman, aged 24, had recurrent mania alternating with periods of mild depression, the mania being characterized by typical flight of ideas, delusions, exaltation, etc. The patient has been three times in a private asylum. On two occasions supporting the retroflexed uterus gave temporary relief; finally curetting of the uterus and removal of the ovaries was followed by recovery, persistent 2½ years after the operation. The procedure has, even in this short time, fully justified itself by the condition of the patient, who is really robust for the first time since Dr. Humiston's acquaintance with her. She is now married and is taking full care of her household duties, and has gained twenty-six pounds in weight.

Dr. Humiston believes that the majority of cases of melancholia, without family history of insanity, in which pronounced pathologic conditions in the pelvis exist, can be cured by resorting to surgical procedures.

DR. FRANCIS X. DERCUM, Philadelphia, declared that he is firmly convinced that maniac depressive insanity is primarily a neurosis. The overwhelming factor of heredity, the absence of visceral complications and the variability of visceral complications when present, justify no other inference than that the disease is a nervous disorder and that visceral symptoms when

present are merely complications. Recovery from insanity, subsequent to operations of various kinds is, of course, not unknown. Recovery has been known to follow accidents, such as injury to the head, after operations of various kinds, after infections and after indeed anything that may profoundly modify the general nutrition. The well-known influence of typhoid fever in bringing about recovery in insanity, is a convenient illustration. If manic depressive insanity is dependent on visceral lesions, these lesions ought to be of definite character. In view of the overwhelming factor of heredity how, he asked, are we to attribute any importance to such conditions as retroversion of the uterus. The truth is that retroversion is in many cases merely a retention of the primary position of the uterus and is not of itself really pathologic. Attempts to attribute manic depressive insanity to diseases of the digestive tract or to other visceral affections meet necessarily with the same fact, namely, the entire absence of a close etiologic relationship.

DR. ALFRED GORDON, Philadelphia, referred to the work of a French surgeon, Dr. Picqué, who made an exhaustive study of this subject. The work was done in one of the asylums of Paris and from a study of the record of these cases one is impressed with the fact that while some of the patients improve, the majority have recurrences, in spite of the correction of the retroversion of the uterus or any other pelvic disease. To Dr. Gordon it seemed difficult to connect, in any pathologic sense, as cause and effect visceral complications, or defects in the viscera with the psychoses, discussed by Dr. Upson.

DR. HENRY S. UPSON, Cleveland, Ohio, said that he is well aware of the unpopularity with many physicians of the theory that psychoses are dependent in any way on visceral disease, but it seemed to him that the bad repute of surgical intervention in these cases is due preëminently to the one fact that some early good results were obtained by operation on the pelvic viscera. Because the ovaries had been removed in some cases and melancholia cured, it was thought, formerly, that melancholia was an ovarian disease and that a cure would follow in all cases. There was too much enthusiasm, which resulted in disappointment, because recovery did not take place in all cases in which the ovaries were removed. It is a mistake to think that manic-depressive insanity in all these cases is the result of any one pathologic process, or has any well-defined syndrome in all cases. Dr. Upson believes that such statistics as Dr. Gordon mentioned ought not to be given too much weight, because such observations are usually made by a surgeon with the idea that manic-depressive insanity is a surgical disease and may be relieved by surgical procedure, especially in one class of cases.

THE OPSONIC INDEX IN MEDICINE.*

NATHANIEL BOWDITCH POTTER, M.D.,
NORMAN E. DITMAN, M.D.,
ERNEST B. BRADLEY, M.D.
NEW YORK CITY.

In 1895, Denys and Leclef[1] first called attention to the effcet of blood serum on phagocytosis by leucocytes. They were the first to produce reliable experimental evidence that substances which alter microbes in such a way as to permit their being ingested by the leucocytes exist in the blood serum of immunized rabbits. From careful experiments *in vitro* they concluded that in an immunized rabbit the leucocytes obtain their power of engulfing the bacteria from some other property of the serum. The immunized animal fights the bacteria, first, by the direct action of its serum; second, by its leucocytes.[2] The latter always owe to the serum the commencement of their power.

In 1897, Bordet[3] was unable to confirm their results. In the same year Mennes[4] showed that the immunity of guinea-pigs inoculated with toxins or cultures of pneumococci depends on a modification of their serum whereby an active phagocytosis is induced, and that this is not due to any special activity of the leucocytes. In 1902, Leishman[5] devised a method of quantitatively estimating the phagocytic power of blood to staphylococci. In 1903, Wright and Douglas[6] introduced the word "opsonin" (*opsono,* I prepare the food for) to characterize the substance in normal blood which they believed prepared the microbes for ingestion by the phagocytes. They were able to show that this substance exists in the serum, that it is partly thermolabile, being largely destroyed at 60 C. in ten minutes, and that it acts on the bacteria and not on the leucocytes.[7]

In 1904, Neufeld and Rimpau,[8] independently of Wright, alluded to the two well-known elements in immune sera (i. e., antitoxin and bactericidal substances) and stated that they had found a third element which they claimed sensitized the bacteria, but did not act on the leucocytes. They treated leucocytes with antistreptococcus serum for a certain time, suspended them in normal serum, and found that they did not ingest virulent streptococci (note that they employed virulent organisms). On the other hand, after treating virulent streptococci with antistreptococcus serum and then washing them free from the serum with salt solution, they found leucocytes could then actively ingest these sensitized microbes. They obtained corresponding results with pneumococci. They proposed to call their sensitizing substances "bacteriotropic" substances. To these substances Wright and Douglas have given the name "immune opsonins."

---

* Read in the Section on Practice of Medicine of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

1. "Sur le mécanisme de l'immunité chez le lapin vacciné contre le streptococcus pyog.," La Cellule, 1895, vol. xi, p. 198.

2. A summary of their conclusions follows:

(a) The serum of normal rabbits exercises no bactericidal action on the *Streptococcus pyogenes.*

(b) The serum of a rabbit on whom a certain degree of immunity to streptococcus has been conferred by vaccination, will delay the development of streptococcus for several hours and will sometimes exhibit a true bactericidal power.

(c) Leucocytes from a normal rabbit added to the serum of a normal rabbit exhibit only a feeble phagocytic power to streptococcus. The leucocytes die before their usual term of life.

(d) Leucocytes from a normal rabbit added to the serum of a vaccinated rabbit energetically destroy streptococcus. The leucocytes preserve their normal duration of life.

(e) Leucocytes from a vaccinated rabbit added to its own serum act the same as above (d).

(f) Leucocytes from a vaccinated rabbit added to the serum of a normal rabbit act as above (c).

(g) If a dose of streptococcus, lethal for a normal rabbit, is injected into the pleura of a vaccinated rabbit, the serum prevents the development of a pleurisy.

(h) If a dose of streptococcus capable of producing erysipelas in a normal rabbit is injected under the skin of a vaccinated rabbit the infection is prevented especially by leucocytes.

3. Ann. de l'Institut Pasteur, 1897, p. 201, note.

4. "Antipneumokokken Serum und der Mechanismus der Immunität des Kaninchen gegen deu Pneumokokkus," Zschr. f. Hyg., 1897, vol. xxv, p. 413.

5. "Method of Estimating Phagocytic Power," Brit Med. Jour., 1902, p. 73.

6. Proc. of Royal Soc., vol. lxxii, p. 357.

7. The following experiments were responsible for their conclusions:

(a) Staphylococcus emulsion + washed corpuscles + NaCl solution at 37 C. for 15 minutes = no phagocytosis. Add serum; phagocytosis occurs.

(b) Three vols. washed corpuscles + 3 vols. serum at 37 C. for 15 minutes, then heated to 60 C. (destroying the thermolabile opsonin). Cool + 1 vol. emulsion staphylococci at 37 C. for 15 minutes, result is little or no phagocytosis.

(c) Three vols. serum + 1 vol. emulsion staphylococci at 37 C. for 15 minutes, then heated to 60 C. + 3 vols. corpuscles at 37 C. for 15 minutes, result is marked phagocytosis. Hence, action of serum is mainly to modify the bacteria in such a way as to render them a prey to the phagocytosis.

The organisms which are thus acted on are staphylococci, streptococci, gonococcus, pneumococcus, *Micrococcus melitensis,* vibrio of Asiatic cholera, and colon, pest, typhoid, tubercle, anthrax, proteus, and dysentery bacilli.

8. Neufeld and Rimpau: "Ueber die Antikörper der Streptokokken und Pneumokokken Immunserum," Deutsch. med. Wochschr., 40, 1904, Sept. 29, p. 1458; also Ztschr. f. Hyg., 1905, vol. ii, p. 283.

METHODS OF ESTIMATING PHAGOCYTOSIS QUANTITATIVELY.

In 1902, Leishman[5] first devised a method for quantitatively estimating phagocytosis. He mixed equal quantities of blood and a suspension of staphylococci in salt solution in capillary pipettes, blew out a drop of the mixture on the end of a glass slide, on the other end a similar mixture, using control blood, covered with cover glasses and incubated for one-half hour in a moist chamber. After sliding off the cover glasses the preparation was fixed and stained. By counting the cocci in a certain number of leucocytes an average per leucocyte was obtained, which compared with the control constituted the "phagocytic index."

Wright's[6] modification[9] of this method is as follows:

Equal volumes of (1) a bacterial emulsion in salt solution; (2) washed blood corpuscles; and (3) the serum to be tested are measured in a capillary pipette fitted with a rubber teat, mixed thoroughly by blowing out on a slide several times, drawn up in the same pipette, the end sealed in the flame, and incubated for fifteen or twenty minutes at 37 C. A drop of the mixture is then blown out on a slide, and a smear fixed and stained. The enumeration of the bacteria in twenty to fifty polymorphonuclear neutrophiles is made under an oil immersion lens and an average per leucocyte obtained. The ratio of this average to that for a normal serum, using the same emulsion of leucocytes and corpuscles, constitutes the "opsonic index."[10]

In general the procedure for making the bacterial suspension is as follows:[11]

TECHNIC.

In the case of staphylococci, streptococci, pneumococci, gonococci, and colon bacilli, the twenty-four hour growth of agar slants is washed off with normal salt solution.* This is allowed to settle and the upper part of the turbid fluid is pipetted off and centrifugalized in a small tube for from five to eight minutes at high speed. The slightly opalescent supernatant fluid is then carefully taken off in a pipette and is used for the bacterial suspension.

In the case of tubercle bacilli, it is necessary to proceed a little differently. The conglomerated mass of bacilli is heated at 100 C. for ten minutes† and a loopful is ground up in an agate mortar, adding from time to time a drop of salt solution until about 2 c.c. have been added. This is centrifugated as in the case of the cocci for from five to eight minutes, until the supernatant fluid is only slightly opalescent. This is pipetted off and used for the bacterial suspension.

The washed corpuscles are obtained by receiving thirty to forty drops of blood[12] into about 30 c.c. of a 1 per cent. sodium citrate in 0.85 per cent. salt solution. This prevents coagulation. The corpuscles are swung completely down in the centrifuge and are washed twice in 0.85 per cent. salt solution to remove all traces of serum and citrate. After the final washing, all the salt solution is pipetted off and the upper layer of corpuscles, which is rich in leucocytes, is taken for the "washed corpuscles."

The serum is obtained by receiving the blood in small glass capsules with curved capillary limb, allowing it to clot and then centrifugating so that the clear serum can be easily removed.

Illustration of the Method.—If it is desired to obtain the opsonic index to staphylococci of a patient suffering, say, from acne, equal parts of washed corpuscles, bacterial suspension and patient's serum are mixed in the pipette and placed in the incubator. In another pipette equal parts of washed corpuscles, bacterial suspension and normal serum are likewise mixed and incubated. At the end of 15 minutes smears are made from each specimen, fixed and stained. The number of staphylococci per leucocyte is obtained in each case by counting the cocci in the first 50 polymorphonuclear neutrophiles encountered and making an average. If the average for the patient's blood is 6 cocci and that for the normal is 8, the opsonic index to staphylococci would be 6/8 or 0.75.

FIXING AND STAINING.

For tubercle bacilli our slides have been fixed in formalin vapor, stained in anilin fuchsin, decolorized in acid alcohol, washed in 1/1,000 sodium carbonate, and counterstained with methylene blue. For cocci and colon bacilli we have fixed and stained in Jenner's stain, counterstaining when necessary with methylene blue.

DIFFICULTIES.

In a method of this kind involving so many steps, there are necessarily many sources of error and a slip in technic at any point will often invalidate several hours' work. A brief mention of some of the difficulties and sources of error met with by us may prove useful. It is very important that the bacterial emulsions be uniform, free from clumps, and of the right concentration; if too thick, the bacteria can not be counted accurately, and if too thin, there will not be enough to strike a proper average. For cocci, counts averaging 5 to 12, and for bacilli, 3 to 5, are ideal.[13]

The greatest difficulty occurs with tubercle bacilli, since on artificial media they grow only in conglomerated masses. For this reason they have to be ground up in the mortar; but there is an added difficulty from the fact that even after they are mechanically separated they are clumped by salt solution of any concentration greater than 0.1 per cent., and living bacilli, furthermore, are agglutinated by any blood serum. To obviate these difficulties, the bacilli are heated at 100 C. for ten to fifteen minutes and the suspension is made in 0.1 per cent. salt solution.† In using cocci and colon bacilli it is necessary to use young cultures, since the dead and dying cocci stain very poorly and irregularly.

Another source of error in making a series of tests is dependent on the fact that the number of bacteria ingested by the leucocytes during incubation varies directly as the time which the leucocytes have to act. This is shown very clearly by the following table:

EFFECT OF TIME OF INCUBATION ON THE AMOUNT OF PHAGOCYTOSIS.

Incubation time.	Number of staphylococci per leucocyte.
5 minutes	5.7
10 minutes	8.2
15 minutes	11.6
20 minutes	14.5
25 minutes	15.2
45 minutes	19.4
1 hour	28.5
2 hours	Too many to count.

For slight differences in time, however, the error is fortunately a small one.

For the sake of accuracy the capillary pipettes should be approximately of the same caliber.

The "leucocytic cream" of the washed corpuscles should be used fresh as otherwise the leucocytes stick together, and it should be as thick as possible in order to make good smears.

SMEARS AND COUNTING.

Smears are made best by using a slide with corner broken off and the end made rough with a file. They should be fairly thick and are more easily made by pushing the slide.§

9. "Blood Fluids in Connection with Phagocytosis," Ibid, Sept. 1, 1903, vol. lxxiii, p. 130.

10. Simon (Johns Hopkins Hospital Reports, January, 1906) has still further modified this technic by making successive dilutions of the control and test sera and comparing the points at which phagocytosis is practically abolished, or by comparing the percentages of leucocytes engaged in phagocytosis in a given dilution.

11. The details of our technic are essentially those of Wright, to whom we wish to express our thanks for his kindness in personally explaining his methods to one of us.

* Wright informs us that he now employs much younger cultures of the streptococci, gonococci, and colon bacilli, 4 to 5 hours growth.

† Wright now heats the bacillary mass to 100 C. on three successive days and employs a 1.5 per cent. salt solution.

12. In all cases we have used leucocytes from supposedly normal human beings, but it would seem from the researches of other investigators that the amount of variation in the phagocytic power of leucocytes from different individuals of the same species, is so slight as to be negligible.

13. A scale of opalescence by which to judge of the thickness of the bacterial suspension can be made by having a series of tubes of barium sulphate of different concentrations. (McFarland).

§ Wright rubs the slides with a very fine emery paper obtained at a jeweler's and uses a smooth smearer.

In counting, the edges of the smear are selected as most of the leucocytes collect there and at the end, and it is better to take isolated leucocytes or at most groups of two or three, as the counts for these are more uniform than when large masses of leucocytes are enumerated. We have found it necessary to count a larger number of leucocytes than did Wright and Douglas in order to get a fair average, consequently we have usually counted 100 leucocytes in working with the tubercle bacillus, and 50 to 60 when using the cocci and colon bacillus.

The time that it takes to complete a set of observations depends largely on the worker, but after the bloods are collected and the tubes opened, one should in an afternoon be able to make all preparations and make slides of fifteen test sera, using each to two different bacteria.

The enumeration takes time and depends very much on the quality of the smears. With practice one can count on an average about five slides an hour, sometimes more, but often less. To make an index of two or three sera to a single germ should not take more than two hours (two workers).

NATURE OF OPSONINS.

Relation to Amboceptors.—Savtchenko[14] and Dean[15] regard certain opsonins and amboceptors as identical. Hektoen[16] regards opsonins as distinct from amboceptors, and in proof of his opinion states that under certain circumstances normal serum may possess lytic, but not opsonic powers, and *vice versa;* again, that immunization may give rise to opsonic, but not to lytic substances; and, further, that heat may destroy the opsonic power without affecting the lytic amboceptors and *vice versa.* Thus, while opsonin for anthrax bacilli, present in the serum of normal dogs, is destroyed by heating at 60 C. for thirty minutes, the amboceptor for anthrax bacilli, present in the serum of normal dogs, is not affected by heating at 65 C. for thirty minutes. Moreover, while the serum of white rats is normally anthracidal owing to the presence of a thermostabile substance that is inactivated by neutralization of the serum with oxalic acid, the same serum contains a thermostabile opsonin for anthrax bacilli which, however, is not inactivated by oxalic acid.

Relation of Opsonins to Toxins and Complements.—Walker's[17] experiments with diphtheria bacilli and tubercle bacilli showed that toxins as well as opsonins produce an effect on phagocytosis, but that they act independently of one another. Opsonins may be considered analogous to toxins and complements in so far as they have two distinct groups, haptophore and opsonifore. Like complements, opsonins may be neutralized or bound by various salt solutions, Ca, Ba, $MgCl_2$, K_2SO_4, $NaHCO_3$, etc., and so prevented from acting on bacteria.

Relation of Opsonins to "Stimulins."—In his treatise on "Immunity," Metchnikoff described a series of experiments conducted by himself, Gengou, Klemperer, Besredka, and others, in which the introduction of serum, sometimes normal, sometimes immune, into the serum sacs of experimental animals demonstrated a greatly enhanced phagocytic activity in the leucocytes of the exudation subsequently removed from the sac for examination. To the substance which these observers conceived to be present in such sera they gave the name "stimulin," and to the presence of these "stimulins" in immune sera Metchnikoff and his school attributed an important rôle in the processes of both active and passive immunization.

Wright and Douglas[6] endeavored to determine whether unheated serum contained "stimulins" in addition to opsonins. They found the same difference between the action of heated and unheated serum toward staphylococci heated to 115 C. as toward living germs. Their expectations were based on the fact that typhoid bacilli heated above 70 C. acquire a resistance to bacteriolytic effect. Although their experiments with particles of India ink and carmine were unsatisfactory, unheated serum seemed to facilitate their phagocytosis slightly more effectually than heated serum. Staphylococci and unheated serum were digested in an incubator for varying times and then divided into two portions. The first was immediately mixed with corpuscles, the second was first heated to 60 C. and then mixed. In every case the phagocytic power was greater when the heating was omitted and no difference could be detected in specimens left in the incubator fifteen minutes from those left one hour; thus they were obliged to leave the question unsolved.

In 1905, Leishman[18] showed that sera derived from cases of Malta fever or enteric fever, or from animals immunized with living cultures of the germs of these diseases, contain substances which when added to normal human blood are capable of increasing the phagocytic activity of the leucocytes of that blood. He also showed that these substances were specific and thermostabile, withstanding a temperature of 60 C. for fifteen minutes. No evidence of the presence of these substances could be found in the sera of normal men or animals. He also showed that these substances were not identical with agglutinins, that they acted directly on the leucocytes and not on the bacilli. Metchnikoff suggested the name "opsonic sensitisers" for these substances. Wright suggested that they might be thermostabile opsonins in spite of the fact that opsonins act only on the bacteria, while these substances, if the work and statement of Leishman are to be accepted as correct, act on the leucocytes.

Effect on Opsonins of Various Conditions and Agencies.—1. *Standing:* The opsonic power of serum kept at 2 C. is practically unchanged in ten days, but it is destroyed in three days if the serum be kept at 37 C. Without referring to the temperature, Wright and Douglas say, "Opsonic power of blood disappears gradually on standing. In five or six days it is only about one-half as much as the original."

2. *Sunlight:* Exposure to bright sunlight for three hours reduces opsonic value about one-third.

3. *Heat:* The opsonic power of any serum is but little impaired by heat below 50 C., but that of normal serum is rapidly destroyed at temperatures of 60 C. or above. Normal human serum contains an opsonin for typhoid bacilli that resists heating above 60 C., and there is an opsonin for anthrax bacilli in the serum of white rats that resists heating to 70 C. Dean[15] believes that some of the opsonin is unaltered even by heating to 60 C., because on exposing bacteria to heated serum for a longer period than fifteen minutes some phagocytosis occurred.

Immune opsonins are more resistant than the normal. Leishman[19] and his co-workers showed that the serum of persons vaccinated against typhoid fever contained sufficient opsonin to promote some degree of phagocytosis after heating to 56 C. Hektoen[16] mentions that he has several times noted a typho-opsonin in the serum of

14. Ann. de l'Institut Pasteur, 1902, xvi, p. 107.
15. Proc. Royal Soc., 1905, lxxvi, p. 506.
16. THE JOURNAL A. M. A., May 12, 1906, p. 1411.
17. "The Relative Influence of Blood Fluids and Bacterial Toxins on Phagocytosis," Jour. Med. Research, Nov., 1905, p. 173.
18. "Some Experiments in Connection with Stimulins," Trans. Path. Soc., London, 1905, lvi, p. 344.
19. Jour. of Hyg., 1905, v, p. 380.

convalescents from typhoid which resists heating to 70 C. for thirty minutes. Immune hem-opsonins are also thermostabile.

Dilution: The opsonic power of serum is diminished in proportion to the dilution. Simon[20] has utilized this principle in estimating the opsonic content of serum.

5. Chemicals and Drugs: Hektoen and Ruediger[21] showed that the opsonic action of serum may be diminished or inhibited by solutions isotonic with the serum of $CaCl_2$, $BaCl_2$, $SrCl_2$, $MgCl_2$, K_2SO_4, $NaHCO_3$, $Na_3H_5C_6O_7$, $Na_2C_2O_4$, $K_4Fe(CN)_6$, formalin, lactic acid and chloroform. They suggest that certain so-called negatively chemotactic substances, of which lactic acid is a good example, owe their effect to neutralization or destruction of the opsonin. The diminution of resistance produced by lactic acid to various infections and ascribed to its direct repulsion of phagocytes is, therefore, perhaps dependent primarily on the anti-opsonic action of the acid. The addition of potassium iodid in small amounts to serum does not interfere with its opsonic power.[22]

The administration of potassium iodid has no influence on the opsonic index. The iodid eruption is not associated with a low opsonic index. Owing to the fact that nuclein has a bactericidal action and may cause leucocytosis when introduced into the blood stream, the idea occurred to Huggard and Morland,[23] in 1905, to determine whether these manifestations were also accompanied by any change in the opsonic index after the employment of nuclein or yeast.

After a single dose of 3 gm. of yeast the opsonic index dropped for two days and then rose some distance above the normal. As has been noted, this rise in opsonic index occurred at the time when the leucocytosis was diminishing and below normal. Huggard and Morland also made the observation that some of the lowest opsonic indices in cases of tuberculosis under their observation occurred in heavy smokers.

6. Daboia Venom: The opsonic index is diminished on digestion of serum with daboia venom.[6]

RELATION OF OPSONINS TO LEUCOCYTOSIS.

From the fact that leucocytosis is of almost universal occurrence in the course of infections, it might be thought that some relationship existed between the quantity and quality of the leucocytosis and the opsonic content of the serum.

In their research on the therapeutic effect of the administration of yeast in tuberculosis, Huggard and Morland[23] found that, after a preliminary rise, the number of leucocytes remained constantly below normal. As the opsonic index in these cases was at first low and later high, it was apparent that there was no direct relationship here between leucocytosis and opsonic index. The same results were obtained by Bulloch and Ledingham.[24] They employed tallianin and sodium cinnamylicum, both of which increased the number of leucocytes without increasing the opsonic index, thereby showing also the lack of relationship between the two.

SOURCE OF OPSONINS.

Up to the present time very little has been determined concerning the source of the opsonins, but Denys and Leclef, Wright and Douglas, and Neufeld and Rimpau have all shown that the opsonin exists in the blood serum and not in the leucocytes.

The lack of any relation between opsonins and leucocytosis might be regarded as some evidence against Metchnikoff's belief that the leucocytes themselves furnish opsonin to the serum.

RELATION OF VIRULENCE OF BACTERIA TO OPSONINS.

Denys and Leclef[25] (1905), Hektoen and Ruediger[24] (1905) and Hektoen and Horton[16] (1906) have confirmed Metchnikoff's fundamental conception that the increase of virulence of a certain organism goes hand in hand with its resistance to phagocytosis. They worked with streptococci, staphylococci, pneumococci and anthrax bacilli.

Hektoen[16] shows the effects of different degrees of virulence in the following way: Virulent organisms, freed from anti-opsonic substances by washing, on being heated at 65 C. for thirty minutes, are not opsonified when treated with normal serum. Similar treatment of the avirulent strains has no effect on their phagocytability. Virulent streptococci which are not rendered phagocytable for rabbit and guinea-pig leucocytes by normal serum (rabbit, guinea-pig, human) are taken up to some extent by human leucocytes after treatment with human serum. It is also known that virulent cocci are subjected to phagocytosis under the influence of immune serum and, further, that immunization of animals with virulent cocci increases the opsonin in the serum. From their work, consequently, it may be concluded that the insusceptibility of virulent cocci to phagocytosis probably does not depend on any lack of affinity for the opsonin, but rather it would seem on increased resistance to its peculiar action. Virulent bacteria also probably differ from the non-virulent in producing substances which are harmful to the phagocytes.

Hektoen suggests that the relative susceptibility of various bacteria to phagocytosis under the influence of normal serum may be quite an accurate index, of which practical use might be made, of virulence.

(To be continued.)

20. Johns Hopkins Hosp. Rep., Jan., 1906.
21. "Studies in Phagocytosis," Jour. Infect. Dis, 1905, vol. ii, pp. 129, 141.
22. Western: "Influence of Potassium Iodid on Resistance of Blood Fluids to Staphylococcus Albus," Brit. Jour. of Dermatology, 1905, August.
23. "Action of Yeast in Tuberculosis and Its Influence on the Opsonic Index." Lancet, June 3, 1905, p. 1493.
24. "Treatment of Tuberculosis by Tuberculin," Lancet, Dec. 21, 1905, p. 1603.
25. Cent. f. Bakt., 1898, vol. xxiv, p. 685.

CERTAIN FACTS CONCERNING FAUCIAL TONSILS.*

CHARLES M. ROBERTSON, A.M., M.D.
CHICAGO.

Preventive medicine is the most important part of our work as physicians. Experimentation and research is being conducted in every branch of medicine. Efforts to prolong life by making foods of more nutritious character, physical development to produce greater resisting power of the individual and the prevention of bodily ill and dissolution by unfavorable conditions, are being studied by all scientists.

As specialists we are aware of many conditions which may and do impair our health and it becomes of interest to all to have a full understanding of things pertaining thereto. I therefore present some observations made in the last few years on the entrance of tuberculosis into

* Read in the Section on Laryngology and Otology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

the general system, with special reference to the faucial tonsil. While my work may not be new in any particular, it is at least original and I submit it therefore to your consideration.

In order to understand the gland which we are about to consider, let us look at it first as an anatomic part.

ANATOMIC DESCRIPTION.

Formation of the Faucial Tonsil.—The tonsil appears at about the fifth month of gestation. With the appearance of the horizontal fissures in the lateral foregut, there appear the formation of five arches or plates with intervening clefts. From the first arch, the lower jaw develops. From the second arch, the anterior pillar of the fauces and a part of the hyoid bone develops. From the third arch, the posterior pillar develops. The cleft between the second and third arches, forms the fossa of Rosenmueller above and the sinus tonsillaris below.

The palate is formed by the ingrowth of the palatal plates from the upper jaw which meet in the median line. These plates extend backward and cross the second and third visceral arches and the intervening cleft, dividing the fetal pharynx into an upper and a lower

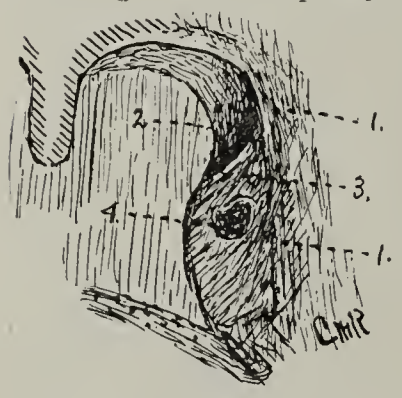


Figure 1.

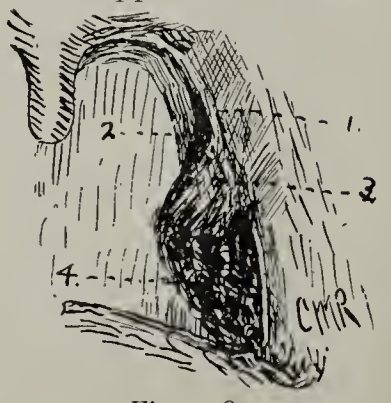


Figure 2.

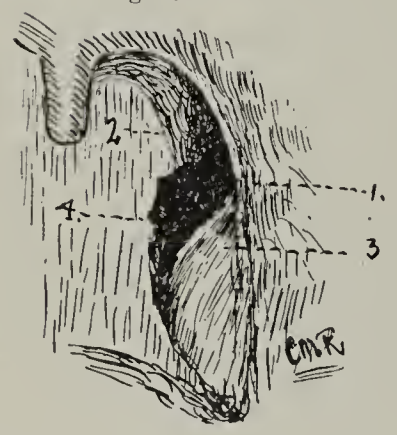


Figure 3.

Figure. 4.

Figs. 1, 2, 3, 4.—Various forms of the plica tonsillaris. 1. Anterior pillar. 2. Posterior pillar. 3. Plica tonsillaris. 4. Tonsil.

series of parts. In the upper part, the Eustachian tube is developed from the cleft between the first and second arches. Behind this is the fossa of Rosenmueller.

Corresponding to this cleft below the soft palate, is the sinus tonsillaris in which the tonsil develops. The unoccupied portion of this cleft above the tonsil is known as the supratonsillar fossa. The faucial tonsil arises by an invagination of the hypoblast in the sinus tonsillaris. The diverticulum thus formed subdivides forming the crypts, around which lymphoid tissue develops.

Plica Tonsillaris.—In early fetal life the anterior pillar extends backward covering the sinus tonsillaris. In this manner the tonsil may be more or less completely covered by this free border of the anterior pillar, which membrane is known as the plica tonsillaris or triangularis. This membrane is very marked at times and I recall cases in which the tonsil was almost hidden by this membranous fold (Figs. 1, 2, 3, 4). One case comes to mind in which only a small portion of the gland could be seen through an opening 6 mm. in diameter in this plica tonsillaris. Some authors consider this membrane pathologic when present and think it a hypertrophy of the edge of the anterior pillar.

The Supra-tonsillar Fossa.—The supra-tonsillar fossa is a triangular, conical space, with the base in and when normal allows of free exit into the pharynx. Its walls are formed by the anterior and posterior pillars, while the floor is formed by the superior surface of the tonsil. It varies in size in different throats and may vary from the fossa of the opposite side. It may extend down and external to the tonsil or up and outward into the soft palate. It is an important space from the fact that the superior tonsillar crypts empty into it and when the communication with the pharynx is imperfect we are liable to have a collection of caseous material retained in this cavity. This condition is the cause of quinsy in its different forms.

Pus, when once formed by decomposition of extruded material, may follow the line of least resistance and burrow up into the soft palate or down external to the tonsil forming an abscess, which may extend downward external to the tonsil and result in a glottic or subglottic abscess. In many cases the formation of abscess does not occur. The decomposed caseous material may produce a mild infection and the mass gradually extend until sinuses have been formed in the soft palate or down external to the tonsil itself. These sinuses may be simple or branching, as they burrow in different directions. After they are formed they act as catch-basins for material extruded from the tonsillar crypts and are a constant source of infection.

Palatal Pillars.—The anterior pillar is formed by the palato-glossus muscle, which is attached above to the aponeurosis of the velum and has its insertion in the tongue. It is a constrictor of the isthmus of the fauces and holds the tonsil back in place. The free edge is often persistent as was described. The pillar is often attached to the tonsil by inflammatory adhesions from repeated attacks of tonsillitis. The free border may be of considerable thickness, or it may be so thin as to be almost transparent. At times the anterior pillar is attached to the posterior pillar by adhesions or by means of the plica tonsillaris.

The posterior pillar is formed by the palato-pharyngeus muscle, which arises in the soft palate with fibers from its fellow of the opposite side. It passes partly above and partly below the levator palati and azygos uvulæ. After forming the posterior pillar of the fauces the internal fibers are inserted into the pharyngeal aponeurosis and the external fibers pass forward to be inserted into the posterior border of the thyroid cartilage. The action of this muscle is to contract the isthmus and help lift the soft palate.

Capsule.—The capsule is of no particular importance except that it is made up of thick connective tissue and surrounds the tonsil. From the capsule the trabeculæ are given off, which run to the inner surface of the gland.

The Crypts.—The crypts vary in number and length. In the upper half of the tonsil they are longer, usually extending to the capsule on the external surface of the gland. The crypts emptying below the middle of the gland are usually empty, while those in the superior half are nearly always full of cheesy material. This is especially true of the crypts which empty into the supratonsillar fossa. One crypt situated about the junction of the middle and upper third of the medial surface of

the gland, is often very large at its mouth. At times this has the appearance of a fissure across the gland and has given rise to the opinion that the part above the fissure was a separate tonsil but this is not true. At each act of deglutition the tonsils are squeezed by the palatal muscles and the superior constrictor. This empties them of secretion unless there is an obstruction at the mouth, in which case the material may be pushed farther into the crypt. The lining membrane of the crypt is of columnar cells while the surface of the gland is covered by squamous epithelium.

Blood Vessels.—The blood supply of the tonsils is derived from the tonsillar, a branch of the facial, the ascending pharyngeal, a branch of the external carotid; the dorsalis linguæ, from the lingual. These vessels enter the tonsil near its base. In hypertrophied tonsils, the tonsillar artery is often considerably enlarged and may make troublesome hemorrhage. The lingual branches cross from the base of the tongue to the lower part of the tonsil and may be somewhat prone to produce bleeding also.

Relation to Other Parts.—The tonsil is sometimes found in malposition. One case is reported in which the gland occupied a position under the Eustachian tube, behind the posterior pillar. In another case it hung well down over the larynx as a sessile growth. The tonsil is in relation in front, with the anterior pillar; behind, with the posterior pillar; internally, with the oropharynx; above, with the supra-tonsillar fossa; externally, with connective tissue, external to which lies the superior constrictor muscle. The pharyngo-maxillary space lies external and behind the tonsil. It is formed by the lateral wall of the pharynx, the internal pterygoid muscle and the upper cervical vertebræ. The tonsil corresponds to the anterior part of this space, which is filled with fat and connective tissue and contains the external and internal carotid arteries, the vagus and the hypoglossal nerves. The internal carotid is 1.5 c.m., and the external 2 c.m. from the gland.

The Eustachian Tube.—The Eustachian tube lies just above and a little behind the tonsil and in cases of hypertrophy of the tonsil upward and outward, it often extends along the course of the tube causing tubal irritation and tinnitis (Fig. 5).

Cervical Lymphatics.—The tonsil is in direct connection with the superficial and deep cervical chains of lymphatics. Lymph is carried from the tonsil to the submaxillary gland and then to other glands belonging to these chains. These chains are emptied into the jugular trunk, which with the subclavian trunk, are emptied into the thoracic duct, or direct into the vena cava. Lymphatic anastomoses between different glands of the same and with other chains are exceedingly numerous allowing an infection being carried differently at different times. It has been proven that the lymph current may flow in almost any direction through these anastomotic branches. If the current were constant, we would have an infection carried from the tonsil to the vena cava direct.

By a series of experiments it has been shown that there is an intimate relation between the cervical and bronchial chains, especially the peritracheobronchial, the intertracheobronchial, the interbronchial and the posterior intercostal chains. These gland chains communicate with the thoracic duct direct, but they also communicate with the cervical and subclavian glands by their anastomotic branches. Consequently, we can have an infection from the tonsil transmitted to the upper lobe of the lung direct.

AUTHOR'S RESEARCHES.

In 1903 I presented a paper[1] to this section on "Removal of the Faucial Tonsil" and demonstrated my method and instruments of operation. I had been studying pathologic findings of tonsils removed, both in regard to the mode of infection of the general system and the most likely part productive as an infective focus. The tonsils considered were not limited to any particular type, being specimens from patients presenting for treatment both in private and hospital practice, irrespective of symptoms observed, other than that the gland was diseased and it was deemed wise to remove it. Thus many cases were included in the list in which the patient complained of no symptoms ascribed to the tonsil itself. Had cases been selected with special care as to symptoms, the percentage would have reached a very high degree.

These observations were made in accord with similar observations by other authors, so that a true estimate might be arrived at in my locality. Care was exercised not to confuse secondary involvement, by infection from the patient himself, with primary infection of the gland.

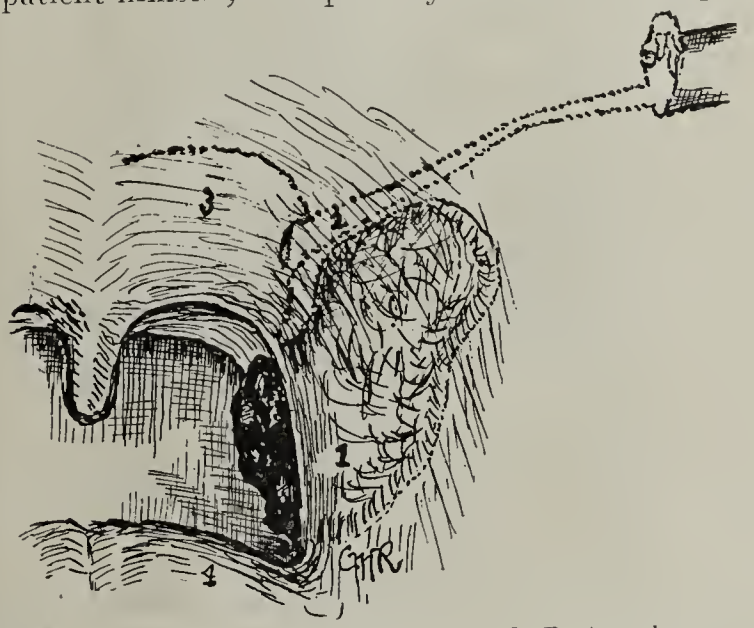


Fig. 5.—1. Tonsil. 2. Eustachian tube. 3. Postnasal space. 4. Tongue.

In no instance have I seen what Wood of Philadelphia has explained as a secondary tuberculosis of the tonsil. In nearly every case the cervical lymphatics gave evidence of some form of infection by being enlarged, but no mention will be made of any but the tuberculous lesions.

Diagnosis was made by means of microscopic slides and the simple presence of tubercle bacilli in crypts was not taken as sufficient evidence to call the case tuberculous. Microscopic tissue and cells which might be questioned were not accepted. Thus giant cells of syphilis, or chronic granulations, were not mistaken for tuberculous tissue with giant cells. I have thus endeavored so far as possible to be absolutely fair in my deductions that they might attain a position which would withstand the most searching investigation. In all cases the personal history was recorded as well as the subsequent deportment of the patient. In some a tuberculous family history was recorded with negative findings in the tonsil examined. In others of negative family history, tuberculous tissue changes could be demonstrated. We have long since realized that the tonsil

1. THE JOURNAL A. M. A., 1903, xli, p. 1334.

has the power of destroying micro-organisms by phagocytosis. When diseased, however, this power is either destroyed, or overcome by the presence of a greater amount of infecting material than can be destroyed. The gland becomes the lodging place of pathologic material by its detention in the crypt through some interference of expulsion by reason of some obstruction at the mouth of the crypt itself, or external to this.

It is common, therefore, to find masses deep in the crypt, while the part nearest the opening may be free from material. This occurs in different ways and is particularly liable to occur to crypts emptying into the supra-tonsillar fossa, from the fact that the tonsil is frequently hypertrophied extending upward and outward filling the supra-tonsillar fossa. The material is held in the crypt, by the hugging of the pillars over the top of the tonsil thereby shutting off the exit to the pharynx; by the crypts running nearly vertical which produces a tendency for the material to extend farther in by the squeezing of the tonsil by the palatal and superior constrictor muscles; and because the mouth of the crypt is often smaller than the rest of the crypt or being enlarged at the extremity causes less resistance in that direction.

Fig. 6.—Cross section through crypt showing: 1. Crypt containing mass of caseous material. 2. Lymphoid tissue. 3. Trabeculæ.

This is especially true of the crypts covered by the plica tonsillaris.

The crypts which empty downward and inward are emptied of their contents by the action of these muscles, there being nothing to interfere with the patency of their mouths as they empty into the pharynx direct. These are shorter than the superior crypts, and it is common to find the upper ones extending as far as the capsule on the outer side of the tonsil. After the gland has become the seat of tuberculous infection it is easy to trace it from the tonsil to the cervical lymphatic chains, both superficial and deep.

We are thus able to trace in a direct way the route of infection through the cervical lymphatics to the lymphatics of the pleura. The apex of the lung is the most direct and this accounts for the great number of such infections shown by authors. I have been able to establish this route. It is not new that cervical lymphaties are infected from the tonsils. It is well recognized by surgeons to-day. In operating for the removal of tuberculous glands of the neck, the faucial tonsil is recognized as the infecting focus and therefore removed. This condition has been proven in clinical findings by others and myself. We know by the work of others, that patients with tuberculous glands of the neck, who are not operated on for their removal, develop lung tubercle to the extent of 75 per cent. as shown by Grober in an article of recent date. In cases which were operated on, he gives the following table of percentage which developed lung tuberculosis.

	Per cent.
Riedel, series 1	15
Riedel, series 2	12
Schnell	10
Frankel	10
Kirsch	14
von Noorden	25

In this table Grober does not state whether the surgeons who operated on these cases removed the infecting focus, the tonsil, or not. Possibly the per cent. might have been less had the gland been enucleated at the time of operation for the cervical adenitis. A tonsillotome operation would not be considered as a means of removal of the tonsil, as such is impossible by its use. I know many surgeons of this country who remove the cervical lymphatics disregarding the tonsil as the point of infection.

In nearly all these cases the operation is only tem-

Fig. 7.—Cross section showing end of crypt. 1. Crypt. 2. Healthy lymphoid space. 3. Trabeculæ. 4. Tubercular areas showing epithelioid tissue with giant cells.

porarily beneficial, as other lymphatics enlarge subsequently from the fact that the infecting focus is left *in situ*. I have demonstrated this to surgeons many times in clinical observations. In my observations I have not recorded the ultimate infection of the lung for this paper but rather satisfied myself by giving the result of my observation as to the per cent. of tuberculous infection of the tonsil and the particular entrance of the infection into the gland. In all I have studied 232 cases operated on by me, taken without regard to symptoms by the patient. The greater number of tonsils were of the submerged type. Some cases had been operated on at a previous time by the tonsillotome method. I have found 8 per cent. of all the cases presented undoubted tuberculous lesions in the form of giant cells and tuberculous tissue change (Figs. 6, 7).

Much has been written concerning secondary infection of the tonsil by the lung by means of the patient infecting the gland when a lung tuberculosis existed, through the exhalation bringing the infection to the surface membrane of the tonsil. This seems far fetched. It is more plausible that most of the apex tuberculosis comes from a direct infection. We have a diseased crypt or

three or four of them, which have been full of cheesy material for months or years. The lining membrane of the crypt is weak as compared to the surface membrane of the tonsil. Is it not reasonable that we are very much more liable to an infection here than on the surface membrane? Again we have a different type of tuberculosis of the lung produced by direct infection. We have a localized tuberculosis in the apex of the lung which extends from this point to the rest of the lung. Tuberculosis of the lung from aspiration or blood infection, is more liable to be a general miliary tuberculosis.

What I desire to note more particularly is that about 8 per cent. of average cases have tuberculosis of the tonsil and that a large per cent. of these go on to develop tuberculosis of the lung. This infection is carried through the cervical lymphatics and by anastomotic branches direct to the lung. This occurs through the internal mammary, juxta-bronchial and peri-bronchial chains. I find cases in which there is a tuberculous infection of one tonsil and not of the other. I find a dull spot in the apex of the lung on the same side of the body as the infected tonsil. I find pus in a broken down lymphatic gland, usually the submaxillary, which is tubercular. I find other glands on the same side enlarged. Am I not justified in thinking this a direct infection? You may doubt. I have enucleated the tonsil, curetted the broken down gland and found an enlarged channel leading direct from the gland to the tonsil through which I passed a large probe. This was in a patient who had a dull spot in the apex of the lung, with subjective symptoms of tuberculosis, such as daily rise of temperature, rapid loss of flesh during a short time, night sweats and a hectic flush. After the operation on the tonsil and the submaxillary gland the patient regained the lost vitality. The enlarged glands disappeared, the fever subsided, the appetite and weight returned, the night sweats ceased and the dull area in the lung cleared up. Three years later the patient is in good health with no evidence of the dull spot in the lung. This is a typical picture of a class of which I have seen several, and I feel sure of this being a direct infection of the lung apex from a tuberculous infection of the tonsil. I have watched the cervical lymphatics become infected one by one and then removed the tonsil to witness the infected glands gradually disappear. Then by means of the slide I have found the tonsil tuberculous. (Fig. 7). There is no doubt but that the glands are able to destroy germs by their phagocytic property, but there is also no doubt that the infection can come until they become unable to compete with the great amount heaped on them.

The blood may introduce tubercle bacilli into the general system, having received it from the tonsil by means of the current carried through the jugular or subclavian trunks, either by way of the thoracic duct or direct to the vena cava. In this way we may have an infection carried to any part of the body and as a result have a tuberculosis of the mesentery or the knee-joint, the original infection coming from a crypt in the tonsil. The point of entry into the tonsil therefore is of great interest to us, as by its removal we may be the means of preventing this disease in 8 per cent. of cases. In studying the tonsil we know we can produce tuberculosis of the gland by inoculating the surface with strong cultures. At times the inoculation must be repeated often before the result obtains, showing that the germ is to some extent at least destroyed.

I have produced it through the surface membrane as is shown also by Wood in his experiments on pigs. If we study the section of the gland, however, we find the surface membrane much thicker than the lining membrane of the crypt. Therefore it would be more difficult to inoculate through the surface membrane than through the lining of the crypt. Again, if the surface membrane were the point of entry, we should find tuberculous changes here. This I have never seen in the slides examined. It has always been in the crypt. It was noted that the crypts which empty into the throat direct are seldom if ever affected. Those emptying below the middle of the gland were not affected in a single instance. The greater number of infections were from crypts emptying into the supra-tonsillar fossa. The part of the crypt affected is universally in its deeper extremity where giant cells are abundant in the tuberculous tissue. A few giant cells were at times noticed along the beginning of the crypt but in these sections they were less in number than in the deeper part of the crypt. The cells were found dispersed in the tissue as far as the trabeculæ which seemed to limit the spread of the tuberculous change.

I have not seen a trabecular area where the infection seemed to pass to it from the lymphoid space adjoining it. It is thus found that caseous material pushed to the extremity of the crypt furnishes the infective point of entrance into the tonsil. The crypt receives its infection in its deepest part and from this point is given to the lymphatic system. The crypts most constant in the production of infection, are those whose entrance is from the superior part of the gland. There are three or four which are constant enough to be classed as *the infecting crypts of the tonsil.* They are, one which empties just behind the anterior pillar near its margin, one just below the junction of the anterior and posterior pillars, one just in front of the posterior pillar on the top of the tonsil and one about the middle of the top of the tonsil all in the supra-tonsillar space. The reason of this is the obstruction to the opening of these crypts mentioned in the first part of this article. About 75 per cent. of the cases observed, developed from the crypts in the supra-tonsillar fossa. In two instances they were full of pus which, during enucleation, spurted out into the pharynx, showing chronic abscess of the tonsillar crypts.

In an article "Die Tonsillen als Eintrittspforten für Krankheitserreger, besonders für den Tuberkelbazillus," Grober gives the following table of cases operated on without regard to symptoms by the patient.

	Patients.	Per cent. Tuberculous.
Broca	100	0
Tanterzzi	26	0
Pfiffel	100	3
Gottstein	33	12
Lermoyer	32	6
Brindel	64	12.5
Plunder	32	18.9
Luzzatti	50	4
Brieger	78	6.4
Wesz	210	4.8
Dieulafoy	30	26
Total	760	6

These statistics are practically the same as my own 8 per cent.; and when we realize these facts, certain things become imperative in dealing with this gland. FIRST, and most important is that *the gland when diseased must be removed.* SECOND, *when operated on for removal, it must be enucleated completely.* THIRD, *pockets in the soft tissues around the tonsils must be destroyed.* In order to do this we must have some mode of operative procedure which will do more than is possible with operations by the tonsillotome. As small sub-

merged tonsils are more productive of tuberculous infection than large mass tonsils which hang well out into the throat, we must have some method by which the tonsillar fossa can be cleaned out completely.

TREATMENT AND TECHNIC.

Treatment of the gland by cleansing of crypts and attempts at shrinking the gland by astringents or the ignopuncture are not in keeping with our present knowledge and such practices should receive hearty condemnation. It is needless to say that every operator has his own method of enucleating this gland so it would be unwise to describe the various methods in vogue. To my mind the scissor method of the author meets all the requirements and is the most thorough method.

Scissor Operation.—The scissor operation is performed either under local or general anesthesia. When local anesthesia is desired, a 10 per cent. solution of cocain is used. When general narcosis is induced I prefer ethyl chlorid gas. To cocainize the gland, 10 per cent. cocain is introduced into the depth of the crypts by cotton pledgets. The surface of the gland is also painted, as are the palatal pillars. If deemed necessary, a 1 or 2 per cent. solution may be introduced into the gland hypodermatically.

After the parts are deadened, the gland is separated from the anterior pillar with the curved bistoury (Fig. 8). This is introduced above the tonsil and care is taken not to pass the point of the instrument into a crypt. When in the proper position it is just behind the pillar. Then by a dragging motion the pillar is separated. In cases in which the plica tonsillaris is persistent or there are adhesions between the tonsil and pillar, it is impossible to separate them with the curved bistoury. In these cases the pillar scissor (Fig. 9) is used by slipping one blade between the pillar and the tonsil while the other blade remains in the throat.

Thus we cut the tissues and where the free edge of the anterior pillar extends too far, it can be trimmed off, making the edge where it should be. After cutting with the pillar scissors. the bistoury is reintroduced to make sure the gland is free from the pillar. This is an important step in the operation. After the pillar is separated, the tonsil is grasped with the fixation forceps (Fig. 10). These are fitted on to the gland well up on the top and well down at the bottom. If we get the tonsil well fixed in the grasp of the forceps we can pull it inward and downward when we fit the tonsil scissors into place (Fig. 11). These are pushed against the pillars while the tonsil is dragged in and down. After it is well into the jaws of the scissors it is snipped out.

If we find the gland complete showing the capsule smooth and intact, we may feel sure the gland has been enucleated. If any doubt exist, a search should be made for fragments which, if found, are removed in a similar manner. In this way I have removed glands which had extended upward and outward under the Eustachian tube for a distance of 3 to 4 cm. Some of the advantages of this operation are, *a,* the ease with which the glands can be removed and the completeness of the enucleation; *b,* the freedom from wounding the greater vessels of the neck; *c,* the smooth cut surface of the wound; *d,* the absence of cicatrix after healing.

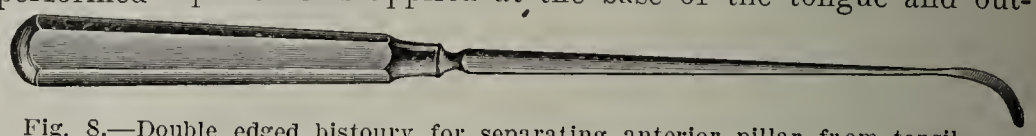


Fig. 8.—Double edged bistoury for separating anterior pillar from tonsil.

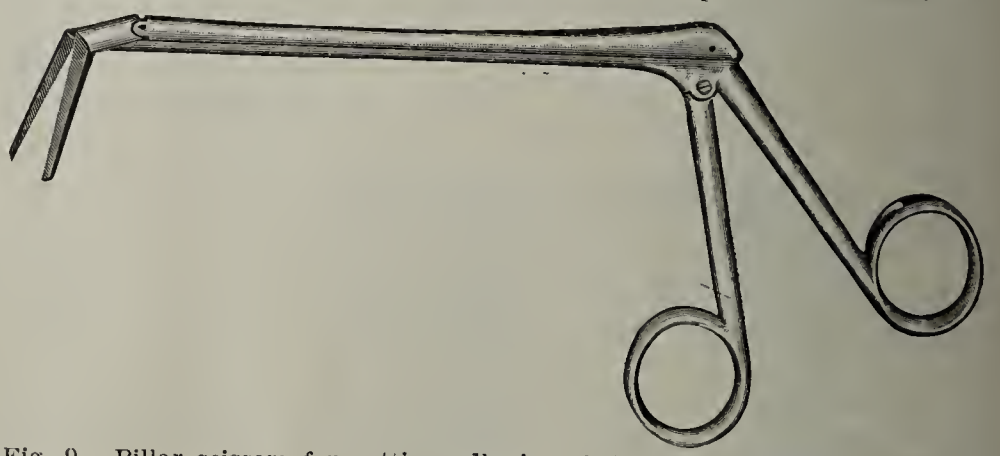


Fig. 9.—Pillar scissors for cutting adhesions between the anterior pillar and tonsil.

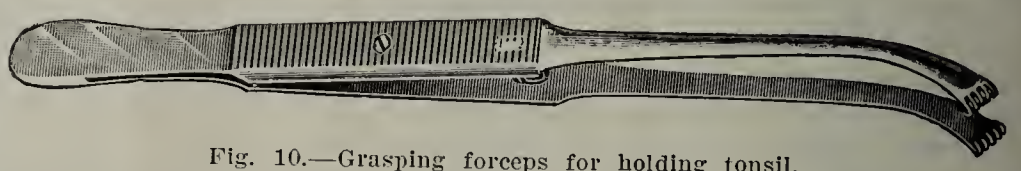


Fig. 10.—Grasping forceps for holding tonsil.

Fig. 11.—Tonsil scissors, made right and left and in two sizes, for adults and children.

ACCIDENTS DURING AND AFTER OPERATION.

Hemorrhage.—Hemorrhage is one thing feared by those who witness the operation of enucleation and I am constantly asked concerning it by students and physicians.

We may have a large tonsillar artery which may cause troublesome hemorrhage. If we remember that both the tonsillar and the dorsalis linguæ vessels enter the tonsil in its lower half, we get a good idea where to make pressure for hemorrhage. A gauze pack held in the throat for a few moments will usually control bleeding. The pressure is applied at the base of the tongue and outward. Should the tonsil be fibrous, it may be necessary to cut more of the base, as often a small stump may retain a small artery in its substance which being held open is not able to retract. In such cases the bleeding stops as soon as the fibrous tissue holding the vessel is removed. I have demonstrated this numerous times when the vessel was of size enough to cause spurting across the pharynx. General oozing may be controlled by a gargle of 50 per cent. dioxogen in cold water. Should the hemorrhage continue, the tonsil hemostat can be applied for a few hours. Usually patients who bleed very freely, faint, at which time the hemorrhage ceases, to return no more.

Some operators think they obtain benefit by the application of strong solutions of silver salts or turpentine, to the cut surfaces. There is a great difference in tonsils as regards bleeding. Of two glands which look alike we find the one will bleed profusely, while the other will bleed very little. This is probably because we remove all of the one and leave a small fibrous piece of the other. I am of the opinion that many of the so-called bleeders are of this type. When hemorrhage is excessive, salt infusions should be given.

Uvula.—Cutting off the soft palate is an accident which sometimes occurs but which with a little care can easily be avoided. It is liable to occur when the operator attempts the second tonsil while the throat is still filled with blood from the removal of the first tonsil. Should this occur, it does no harm aside from the cosmetic effect.

Losing the Tonsil.—The tonsil may pull off the grasping forceps and drop down over the larynx. This is a very alarming condition as it is difficult at times to grasp on account of the blood, and the patient fighting

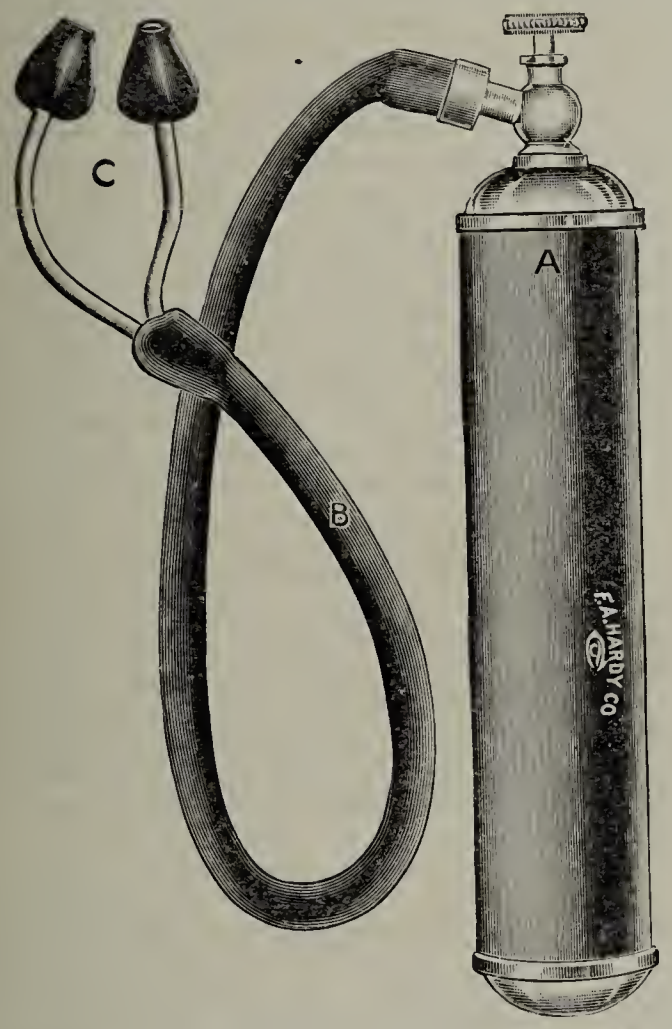


Fig. 12—Ethyl chlorid container with nasal tips for anesthesia.

for breath. This is avoided if the grasping forceps are provided with teeth which will hold after they are placed in position.

Wounding the Pillars.—Wounding the pillars is an accident which is often done and can be easily avoided with a little care. In doing an operation for adenoids subsequent to the tonsil operation, care must be taken not to introduce the curette into the sinus tonsillaris. I have seen mutilation of the posterior pillars from this mistake.

Anesthetic.—For the past eight months I have been using ethyl chlorid gas for tonsil operations. The liquid is held in a metal container and the warmth of the hand is sufficient to generate gas from it. I use the Gebauer inhaler for patients who are unable to breathe through the nose and after the patient is narcotized by the mouth I continue the gas through the nose piece. If the patient can breathe through the nose the inhaler may be dispensed with. By this means I can keep the patient under the influence of the gas for any length of time with safety. It is given either sitting or prone and I have seen but one case in which there were any but pleasing symptoms. The heart is not depressed, the patient is not cyanosed and recovery is made a moment or two after the administration is discontinued.

CONCLUSIONS.

1. Eight per cent. of all tonsils examined were affected with primary tuberculosis.
2. Tuberculous infection enters the tonsil through the crypts.
3. Those crypts emptying into the supra-tonsillar fossa furnish 75 per cent. of the cases of tuberculosis of the tonsil.
4. Infection takes place in the depth of the crypt.
5. Tonsils are the cause of general infection of the blood which may produce tuberculosis in any part of the body.
6. Direct infection of the apex of the lung from the tonsil.
7. Failure of operations for cervical adenitis unless the tonsil is removed.
8. The great number of patients developing lung tuberculosis when cervical glands are not operated on.
9. The per cent. of lung tuberculosis when glands of the neck were removed showing the operation on the tonsil as being insufficient to remove the infecting focus.
10. Resolution after tuberculous glands are removed.
11. Advantages of special instruments.
12. Some of the accidents which may occur during tonsillectomy.
13. A new method of administering gas for narcosis.

100 State Street.

DISCUSSION.

Dr. J. W. Farlow, Boston, said that thorough examination of the part of the tonsil situated behind the anterior pillar is of great importance, in order to find a possible source of infection. A dull wire curette passed into the crypts, the supratonsillar fossa and between the anterior pillar and the tonsil often brings to light foul, cheesy masses, which are the cause of trouble. It is also of great importance to notice the condition of the teeth, because bacteria from decayed roots may cause irritation of the cervical glands and keep up an enlargement of the tonsils. In removing the tonsils the guillotine is not sufficient in many cases and should be superseded or supplemented by instruments which can dig out the deeply situated crypts with their foul contents. At one time Dr. Farlow was of the opinion that in cases in which adenoid disease existed with moderately enlarged tonsils, removal of the adenoid would be followed by a shrinkage of the tonsils. But he has seen so many cases in which this was not true, the tonsils oftentimes enlarging even when the postnasal space was free, that he has come to the conclusion that it is best to take no chances, and has advised removal of the tonsils as well as of the adenoids.

Dr. J. L. Goodale, Boston, said that his own observation agreed with that of Dr. Robertson that the crypts are particularly a source of infection. With regard to the following of tuberculous tonsils and tuberculous glands of the neck by tuberculosis of the lungs, he said he was somewhat surprised at the large percentage of secondary effects which Dr. Robertson gave. In the Children's Hospital for 12 years Dr. Goodale has followed individual patients for at least four to six years, children who have come originally with tuberculous cervical adenitis, who have been in some instances operated in; others not, and he has not found these cases followed by pulmonary tuberculosis. That brings the possibility of two forms of tuberculous infection, namely, by the bacillus of bovine tuberculosis and the bacillus of human tuberculosis. Within two years he has had under observation seven cases of tuberculous

cervical adenitis in which he removed the tonsils. On clinical inspection the tonsils showed very little that was abnormal, but on microscopic examination tubercles and giant cells were found. The tonsils were inoculated into guinea-pigs, who died subsequently of tuberculosis. Cultures from four of these pigs have been kept under observation by Dr. Theobald Smith, who reports that they are cases of bovine tuberculosis. The bacteriology of the cases will be reported in detail shortly by Dr. Smith. This seems important, and there should be careful inspection of these cases. Dr. Goodale does not believe that a cervical adenitis of tuberculous nature can be removed by removal of the tonsils; the tubercle bacilli have already penetrated into the lymph glands. What should be done under these circumstances is the prevention of further penetration of more bacilli into the cervical lymph glands by extirpation of the tonsils and adenoid, but if they are already enlarged that will not necessarily alter the course of these glands. In many instances there is enlargement of the glands of a non-tuberculous nature in which removal of the tonsil brings relief to the glands. Dr. Goodale has a series of such cases of cervical adenitis in which the tonsils were removed, with disappearance of the adenitis, and in no instance did infection of the guinea-pig follow inoculation. Summing up, Dr. Goodale said that the more he finds enlargement of the tonsil with cheesy detritus associated with cervical adenitis, the more he is inclined to regard the adenitis of toxic origin by absorption from the tonsils; while the less he finds of pathologic alteration in the tonsils the more he is inclined to regard it as of tuberculous origin.

Dr. A. H. Andrews, Chicago, said that there are a great many physicians who are reading with interest everything pertaining to tuberculosis; indeed, there is a wave of interest all over this country and the world on this subject, especially the prevention of tuberculosis. There is no more important subject, no subject which to greater advantage can be called to physicians' attention than tuberculosis coming from the tonsil. If the title of the paper were changed it would be read more widely and do more good than under its present title. From his own observation Dr. Andrews is satisfied that very many cases of pulmonary tuberculosis result from primary infection of the tonsil, a much larger percentage of cases than is ordinarily thought.

Dr. F. B. Sprague, Providence, R. I., said he believes a great many of the acute infectious diseases as well as tuberculosis find their way into the system through the lymphoid tissue of the throat as it does through the tonsil; also that infection from the teeth gets into the tonsils and into the lymph glands in the same way, thereby causing infection as Dr. Farlow said. Speaking of the relation of the tonsils to adenoids, Dr. Sprague said it always seemed that when he took out adenoids without taking out the tonsils, as he did early in his practice, the tonsils showed up more afterward than before because of the shrinking away of the tissues of the throat. Now he always takes out the tonsillar tissue at the time of the adenoid operation, and is surprised at the amount he gets out, judging from what was evident before the operation. With the small guillotine tonsillotome a lot of tissue can be caught in the instrument that had not seemed to be present. He has had a little different experience from Dr. Farlow in getting out tonsillar tissue, and rarely uses anything except the guillotine tonsillotome. With a small size, half inch and other sizes, he is able to clean the tonsil down to the fascia. This is easily and quickly done by using an instrument of this sort. It is very important to clean the supratonsillar fossa, because many ear cases are dependent on inflammation of the tissue in this region which, if not removed, prevent the ear disease from getting well.

Dr. A. E. Prince, Springfield, Ill., said that he is convinced that a careful examination of the secretions which come out of the crypts of the tonsil relative to the discovery of their tuberculous nature, would have a great effect in convincing the patient and the family physician in regard to the efficiency of the surgeon's work and the seriousness of the case. There is a great deal of prejudice against the removal of the tonsils, and if the family physician and the patient think that tuberculosis is being studied in relation to the tonsils, laryngologists will do good to humanity.

Dr. Cullen F. Welty, San Francisco, agreed thoroughly with the radical removal of the tonsil, including the capsule. He does not believe it can be done with the ordinary tonsillotome with the exception of a very few cases in which the pillars are only slightly adherent. In these cases material assistance is rendered by breaking up the adhesions, drawing the tonsil well into the tonsillotome, in fact, doing an enucleation. Dr. Welty has done this repeatedly. All cases that are adherent to the pillars, however, must be removed in a different way. In a paper a short time ago he advocated practically the same as Dr. Robertson. At that time he came into possession of a publication by Lartigau of San Francisco regarding investigations along this line on adenoids, showing 15 per cent. of tuberculosis. This, added to the 8 per cent., makes a very formidable figure. This should be investigated very thoroughly, as it is amenable to treatment. Further, Dr. Welty believes that many cases of chronic rheumatism may be traced to a continuous infection from a diseased tonsil and that many acute cases of rheumatism are none other than a streptococcus infection by way of the tonsil. A short time since he observed a case of acute nephritis develop from a tonsillar infection.

Dr. Otto T. Freer, Chicago, was much pleased to note that the tonsillotome had no advocates in that assembly. It is prone to create prolonged bleeding from accidental wounds of the pillars of the fauces and it removes the tonsil incompletely, leaving so much of it behind that the remains form a hidden focus of disease permeated with ill-drained ends of follicles obstructed by the cicatricial contraction of the stump when healed. The tonsillotome is, therefore, an instrument that should be discarded by the skilled laryngologist and left to the general surgeon, for whom such mechanical means have to supply his lack of skill in laryngologic methods. In time the general medical public will begin to understand how dangerous an organ a hypertrophic or chronically inflamed tonsil is, infected, as it may be, by tubercle bacilli, and in the future its removal will be more readily agreed to than even now. The tonsil is, of course, only a small part of the vast adenoid expanse which covers the pharyngeal mucous membrane and base of the tongue. Into this broad layer of lymphoid tissue tubercle bacilli can enter anywhere, and removal of the tonsils alone will, of course, not make the patient immune to their entrance through other parts of the surface of the upper air passages. Nevertheless, as Dr. Roberston emphasized, the crypts occurring in the faucial and pharyngeal tonsils seem to be the most likely points for the invasion of the bacilli, and it seems, therefore, to be best radically to extirpate these glands when diseased.

Dr. C. M. Robertson, Chicago, said that there is much he could not say in his paper about the plica tonsillaris. He has drawings showing how the plicatonsillaris binds the tonsil down. Microscopic examination of the material that is thrown off from the tonsil will not show tubercle bacilli very often; they are not entering constantly, and repeated examinations might be made before getting any of these bacilli. In some cases in which the giant cells were most numerous in the section there were no bacilli in the crypt. When the process is chronic there is not a profound infection at any one time, but it is a slow low-grade infection. That explains why the cervical lymphatics may not be much enlarged. Of course, the more rapid and profound the infection the more prominent will become the glands infected, whereas there may be a more dangerous infection from a slow low-grade type in which the gland does not enlarge much, but the infection is getting in all the time. He has tried to demonstrate the presence of tubercle bacilli in the crypts, but has been able to do so only a couple of times. It is difficult to keep the tubercle bacilli after the specimens are taken out, as they soon disintegrate. Infection of the teeth he did not touch on in his paper. He did not mention where the infection could come from. He simply observed those cases in which infection comes from the tonsil.

Dietetics.—The study of rational dietetics is imperative for the physician who would succeed in the practice of medicine.—*Medical Times.*

THE ODOR AS A GUIDE IN THE TREATMENT OF CHRONIC SUPPURATION OF THE MIDDLE EAR.*

H. GRADLE, M.D.

CHICAGO.

In chronic suppuration of the middle ear the success or failure of conservative treatment can not often be predicted from the objective appearances at the first examination. Cases in which we can demonstrate caries, or necrosis or cholesteatoma or involvement of the mastoid cells can, as a rule, not be cured except by operation. But very often the existence of these lesions can only be suspected, not demonstrated.

Any sign, therefore, which enables us to test quickly the efficacy of conservative treatment should be recognized as a valuable guide. I have repeatedly pointed out what important lessons can be learned from the odor of the discharge in the course of treatment.[1] It seems to me important enough to revert to this subject in the light of further experience.

With scarcely an exception the discharge of chronic suppuration is characteristically fetid. It has been shown by bacteriologic research that this offensive decomposition of the pus is due to anaërobic bacilli. Clinical observation further shows that this decomposition of the discharge is an important factor in prolonging the disease. The putrefactive germs are readily dislodged when the source of suppuration is freely accessible. If, however, there are any sinuses or fistulas or spots protected by granulations, in short, any spaces in which the pus can not be reached, it is far more difficult or even impossible to remove the odor of the discharge.

METHODS OF COMBATING ODOR.

In practice I employ the odor test in the following way: In every case in which there are no urgent symptoms necessitating prompt operation, the ear is washed out until the water brings out no further discharge or débris, and boric acid powder is then blown in lightly. In successful cases the odor disappears permanently after one or at the most two to three treatments of this kind. At the next examination the pus wiped out with cotton is odorless.

This class of cases requires no operation. The larger number are cured by the continuance of this treatment in from one to three weeks. The disease is evidently of a superficial character. Yet I have positively known instances to react in the same favorable manner, in which small areas of caries of the tympanic walls could be demonstrated. A small proportion of these patients require a longer time for cure. Exceptionally a case is met with in which it seems almost impossible to remove a trace of mucous discharge, although by some variations of the treatment (nitrate of silver or tannin in glycerin) success is usually obtained in the end. There is no reason to assume that in this class of cases an operation would prove of any benefit. The occasional relapses met with are clearly re-infections from the throat.

When irrigation followed by boric acid fails to remove the odor in the course of a few days, nothing can be gained by continuing the same treatment. Intratympanic irrigation through a very slender curved canula will sometimes succeed, though not very often, in dislodging pent-up pus or retained epidermis scales, whereupon the odor disappears, and the now accessible source of suppuration heals. Even less frequently than from intratympanic washing I have seen the same success attained by instillations of a mixture of alcohol and ether followed by 10 per cent. carbolated glycerin. Whenever the odor can be removed by these measures, healing usually follows promptly.

In a certain number of instances the suppurating source is so inaccessible that these different therapeutic measures fail to remove the odor of decomposition. On the basis of a long experience I must say positively that the continuance of the different forms of treatment so far mentioned proves absolutely useless if they fail to remove the odor promptly. The only conservative treatment which in my hands has been able to influence and cure a proportion of these patients is careful tamponing with gauze. If this is not properly done it fails, even in suitable cases. After proper cleansing a narrow strip of good absorbent gauze should be pushed into actual contact with the source of the pus as far as it is visible. The efficiency of the drainage thus created depends on the dryness of the gauze and hence on its frequent replacement. Drainage by gauze tampon does not remove the odor directly. Slowly the discharge lessens. It takes never less than 3 weeks, sometimes over 6 weeks, until the gauze remains dry. In some instances the odor persists until there is absolutely no secretion. In others the discharge may finally become odorless when it has been reduced to a minimum, when suppuration often ends within a few days.

RESULTS.

Treatment by gauze drainage ends either in a complete cure (in about 50 per cent. of the cases), a partial cure (33 1/3 per cent.) or failure (16 per cent.).

If when properly done tamponing does not distinctly lessen the discharge in about 3 weeks at the most and continue to diminish it progressively, no ultimate benefit can be expected. These patients can only be cured by operation. On the other hand, in the most favorable cases the gauze will ultimately be found dry, no matter how long it is kept in the ear.

Most of the cures thus obtained I have found to be permanent. But still relapses occur oftener than in those patients whose odor is at once stopped by irrigation. As a partial cure I would record those instances in which gauze drainage removes the odor in the course of a few weeks, but fails to end the suppurative process completely. A trace of discharge continues, but often such a minute trace that it would not be detected except by the tiny moist spot on the tampon.

Some of these patients get well by long continuance of the same treatment, but relapses are very common. Others present the same trace of discharge for months and years while under treatment. If treatment is discontinued they do not get subjectively worse, but the discharge increases slightly and may again become fetid when neglected. In an experience extending over many years with many dozens of cases of this description I have never known any to suffer from any consequences or aggravations. I feel reluctant, therefore, to urge a radical operation in these cases of partial success. My own experience, fairly large, suggests that when the odor is permanently removed in chronic suppuration the disease has lost its progressive and hence dangerous character.

---

* Thesis for admission to the American Laryngological, Rhinological and Otological Society.

1. Arch. Otology, xxi, p. 110; also "Diseases of the Nose, Pharynx and Ear," 1902, p. 494, *et seq.*

The patient has then to choose between the danger of a radical operation and the necessity of more or less indefinitely continued treatment which many people can learn to carry out themselves.

CONSTITUTIONAL LOW ARTERIAL TENSION IN CHILDREN.*

LOUIS FAUGERES BISHOP, A.M., M.D.
Physician to the Lincoln Hospital.
NEW YORK CITY.

One of the most interesting problems occupying our attention of late years has been that of arterial tension in relation to circulatory disease. While the greater number of conditions fall, we believe, without difficulty into our classification into three cardinal groups, still there are certain outside cases which it is necessary to consider. One of these is "Constitutional Low Arterial Tension," and that is the topic we have chosen to present to this section under the title of this paper.

The cardinal groups, which as a matter of clinical experience we have come to recognize are:

1. Primary low arterial tension, covering all cases in which the tension in the arteries is abnormally low on account of valvular disease, myocardial disease, or secondary to some general weakening condition.

2. High arterial tension, in which is found an abnormally increased tension in the arteries due to some condition of the system demanding it. This is found as a result of degenerative disease of the blood vessels, or kidneys, nervous strain, or toxemia, causing disorderly action of the vessels.

3. Secondary low arterial tension, in which there is a failure of the circulation secondary to an exhaustion of the circulatory apparatus as a result of an over demand for pressure.

The relation of anemia and congestion to disease is always a question of much interest, but it is one the importance of which is invariably exaggerated by amateur therapeutists. Often enough the local circulation is influenced by the local condition and not the reverse. The effect of acute congestion or anemia is very different from that of chronic congestion or anemia. Much depends on the establishment of the toleration of a condition. The individuality of the subject is always considered by the clinician, and individuals are classified consciously or unconsciously into groups. One of these groups is composed of those children who are suffering from constitutional low arterial tension, a condition which probably has its origin in the nervous system, though the symptoms are circulatory.

Young people with this defect present habitually a very low arterial tension. The pulse is such that if found in other individuals it would suggest the prostration of acute or chronic disease. The condition is habitual. There is no heart lesion; there are no cardiac symptoms, such as shortness of breath, or dropsy, and the kidneys present no abnormality of function. The defect seems to be in the peripheral circulation, due to a vasomotor relaxation which fails to produce the back pressure on the arterial system that is necessary for a normal tension, and a proper cardiac stimulation. In other words, the blood circulates too easily, though badly. To differentiate such a case from a case of cardiac weakness it is only necessary to make a demand on the circulation by active exercise, or to observe the response in the case of acute disease.

Such children suffer much discomfort from lack of circulation, as by cold feet, depression, constipation, and skin disorders. They are particularly liable to catarrhal disease and functional nervous disorders. Sometimes they are subject to fainting attacks. They thrive on active exercise and the stimulation of excitement, and indeed every mental and physical activity which stimulates the circulation. A brisk horseback ride is to them like a dose of medicine. Very hot bathing of short duration benefits them, while they but seldom respond to cold bathing.

The group of children included in the group of constitutional low arterial tension, though not a large one, will still present instances in the experience of every pediatrist. The importance of recognizing the condition is that it may be placed where it belongs in the category of constitutional conditions and not treated as an accompaniment of a supposed anemia, or cardiac disease, or as the constitutional effect of some local disease. It is a condition that must be met by a proper regimen and one which has a tendency to improve and even disappear after adolescence.

The recognition of a patient as belonging to this class removes much unnecessary anxiety from the family physician, but he must not fall into the error of confounding it with primary or secondary low arterial tension. The former has for its basis a true failure of the integrity of the circulatory apparatus which results in an inability to respond to demands for pressure, and the latter represents an exhaustion due to the exorbitant demands of prolonged high arterial tension. Secondary low arterial tension is rare in childhood. I commend to students of the circulation the careful observation of this class of cases.

54 West Fifty-fifth Street.

DISCUSSION.

Dr. Arthur W. Fairbanks, Boston, referred to a case which puzzled him considerably; a child about a year old was brought into a babies' hospital with enteritis. The enteritis improved very much, but the child became cyanotic. The extremities and the whole body became more or less blue, but limbs, hands and feet were warm. The pulse was only 80 and remained at that rate practically without variation until the child's death. A postmortem could not be secured. He considered it a vasomotor palsy. He thought possibly Dr. Bishop could explain the condition.

Dr. L. F. Bishop, New York City, did not know exactly how to explain the case mentioned by Dr. Fairbanks. These mysterious cases are seen in the hospitals, in those dying from different causes. They seem often to be due simply to loss of vitality, but other cases of cyanosis of the extremities are often peculiarly obscure. They are evidently due to some toxic condition in the blood or else they are due to some nervous influence. In fatal cases there has seemed to him to have often been some intra-abdominal disease. He has noted it in a fatal case of appendicitis. Cases of constitutionally low arterial tension are not very common and the condition is usually a chronic one. They are apt to come under the observation of a number of people and the impression is made that they are more frequent than they really are. The blood pressure is chronically low, and yet it is low, because these particular children do not seem to need a higher tension. His observations have not been made in very young children. There are, indeed, as one of the speakers has implied, many cases, particularly of cardiac disease and in renal disease in which by the finger the impression is conveyed that the tension is low and yet actual examination by the pressure gauge shows that the tension is high. In the cases mentioned in the paper accurate measurements showed the tension was low.

---

* Read in the Section on Diseases of Children of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

Clinical Notes

A CASE OF RENAL TUBERCULOSIS.

JOHN C. SPENCER, M. D.
SAN FRANCISCO.

Patient.—F. M., male, aged 33, carpenter, native of the United States.

Family History.—The cause of the father's death is unknown, although he lived to an advaneed age. Mother died of mammary eancer. One brother died from pulmonary tuberculosis.

Personal History.—The patient had gonorrhea in early youth. About twelve years ago he had apparently a first attaek of appendieitis. Symptoms continued for about five days and then subsided. The patient has always been rather suseeptible to "eolds," with a vague history of having had one or two very persistent attacks. Six years ago he had a pleurisy with effusion, which necessitated my removing about 500 c.c. of elear fluid from the left pleural sac. Convaleseenee was uneventful. About four years ago I operated on him for perityphlitic abscess eaused by ruptured and partly gangrenous appendix. During the first week fragments of a feeal concretion about the size and shape of a date pit were washed out in irrigating the wound. Aside from this, eonvalescenee was uneventful.

Present Illness.—His general health after this was very good until about two years ago, when some hernial protrusion developed at the site of the abdominal scar. Coincidently, he began to have symptoms of intestinal obstruetion, as shown by dyspeptie symptoms, large aecumulations of gas in the intestines, and obstinate constipation, only relieved temporarily by purgatives and enemas. The ehief eenter of disturbanee seemed to be definitely localized in the left hypoehondrium.

Operation.—He sought my adviee in August, 1905. After examination and eonsultation with Dr. W. I. Terry, it was decided that some band-like structure was the eause of his obstructive symptoms. In September, assisted by Dr. Terry, I reopened the abdomen at the site of the sear. A number of dense adhesions between coils of intestine and the abdominal parietes were separated. A velamentous faleiform band started from about the umbilicus, seemingly connected at its upper part with the urachus. This band passed along the parietal peritoneum downward, outward and backward and toward the left, to the brim of the true pelvis. I followed this to about the region of the saero-iliac synehondrosis, where it merged into the peritoneum and subperitoneal connective tissue. This band was exeised. The abdominal wound was closed in tiers and healed normally. During eonvaleseenee, irritability of the bladder, from whieh he had suffered temporarily about six months before, reappeared. Boric aeid irrigations were ordered, but the patient complained bitterly of the pain and discomfort they caused. The urine was turbid and eontained a moderate amount of pus, and bladder epithelia, but no blood or other abnormalities.

Postoperative History.—Patient left the hospital in about three weeks, but failed to gain strength or flesh, and was unable to work. He received various tonies and roborants, but declined steadily in general health. In the meantime his bladder was almost constantly under treatment. I observed that any attempt at irrigation with silver nitrate solutions of from 1 up to 15—to 10,000, was invariably followed by a very intense symptomatie reaction. The eonclusion began to foree itself on me that I was dealing with a tubereulous eystitis. Consequently I determined to make a cystoscopie examination under eoeain anesthesia. This exeited sueh an intense bladder spasm that a eystoseopie examination was rendered impossible. Owing to the intense pain and severe reaetion, and his enfeebled condition, he positively refused any further attempts at examination of the bladder. A specimen of urine from the bladder was eollected by catheter, *secundem artem;* it was centrifugated and the sediment examined for tubercle baeilli in vain. Shortly after this the man began to walk bent slightly forward and to the right. This attitude, his progressive marasmus, with daily rise of temperature, foreed on me the conclusion that the trouble was in all probability a tuberculous pyelo-nephritis, affecting the right kidney. Examining him in conjunetion with Dr. Terry we found the right kidney somewhat eetopie, and sensitive to pressure. The left kidney was barely palpable, and not especially sensitive.

Second Operation.—A nephrotomy with a possible nephreetomy was determined on by us, and agreed to by the patient. On February 21, at St. Mary's Hospital, I delivered the right kidney through a Simon lumbar incision. The kidney appeared to be about one-quarter larger than normal. This, with its general appearanee, determined me to do a nephreetomy without a perliminary exploratory ineision. The operation offered no unusual features. The vessels were tied separately; the mucosa of the ureter presented a few fairly well-defined hemorrhagie areas. I stitehed the upper end of the ureter into the lower angle of the wound. In 24 hours the ureter stitehes had eut through and the ureter undiseoverably retraeted. The sutnre ends from the vessels were brought out at the upper angle and the wound elosed by through and through silk-worm gut sutures, supplemented by catgut sutures.

Termination of Case.—The temperature dropped to normal the following day, and did not rise again. For the first week after the operation the amount of urine exereted almost equaled the amount of fluid ingested, the differenee being about 100 e.e. The man drank distilled water exelusively.

From the end of the first week his eondition beeame progressively worse, with moderate uremie symptoms direeted chiefly to his stomaeh. At the end of ten days the external wound beeame infeeted and was freely reopened at the upper and lower ends. The urine became more scanty in amount and at times bloody. Occasionally there was some tenesmus. Exaetly four weeks from the operation the patient died, the sensorium remaining elear to the end.

Report on Exsected Kidney.—(By A. J. Lartigau, M.D.) The eenter of the exsected kidney eontained a number of yellowish areas about the size of a pinhead, whieh proved to be tuberculous.

Postmortem.—Postmortem examination showed evidences of old tuberculosis at both apices, adhesion to the parietal pleura and miliary tubereulosis of the lower lobes of both lungs. The left kidney and ureter, the left lobe of the prostate, the left epididymis and the vasa deferentia and seminal vesicles showed advanced tubereular lesions. The brain was not examined.

SUMMARY.

An adult with a poor family history, evidently passed through a pulmonary tuberculosis at some time during his earlier years, the process undoubtedly terminating spontaneously. Then followed a period of reasonably good health, broken by an acute pleuritis with effusion and culminating in an acute appendiceal outbreak necessitating operative interference. During the next four years he had only moderately good health. Then a second eeliotomy was performed, followed by rapid decline in general health, and development of symptoms of apparent tuberculosis of the urinary bladder. Two months before death there were strongly marked symptoms of renal tuberculosis.

The diagnosis of bladder tuberculosis was only possible, inferentially, from the symptoms, and was confirmed in a measure by the man's intolerance of silver nitrate solutions. The only positive diagnostic means—cystoscopy—was unsuccessful, at the single attempt, and impossible of repetition. A guinea-pig test was uot tried, but in the face of so many corroborating factors, it may be regarded as a superfluous diagnostic refinement, in this case. The symptoms pointing toward renal tuberculosis seemed to point so positively to the right kidney, that not finding this one affected at the time of the nephrectomy, was a source of unqualified surprise. Furthermore, the failure to discover the gross lesions at that time, on sagittal section, reveals the inefficiency of a nephrotomy as a diagnostic precaution preliminary to

a nephrectomy. Nothing short of multiple sectioning of this kidney would have revealed the presence of the microscopic lesions found by A. J. Lartigau, M. D.

The course of the tuberculous process in this individual is a matter of some speculative interest.

The possibility of the original or secondary appendiceal attacks being of tuberculous origin can not be excluded. The healed pulmonary lesions certainly antedated the first attack.

It would seem that the tuberculous process remained in abeyance—probably encysted in the lung apices—and received a fresh impetus through the lessening of the patient's resistance, consequent on the long period of obstructive bowel disturbance, terminating in the last celiotomy. It would appear further that the fresh outbreak originated below the diaphragm, either in the pericecal region or else directly in the left kidney. The manifestations were most marked at first in the bladder. The tuberculous process extended down the left ureter and thence ascended the right ureter to the right kidney. The extensive involvement of the left kidney would make it seem most likely that the peritoneum over fundus of the bladder became involved through the lymphatic channels. A similar theory may explain the involvement of the genital adnexa.

836 Turk Street.

A CASE OF PEMPHIGUS LIMITED TO THE MUCOUS MEMBRANES.*

EDMUND M. COCKS, M.D.
NEW YORK CITY.

My object in presenting the history of a fatal case of pemphigus limited to the mucous membranes is to bring before you a case seen almost from its incipiency to a few days prior to the patient's death, a dermatosis so rare that its existence has been denied by a majority of dermatologists, Brock and Bernier claiming to have seen but four cases.

History.—Mrs. B., aged 37, a thin, nervous woman, the mother of five living children, was born at Pittsburg, Pa., of German parents. She had the usual diseases of childhood and developed into a strong, healthy woman. She married at the age of 24. Her health commenced to deteriorate after a miscarriage due to overlifting.

One year previous to the illness under consideration, Feb. 15, 1904, she experienced her first chill, which lasted two hours. Later in the day she menstruated. A year later she had a second chill lasting the same length of time. The following morning on account of the swollen condition of the tongue, she was unable to talk, and swallowed food with great pain and difficulty. Numerous pea-size vesicles were to be seen on the tongue, buccal mucous membrane, pharynx and lips. This condition persisted for two weeks, the older vesicles rupturing, swelling and subsiding. Deglutition became less painful.

The date of her next menstruation was ushered in by a severe chill, followed by a repetition of the first attack, which ran a like course. The third was similar to the two previous attacks, also the fourth, but the menses did not appear the following month.

Up to the seventh month of her pregnancy each was a duplicate of the previous month, the patient becoming more and more discouraged and emaciated. The two weeks preceding the seventh month of her pregnancy she was very comfortable but, she painfully remarked, January 14 was a banner day. The chill lasted three hours, with a slight remission.

Examination.—I saw her the following day; there was not a pea-size space of tongue, lips, buccal mucous membrane, pharynx or nasopharynx that was not the site of vesicles. There were several vesicles on the conjunctivæ. In the vagina were several bullæ; cervix was free. The rectoscope revealed vesicles as far as could be seen.

Treatment.—Lancing the vesicles of the mouth and touching their bases with an aqueous solution of methylene blue, 20 grains to the ounce, gave the patient considerable relief. Those of the vagina and nasopharynx were not incised but ruptured within three or four days. Small painful ulcerations resulted which did not heal for several days. Although at no time during her pregnancy was she free, by opening the vesicles as soon as they appeared, a fair degree of comfort and health was maintained.

Her food consisted of milk, to which cream had been added, eggs and concentrated liquid food. She gained slightly in weight until the fatal attack. She was seen almost daily and arsenic was prescribed and pushed from the first. All known local remedies were tried but methylene blue gave the greatest relief.

Further History.—The eighth month was no exception to the rule. The ninth month was ushered in by a chill and in a few hours the patient's tongue was so swollen that at the height of her labor she could not cry out for pain, or laugh for joy at its termination. Two weeks after her confinement she commenced to gain rapidly and we were all hopeful, though I had given my opinion that the pregnancy was not an etiologic factor. This quiescent period lasted three months then a return of all the symptoms, persistent vomiting and uncontrollable diarrhea greatly aggravated the patient's condition and rapid emaciation and death followed in one week. At no time was there a cutaneous symptom of any kind.

Historical Report.—During the height of an attack the contents of a vesicle situated on the tongue were aseptically drawn into a pipette and proved to be sterile. The contents of a flabby vesicle or one several days old showed numerous staphylococci. The blood at this time showed a leucocytosis of about 10 per cent. Between the attacks the blood was normal. The urine, examined numerous times, showed nothing abnormal but indican, which was present in a greater or less quantity during her entire sickness.

Postmortem Findings 24 Hours After Death.—Vesicles occluded the nares, they were also present in great number in mouth, on tongue, pharynx and esophagus. The mucous membrane of the stomach was also affected, the intestinal track from pylorus to anus was involved. The vesicles of the intestines were flatter and in some places where they had ruptured, ulceration to the muscular coat had taken place.

There were a few disseminated vesicles on the serous surface of the liver, spleen, intestines and pleura.

This case seems to have been one of pemphigus limited to the mucous membranes, probably due to indican, the result of intestinal fermentation, for which her family physician had treated her for several years, her pregnancy having had little, if anything, to do with her condition, in spite of the fact that her symptoms were worse at her menstrual periods preceding her pregnancy and at the time she would have menstruated if not pregnant.

DISCUSSION.

DR. WILLIAM S. GOTTHEIL, New York City, said that in his clinical work, on the lower east side of New York City pemphigus is a comparatively common affection. There are always two or three such cases in the City Hospital, and the same is true of the Lebanon Hospital. In two patients recently under his care the lesions were restricted to the mouth for a long time. One of these patients had been referred to him as presenting a case of syphilis, and his own diagnosis at the time was mercurial stomatitis. It proved to be a case of pemphigus, affecting first the mouth and later the cutaneous surfaces, and finally proved fatal. Dr. Gottheil said that he has never seen pemphigus limited to the mucous and serous membranes end fatally, as in the case reported by Dr. Cocks.

DR. L. DUNCAN BULKLEY, New York City, said he could cor-

---

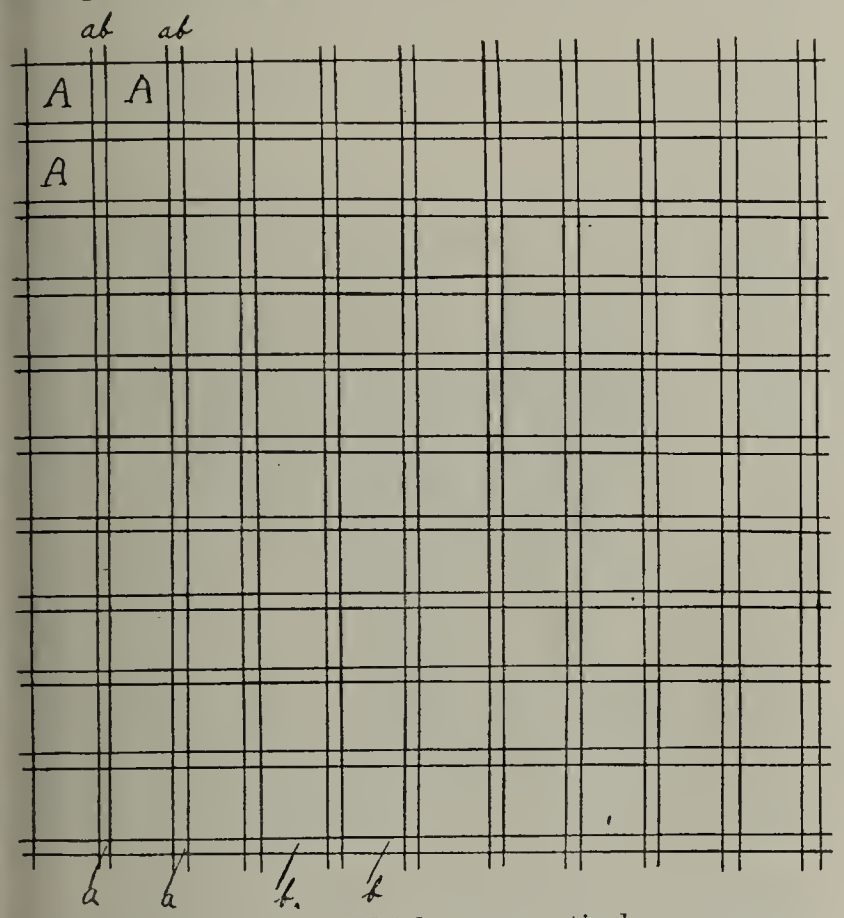
* Read in the Section on Cutaneous Medicine and Surgery of the American Medical Association at the Fifty-seventh Annual Session, June, 1906.

roborate Dr. Gottheil's statement in regard to the frequency with which pemphigus occurs in certain sections of New York City, especially on the lower east side. At the New York Skin and Cancer Hospital, cases of this disease are comparatively common and they almost invariably come from that district.

A NEW COUNTING CHAMBER FOR THE ENUMERATION OF BLOOD CORPUSCLES.

CHARLES E. SIMON, M.D.
Professor of Clinical Diagnosis at the Baltimore Medical College.
BALTIMORE.

Every worker in the clinical laboratory, no doubt, has felt that in the construction of the hemomytometric slide undue prominence is given to the ruling for the enumeration of the red corpuscles, while as a matter of fact the leucocyte count is made much more frequently than the red count. In teaching, also, the red lines prove confusing to the beginner, and the patience of the instructor is often severely taxed in explaining again and again the meaning of the various lines. To overcome these difficulties, which seem entirely unnecessary, I have had E. Leitz & Co. construct a counting slide which is much simpler than any other with which I am acquainted. It will be found especially convenient in the enumeration of the leucocytes, but may also be utilized in counting the red cells. Its description and directions for use follow:



DESCRIPTION.

The instrument, as placed on the market, consists of the two ordinary diluting pipettes, and the counting chamber. The latter is ruled into 100 large squares (A, A, A), each occupying an area of .04 sq. mm. They are separated from one another by double guiding lines (ab, ab), with an intervening distance of .05 mm. Where the horizontal and vertical lines intersect, small squares (a, a, a) result, 100 in number, which accordingly have an area of .0025 sq. mm. each. The large squares are thus bounded by rectangles (b, b), measuring .05 mm. in width by .02 mm. in length, representing an area of .01 sq. mm.

As the little platform (P), carrying the ruling is exactly .01 mm. lower than the outside glass plate (D), each large square represents the base of a cube, the contents of which are .04×.01=.004 cb. mm.; each small square similarly corresponds to .00025×.01=.000025 cb. mm., and each rectangle to .001×.01=.0001 cb. mm.

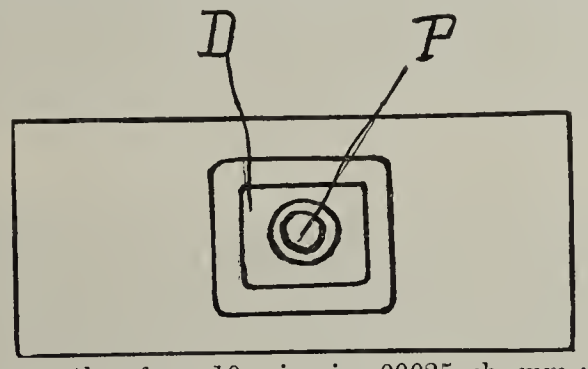
METHOD.

1. *Enumeration of Leucocytes.*—A drop of blood, diluted in the 1:10 pipette, with a 1 per cent. solution of glacial acetic acid, containing a small amount of gentian violet, is mounted in the usual manner and placed under the microscope. Starting with the top row of large squares at the left corner the total number of leucocytes in the 100 large squares is carefully counted. This number, divided by 100, gives the average number of leucocytes for one large square. As the cubic contents of each large square are .004 cb. mm. it is only necessary to multiply the number of leucocytes in one square by 250 in order to find the number of 1 cb. mm. of diluted blood, and thus by the degree of dilution, to find the number for 1 cb. mm. of non-diluted blood.

Example: Total number of leucocytes counted in the 100 large squares = 400; hence 4 = number for one large square, i. e., for .004 cb. mm. of diluted blood; 250×4 = 1,000 is hence the number in 1 cb. mm. of diluted blood and 1,000×10 = the number in 1 cb. mm. of non-diluted blood.

2. *Enumeration of Red Cells.*—The blood is diluted with Toison's solution or a similar diluent in the 1:100 pipette, and a drop mounted as usual. All the red cells are then counted, in the 100 small squares if no marked degree of anemia exists, or in the 40 rectangles if there is evidence of a distinct oligocythemia. The calculation is made as follows, bearing in mind the cubic contents corresponding to the small squares and the rectangles, viz., .00025 and .001 cb. mm. respectively.

Example: Number of red cells in 100 small squares equals



1,000; in one, therefore, 10, viz., in .00025 cb. mm.; in 1 cb. mm. of diluted blood 4,000×10 = 40,000, and in 1 cb. mm. of non-diluted blood 40,000×100 = 4,000,000.

Example 2: Number of red cells in 40 rectangles equals 800; in one rectangle therefore 20, i. e. in .001 cb. mm.; in 1 cb. mm. of diluted blood, hence 20 × 1,000 = 20,000, and in 1 cb. mm. of non-diluted blood 20,000 × 100 = 2,000,000.

If for any reason a larger area is to be counted for red cells this can, of course, be readily done by going over a larger number of rectangles, or by combining small squares and rectangles, due allowance being made, of course, for the cubic contents of the ground covered.

TRANSPOSED HEART.

ANOMALY REVEALED BY BULLET WOUND THROUGH NORMAL LOCATION.

JAMES A. ROLLS, M.D.
WATROUS, N. M.

The following unusual case occurred recently in my practice:

Patient.—A boy, aged 16, was shot in the left breast.

Examination.—I found the patient with a rapid pulse of fairly good quality, showing moderate signs of shock, with a bullet wound over the fifth rib, on the left side, 1½ inches inside the mammary line. An hour previously a friend, in handing to him a 22-caliber rifle, had accidentally discharged it when the muzzle was almost touching his breast, and directed slightly outward and upward. It seemed that the heart could not have escaped.

No apex beat was visible, and to my surprise none could be felt, nor could any sound be heard in the usual locality. Percussion gave moderately dull note at the fifth rib, passing into dulness lower down and continuing the costal margin.

Examination of the right side cleared up the anomaly, as there was no sign there of the usual liver dulness, while the apex beat was easily found in the fifth space, one-half inch inside the mammary line. The spleen was located within the usual limits, but on the right side. Percussion and auscultation of the apices did not encourage the belief that the lungs were transposed.

The boy made an uneventful recovery.

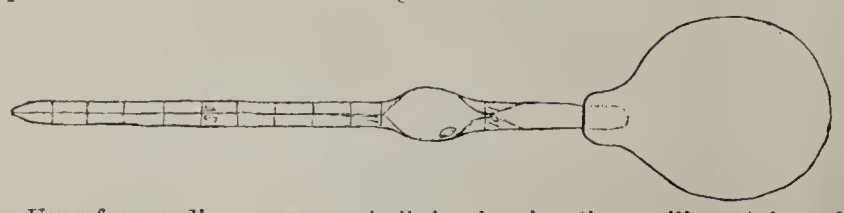
Cases of transposed viscera are uncommon, but one in which the conservation of life is dependent on this condition is possibly unique.

METHOD OF CLEANSING BLOOD PIPETTES.

M. BENMOSCHE, M.D.
WASHINGTON, D. C.

The following simple method is submitted with the hope that it may be of service to others doing blood work, as it has been to me.

Thoroughly cleansing the capillary pipettes after use is a very important feature in blood work. The usual method of blowing through a rubber tube is very trying to the buccal muscles. The use of an ordinary camera bulb, rubber being more pliable and durable, solved the problem. Expulsion of the contents, cleaning and suction of the ethereal vapor by this means is much easier, quicker and more thorough. The bulb must fit the



Use of an ordinary camera bulb in cleaning the capillary tubes of the Thoma-Zeiss Blutkörperzahl apparat.

tube (pipette) snugly. Usually rubber tubing is connected with the camera bulb. This must be removed, using merely the bulb.

I have found this method very convenient, particularly in the expulsion of the contents from the red-diluting pipette. I am also able to regulate the drop for the counting slide much better than with the regular tubing.

2511 Seventeenth Street N.W.

APPENDECTOMY THROUGH THE OPERATIVE WOUND FOR THE RADICAL CURE OF RIGHT INGUINAL HERNIA.

JOHN A. WYETH, M.D.
Professor of Surgery at the New York Polyclinic Medical School and Hospital.
NEW YORK.

Four times within the last fifteen months, in operations for the radical cure of oblique inguinal hernia of the right side, the cecum and appendix were involved, and in these the appendix was removed. These cases presented no difficulty, so far as the appendectomy was concerned, for the reason that this organ had descended into the hernial sac.

History.—On Oct. 7, 1906, I operated on a man suffering with a right oblique inguinal hernia, who also gave a history of three well-marked attacks of appendicitis of the relapsing type. I advised him to have this organ removed at the same operation in which the radical cure of the hernia was undertaken, as there were at this time no symptoms of disturbance about the appendix.

Description of Operation.—Through the usual incision for the Bassini operation the sac was opened and a loop of small intestine returned to the abdominal cavity. By means of the index finger, introduced through the neck of the sac, the cecum and appendix were felt about as far above the normal position of the internal ring as the finger could reach. By careful dissection with the finger tip, the cecum and appendix were gradually loosened from their anchorage and brought far enough down to permit me, by the aid of strong upward traction on the arched border of the conjoined tendon, to tie off the mesoappendix with catgut and the appendix with the silk ligature one-quarter of an inch from its origin. The stump of the appendix was cauterized with pure carbolic acid applied by means of a wisp of cotton twisted on the end of a small probe. A drop of alcohol was added to neutralize any excess of carbolic acid. The cecum and stump were allowed to resume their normal position and the hernial operation was completed after the technic I advise, namely, the treatment of the sac after the method of Macewen; the plastic work after Bassini; the treatment of the spermatic cord after the method of Halsted.

The patient made an uneventful recovery and left for his home in Florida two weeks after the operation.

A DICEPHALOUS MONSTER.

HUGH B. CAFFEY, M.D.
PITTSBURG, KAN.

On account of the peculiarities of this case of dicephalous monster, I wish to record it, together with the facts pertaining to its birth.

Back view of dicephalus monster showing the double arm. The two spinal columns can readily be traced downward from the heads.

History.—I was not engaged to attend the patient until labor had set in, so the history of the pregnancy previous to that time is unknown, except for the statement by the patient that she had been feeling very well, but had worried a great deal over domestic troubles..

The woman is an American, height 5½ feet, weight 150 pounds, aged 29. She is strong and healthy. She has been married seven years and has one healthy well-formed child, 4 years old. No miscarriages. She first felt fetal movements in December, 1905. The father of the child is 29 years of age and gives a good family and personal history. He has never had gonorrhea or syphilis. He has been drinking to excess for the past two years, which accounts for the domestic trouble referred to. There are no twins or deformities in either family, his parents having five and her parents three normal children.

Labor.—Labor pains began on the morning of May 5. About 7 o'clock I was called, and on examination found dilatation almost complete, the membranes unruptured, and the vertex presenting. Labor progressed in a normal manner; when the membranes ruptured there was great excess of liquor amnii. Diagnosis of the condition was not made until the second hand was felt presenting alongside of the first head. I made pre-

quent examinations and found that the head was making satisfactory advance, and that the efforts of Nature were not needing assistance. Labor terminated in about half an hour after the rupture of the membranes without the slightest laceration of the perineum. The placenta was of normal size, but the cord was very large. The fetus showed signs of life and there was feeble pulsation in the cord, but I was unable to start respiration. After using all the measures at my command for at least ten minutes the pulsation ceased and no signs of life remained. The parents objected to an autopsy, and I was only allowed to photograph and to measure the monster.

Description of Monster.—Sex, male, weight 10 pounds, length to top of right head 14 inches, to top of left head 13 inches, circumference of the chest at the level of the axillæ 11 inches. Measurements of the heads: Right head, occipitomental 5½ inches, suboccipito-bregmatic 3½ inches, anteroposterior 4½ inches: left head, occipitomental 5 inches, suboccipito-bregmatic 3 inches, anteroposterior 4¼ inches. The two outside arms and hands were perfect, as were the genital organs and lower extremities. Each head had a distinct neck and the distance between them was 2½ inches. So far as could be determined there was one sternum and two spinal columns, which could be outlined as shown in accompanying illustration. The middle or double arm is of particular interest in this case on account of the unusual deformity. I have been unable to find a similar case on record. There was a joint at the junction of the arm and body, corresponding to the shoulder joint, also an elbow and a wrist joint, which presented no special features. The arm measured 5 inches in length, being slightly shorter than the two outside arms. It was supplied with a set of muscles on both sides of the bones, which accounts for its large size. The hand had six fingers and two thumbs.

It is to be regretted that complete autopsy was denied, as doubtless many interesting anomalies would have been found.

A PROSTHETIC APPLIANCE FOR USE AFTER PARTIAL AMPUTATION OF THE FOOT.

GEORGE W. KING, M.D.

HELENA, MONT.

Artificial aid after partial amputation of the foot is seldom satisfactory for the reason that the normal elasticity on which

Fig. 1.—Condition of feet after operation.

ease of locomotion depends is practically eliminated by destruction of the arch and a proportionate crippling results. Taking, for example, one of the more common operations, Lisfranc's or its modifications, we have, as a rule, the ankle joint intact and are able to leave a substantial support for the body weight, but in walking the spring of the foot is lost, the stride is shortened and progression interfered with to a considerable extent.

One of my patients (Fig. 1) was in this condition until he began to use a device (partly his own suggestion) which has been of great assistance. By its aid he often walks a distance of from 6 to 7 miles without fatigue or discomfort; he has resumed his work as a miner and can readily ascend ladders or traverse uneven ground without stumbling; moreover, there is nothing in his gait which suggests his maimed condition.

This case affords a crucial test of the efficiency of the appliance (Figs. 2 and 3), which is constructed as follows: A piece of gun metal is fitted to what remains of the sole of the foot;

Fig. 2.—The appliance for lengthening the foot.

Fig. 3.—Another view of the appliance.

Fig. 4.—Normal appearance of the man's feet with this appliance.

it is given a slight curve upward following the natural curve. Under the instep it is carried forward to the extremity of the stump. At this point several narrow strips of spring steel are riveted and extended to converge at a point corresponding to the natural length of the foot. On the anterior surface two spiral springs are attached from a cross piece over the instep to the converging point at the toe. This frame work is covered with leather and when inserted into an ordinary shoe retains its form and when the stump is inserted and the shoe laced it furnishes an unyielding support and imparts a degree of elasticity unattainable by other means (Fig. 4).

New and Non-Official Remedies

THE FOLLOWING ARTICLES HAVE BEEN TENTATIVELY ACCEPTED BY THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR INCLUSION IN THE PROPOSED ANNUAL, "NEW AND NON-OFFICIAL REMEDIES." THEIR ACCEPTANCE HAS BEEN BASED LARGELY ON EVIDENCE SUPPLIED BY THE MANUFACTURER OR HIS AGENT, BUT TO SOME EXTENT ON INVESTIGATION MADE BY OR UNDER THE DIRECTION OF THE COUNCIL. CRITICISMS AND CORRECTIONS ARE ASKED FOR TO AID IN THE REVISION OF THE MATTER BEFORE FINAL ACCEPTANCE AND PUBLICATION IN BOOK FORM.

THE COUNCIL DESIRES PHYSICIANS TO UNDERSTAND THAT THE ACCEPTANCE OF AN ARTICLE DOES NOT NECESSARILY MEAN A RECOMMENDATION, BUT THAT SO FAR AS KNOWN IT COMPLIES WITH THE RULES ADOPTED BY THE COUNCIL.

W. A. PUCKNER, SECRETARY.

(*Continued from page 1657.*)

QUARTONOL.

A name applied to a mixture of tonols in tablets of 0.3 Gm. (5 grains), each tablet being said to contain lime tonol, 0.146 Gm. (2¼ grains), sodium touol 0.148 Gm. 2¼ grains), quinine tonol 0.03 Gm. (½ grain), and strychnine tonol 0.00033 Gm. (1/200 grain).

Actions, Uses and Dosage.—See Glycerophosphates.

Manufactured by Chemische Fabrik auf Actien, vorm E. Schering, Berlin (Schering & Glatz, New York). U. S. trademark.

SAL ETHYL.

ETHYL SALICYLATE. ÆTHYLIS SALICYLAS.

Ethyl salicylate, $C_2H_5(C_6H_4.OH.COO) = C_9H_{10}O_3$, is the salicylic acid ester of ethyl alcohol and is analogous to methyl salicylate (oil of wintergreen).

It is made by the action of salicylic acid on ethyl alcohol in the presence of sulphuric acid and subsequent purification.

It is a transparent, colorless, volatile liquid, possessing a pleasant characteristic odor and taste. Its sp. gr. is 1.184 at 20° C. (68° F.) and it boils at 231.5° C. (448.7° F.). It is insoluble in water, but soluble in alcohol.

Actions and Uses.—Sal ethyl has the same action as the salicylates, but is said to be less toxic.

Dosage.—3 to 6 c.c. (5 to 10 minims) 3 or 4 times a day in the form of gelatin globules.

Manufactured by Parke, Davis & Co., Detroit, Mich. U. S. trademark.

SALIFORMIN.

HEXAMETHYLENTETRAMINE SALICYLATE, MERCK. FORMIN SALICYLATE. UROTROPIN SALICYLATE.

Saliformin, $(CH_2)_6N_4.C_6H_4.OH.COOH$, is the salicylate of hexamethylenamine.

It is prepared by dissolving equal weights of hexamethylenamine and salicylic acid in water and evaporating the solution to dryness at a temperature below 60° C. (140° F.).

It is a white, crystalline powder, having an acidulous and disagreeable taste, readily soluble in water or alcohol.

It is soluble in cold sulphuric acid without color, becoming crimson on heating. Its aqueous solution is colored deep green by copper sulphate, violet by ferric chloride, and forms a yellow precipitate with bromine.

It is decomposed by basic substances (soluble hydroxides, carbonates, etc.) and by strong acids. It is incompatible with salts of iron and other metals which form insoluble compounds with salicylates.

Actions and Uses.—Saliformin is a genito-urinary antiseptic and is recommended as a uric-acid solvent. Its action does not differ materially from that of a mixture of hexamethylenamine and salicylic acid, for it is largely hydrolysed into its constituents in the presence of water.

It has been recommended in cystitis, lithiasis and bacterial affections of the urinary passages, also in gout, etc.

Dosage.—0.3 to 2 Gm. (5 to 30 grains) in tablets or elixir.

Manufactured by E. Merck, Darmstadt (Merck & Co., New York).

SALIT.

Salit consists chiefly of the salicylic acid ester of borneol, $C_6H_4.OH.CO(C_{10}H_{17}O) = C_{17}H_{22}O_3$.

It is obtained according to the patent by heating a mixture of salicylic acid and turpentine and purifying the ester obtained.

It is an oily liquid, as nearly odorless as possible, insoluble in water, slightly soluble in glycerin, but readily soluble in alcohol, ether and oils. It is decomposed by alkalies into salicylic acid and borneol.

It is incompatible with alkaline media.

Actions and Uses.—Salit is absorbed by the skin after inunction and is decomposed in the body, liberating salicylic acid in the tissues. It appears to be liable to produce some local irritation and eczema of a mild type. It is antiseptic.

It is recommended in gout, articular and muscular rheumatism, neuralgia, erysipelas, pleurisy, etc.

Dosage.—It is used only externally, undiluted, by pencilling, or preferably by inunction with 5 to 10 Gms. (75 to 150 minims) of a mixture of equal parts of salit and olive oil.

Manufactured by The Heyden Chemical Works, New York. U. S. patent No. 779,377. U. S. trademark.

SALOPHEN.

ACETYLPARAMIDOPHENOL SALICYLATE.

ACETPARAMIDOSALOL.

Salophen, $(C_6H_4.OH.COO).C_6H_4NH.(CH_3CO)$, is the salicylic ester of 1,4-acetaminophenol, $C_6H_4(NHCH_3CO)(OH)$.

It is made by preparing paranitrophenolsalicylate by a process similar to that of preparing phenyl salicylate (salol); converting this by means of reducing agents into paramidophenol salicylate, and this into acetylparamidophenol salicylate by the action of acetic acid. The crude salophen so obtained is then purified by crystallization from benzene or alcohol.

It forms small, white, crystalline leaflets or powder, odorless and tasteless, melting at 187° to 188° C. (368.6° to 370.4° F.), and containing 51 per cent. of salicylic acid. It is almost insoluble in cold water, more soluble in warm water, but freely soluble in watery solutions of the alkalies and in alcohol, ether and benzene, but not in petroleum benzin.

If its alkaline solution is boiled it gradually becomes blue; on continuing the boiling this color is discharged, but is again produced on cooling and exposure to air. On addition of ferric chloride to the alkaline solution the violet color characteristic of salicylic acid is produced, but a simple aqueous solution of salophen does not react with ferric chloride and should not be changed by silver nitrate. It forms a colorless solution with concentrated sulphuric acid.

It is incompatible with alkalies which decompose it.

Actions and Uses.—The actions of salophen resemble those of phenyl salicylate (salol). It is not changed in the stomach, but is broken up in the intestine, liberating salicylic acid and acetylparamidophenol, which is not toxic, like phenol. It acts as an antirheumatic, antipyretic, antiseptic and analgesic. It has been recommended in rheumatism, gout, typhoid fever, and as an intestinal antiseptic, in diarrhea and dysentery. Externally it has been applied in psoriasis and other itching skin diseases.

Dosage.—0.3 to 1 Gm. (5 to 15 grains), in powder, wafers or capsules. Externally in 10 per cent. ointment.

Manufactured by Farbenfabriken, vorm. Friedr. Bayer & Co., Elberfeld, Germany (Continental Color & Chemical Co., New York). U. S. patent No. 492,868. U. S. trademark 20,759.

SALOQUININE.

QUININE SALICYLIC ETHER. SALOCHININ.

SALICYLQUININE.

Saloquinine, $C_6H_4.OH.COO(C_{20}H_{23}N_2O) = C_{27}H_{28}O_4N_2$, is the salicylic ester of quinine, containing 73.1 per cent. of quinine.

According to the patent specifications it is obtained by heating a mixture of phenyl salicylate (salol) with anhydrous quinine to 170° to 190° C. (338° to 374° F.) in a vacuum, whereby quinine salicylic acid ester and phenol are formed. The phenol set free is removed by distillation and the residue washed with dilute acetic acid to remove unchanged quinine.

It is a white, crystalline powder, melting at 138° C. (280.4° F.), perfectly tasteless and odorless. It is insoluble in water, soluble in acidulated water and moderately soluble in alcohol and in ether. It forms neutral salts which are tasteless and acid salts.

Its acid solutions are precipitated by alkalies and the usual alkaloidal reagents. The filtrate obtained after shaking saloquinine with water does not give a violet color with ferric chloride (absence of free salicylic acid).

It is incompatible with acids.

Actions and Uses.—It is a tasteless substitute for quinine and salicylic acid.

Dosage.—0.5 to 2 Gm. (8 to 30 grains).

Manufactured by Farbenfabriken, vorm. Friedr. Bayer & Co., Elberfeld, Germany (Merck & Co., New York). U. S. patent No. 678,401. U. S. trademark No. 37,373 (salochinin), No. 37,374 (saloquinine).

SALOQUININE SALICYLATE.

Saloquinine salicylate, $C_6H_4.OH.COO(C_{20}H_{23}N_2O) + C_6H_4OH.COOH = C_{34}H_{34}N_2O_3$, is the salicylate of the salicylic ester of quinine.

It is prepared by the addition of salicylic acid to a hot alcoholic solution of salicylic acid ester of quinine (see saloquinine) and collection of the crystals which separate out on cooling.

It is a white, tasteless powder, melting at 182° to 183° C. (359.6° to 361.4° F.), sparingly soluble in water, soluble in benzene, chloroform and hot alcohol.

It is incompatible with alkaline liquids.

Actions and Uses.—It is recommended in acute rheumatism, neuralgia, tabes, gonorrheal inflammations, etc.

Dosage.—1 Gm. (15 grains).

Manufactured by E. Merck, Darmstadt (Merck & Co., New York). U. S. patent No. 698,079.

SEXTONOL.

A mixture of tonols in tablets of 0.3 Gm. (5 grains), each tablet being said to contain lime tonol, 0.13 Gm. (2 grains); sodium tonol, 0.13 Gm. (2 grains); iron tonol, 0.03 Gm. (½ grain); manganese tonol, 0.015 Gm. (¼ grain); and strychnine tonol, 0.00033 Gm. (1/200 grain).

Actions, Uses and Dosage.—See Glycerophosphates.

Manufactured by Chemische Fabrik auf Actien, vorm E. Scheriug, Berlin (Schering & Glatz, New York). U. S. trademark.

SIDONAL.

PIPERAZINE QUINATE. KINATE OF PIPERAZINE.

Sidonal, $\begin{matrix}\diagup CH_2CH_2\diagdown \\ NH \\ \diagdown CH_2CH_2\diagup\end{matrix}$ $NH.2C_6H_7(OH)_4(COOH) = C_{18}H_{34}N_2O_{12}$, is the normal salt of piperazine and quinic acid.

It is prepared by heating 1 molecule of piperazine with 2 molecules of quinic acid and maintaining the mixture at its melting point for some time, or by dissolving equivalents of piperazine and quinic acid in the smallest practicable quantity of water, concentrating the solution on a water bath, removing the residual water by repeated additions of small quantities of alcohol, evaporating and finally drying the residue in a vacuum.

It forms a white, crystalline powder, melting at 168° to 171° C. (334.4° to 339.8° F.) and having a faint acid taste and reaction. It is very soluble in water and forms salts on mixing the aqueous solution with solutions of alkali carbonates and evaporating to dryness.

It responds to tests for piperazine (precipitate with potassium-bismuth iodide, etc.) and quinic acid.

Its incompatibilities are those of the alkaloidal salts generally.

Actions and Uses.—Sidonal is recommended as a uric acid solvent in gout, neurasthenia, etc.

Dosage.—1 to 1.3 Gm. (15 to 20 grains) 5 or 6 times a day, dissolved in water.

Manufactured by Vereinigte Chemische Werke Actiengeselischaft, Charlottenburg (Victor Koechl & Co., New York), Eng. patent No. 11,420.

SODIUM CACODYLATE.

SODIUM DIMETHYLARSENATE.

Sodium cacodylate, $(CH_3)_2AsO.ONa + 3H_2O$, is the sodium compound of cacodylic acid, $(CH_3)_2AsO.OH$, a dimethyl derivative of arsenic acid, $AsO(OH)_3$.

It is prepared by distilling arsenous oxide with potassium acetate, oxidizing the distillate, composed of cacodyl $As_2(CH_3)_4$, and cacodyl oxide $As_2(CH_3)_4O$, with mercuric oxide, neutralizing the cacodylic acid with solution of sodium hydroxide and concentrating to crystallization.

It is a white powder, very soluble in water, forming needle-shaped crystals, hygroscopic, but otherwise of marked stability. The aqueous solution is alkaline toward litmus, but nearly neutral toward phenolphthalein.

On addition of silver nitrate T. S. to a solution of 1 Gm. of sodium cacodylate in 20 Cc. of water, a white precipitate is formed which is soluble in nitric acid and in ammonia water.

If to 1 Cc. of a 1 per cent. solution of sodium cacodylate, 10 Cc. of hypophosphorous acid are added and put aside for 1 hour in a closed container, a disgusting odor of cacodyl (caution on account of extreme poisonous properties of the gas) is apparent (distinction from sodium monomethyl arsenate).

If calcium chloride T. S. solution is added to a solution of sodium cacodylate (1:20) no precipitate will be produced in the cold nor on warming (distinction from sodium monomethyl arsenate).

A solution of sodium cacodylate (1:20) should show no yellow precipitate with ammonium molybdate T. S., when treated in boiling water; nor should a yellow precipitate form when the 1:20 solution is treated with sodium thiosulphate T. S. and with hydrogen sulphide T. S.; nor should a white precipitate form when, after acidulating with hydrochloric acid, barium chloride T. S. is added to the 1:20 solution.

Estimation: A weighed quantity (approximately 1 Gm.) is dissolved in 25 Cc. of water, one drop of methyl orange T. S. added, and then normal hydrochloric acid V. S. added until a faint pink color appears; 1 Cc. normal hydrochloric acid V. S. = 0.2125 Gm. of sodium cacodylate. If to the finished titration phenolphthalein T. S. is added a volume of normal potassium hydroxide V. S. equal to the volume of normal acid used, should be required to produce a red color; $(CH_3)_2AsO.OH$ being a monobasic acid toward phenolphthalein.

Actions and Uses.—The action of sodium cacodylate is similar to other arsenic compounds, but it is much less toxic than the ordinary preparations of arsenic and is also less apt to cause undesirable side effects. This superiority is due to the slow liberation of the arsenic ion in the body.

The cacodylate is particularly recommended in obstinate psoriasis, pseudoleukemia, diabetes, anemia, chlorosis, tuberculosis, malarial cachexia, etc.

Dosage.—0.025 to 0.12 Gm. (½ to 2 grains) in pills, hypodermically or by enema.

SODIUM CINNAMATE.

SODII CINNAMAS. SODIUM PHENYLACRYLATE.

Sodium cinnamate, $C_6H_5.CH:CH.COONa = NaC_9H_7O_2$, is the sodium salt of β-phenyl-acrylic (benzene-propenoic) acid, $C_6H_5CH:CH.COOH$.

Sodium cinnamate may be prepared by saturating a hot aqueous solution of sodium carbonate with cinnamic acid, evaporating and crystallizing. Cinnamic acid is obtained from balsam of tolu or may be produced synthetically by heating together benzaldehyde, sodium acetate, and acetic anhydride. By the latter method of preparation a purer product is produced which it is claimed is free from any by-effects of the acid from natural sources.

Sodium cinnamate is a white, crystalline powder, soluble in water, 1 part in 20, the solution being faintly alkaline. On boiling the alkalinity becomes stronger on account of the decomposition of the cinnamic acid forming sodium carbonate. Solution of sodium cinnamate (1 to 25) yields on the addition of ferric chloride, a yellow precipitate. On adding it to potassium permanganate solution, the red color of the permanganate is destroyed and the odor of benzaldehyde developed. If a solution of sodium cinnamate is treated with dilute sulphuric acid, a precipitate of cinnamic acid appears, which after purification should melt at 133° C. (271.4° F.).

It is incompatible with acids and with oxidizing agents, e. g., potassium permanganate.

Actions and Uses.—Balsam of Peru, cinnamic acid and sodium cinnamate are recommended by Landerer for the treatment of phthisis, the drugs being injected intravenously under strict aseptic precautions. The effect is referred by him to an inflammatory reaction, localized about the tuberculous foci and leading to cicatrizations. He records very favorable results in well-selected early cases, and other clinicians have also reported some successes, although the treatment fails very often. The synthetic cinnamate is preferred on account of its purity.

Dosage.—0.001 Gm. (1/60 grain), gradually increased to 0.02 Gm. (1/3 grain), in 1 to 5 per cent. solution, injected intravenously thrice weekly for long periods (3 to 18 months).

(*To be continued.*)

Naming of Carbon Compounds.—Diatomic: Alcohols and phenols containing two hydroxyl groups, diols, are said to be diatomic. Diazo: This is a prefix indicating the group N:N(di + azo) thus $C_6H_5N:N.Cl$ is diazobenzene chlorid.—*Pharm. Rev.*, August, 1906.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

103 DEARBORN AVENUE . . . . CHICAGO, ILL.

Cable Address . . . "Medic, Chicago"

Subscription price.....Five dollars per annum in advance

[*For other information see second page following reading matter.*]

SATURDAY, NOVEMBER 24, 1906.

THE INTESTINAL ORIGIN OF PULMONARY TUBERCULOSIS.

The extensive observations on the relation of pulmonary tuberculosis to the absorption of infective material from the intestine, which followed Koch's remarks on the relation between the human and bovine forms of the disease, have led to some modification of our ideas regarding methods of infection in phthisis. As is customary when attention is directed to one aspect of a question, some observers have advanced extreme views and, as usual, there is danger that these views will not be critically examined, but will be too widely accepted. That healthy skepticism which is so valuable an asset in the mental make-up of the scientific observer is often sadly lacking in the average physician.

About a year ago two pupils of Calmette, Vansteenberghe and Gryscz[1] published an article, which has since been widely quoted, and which recorded experiments tending to show that foreign particles taken into the intestinal canal, or injected into the peritoneum, passed in most instances into the lungs and the thoracic glands. The article gave the impression, confirmed by the protocols, that the lungs were the organs which received the great mass of the ingested particles. Although the article dealt with problems having a direct bearing on anthracosis, its indirect bearing on pulmonary tuberculosis was obvious, and it naturally led many to the conclusion that pulmonary tuberculosis might be, in a large percentage of instances, primarily an affection of the alimentary rather than of the respiratory tract.

These authors, and those who quoted their work, either ignored or overlooked the fact that similar observations, done on a larger scale and, we think, it can be fairly stated with greater care, had been carried on years previously, and had led to entirely different conclusions. In the early discussions on the origin of anthracosis reference may be found to the work of such men as Arnold, Muscatello, Ponfick, Fleiner and a number of other equally well-known observers. The results of the numerous investigations carried on at this time, the latest of them twenty years ago, were in almost every instance opposed to the results of Calmette's pupils.

Since the appearance of the work of Vansteenberghe and Grysez the subject has been retested by Aschoff and recently by Schultze[2] and others with the result that the careful observations of Arnold, made twenty years ago, are substantially confirmed. It is shown that particles taken into the intestine do not lodge by preference in the lungs, though a certain small percentage of them invade these organs. It has further been made apparent that the technic of many of the ingestion experiments has been faulty, and that it is a matter of great difficulty to introduce particles into the intestinal canal from above and to avoid contamination of the air passages, even when a sound is used.

We must conclude from the available evidence before us at present that experimental work strongly favors the view that the infection in pulmonary tuberculosis takes place, in the vast majority of instances, through the respiratory and not the alimentary tract. For the present we must continue to assume that inhalation tuberculosis is the common form of pulmonary tuberculosis, and we must continue to take the precautions against its spread which experience has suggested and which practice has shown to be distinctly of value. This view does not, of course, imply that intestinal infection with the tubercle bacillus may not lead to pulmonary tuberculosis. There is good evidence that it occasionally does, but there is a wide difference between the view that pulmonary tuberculosis is an occasional sequence of intestinal infection, and the belief that it is commonly of intestinal origin. The latter view, in the light of present knowledge, is untenable.

1. Annales de l'Institut Pasteur, xix, No. 12. See editorial in THE JOURNAL, p. 1100, and abstract, page 1600.

2. Zeitschrift für Tuberculose, 1906, ix, 425.

PREVENTION OF CANCER.

In the fight against preventable diseases there has gradually come a time in the history of each one which has been systematically attacked, when a general and concentrated effort has been made to stamp it out. The crusade against tuberculosis may be cited as an example.

Keetley[1] has recently suggested that the time has arrived when the prevention of cancer must be regarded as a practical problem ripe for solution. In this connection numerous precautionary measures are suggested, some of them eminently practical, others somewhat chimerical. All are based on the assumption that cancer is a parasitic disease. Among the practical suggestions that Keetley makes, the care of the mouth and teeth, the destruction of dressings from ulcerated malignant growths, the healing, when possible, of chronic non-malignant ulcers, and the excision of doubtful tumors are all worthy of attention. Other suggestions, as the sterilization of food, abstinence from alcohol, tobacco and meat, and avoidance of milk, are, we fear, not practicable.

Even though cancer is not proved to be parasitic, and

1. Lancet, Oct. 13, 1906, p. 993, Abstracted in THE JOURNAL, Nov. 10, 1906, p. 1599.

hence contagious, it will do no harm to regard it as such if this leads to greater precautions in cancer cases. Something very definite as to its etiology will have to be demonstrated, however, before physicians can be persuaded to advise their patients to sterilize their food, to avoid meat and milk, and to abstain from stimulants of any kind. We have as yet little or no direct evidence to connect cancer with food, and until we have it is undesirable to remove from the dietary such staples as the author suggests.

While we regard many of Keetley's suggestions as practical, we would suggest that the extension of the plan of action suggested by the Committee on Cancer of the Uterus at the last session of the Association affords the best means to the profession in this country of combating this terrible and fatal disease. Some forms of cancer come very close to the uterine variety as causes of death, and it seems to us eminently desirable that experts in the various forms of cancer be delegated to draw up suggestions for plans of campaign against each form. As in tuberculosis, so in cancer, the education of the public is our most important weapon in the fight, and education in the early manifestations of the disease is the great desideratum.

NIGHT WORKING.

About a year ago, when it was announced that an all-night bank was about to be opened in one of the large American cities we deprecated the fact because it seemed to be an entering wedge for the splitting off of further time from the hours of rest which this generation seems to consider so valueless but which physicians are convinced is almost the most precious part of modern life. We suggested then that further commercial developments along the same line might be looked for and already the little prophecy is proving true.

In London an important department store now keeps a sufficient staff of clerks on duty all night so as to take orders with the assurance that the goods will be delivered early next morning. It is understood that some of the important commercial institutions in this country have the establishment of a similar department under consideration. There seems no doubt that the hours of rest are to be further invaded in large cities and that the candle is to be burned at both ends not alone by alternation of business and pleasure by day and by night, but also by business invasion during the hours formerly considered inviolate to recuperation.

A certain number of workers at night seem to be absolutely necessary in modern life. Those engaged in the various protective departments and in transportation must invert the usual physiologic cycle and do their sleeping as best they may during the daylight hours. It is well known, however, that such persons present, as a rule, a marked lack of resistive vitality to disease which does not encourage an enlargement of this class of workers.

The present announced developments in city commerce are likely to lead to a large increase in the number of these night workers, and it is doubtful whether pressure by those who are interested in public hygiene will be powerful enough to curb this tendency. Not only will night work prove a source of no little detriment to the health of many workers, but the responsibilities thus crowded on proprietors, who can not feel entirely free even during the night, will add greatly to the neurotic ills, because of the increased nervous strain.

THE RESPONSIBILITIES OF THE PROFESSION.

It is noteworthy that physicians realize as never before the benefits of organization, not only to individual members, but also to the medical profession in its complex relations to the general public. While practically all of the states of the Union have taken final action and have adopted the "essentials to uniformity" of organization, the work has not as yet been completed. In this direction, the results already accomplished by Dr. J. N. McCormack are worthy of the highest commendation. Moreover, there are at present to be found scattered throughout the length and breadth of our land many volunteers who have taken up the work with zest and earnestness.

The beneficent influences of organization, Dr. J. M. Anders[1] of Philadelphia states, are easy of explanation, and among the most obvious stands its power to stimulate men to useful tasks. It is undeniably true that the major portion of important and far-reaching constructive work by members of the medical profession is performed under the stimulus of an organized society. Again, the association of men together leads to the establishment of relations which play no minor part in their mutual advancement. To belong to the county medical society, then, is a necessity at the present day, if the physician would take advantage of the principal means at his command to advance himself in the profession. Organization means progress, not alone to the individual member, but to the profession, for by organization the profession gains added weight, influence, dignity and honor.

Unquestionably, the county medical societies should and are coming to appreciate their advisory capacity in matters that relate to the physical and moral welfare of the community. Men should be prepared to take up seriously the consideration of the medical service to be maintained and improved; they should be thoroughly acquainted with their rights, privileges and power for safeguarding the most vital interests affecting the well-being of the community.

In regard to the question of promoting the general good, Dr. Anders declares that the medical profession had scarcely kept pace with the march of civilization.

1. In his address on retiring from the presidency of the Philadelphia County Medical Society.

The county medical society should aim to procure suitable municipal and state legislative enactments, to secure ample and appropriate accommodations for the consumptive and the insane poor, and to remove the dense clouds of ignorance which so effectually retard the progress of state medicine and other branches of professional work. It is especially in the matter of public instruction and enlightenment that the medical profession as an organized body fails to meet its true responsibility.

PURE MILK AND INFANT MORTALITY.

A mother having with tears told Dr. Osler that it had pleased Providence to take her baby from her, he responded that it was unfair to blame Providence, who had had nothing at all to do with the matter, and said: "It was bad milk that killed your baby." Of late years the mortality of infancy and early childhood has been decidedly diminished, at least in New York. In that city in 1881 the death rate from diarrheal diseases among children under 5 was 33.3 to the 1,000; in 1905 it was 14.9 to the 1,000. In the latter year, during the three months following June 10, the mortality from the same cause and under the same age limit was 4,086; this year in the corresponding period the deaths were 3,662. Unquestionably we must thank "cleaner milk" for the saving in 1905 of many, if not all, of these 20 infant lives out of 1,000 that would have been lost in 1881, and of the 10 per cent. reduction of infant mortality in the heated term of 1906 over that of the same period in 1905. And in this estimate we must not fail to consider the enormous amount of illness and distress not ending fatally that was obviated by the use of wholesome milk. Practically all diarrheal diseases, so fatal as they are to infancy, are caused by impure milk. Absolutely pure, clean milk is no doubt unattainable, especially for the very poor. These qualities, however, are being decidedly approximated, thanks to health department and medical society activities, to the education of the poor in rational methods of infant feeding and to the combating of inordinate greed on the part of some dealers. We say "some" dealers; for human nature, among them, as in all other walks of life, is well intentioned. In most cases all that has been necessary has been to prove to the dealers that clean milk pays better than dirty milk. And the few who are unprincipled are finding that it does not pay at all when any sunrise in the metropolis there are thirty-one health inspectors "pouring into the sewers death and disease that a few years ago would have been sold and used as children's food."

YELLOW FEVER IN CUBA.

The reappearance of yellow fever in Havana, together with the recent political troubles there, is an unfortunate augury for what may happen if the island is to be left entirely to be self-governed. According to the New Orleans *Picayune's* Havana correspondent, the appropriations for health purposes were remorselessly cut in the Cuban congress to an extent that practically destroyed the usefulness of the department. If Cuba is to be a good neighbor, the provision of the Platt amendment which requires due attention to sanitation, should be and must be observed. Havana is the starting point, apparently, for Cuban yellow fever, but it is easy for it to persist in remoter localities unknown to the more active health authorities of the city, and these also should be looked after. It is also stated by the *Picayune's* correspondent that the practice of appointing unfitted persons to offices for political reasons was extended in Cuba to the health department and that as a result a number of inefficient employés used up the appropriations without due return of service. Of course, these evils will be remedied during the American occupation. The problem is not at present so serious a one as Dr. Gorgas had to meet, and he demonstrated that there is no necessity for Havana to be a radiating focus of pestilence such as it was in former years. There should be some adequate guarantee, however, against the possibility of the old evils when the Cubans are again left to their own devices.

MEDICAL AND SPIRITUAL CO-OPERATION IN RELIGIO-NEUROTIC CASES.

A Boston clergyman, it is reported, has recently asked the assistance of a distinguished physician to aid him in the treatment or management of certain cases. He has recognized that there are many coming to him for whom relief can be obtained by medical rather than by spiritual advice. He, therefore, proposes to form a class for such persons which will be in charge of the physician and others, who will follow out the ideas—in a modified form—of Professor Dubois as published in his work on "Psychic Treatment of Nervous Diseases." The benefit of such a plan is beyond question in some cases, but it will require the most judicious cooperation between the physician and the spiritual director. There is a diseased sort of religion or neurasthenic pietism to which churchly methods in one form or another appeal, and for which a judicious medical adviser is perhaps occasionally the best prescription. Religion is always the best solace in disease, even if it is sometimes morbidly modified. On the other hand, speaking medically, ill health or physical deprivation in one way or another may be the most powerful suggestive treatment for inducing spiritual welfare. There are some devils that require fasting as well as prayer to cast them out. Bunyan was one of these neurotics in his early life, and perhaps, in part, it is to this that we owe his unequalled allegory which covers almost every possible phase of Christian experience. As regards the vast number of self-centered neurasthenics who take to religion in their morbid way, the co-operation of a religious and scientific physician could be of the greatest value to a pastor. Even a free thinker like Dubois claims that he could co-operate, in feeling at least, with pastors of all denominations in the desire to utilize religious faith in the treatment of psychoneuroses. The proposition of the Boston minister should be suggestive to others. It is possible that some have already tried it. Properly carried out and with due individual study, such as is said to be proposed, it may do much good.

THE PUBLIC HEALTH DEFENSE LEAGUE.

In another column will be found a report of a conference of public-spirited men and women—both medical and lay—held in New York last week, to organize a national society for the protection of the public against quackery in all its forms. The conference was certainly a representative one, for not only was the medical profession well represented, but also various sectarian religious bodies, as well as temperance organizations. The conference resulted in the organization of a body to be known as the Public Health Defense League. This movement is the result of the active work of the Medical Society of the County of New York, through its attorney, Mr. Champe S. Andrews, against the fraudulent quacks in New York City. The success of the work of this society, by the way, shows that public opinion will back up the efforts for suppressing frauds, even as regards advertising quacks. The New York *Herald* comments very favorably on the organization of such a league. We quote the following from the editorial: "All 'patent-medicine' manufacturers should be compelled by law to label their products and give not only the ingredients but their proportions, so at least that each venturous experimenter can know what he is taking. No secret should be withheld when health or life is at stake. No mere trade interests should balance themselves against human suffering and human needs. The medical profession has been keenly alive to the necessity of reform in this matter and refuses to use remedies the composition of which is not given. Even the various medical journals which shamefully advertise such nostrums for purely business reasons, thus doing a double wrong in attempting to deceive the profession and the public, are now being called to the bar of medical opinion for violation of the fundamental principles of high medical ethics. The American Medical Association, with all praise be it said, is using its powerful influence through its JOURNAL to remedy conditions in this regard and to give the true sentiment of the profession in the premises. There is also great promise of reform, not only in this, but in other directions, when the legislative committee of this learned body openly joins its endeavors to those of the national league and valiantly and unreservedly commits the medical profession of the country to the praiseworthy movement in question." While originally it was the intention, evidently, to limit the work of the proposed organization to the suppression of quack doctors, it seems to have taken—and wisely—a broader view of affairs, and will take a hand against adulterated foodstuffs, fraudulent "patent medicines," etc. As we understand it, it is proposed to have branches of the Public Health Defense League in every state, and it is to be hoped that the profession will be found ready to coöperate and assist in the splendid work. It is well that the inception of such an organization comes from the public and not from the medical profession. While the latter knows the need of such work as this league proposes to do, yet the public itself has become so enlightened through the efforts of *Collier's Weekly* and other lay journals that it is ready to assist in checking the great American fraud, not only as it applies to "patent medicines," but to quackery and fraud in general.

Medical News

DISTRICT OF COLUMBIA.

Open-Air Ward for Tuberculosis.—The open-air treatment for consumptives will be the important feature of the Municipal Hospital, Washington, which is to be located near the District line on a 30-acre site of pine land. Dr. George M. Kober plans a roof garden covering the entire top of the building, open on three sides and protected on the north by a brick wall with ample windows for the admission of fresh air and sunshine. The buildings are all to face the south, and the pavilion will be large enough to accommodate 60 patients.

Personal.—The following appointments have been made in the Medical Department of the George Washington University: Professor of nervous diseases and clinical director of the Governmental Hospital for the Insane, Dr. Charles H. Clark; professor of physiology, Shepherd I. Franz, Ph.D., pathologic physiologist at the McLean Hospital, Waverley, Mass.——Dr. J. Ford Thompson, Washington, was taken seriously ill with hemorrhage of the stomach while in London, November 5, and operation was performed November 10. He is reported now to be improving and his condition is considered hopeful.

ILLINOIS.

State Board Laboratories Removed.—The laboratories of the State Board of Health, Springfield, have been removed to larger quarters at 228 East Capitol Avenue.

Unlawful Practitioners Fined.—W. R. Grady, charged with practicing medicine without a license at Rushville, was fined $100 and costs, November 1.——J. F. Alderson, an osteopath of Urbana, was fined $100 for practicing medicine without a license.

District Society Meeting.—The Fifth District Medical Society held a meeting in Pekin, November 8, at which Dr. Eugene F. Kelchner, Delavan, was elected president, and Dr. Carl G. Muehlmann, Pekin, secretary-treasurer. The mayor of Pekin delivered the address of welcome, which was responded to by Dr. J. Whitefield Smith, Bloomington, councilor for the district.

Hospital Notes.—By the will of the late Joseph F. Glidden, De Kalb, after a number of bequests, the residue of the property is devised to the daughter of the deceased, and within five years after her death the trustees appointed are directed to found and build a hospital in De Kalb, to cost $22,000, to be known as the Joseph F. Glidden Hospital.——The donations to Blessing Hospital, Quincy, from hospital day amounted to $2,674.

Personal.—Dr. Charles H. Mills, Champaign, has completed half a century of practice in that city.——Dr. Joseph Studer was the guest of honor at St. Francis' Hospital, Peoria, October 29, in celebration of the fiftieth anniversary of his connection with the hospital.——Dr. Austin M. Lindley, Urbana, fell from the haymow of his barn, November 11, and sprained his arm.——Dr. Arch G. Servoss has been appointed local surgeon at Havana for the Illinois Central Railroad, vice Dr. P. L. Dieffenbacher, deceased.

Æsculapian Society Meeting.—The Æsculapian Society of the Wabash Valley held its sixtieth annual meeting in Paris, October 25. The following officers were elected: President, Dr. Charles B. Johnson, Champaign; vice-president, Dr. Finis E. Bell, Mattoon; secretary-treasurer, Dr. Herbert N. Rafferty, Robinson (re-elected), and censors, Drs. John T. Montgomery, Charleston; Cyrus E. Price, Eaton; Mark Rowe, Paris; W. E. Belle, Terre Haute, Ind., and Thomas E. Walton, Danville. Champaign was chosen as the place for the semi-annual meeting in May, 1907.

Communicable Diseases.—A case of smallpox was reported in Oak Park, November 14.——On account of the prevalence of diphtheria, the public schools, Sunday schools and churches of Fairfield were ordered closed, November 11.——The health commissioner of Moline reports that there are at present in that city 19 cases of scarlet fever, 4 cases of diphtheria and one case of smallpox.——Diphtheria is reported to be epidemic in South Peoria. The Garfield school has been placed under guard to prevent the spread of the disease.——Scarlet fever is reported in Oakland, and the schools in that city have been closed.——At Viola 4 cases of smallpox are reported.

Chicago.

Personal.—Dr. T. C. Williams, fellow in zoology in the University of Chicago, has been elected professor of biology at Morningside College, Sioux City, Iowa.

Provident Hospital Report.—The fifteenth annual report of Provident Hospital shows that during the year 1,216 patients

were treated in the hospital and nearly 5,000 in the dispensary. The training school graduated a class of nine during the year.

Faith Healer Fined.—A. W. Birkholz, who advertised to heal all diseases without the use of medicine, was prosecuted by the Illinois State Board of Health, and on November 14 was fined $100 and costs, by Justice Underwood, for practicing medicine without a license.

Home for Nurses Open.—The legal transfer of the new home for nurses, Wesley Hospital, erected at a cost of $30,000, was made November 3, when the trustees formally accepted the building from the donor, N. W. Harris. The building has been occupied since September.

Alumni Association Meeting.—The Cook County Hospital Alumni Association held its fortieth annual reunion November 15. Dr. Nicholas Senn was elected president, and Dr. Frederick A. Besley, secretary, and addresses were made by Drs. Nils T. Quales, the first of the internes, Drs. Senn, Ingals, Billings, Bacon and others.

Coroner's Record for October.—The report of the coroner of Cook County, issued November 1, shows an increase in the number of deaths for October over the preceding month, the respective numbers being 351 and 308. There were 46 suicides in October, as compared with 36 in September; of these 18 died from gunshot wounds, 9 from poison and 10 from asphyxiation.

Bequests.—By the will of the late Mrs. Lucretia J. Tilton $6,000 is devised to the Elliot City Hospital, Keene, N. H., and after the payment of other bequests the remainder of the estate, which is estimated at more than $50,000, is to be divided among the five legatees, in which the Visiting Nurse Association of Chicago and the Passavant Memorial Hospital are included.

Hospital Order Passed.—At a meeting of the city council, November 12, Alderman Young presented an ordinance which was passed, prohibiting the removal of the Chicago Lying-in Hospital from its present location to a site facing Washington Park. The ordinance provides that before a hospital can be opened in any neighborhood frontage consents from the surrounding property owners must be secured. This ordinance also affects the McCormick Memorial Hospital for Infectious Diseases.

Many Deaths for the Week.—During the week ended November 17 there were 584 deaths, 70 more than for the preceding week and 74 more than for the corresponding week of 1905. This is equivalent to an annual death rate per 1,000 of 14.86. The excess in deaths was almost entirely among those beyond middle life, and especially in individuals over 60 years of age, the deaths in this age period amounting to 22.09 per cent. of the total mortality, or an excess of more than 12 per cent. over the November average. The death causes showing greatest increase were: Heart disease, 22; pneumonia, 16; nephritis and scarlet fever, each 10; bronchitis and cancer, each 8, and cerebral hemorrhage and whooping-cough. Those showing a decrease were: Nervous diseases, 10; consumption, 6; convulsions, 5, and acute intestinal diseases, 4. The chief causes of death were: Pneumonia, 84; violence (including suicide), 39; cancer and acute intestinal diseases, each 30; diphtheria, 19; scarlet fever, 16, and typhoid fever, 12.

INDIANA.

Hospital Incorporated.—The State College Hospital has been incorporated in Indianapolis by Drs. Simon P. Scherer, David L. Kahn and Charles R. Sowder.

Epileptic Village Nearing Completion.—Work on the state epileptic village, New Castle, is now completed and the buildings are ready for the interior finish.

Removal.—The offices of the *Indiana Medical Journal* have been moved from the Willoughby Building to the Indiana Medical College, Medical Department of Purdue University.

Malpractice Suit Ended.—In the case of Joseph Wardell against Dr. Burnham C. Dale, Marion, in which $5,000 was claimed for alleged malpractice, tried October 30, the case was withrawn on motion of the attorney for the plaintiff.

State Board May Not Condemn Buildings.—Denying the power of the State Board of Health to condemn public school buildings, and holding that the board has no power to enforce condemnation, J. B. Kenner, sitting as special judge in the Huntington Circuit Court, ordered a writ of mandamus to issue against Edward Fisher, trustee of Polk Township and his advisory board. The writ provides that certain repairs shall be made to the buildings at once and that the school shall be open.

Society Meetings.—The Union District Medical Society of Ohio and Indiana, at its meeting in Hamilton, October 25 and 26, elected Dr. Charles S. Hougland, Milroy, president, and Dr. Franklin T. Dubois, Liberty, secretary. The next meeting of the association will be held in Connersville in April, 1907.—— The meeting of the Thirteenth District Medical Society was held at Warsaw, October 30. Dr. Angus C. McDonald, Warsaw, was elected president for the coming year and Goshen was the place selected for the next semiannual meeting.

Personal.—Dr. Maurice I. Rosenthal, Fort Wayne, is seriously ill and is taking an extended trip to the West.——Dr. John W. Morr, Albion, has been elected to Congress.——Dr. Alpheus Toms, Goshen, formerly a practitioner of Scott, La Grange County, had a narrow escape from death by gas asphyxiation at his home in Goshen, November 10.——Dr. Oliver P. Terry has been appointed instructor in physiology and anatomy in the Department of Biology, Purdue University.——On account of septicemia, Dr. Arthur K. Hammond, Fort Wayne, was obliged to have the index finger of his left hand amputated, November 6.

Diseases and Death.—During October tonsillitis was the most prevalent disease, followed in order of prevalence by typhoid fever, rheumatism, bronchitis, diphtheria, scarlet fever, diarrhea and pneumonia. There were 118 cases of smallpox reported from nine counties, with 3 deaths. Typhoid fever was very prevalent, 732 cases being reported from 73 counties, with 150 deaths. Diphtheria and scarlet fever were reported in many places in epidemic form. The deaths from diphtheria numbered 64, and those from scarlet fever 9. The deaths reported during October were 2,847, equivalent to an annual death rate per 1,000 of 12.6.

Trustees to Appeal to Legislature.—After the city council of Richmond had passed an ordinance appropriating $6,000 to the Reed Memorial Hospital, over the veto of the mayor, that official on November 7 ordered the city controller not to issue the warrant, basing his action on the claim that the action is illegal. The trustees, believing that the city has a right to appropriate money for the hospital, will make no effort through the courts to gain possession of the funds, but will ask the next legislature to enact a law which will give the city the right to extend financial aid to hospitals designed for the public although not under the direct care of the municipality.

IOWA.

Practitioners' Club Organized.—Thirty physicians of Cedar Rapids met in the Commercial Club rooms October 29 and organized "The Medical Practitioners' Club of Cedar Rapids."

Communicable Diseases.—Typhoid fever is reported to be in and around Marne.——Diphtheria in malignant form is reported at Jefferson. Four deaths have occurred, the schools have been ordered closed and public meetings discontinued.——Spirit Lake is threatened with a serious epidemic of scarlet fever.

State Laboratory Report.—Dr. Henry Albert, director of the Iowa State Board of Health hygienic laboratories, Iowa City, reports that during October 915 examinations were made in the institute. On account of pressure of work an auxiliary laboratory has been established in Mason City in charge of Drs. Starr and Albert.

Supreme Court Affirms Conviction.—In the case of J. C. Wilhite, Webster County, convicted of practicing medicine without a license, the Supreme Court on November 14 affirmed the decision of the lower court. The defendant styled himself a doctor of "neurology and ophthalmology," but the Supreme Court in its decision is reported to have classed him as a "charlatan and impostor."

Rummage Sale Interdicted.—Dr. Grant J. Ross, city physician of Sioux City, has given orders to stop any rummage sales projected by church societies and charitable institutions of the city, unless the second-hand clothing contributed for such sales first be disinfected. Dr. Ross says that several cases of contagious disease in Sioux City have been traced directly to goods purchased in rummage sales.

Personal.—Dr. Walter L. Bierring, Iowa City, underwent amputation of the right leg, November 5, on account of an epithelioma recurring from an old scar.——Dr. Grant has been appointed lecturer on pediatrics in the State University of Iowa College of Medicine, Iowa City, vice Dr. George E. Decker, Davenport, resigned, who is spending a year in Europe.——Dr Belle Conrad, Webster City, was thrown from her carriage, November 5, and seriously injured.——Dr. Joseph A. Valenta has been re-elected health officer of Iowa City.——Dr. William P. Slatterly, Dubuque, has been appointed surgeon of the Illinois Central Railway.——Dr. Ernest J. Waddey has been appointed local surgeon of the Illinois Central and Dr. Earl B. Rogers for the Rock Island System at Waterloo.

KENTUCKY.

Typhoid Fever.—Typhoid fever is said to be epidemic in the neighborhood of Utica, near Owensboro.

Physician Acquitted.—Dr. Chester M. Beach, charged with the murder of H. F. Lumer, at Esculapian Springs, in August, 1905, was acquitted, as the evidence indicated that the defendant shot Lumer in self defense.

Mission Medical Department.—A medical department has been added to the Holcomb mission, Louisville, by Mrs. E. M. Cardwell. Dr. Stephen C. Quimby will have regular office hours at the mission from 4 to 5 each day.

Endorse Issuance of Bonds.—The Jefferson County Medical Society, at its last meeting, voted to endorse the issuance of $4,000,000 in bonds by the city of Louisville for the purpose of building a comprehensive system of sewers in that city.

Illegal Practitioners Fined.—The State Board of Health has prosecuted and is reported to have obtained a verdict with a fine of $50 against John A. Taff, proprietor of the Louisville Sanitarium, an institution operated for the "cure of locomotor ataxia, paralysis and kindred diseases." The defendant entered a plea of not guilty. The prosecution was instituted by Drs. Joseph M. Mathews, William Baily and Chester Mayer, executive committee of the State Board of Health. The prosecution introduced testimony to show that medical prescriptions, signed by Taff, had been filled at a neighboring drug store and that medicine had been injected by Taff into the intestine of a patient who died several days later. The defendant is said to have visited everyone in Louisville whom he could hear of, as suffering from locomotor ataxia and paralysis in his endeavor to have them take treatment with him. The conviction of the defendant was based principally on his own statement that he had often diagnosed the cases of patients and referred prescriptions of his making to the staff physicians.

MARYLAND.

Annual Meeting.—The annual meeting of the Frederick County Medical Society was held in Frederick, November 14. Dr. Jesse W. Downey, New Market, was elected president; Drs. W. Crawford Johnson, Frederick, and Joseph H. Leib, Mount Pleasant, vice-presidents; Dr. Ira J. McCurdy, Frederick, secretary; Dr. Wilson A. Long, Frederick, treasurer; Dr. Franklin B. Smith, Frederick, delegate to the Medical and Chirurgical Faculty of Maryland, and Drs. Charles F. Goodell and Franklin B. Smith, Frederick, and William H. Wagner, Woodsboro, censors.

Change in Medical Staff.—The directors of the Western Maryland Hospital, Cumberland, have decided to establish a medical and surgical staff in lieu of a resident physician. The active medical staff is composed of Drs. Thomas B. McDonald, Edgar T. Duke, Edward H. White and Charles L. Owens, who will each serve terms of three months in alternation. The active surgical staff is composed of Drs. James M. Spear and Arthur H. Hawkins, surgeons-in-charge, with Drs. William W. Wiley, Frederick W. Fochtman and Wyllys Hodges, associates. Dr. Charlotte B. Gardner was appointed pathologist, and Drs. Emmett L. Jones and Robert Y. Fechtig were appointed ophthalmologists and otologists.

Baltimore.

Medical Club Election.—The Baltimore Medical Club at its annual meeting, October 25, elected Dr. Charles A. O'Donovan, president; Dr. Eugene H. Hayward, vice-president; Dr. Edward L. Whitney, secretary, and Dr. J. C. C. Botts, treasurer.

Personal.—Dr. Henry M. Hurd, superintendent of the Johns Hopkins Hospital, left for his year's vacation November 16. He goes first to Havana, thence to Mexico, and from there to Southern California and Europe.——Dr. William B. Perry was thrown from his automobile in a collision with a street car, November 15, and severely hurt about the head.

Discuss Nostrums.—A joint meeting of the Maryland Pharmaceutical Society and the Medical and Chirurgical Faculty of Maryland was held November 16, to discuss "Nostrums and Proprietary Remedies." It was addressed by Drs. Harvey W. Wiley, Washington, and C. Urban Smith, Baltimore, representing physicians, and by Messrs. John B. Thomas and Henry P. Hynson, representing the pharmacists. Statistics were given showing that more than 50 per cent. of physicians use their remedies habitually. An object lesson was afforded by a large number of bottles containing drugs put up according to the National Formulary in the department of pharmacy of the University of Maryland. The discussion which followed showed great ignorance on the part of physicians of the National Formulary, and much surprise was shown when Prof. Charles Caspari stated that there was not a proprietary remedy which could not be duplicated by an official formula in the National Formulary. The preparations shown will be kept on exhibition at the rooms of the Medical and Chirurgical Faculty for the enlightenment and guidance of medical men. Many compliments were paid THE JOURNAL for its efforts against secret remedies. An excellent proposal was made for a therapeutic society composed of pharmacists and physicians. Not only would a better feeling be engendered between the two closely allied and mutually dependent professions, but each could gain help and knowledge from the other.

MASSACHUSETTS.

Rabies Reappears.—Rabies has appeared in Boston again, this time in Jamaica Plains. So far this year 29 rabid dogs have been reported within the city limits.

Medical Inspection Urged.—The school committee of Boston has been strongly urged to extend the work of medical inspection of the schools and gave a public hearing on the matter. Many physicians attended and urged especially the need of the assistance of nurses, as in New York City, and the importance of strict rules with regard to tuberculosis.

Validity of Vaccination Certificates.—The town council of Rockland has tried to establish the ruling that certificates for school children, stating that they are unfit subjects for vaccination, are valid for an indefinite period. As this controverts the decision of the attorney-general of the state that school authorities need not accept such certificates at all if they suspect that they have been issued for insufficient cause, it is probable that the courts may be called on to decide the matter.

Anti-Tuberculosis Association's Work.—The Cambridge Anti-Tuberculosis Association during the past year, its fourth, has aided 30 patients in securing board at the Rutland Sanatorium; 15 in securing board in the country; 25 in securing admission to various hospitals; has provided 25 with special nourishment at their homes; assisted 7 in returning to other countries, and has had 27 under the care of its own physicians. Of the 35 patients whom the society has sent to Rutland during the past four years 68 per cent. have been returned to their normal places as wage-earners in the community. In all more than 300 people were helped during the past year.

MICHIGAN.

Medical Journals Consolidated.—Parke, Davis & Co. announce that the *Medical Age* and *Medicine* will be consolidated with the *Therapeutic Gazette*, Jan. 1, 1907.

Typhoid Fever.—Typhoid fever is reported to be epidemic in Lakewood, the logging headquarters of the Holt Lumber Company.——Three Oaks reports 24 new cases of typhoid fever, with 3 deaths.

Medical Inspection.—During October the medical inspectors of Detroit examined 3,682 children, of whom 357 were excluded on account of communicable diseases. During the month 34 new cases of diphtheria and 21 cases of scarlet fever were reported.

Personal.—Dr. Richard Leuschner, Mount Clemens, has gone to Europe.——Dr. Duncan A. Cameron, Alpena, has been elected physician of Alpena County, vice Dr. Samuel T. Bell. ——Dr. James B. Wallace, Saline, has been elected coroner of Washtenaw County.——Dr. Robert Walton, Portland, who is about to leave for New Mexico, was presented with a silk hat and suit case by his friends in Portland, October 31.——Dr. Jabez Perkins, Owosso, celebrated his eighty-sixth birthday, October 26.

Ill and Injured.—Dr. Edwin Eaton, Hudson, has gone to Ann Arbor to undergo an operation at the University Hospital.—— Dr. Roch R. Gareau, Detroit, who was injured by the crank of his automobile, three months ago, is still in a critical condition.——Dr. Enos C. Kinsman, Saginaw, who has been ill with pneumonia and appendicitis, is reported to be improving.—— Dr. Romeo H. Earle, Eloise, who has been ill with septicemia in a hospital in Detroit, is improving and has returned home. ——Dr. Alexander Thomson, Adair, who has been ill in the Port Huron Hospital with typhoid fever, is convalescent.—— Dr. DeWitt C. Howell, Onaway, was operated on in Detroit, November 3, and is reported to be recovering.

Tuberculosis Sanatorium.—The Onekama Heights Sanatorium was organized March last, under the auspices of the Manistee County Medical Society as a tent colony for tuberculosis. The institution is conducted on the self-supporting basis, but is semi-philanthropic. The following benevolent funds have been established, to which subscriptions are invited: Endowed or free bed fund; nominated bed fund; the building endowment fund; clinical research laboratory fund,

and the general endowment fund. The institution is under the medical care of Dr. W. E. Coates, formerly of Chicago. The association owns 85 acres of land, 75 of which are woodland and 15 farm land, one mile north of Onekama and Portage Lake Harbor of Refuge, and three miles east of Lake Michigan. The land is on the southern slope of a range of hills 350 feet above the lake.

MONTANA.

New Legislators.—The following physicians of Montana have been elected to the tenth general assembly: Dr. Willis H. Haviland, Butte, to the senate; Drs. George H. Barbour, Helena; Charles B. Miller, Helena (second term); Donald Campbell, Butte, and A. T. Leighton, Boulder, to the legislature.

Hopital Notes.—The Silver Block, Kalispell, has been leased by physicians of that city and will be converted into a hospital with 36 rooms.——Work on the hospital being erected in Lewistown by the Daughters of Jesus is progressing rapidly. Subscriptions covering the greater part of the estimated cost of $20,000 have already been made and the hospital will soon be completed.——It has been determined to open a union hospital in Butte in the near future. A building at Broadway and Columbia Street is reported to have been purchased at a cost of about $10 000, and the building, when fitted up, will accommodate about 40 patients.

NEW YORK.

Measles Epidemic.—A canvass of Suffern and Sloatsborough, Rockland County, shows that there are at present more than 200 cases of measles in these towns.

Insanity on the Increase.—The seventeenth annual report of the state commission in lunacy shows that the whole number of insane committed in public and private hospitals during the year was 27,406. The net increase in all institutions for the year was 545. The number discharged, including transfers, was 6,065. The entire number of deaths was 2,017.

Wants Tuberculosis Statistics.—Because of the fact that more deaths occur from tuberculosis than are reported to the health department, the health commissioner has sent out notices to all physicians of Buffalo calling attention to the city ordinance, which states that all cases of tuberculosis must be reported and that failure to report constituted a misdemeanor punishable by fine.

Too Few Institutions.—At a session of the State Board of Charities, which was held at Rochester, Dr. William L. Russell said that the state had not enough institutions for the care of the feeble-minded. There were at present 2,500 who need such institutional treatment and for whom no provision is made by the state. The enlargement of the institution at Rome was suggested as well as that at Newark. Places of retention pending examination are also needed, as it is still common to keep people in jails and lockups for days. Dr. Robert B. Lamb gave an address on "Mental Defect and Crime." He showed the fallacy of the comon belief that insanity was made a plea for the purpose of securing a shorter term of imprisonment, as this class of criminals were usually detained in hospitals for the insane longer than they would be in prison. Surgeon Thomas W. Salmon, U. S. P. H. and M.-H. Service, spoke on "The Relation of Immigration to the Prevalence of Insanity in New York State."

New York City.

Personal.—Dr. M. Boland, Long Island State Hospital, Brooklyn, has been appointed junior assistant physician to the Hudson River State Hospital, Poughkeepsie.——Dr. A. M. Skeen has been appointed assistant physician at the State Custodian Asylum, Rome.

New Hospital Opened.—The Jewish Hospital for Deformities and Joint Diseases, at 915 Madison Avenue, was formally opened November 4. The hospital is the outgrowth of a dispensary opened two years ago by Dr. Henry W. Frauenthal at Fiftieth Street and Lexington Avenue.

Bequests.—By the will of the late Mary L. Cassidy, who died October 14, bequests amounting to almost a million dollars were made to religious and charitable institutions. Among these are the Lying in Hospital, New York City, $86,000; the New York Home for Incurables, $86,000, and the New York Society for the Crippled, $153,670.

New Hospital Sunday Plan.—The board of trustees of the Hospital Saturday and Sunday Association announces that it has been authorized by two persons to say that they would duplicate all gifts above $100,000 to the extent of $5,000. Isaac Guggenheim has since anounced that he will duplicate all gifts above $105,000 to the extent of $5,000.

Academy Anniversary.—November 15 being the fifty-ninth anniversary of the Academy of Medicine, the usual discussion of a serious subject gave way to one of interest to the laity as is the custom on these occasions. Dr. Roswell Park of Buffalo gave a talk on "Medicine and Surgery in Classic Art and Satire," which was illustrated by more than one hundred lantern slides taken from the masters of art, both ancient and modern. The lecture was followed by a reception.

Board of Health Criticised.—The committee on supplies has made a report to the board of education criticising the board of health for performing surgical operations on public school children during the school session, as several riots have been caused in this way. A resolution was offered requesting the board of health to have such operations performed after school hours.

The New Water Supply.—The Nyack *Evening Sun* states that the new water supply of New York City will cost more than the estimated cost of the Panama canal. The new reservoir, situated in the Catskills, will be 12 miles long, 2 miles broad and of a uniform depth of 160 feet. Fifty billion gallons of water will be delivered daily, and there will be a gravity force sufficient to carry the water to the eighth story of buildings at the Battery.

Contagious Diseases.—There were reported to the sanitary bureau for the week ended November 10, 319 cases of tuberculosis, with 163 deaths; 290 cases of diphtheria, with 39 deaths; 138 cases of typhoid fever, with 20 deaths; 84 cases of scarlet fever, with 3 deaths; 57 cases of measles, with 2 deaths; 31 cases of whooping-cough, with 6 deaths; 10 cases of cerebrospinal meningitis, with 10 deaths, and 36 cases of varicella, making a total of 965 cases, with 243 deaths.

Will Keep Seaside Home Open.—At the fortieth annual meeting of St. John's Guild it was announced that the Seaside Home at New Dorp, Staten Island, with accommodations for 125 would be kept open during the winter as a home for convalescent women and children. During the summer a total of 38,392 women, children and babies were given outings by St. John's Guild. In addition to the $20,000 appropriated by the city, more than $60,000 was donated, mostly in small amounts.

Tuberculosis Congress.—The American International Tuberculosis Congress and the Medicolegal Society of New York held a joint meeting at the Hotel Astor November 15 and 16. A resolution was passed recommending the creation of a new cabinet office, that of "secretary" or "commissioner of public health," and it was further recommended that this officer should be given adequate authority and means to accomplish the desired ends in suppressing tuberculosis, and that where state boards of health exist authority should be given them to formulate and enforce a code of regulations for preventing the ravages of tuberculosis. The following officers were elected for the ensuing year: President, Dr. Clifford H. Irion, president of the State Board of Health of Louisiana; vice-presidents, Drs. George R. Tabor of the State Board of Health of Texas; Charles Wood Fassett, St. Joseph, Mo.; Francis T. B. Fest, Las Vegas, N. M.; William F. Drewry, Petersburg, Va.; James W. McDonald, Fairmont, W. Va.; and secretary and treasurer, Dr. Matthew M. Smith, Austin, Texas. A chairman was appointed in each state to form a committee to coöperate in agitation for state and municipal sanatoria for the treatment of tuberculosis.

NORTH CAROLINA.

To Raise Standard of Education.—Two measures of interest to the North Carolina profession will come up for action at the forthcoming session of the state legislature: First, the enlargement of the state hospitals for the insane until accommodations sufficient for the care of all the insane of the state is provided. At present there are said to be at least 2,000 uncared for except in jails and in county homes. Second, the matter of the entrance examinations of students for the study of medicine. The general average of rejections before the State Board of Medical Examiners ranges from 30 to 40 per cent. It has been urged by the board that almost all the individuals are men unfitted to enter the study of medicine because of deficient preliminary education. It is urged that with proper entrance examinations, the number of rejections could be decreased materially by having the poorly prepared student enter another department of study prior to matriculation in medicine. The faculties of the medical colleges are reported to be in favor of the measure of elevating the standards of requirements, and will coöperate in effecting this much-needed reform.

OHIO.

Trachoma in Toledo.—Trachoma is reported to be prevalent on the east side of Toledo, in a district inhabited chiefly by Sicilians and Hungarians.

Scarlet Fever.—Scarlet fever is reported to be epidemic in Marion township, but in mild form. The public school at Addison has been ordered closed on account of scarlet fever in the village.

State Board Reorganized.—The State Board of Health has been reorganized at Cincinnati by the election of Josiah Hartsell, Ph.D., Canton, as president and Dr. Charles O. Probst, Columbus, secretary.

Woman's Medical Club.—The Woman's Medical Club of Columbus, has been organized with Dr. Marinda E. Blackburn, president; Dr. Susannah L. Bryant, vice-president, and Dr. Ida M. Wilson, secretary-treasurer.

Medical Library Opened.—The addition to the Cleveland Medical Library, 222 Prospect Street, was opened with a reception October 27, at which Dr. Abraham Jacobi, New York City, delivered the principal address. The library at present possesses 15,000 volumes and has a capacity for 30,000.

Typhoid Fever.—At Kettlerville, near New Bremen, 9 cases of typhoid fever are reported.——Dr. Horton, Columbus, who was sent by the State Board of Health to investigate the typhoid fever outbreak at Kenton, reports that the city water and the water from private wells fail to show any contamination.——Minster is reported to have a typhoid fever epidemic with 60 cases and 20 deaths.

Campaign Against Irregulars.—The campaign of the Cleveland *News* against the irregular practitioners and "healers" is already showing results. Joseph, the "eye healer," who occupied a suite of rooms in the Pythian Temple, has disappeared on account of the publicity given his methods by the Cleveland *News*. He is said to have been driven out of Buffalo two years ago on account of a threatened sentence of imprisonment.

Diphtheria.—Diphtheria is reported to be on the increase in Cleveland.——An epidemic of diphtheria is feared at Piqua, where a death revealed two concealed cases of diphtheria.——Steubenville reports an epidemic of diphtheria.——During the week ended November 4, 74 new cases of diphtheria with 8 deaths were reported in Cleveland. This is said to be the largest number ever reported in the city.——Diphtheria is reported to be spreading in the village of Delhi, Home City and Fernbank.—The schools in Silverwood district have been ordered closed on account of diphtheria.

Personal.—Dr. William H. Emery, Toledo, has been appointed examiner for the East Side pension board.——Dr. W. Burnett Weaver, Cincinnati, has returned from Europe.——Dr. Odo E. Portman, Canton, returned from Europe October 16.——Dr. Robert B. Meek, Fremont, has been appointed jail physician, vice Dr. O. A. Hess, resigned.——Dr. George Stockton has been re-elected superintendent of the Columbus State Hospital.——Dr. Arthur G. Helmick, Gallipolis, has been appointed night physician at the state penitentiary, vice Dr. J. Garfield Alcorn.——Dr. A. Per Lee Pease, Massillon, expects to sail for Hawaii, Samoa and New Zealand, December 6.——Dr. James T. Hanson, superintendent of the Athens State Hospital, is reported to be seriously ill.

OKLAHOMA.

Hospital Notes.—The Shawnee Hospital Association has been incorporated with a capital stock of $25,000 by Drs. Joseph M. Trigg, F. L. Carson, Joseph R. Shive, John H. Scott and Walter G. Bradford.

Communicable Diseases.—Several cases of scarlet fever are reported among the school children of Ponca City.——Many children have been withdrawn from the schools of Kingfisher on account of the prevalence of diphtheria.——Chandler is reported to have an epidemic of diphtheria. Up to the present time 11 cases have been reported, and the county health officer has forbidden any public meetings to be held until the malady has run its course.

Control of Eleemosynary Institutions.—At a recent meeting of the Council of the Oklahoma State Medical Association, it was decided to attempt to secure a clause in the new constitution for the state which shall include certain ideas or principles set forth by the council. The principles advocated are that the control of all eleemosynary institutions in the state should be divorced from partisan politics; that members of the medical profession are better qualified to judge of the competency of those who should be in control of such institutions than are the ordinary state officials; that medical associations, both state and county, are non-partisan and free from political bias, and that the aggregate professional interest in the good conduct of such institutions would be the best guarantee of their patriotic action in recommending medical men for positions in such state institutions and on the State Board of Health and Board of Medical Examiners. The third suggestion is that the government of the eleemosynary institutions should be under the general supervision of a board of control, to be elected by the people, and that, while this board should have the appointment of physicians for the various positions, "such board should be confined to the appointment of physicians out of a given number of physicians duly recommended therefor by the Oklahoma State Medical Association, and that there should be a State Board of Health and a State Board of Medical Examiners, the members of both of which boards should be appointed by said board of control under similar recommendations from the Oklahoma State Medical Association, and that county boards of health should be appointed by, and under the control of, the State Board of Health." Physicians and others interested in seeing that the state institutions, well and humanely kept, are urged to use their influence on the members of the constitutional convention, to see that the principles outlined are adopted in the new constitution.

PENNSYLVANIA.

Personal.—Dr. Jacob L. Ziegler, Mount Joy, celebrated his eighty-fourth birthday November 17. Dr. Ziegler is said to be the oldest graduate of Jefferson Medical College and has been practicing medicine 63 years.

Illegal Practitioner Yields.—M. S. Kuhn, who has been practicing medicine for several years in Mount Pleasant, was reported to the district attorney by the Scottdale Medical Society as an illegal practitioner. The district attorney thereupon gave this individual twenty-four hours to discontinue practice and remove his signs, and this he did within the time limit. This shows a continuation of the good work done by this society in abating the nuisance of illegal practice.

Philadelphia.

Mütter Lecture.—The Mütter lecture for 1906 will be given in the hall of the College of Physicians, December 4, at 8:30 p. m., by Dr. William J. Mayo, Rochester, Minn., on "Principles Underlying Surgery of the Stomach and Other Viscera."

Hospital Ordinance Approved.—The ordinance to purchase for $267,000, 890 acres of ground at Byberry as a site for a home for the indigent and hospital for the insane, was favorably passed on by councils, November 15, and the ordinance was approved by the mayor.

Bequests.—By the will of the late Jane Hutchinson $3,000 is bequeathed to the Medico-Chirurgical Hospital to endow a memorial bed to bear the name of the donor. It also devises $500 to the Home for Incurables and $500 to the Home of the Merciful Savior for Crippled Children.

Institutions to Benefit by Charity Ball.—At a meeting of the executive committee of the twenty-seventh annual charity ball, to be given Jan. 30, 1907, the following institutions were chosen as beneficiaries: The children's surgical ward of the hospital of the University of Pennsylvania; the Maternity Hospital of Jefferson Medical College; the Children's Aid Society, and the Polyclinic Hospital.

Health Report.—The total number of deaths for the week ended November 17 aggregated 473, an increase of one over the number reported last week and an increase of 66 over the number reported in the corresponding period of 1905. The principal causes of death are as follows: Typhoid fever, 20; measles, 4; whooping-cough, 2; diphtheria, 8; consumption, 60; cancer, 26; diabetes, 4; apoplexy, 28; heart disease, 41; acute respiratory disease, 76; enteritis, 27; cirrhosis of the liver, 6; Bright's disease, 27; accidents, 13, and marasmus, 9. There were 224 cases of contagious diseases reported, with 31 deaths, as compared with 236 cases and 35 deaths reported in the previous week.

Personal.—Dr. S. Wier Mitchell delivered the graduating address to the nurses of the Orthopedic Hospital at the annual commencement exercises, held November 16.——Dr. R. E. Doolittle, chief chemist of the government laboratory at the port of New York, delivered an address, November 15, before the chemical section of Franklin Institute on "Inspection of Imported Food Products."——Drs. Ernest M. Dorset and Milton F. Percival were reported by the civil-service commission to Director Coplin, November 12. as the only candidates who passed for the position of resident physician at the Municipal Hospital.——Dr. Hugh Howard Riddle will sail this month for England, where he will reside permanently.

Health and Charities for 1907.—Dr. W. M. Late Coplin, director of the department of health and charities, submitted to the councils' committee on health and charities the budget for the department for 1907. This asked for an appropriation of $955,722, as compared with $848,555 appropriated during the present year. The budget provides for the erection of a municipal ice plant at a cost of $45,000; enlargement and improvement of the Nurses' Home (Philadelphia Hospital), $20,000; and alterations and refurnishing for the care of consumptives of old wards at the Philadelphia Hospital formerly used for the treatment of nervous diseases. The item for abating nuisances is increased from $20,000 to $40,000, and that for special sanitary inspections from $1,000 to $5,000. Dr. Coplin also recommends increases in the salaries of employés in the different bureaus and equalization of salaries. The force of cattle and meat inspectors he recommends shall be increased from 6 to 25, at $1,000 each. Among the new positions recommended is that of assistant chemist for the health bureau, with a salary of $1,000.

SOUTH DAKOTA.

Defendant Wins.—The damage suit for $10,000 brought by Mrs. Alice Jones against Dr. Frank S. Howe, Deadwood, for alleged malpractice in the treatment of a Colles fracture, has been decided in favor of the defendant, the presiding judge refusing to allow the case to go to the jury and scoring the plaintiff severely for bringing suit with no medical testimony whatever. The defendant presented expert testimony showing that the treatment was correct and that the case was one of malingering for the purpose of blackmail.

Hospital Notes.—The St. Joseph's Hospital, Mitchell, was dedicated with appropriate ceremonies and opened for patients, November 15. The building is constructed of compressed brick, is thoroughly built and modern in every way, has accommodation for 15 patients, and a large operating room and a training school for nurses in connection. It was built by the Benedictine Sisters at a cost of $30,000.——St. Luke's Hospital is being constructed in Fargo under the auspices of the Lutheran Hospital Association. The building will cost about $30,000 and will accommodate about 40 patients.

GENERAL.

Dr. Osler to Visit America.—Dr. William Osler, Oxford, England, will sail for America, November 28, to visit Toronto, Baltimore and other cities.

Railway Surgeons Meet.—The Surgical Association of the Rock Island Lines will hold its fourth annual meeting in Hot Springs, Ark., December 5 and 6.

Cuban Yellow Fever.—Six new cases of yellow fever are reported in Havana and four in the provinces during the previous week, according to a telegram, November 20. From November 1 to 10, inclusive, nine cases occurred in Havana, but no deaths were reported in that period, indicating that the fever is of a mild type. U. S. health officers think that practically all the cases are being found.

An Index Pathologicus.—Americans are taking the lead in organizing an international association of medical museums to catalog specimens and enable duplicates to be exchanged or specimens loaned. The curator of the Army Medical Museum at Washington, Assistant Surgeon James Carroll, is chairman of the committee in charge of the task, and at the meeting of the British Medical Association at Toronto presented an official communication asking for coöperation and outlining the plans of the proposed association of museum representatives. Honorary memberships for prominent pathologists are a feature of the plan.

FOREIGN.

A Model Public Hospital.—The town of Pankow, in Germany, has just completed a noteworthy general hospital at an expense of 6,500 marks ($1,625) per bed. In order to keep the mild and severe cases separate there are no large wards and only six beds to a room. Another innovation is an arrangement by which CO_2 is piped to the bath tubs, the supply regulated merely by a faucet. The total number of beds is between 100 and 200.

New Medical Council in Turkey.—According to the Constantinople correspondent of the *Lancet*, a new medical council has been established in that city under the name of "Conseil d'Instruction Médicale" and under the presidency of Prof. Mazhar Bey. The duties of this council will be to watch over the sanitary situation of the Ottoman Empire, to inspect and to direct the management and operations of the administration of the civil service of medicine, and to attend in general to the advancement of medical science.

Australian Diploma of Public Health.—According to the *British Medical Journal*, the University of Sydney will grant a special diploma in public health. The diploma will testify to the candidate's proficiency in all the branches of study, scientific and practical, which are necessary for the proper performance of the duties of a medical officer of health. The examination is to be in two parts, one relating to the general principles of sanitary science; the other relating to state medicine and to the appliances of pathology and sanitary science to public health.

Medicaster.—The proprietor and editor of a medical journal in Germany, the *Aerztl. Centralanzeiger*, were recently sued by a manufacturing chemist, Bauer, because they had referred to him editorially as a "medicaster." He manufactures djoeat, a remedy for diabetes, and they were protesting against his advertising methods. The courts decided in favor of the defendants, stating that the term medicaster is not an insulting one, but means a person practicing medicine without being duly licensed. Our English dictionaries define the term as "an ignorant physician, a quack." The costs of the proceedings were imposed on the chemist.

Improvements at the Calcutta Hospitals.—Great improvements are reported at the Calcutta hospitals. The new quarters for nurses at the Eden and Medical College hospitals are completed and will provide every necessary comfort. Electric lights and fans are installed. Altogether 96 European and Eurasian (principally Eurasian) nurses are to be provided for. The new surgical ward at the Medical College Hospital, soon to be opened, is expected to be the best of its kind in India. The operating theater and its appliances will be of the latest and best description. A new lecture room is to be erected also. The native wards of the hospital are to be furnished with electric fans.

Addition to London Temperance Hospital.—The foundation stone of a new out-patient department for the London Temperance Hospital was laid on October 25. The addition will provide a waiting hall for 200 patients, various consulting and examination rooms, and dispensary and store room, and a small theater for minor operations. It is, however, only part of a larger scheme, which, when completed, will furnish isolation accommodation and observation wards, a clinical laboratory, a museum and a lecture room for nurses. To carry out the entire plan about $125,000 will eventually be required, but only about $55,000 is needed for the first portion with which alone for the present it is proposed to deal.

Nobel Prize to Golgi and Ramon y Cajal.—One of the Nobel prizes this year is to be divided between Ramon y Cajal of Madrid and Golgi of Pavia. The prize thus goes to the men who have led the way in the study of the finer structure of the nervous system. C. Golgi has been professor of general pathology at Pavia since 1871, and is now 62 years old. Ramon y Cajal is 54, and has been professor of anatomy at Valencia, Barcelona and Madrid since 1881. He is the son of the former professor of anatomy at Saragossa. He was awarded the city of Moscow prize at the International Medical Congress at Paris in 1900, and the Helmholtz medal of the Prussian Academy of Sciences in 1905. He visited America in 1899 to deliver a lecture at Clark University, Worcester, Mass. The Moscow prize of $1,000 is awarded triennially to the author "whose works have contributed most to the progress of medical science." The Nobel prize is $40,000.

The Mecca Pilgrimage.—The annual pilgrimages of "the faithful" to Mecca have always been an interesting spectacle to the outside world, and great efforts have been necessary to prevent their proving a source of widespread epidemics of disease as the thousands of pilgrims return to their widely scattered homes. According to the *Semaine Méd.* for October 24, especially stringent measures are being prepared for this year, on account of the recent small epidemic of plague at Djeddah. A medical mission has been sent there, consisting of 6 physicians, 3 disinfectors and 6 sanitary police. The pilgrims leaving Djeddah for Mecca have to pass through the quarantine station and be examined and their goods disinfected. Pilgrims arriving at other ports are sent on to Mecca without delay, the commission in charge of the sanitary measures for the pilgrimage recommending that large numbers of camels and other means of transportation be provided to hasten the arrival at Mecca. The pilgrims are to be supplied at the ports with distilled water sufficient for their daily consumption. The pilgrims are all examined at the midway medical station, half way on the route to Mecca, and the suspects are sent to Djeddah. The pilgrims are examined again on their arrival at Mecca, where an isolation hospital is to be established. They are further to be kept under medical supervision for five days after their arrival.

LONDON LETTER.

(From Our Regular Correspondent.)

LONDON, Nov. 10, 1906.

An Expensive Handshake.

A woman has recovered $12 compensation from a man for injuries caused by shaking hands with him. When taking leave he gripped her hand so tightly that she screamed. This he treated as a joke and went away laughing. She consulted a physician who found that her little finger was fractured. She had to have the hand in splints for three weeks.

Deaths in India Due to Wild Animals.

During the past year, 2,054 persons were killed by wild animals in India and 21,797 by snakes. Elephants killed 48, lepers 401, tigers 786 and wolves 153. In the Bombay province and in the central provinces lancets designed for the treatment of snake bite with permanganate of potassium have been freely issued. In several cases the treatment is said to have been successful. The number of cattle destroyed by wild animals rose to 92,277. The number of wild animals destroyed amounted to 16,915.

Death Under Chloroform in a Dentist's Chair.

The danger of administering chloroform in the upright position is once again illustrated. A woman, aged 31, went to a dentist to have 14 or 15 teeth extracted. A physician administered chloroform sprinkling it on a mask. When she appeared to be going under the influence the respiration and circulation suddenly stopped. The usual methods of resuscitation were adopted without success. Before the administration the patient's heart was examined and found to be healthy. But the necropsy showed that it was dilated and fatty. The patient was obese and had suffered much from indigestion.

Increasing Plague Mortality in India.

For several weeks plague mortality in India has been steadily rising. For the week ending September 22, 6,436 cases and 4,945 deaths were reported. The present season is that of the annual recrudescence. As in previous years, the Bombay presidency leads the way. The city of Poona has recently passed through one of the most terrible outbreaks that have occurred anywhere in India. The population of 111,000 is supposed to be reduced to 50,000, owing to the exodus of nearly all but the poorest people. During one week the mortality was at the rate of nearly 300 per 1,000 and on one day 175 deaths were recorded.

Opening of New Building of University College Hospital.

The Duke of Connaught opened the new building of University College Hospital which has been erected by the generosity of the late Sir Blundell Maple, who gave $1,000,000 for the purpose. The style of the building is free treatment of renaissance. The material is red brick with terra cotta dressings. The plan of the main buildings is cruciform, and this form is retained in each of the wards and secures to the patients a maximum amount of sunshine. The wards are roomy and lofty and contain 24 beds each, there being about 300 beds in all. Each ward is strictly isolated in accordance with the plan of the late Dr. Moore and is connected with the central block by a covered bridge with windows admitting a free supply of air. Since the erection of the new building a gift of $500,000 has been made by Sir Donald Currie for the erection of a school of advanced medical studies and a home for students attending midwifery cases.

Food Adulteration.

The thirty-fifth annual report of the Local Government Board shows that adulteration of food is very prevalent. With the object of avoiding detection tradesmen often supply genuine articles to strange customers while they supply adulterated ones to customers they know. Thus while the proportion of adulterated samples obtained by the latter amounted to only 8.2 per cent. in the case of articles obtained by private persons it amounted to 39 per cent. Milk continues to be the chief article subject to adulteration. The rate of adulteration for the whole country in 1898 was reduced to 9.9 per cent., but in none of the subsequent years did it fall below 10 per cent. The extent of adulteration must be much greater than this, for many of the samples submitted are very close to the official limits and far below good milk. As to butter, there are on the market cheap substances invented by foreign chemists which when mixed with genuine butter do not appear to be capable of detection by any known process of chemical analysis.

Pharmacology

VIN MARIANI.

Official Report by Council on Pharmacy and Chemistry—With Comments.

This preparation was assigned to a subcommittee of the Council and the following is an abstract of the report of the committee:

Samples of Vin Mariani and of the literature distributed by the manufacturers were examined.

It appears that the beverage or medicine known as "Vin Mariani" is a preparation of red wine, apparently imported from Bordeaux, and fortified, in this country, by an alcoholic preparation of coca leaves or other parts of the coca plant.

The committee considered, first, the character of the red wine as imported. A sample received from the port of New York, March 10, 1905, from Henry Clausel & Co., Bordeaux, and consigned to Mariani & Co., on analysis was found to have the following composition:

Specific gravity		0.9959
Alcohol by volume	per cent.	10.00
Extract	per cent.	2.279
Volatile acids	per cent.	0.0914
Ash	per cent.	0.2801
Reducing sugar		trace.
Pol. direct	degrees	—0.8
Pol. Invert.	degrees	—0.7
K_2SO_4	Mg. per liter	0.092

A sample of Vin Mariani, as bought in the open market in an original package, has also been analyzed and found to have the following composition:

Specific gravity		1.0125
Alcohol by volume	per cent.	16.15
Extract	per cent.	8.602
Ash	per cent.	0.277
Glycerin	per cent.	0.444
Volatile acids	per cent.	0.0747
Tartaric acid	per cent.	0.2400
Alkaloids (coca bases)	per cent.	0.0250
Cane sugar	per cent.	2.35
Reducing sugar	per cent.	3.38

The increased alcoholic strength of Vin Mariani over the Bordeaux wine, from which it is made, as shown by this analysis, doubtless comes from the alcohol extract containing the coca bases, as already stated. Approximately 6 per cent. of sugar is also added to the wine. Judging from the analysis, therefore, Vin Mariani corresponds to a mixture of an alcoholic preparation of coca leaves and ordinary Bordeaux red wine, with the addition of about 6 per cent. of sugar.

Vin Mariani conflicts with Rule 5, which requires that "no article will be admitted or retained, concerning which the manufacturer or his agents make misleading statements as to geographical source, raw material from which made, or method of collection, or preparation," by stating in the advertising literature that: "The United States government, under the Pure Food Law of March 3, 1903, further emphasizes all previous analyses of Vin Mariani by admitting Mariani's wine as absolutely pure and unadulterated."

Whatever may have been the intent of the above statement, its effect is to deceive. The conjunction of the terms "Vin Mariani" and "Mariani's wine" can only be construed as meaning the same thing. Inasmuch as it does not appear that Vin Mariani is imported into this country, it would not have been possible for the United States government to inspect it and as to the wine obtained from Henry Clausel & Co., from Bordeaux, it is not in any sense Mariani's wine except that of ownership. It is the opinion of the committee that this phrase can only result in deception and the construction of the language strongly favors the supposition that it is intentionally meant to deceive.

This false claim is practically repeated in the other pamphlets published by the Vin Mariani Company, although not always in the same words.

This preparation also conflicts with Rule 6, which states that "No article will be admitted or retained of which the manufacturer or his agents make unwarranted, exaggerated or misleading statements as to therapeutic value," in that the firm's letter-heads have printed on them the following:

"Vin Mariani purifies the blood stream, strengthens the circulation, stimulates muscular fiber and nerve tissue, is a respiratory stimulant, strengthens the heart muscles, and is an emergency food in the absence of all other nutriment. Successfully employed as an adjuvant in anemia, debility, diseases of the chest, nervous troubles, muscular or mental overstrain, neurasthenia, and allied conditions, and in certain cases of protracted convalescence."

The committee believes that Vin Mariani is intended as a beverage rather than as a medicine.

The report concludes:

"The committee recommends, therefore, that Vin Mariani be refused recognition and that this report be published in full or in part."

In accordance with this recommendation the above abstract of the report is herewith published.

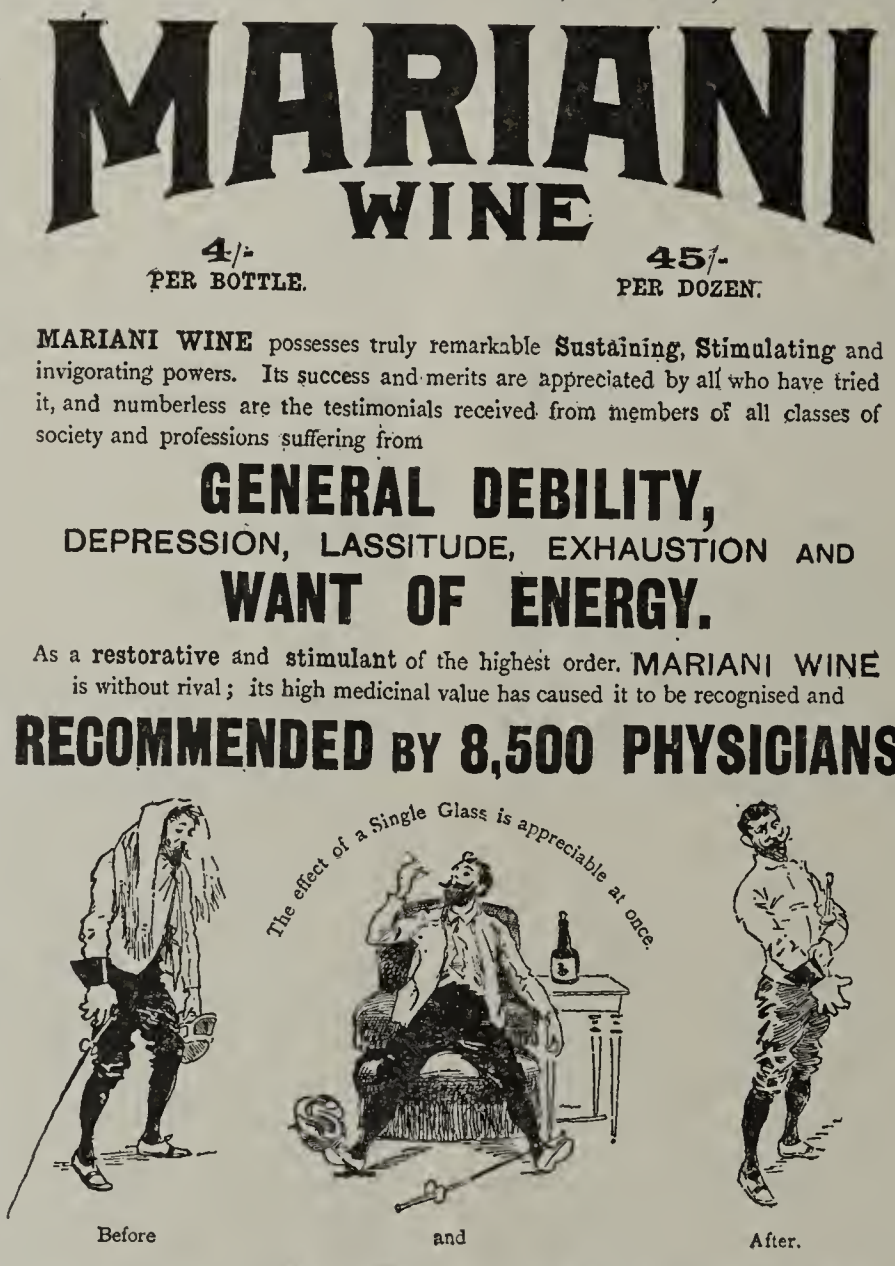
W. A. Puckner, Secretary.

VIN MARIANI MADE IN THIS COUNTRY.

According to the above report, Vin Mariani as imported is simply an ordinary cheap French wine, the preparation sold in this country as Vin Mariani being compounded in this country. Yet the advertising literature, the label on the bottle, etc., state directly or indirectly that it is a French preparation. Until recently—presumably until the vendors realized that the truth regarding this point would come out—the advertisements in medical journals contained an analysis made by a chemist in Paris. The shape of the bottle, the character of the printed matter accompanying the bottle, etc., are evidently intended to convey the impression that it is imported. So far then as this point is concerned, Vin Mariani is sold under gross misrepresentations and is a fraud.

ADVERTISED TO THE PUBLIC.

Vin Mariani was at one time advertised to the public in this country, but, so far as we know, it is not at the present time; at least, not directly. Yet it is most effectively advertised to the public indirectly, and this with little expense to the promoters, the cost of the circular around the bottle being the only expense — doctors who prescribe it do the rest. If those who are in the habit of prescribing Vin Mariani will examine the advertising that goes into the hands of their patients, they will realize how true it is that our profession is responsible for much of the "patent medicine" taking. Few laymen could withstand the temptation to buy the stuff for any ailment that comes along when they read in the circular that this "medicine," which their doctor evidently thinks is a good thing, is so highly recommended, for all the ills that befall us mortals, by the Pope of Rome, the Czar and the Czarina of Russia, the Queen of England, the Shah of Persia, the King of Norway and Sweden, the Queen of Portugal, the Queen of Saxony, the Crown Prince of Cambodia, Ferdinand of Bulgaria, and by a whole list of ambassadors, generals, politicians, musicians, actresses, etc. The testimonials of these great men and women are enough to convince the most skeptical that this remarkable medicine will do everything but raise the dead—and under favorable circumstances accomplish even this. And still more—it will win battles! Witness this from the governor-general of Madagascar: "We were refreshed by Vin Mariani, and before morning carried the stronghold." Alexandre Dumas and Emile Zola are credited with calling it "the elixir of life." One very strange thing about the testimonials in the circular used in this country is that all are written by foreigners. But Americans (President McKinley—think of it!—among others) are honored by having their testimonials quoted in the circulars used on the other side of the Atlantic. Why? Is it possible that the testimonials are fakes?



[The above is the first page of a four-page circular accompanying the bottle of Vin Mariani as sold direct to the public in England.]

AN ETHICAL CURE-ALL.

Here are a few of the conditions that the circular says Vin Mariani is good for: "Anemia, winter cough, debility, vocal weakness, la grippe, continued fevers, bronchitis, nervous troubles, muscular weakness, diseases of the aged, malaria, melancholia, overwork, neurasthenia, impotence, malnutrition, depression, heart troubles, wasting diseases, mental overstrain, and in certain cases of protracted convalescence."

The following quotations are taken from blotters—circulated in this country—which are evidently intended for the laity, as well as for physicians:

"Vin Mariani creates and sustains vigor and energy. Guards against wasting diseases. When everything else has failed try it to prove merits."

"Lung, Throat and Stomach Troubles benefited by Vin Mariani; this Ideal French tonic strengthens entire system of Body, Brain and Nerves."

"Most Efficacious, Most Agreeable, Unequaled by anything in Fortifying, Strengthening, Refreshing."

WHY BLAME THE LAYMAN FOR USING NOSTRUMS?

Can we blame the layman for using peruna, wine of cardui, etc., simply because they are advertised, when there are physicians who, for the same reason, prescribe concoctions that are just as quackish and just as useless? And can editors of medical journals consistently find fault with newspapers for carrying advertisements of fraudulent "patent medicines" when they themselves admit to their pages advertisements of nostrums that are no less fraudulent and of no more value?

MEMBER OF PROPRIETARY ASSOCIATION.

One word more: There is an organization known as the Proprietary Association of America, but it is usually referred to in common parlance as the "patent-medicine" men's association. It will be remembered that last year we printed a list of the members of this body, among which was the Vin Mariani Company. It will be remembered also that in the list were the names of certain firms who were supplying medicines to physicians, but practically all these resigned from membership and their resignations were published by us. We have not had the pleasure of publishing the resignation of the Vin Mariani Company. On the contrary, we note that at the last

annual meeting of the "patent-medicine" men's association this firm was still an active member, Mr. A. L. Jaros, who stands for the Mariani Company in this country, being one of those who registered at the meeting.

Correspondence

A County Bacteriologist.

ST. PAUL, Oct. 30, 1906.

To the Editor:—I notice in an editorial in THE JOURNAL, October 27, page 1382, that Ontario County, New York, is thought to have been the first county to appoint a county bacteriologist. The date of this appointment does not appear, but St. Louis County, Minnesota, I think, antedates Ontario County, New York, so far as I can judge from the editorial. In July, 1905, an agreement was entered into between the Minnesota State Board of Health and the city of Duluth by which the former was to establish a laboratory in said city. The control of this branch laboratory is entirely under the State Board of Health. The country district contiguous to Duluth felt that it should have the benefit of this laboratory, and a request was made of the county commissioners of St. Louis County that it enter into negotiations with the State Board of Health and arrange that this branch laboratory should serve the entire county. This matter was taken up and the branch laboratory extended its work to the entire county, beginning with Jan. 2, 1906. H. M. BRACKEN.

[We learn from the editor of the *Medical Times* that the bacteriologist did not begin work in Ontario County until some time after the date mentioned above in the case of St. Louis County, Minnesota. Hence Dr. Bracken's contention is correct.—ED.]

Marriages

ALLEN W. URMSON, M.D., New Castle, Pa., October 30.

MARVIN PIERCE RUCKER, M.D., to Miss Josie McRae, both of Manchester, Va., November 3.

WILLIAM NEAVITT PALMER, M.D., to Miss Nellie Alice Gott, both of Hinton, W. Va., October 24.

HERBERT HARRIS, M.D., Fredericksburg, Va., to Mrs. Emma Gilson of Syracuse, N. Y., October 31.

FREDERICK KENAN, M.D., to Miss Charlotte Maxwell, both of Upper Sandusky, Ohio, November 7.

CALEB WILLIAM SOMMERVILLE, M.D., to Miss Flora B. Kaestner, both of Philadelphia, November 10.

GEORGE R. PENNINGTON, M.D., Fillmore, Mo., to Miss Grace Handley of St. Charles, Mo., recently.

CARLOS D. LANE, M.D., Waterloo, Ind., to Miss Faye Belle McDonald of Auburn, Ind., October 31.

ROBERT L. GRAY, M.D., Philadelphia, to Miss Ellen Moore Cheetham of Reading, Pa., November 8.

BAIRD URQUHART BROOKS, M.D., Durham, N. C., to Miss Annie Louise Sills, at Baltimore, October 24.

CLINTON ELLIS RUTTER, M.D., Northumberland, Pa., to Miss Annie Sheef of Williamsport, Pa., November 7.

JAMES CORNELIUS AUSTIN, M.D., Spencer, Mass., to Miss Agnes Duggan of Worcester, Mass., November 7.

BRACE WHITMAN PADDOCK, M.D., to Miss Elizabeth Kellogg Plunkett, both of Pittsfield, Mass., November 8.

RAYMOND GRISWOLD TAYLOR, M.D., Los Angeles, Cal., to Miss Jessie Frances Lawton of Long Beach, Cal., November 7.

NORMAN GLASGOW GOHLSON, M.D., Holly Springs, Miss., to Miss Eliza McNeel Penick, at Lexington, Va., November 1.

LIEUTENANT FRED W. PALMER, M.D., U. S. Army, Fort Bayard, N. M., to Miss Marie Riordan of Los Angeles Cal., November 7.

ALBERT ALONZO DAVIDSON, M.D., Augusta, Ga., to Miss Linda Minta Richardson of Tullahoma, Tenn., at Nashville, Tenn., October 10.

Deaths

James Theodore Reeve, M.D. Castleton (Vt.) Medical College, 1864; Jefferson Medical College, Philadelphia, 1855; a member of the American Medical Association; formerly president of the Wisconsin State Medical Society, the Fox River Valley Medical Society and the Appleton Medical Club; president of the Outagamie County Medical Society; for 19 years secretary of the Wisconsin State Board of Health; assistant surgeon of the Tenth Wisconsin Volunteer Infantry; surgeon of the Twenty-first Wisconsin Volunteer Infantry and later brigade surgeon and division surgeon, during the Civil War, and a prisoner in Libby Prison, Richmond, Va.; a member of the first public library board of Appleton and for many years its secretary; one of the most prominent practitioners of Wisconsin; the oldest surgeon of the Chicago & Northwestern Railway in that state, died at his home in Appleton, November 4, after a long illness, aged 72.

Charles G. Jenkins Finn, M.D. Bellevue Hospital Medical College, New York City, 1876; a member of the Medical Society of New York, New York Academy of Medicine, Associated Physicians of Long Island, Long Island Railway Surgeons Association, president of the New York and New England Association of Railway Surgeons; chief surgeon to St. Giles Summer Hospital, Hempstead; consulting surgeon and physician to the Children's Home, Mineola, N. Y.; chief surgeon of the New York and Long Island Traction Co.; associate surgeon to St. Mary's Hospital, Jamaica; division surgeon Long Island Railroad; for ten years secretary and treasurer and three years president of the Queens County Medical Society, died at his home in Hempstead, N. Y., November 3, from cerebral hemorrhage, after an illness of two days, aged 51.

George W. Matthews, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1895; who practiced in Philadelphia until 1899, when he was commissioned captain and assistant surgeon of volunteers and assigned to duty with the Thirty-sixth Infantry; was honorably discharged on Oct. 12, 1900; was commissioned major and surgeon of volunteers in November of the same year and discharged June 30, 1901; was commissioned as assistant surgeon in the regular establishment Oct. 3, 1900, and was retired with the rank of captain on account of disability incurred in line of duty Oct. 2, 1905, and was given a medal of honor for bravery while on duty in the Philippine Islands, died at the home of his father in Worcester, Mass., August 5, from amebic dysentery, after an illness of four years, aged 31.

David Henry Hazen, M.D. University of Georgetown, Medical Department, Washington, 1873; a member of the American Medical Association, Medical Association of the District of Columbia and Medical Society of the District of Columbia; resident physician at the Washington Asylum for two years and of the Naval Hospital, Washington, for a similar period; contract surgeon in the Army and on duty at Washington arsenal for four years; a member of the board of education of Washington from 1890 to 1900; one of the best known physicians of Washington, died at his home in that city, November 6, from diabetes, aged 60.

Joseph B. Matthews, M.D. Medical College of Virginia, Richmond, 1896; of Greensboro, who had been released on bail pending an appeal to the United States Supreme Court as to his sanity, but who had been pronounced sane and guilty of the murder of his wife by poison and sentenced to 20 years' imprisonment in the penitentiary, is reported to have died from the effects of a gunshot wound of the skull inflicted with suicidal intent, at Baltimore, Md., November 5.

Thomas H. Mackin, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1900; resident physician at the St. Joseph's Hospital, Reading, for one year; treasurer of the Reading Medical Association, died suddenly from heart disease in his office in Reading, October 29, aged 29. At a special meeting of the Reading Medical Association resolutions were adopted deploring the untimely death of Dr. Mackin.

Harvey Oliver Milton, M.D. Jefferson Medical College, Philadelphia, 1855; formerly of Chattanooga, Tenn.; assistant surgeon of the Fourth and Fifteenth Alabama Infantry, C. S. A., during the Civil War, died at the home of his son in Knoxville, Tenn., November 7, from cerebral hemorrhage, after an illness of three days, aged 73.

Harry Heth Rodman, M.D. College of Physicians and Surgeons in the City of New York, 1895; formerly of New York City; who had been ill for a long time from chronic headaches,

is reported to have committed suicide, by shooting himself through the head at his home in Buffalo, N. Y., November 12.

George Edgar Allen, M.D. Boston University School of Medicine, 1887; a veteran of the Civil War; a member of the board of education of Youngstown, Ohio, for two terms, died at his home in Youngstown, November 5, from locomotor ataxia, after an illness of more than 20 years, aged 68.

Charles Vose Bemis, M.D. Harvard University Medical School, Boston, 1839; one of the oldest graduates of Harvard University and of its medical department; for several years a trustee of the Massachusetts General Hospital, died at his home in Medford, Mass., November 6, aged 90.

Jeremiah C. Wilson, M.D. Castleton (Vt.) Medical College, 1855; a member of the Michigan legislature in 1866; at one time president of the village of Rochester, Mich., died at his home in Rochester, November 3, from spinal sclerosis, after an illness of two years, aged 78.

Robert C. Craig, M.D. University of Virginia, Department of Medicine, Charlottesville, 1896; of Pittsburg; who had been suffering from neurasthenia, is reported to have committed suicide in Atlantic City, November 14, by shooting himself through the heart, aged 31.

Richard T. Higgins, M.D. Jefferson Medical College, Philadelphia, 1867; of Vandalia, Ill.; once a member of the Illinois legislature, and a colonel on the staff of Governor Tanner, died in Springfield, Ill., November 14, two days after a surgical operation, aged 65.

Timothy Stanton Crowley, M.D. Jefferson Medical College, Philadelphia, 1849, one of the oldest practitioners of Philadelphia, and one of the founders of the Physicians' Mutual Aid Society, died at his home in that city, November 7, aged 83.

Harry E. Estey, M.D. University of the State of Oregon, Medical Department, Portland, 1906; interne in the Good Samaritan Hospital, Portland, died in that institution from typhoid fever, after an illness of three weeks, October 27, aged 23.

Thomas Latané, M.D. Franklin Medical College, Philadelphia, 1848; for many years a practitioner of King and Queen County, Virginia, died at his home in Stevensville, Va., August 10, from senile debility, after an illness of one year, aged 82.

Corneille B. Strother, M.D. University of Virginia, Medical Department, Charlottesville, 1897; formerly a practitioner of Albany, Ga., died from tuberculosis at his home in Albuquer-que, N. M., October 30, after a long illness, aged 32.

Nicholas Gibbs Dail, M.D. Atlanta (Ga.) Medical College, 1860; one of the most highly respected physicians of Grainger County, Tenn., died at his home in Powder Springs, September 30, from uremia, after an illness of three days, aged 79.

Samuel M. Lane, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1886; a member of the American Medical Association; formerly of Limerick and Royersford, Pa., died in Silver Springs, N. M., October 30.

Llewellyn Sessions, M.D. Medical College of Georgia, Augusta, 1845; one of the oldest practitioners of Union Springs, Ala., died at his home in that place, November 5, after an illness of more than two years, aged 82.

Isaac Edward Styker, M.D. Northwestern Medical College of St. Joseph, Mo., 1883, died at his home in Lawton, Okla., November 9, during an operation necessitated by a collision between a train and his carriage, November 6.

George W. Townes, M.D. Kentucky School of Medicine, Louisville, 1867; circuit clerk of Muhlenberg County for four years, died at his home in Greenville, November 8, from paralysis, after an illness of two years, aged 72.

George S. Miller, M.D. Rush Medical College, Chicago, 1867; one of the oldest practitioners of Jo Daviess County, Illinois, died at his home in Hanover, November 9, from nephritis, after an illness of several months, aged 65.

John N. Gilmore, M.D. New York Medical College, New York City (licensed 1878); a member of the American Medical Association, died at his home in Gaston, Ala., September 17, from hypertrophy of the heart, aged 79.

Olin L. Jenkins, M.D. New York Homeopathic Medical College and Hospital, New York City, 1876; formerly mayor of Plainfield, N. J., died suddenly at his home in that city, November 13, from heart disease, aged 60.

Clarence W. Spring, M.D. Harvard University Medical School, Boston, 1884; a member of the Fitchburg Medical Club and Worcester North Medical Society, died recently and was buried in Pittsburg, Mass., November 5.

Edwin James Wulff, M.D. Medico-Chirurgical College of Philadelphia, 1904; who had gone to Utah for his health, died from acute pneumonia at his home in Myton, Utah, August 10, after a short illness, aged 27.

William J. Brunner, M.D. New York University, New York City, 1879; a member of the American Medical Association, died suddenly at his home in New York City from heart disease, November 8, aged 52.

Edward R. Lang, M.D. Cleveland Medical College, Medical Department of Western Reserve College, 1871; of Cove, Ore., died at Walla Walla, Wash., November 4, after an illness of two years, aged 58.

Richard B. Baker, M.D. University of Maryland School of Medicine, Baltimore, 1846; said to have been the oldest practitioner of Hickory, N. C., died at his home in that place from paralysis, aged 86.

Ira W. Disbro, M.D. Homeopathic Hospital College, Cleveland, 1876; died at his home in Cleveland, November 7, from the effects of injuries received two years ago in a street-car wreck, aged 53.

Clark R. Wilcoxson, M.D. University of Michigan, Department of Medicine and Surgery, Ann Arbor, 1894, died at his home in Ypsilanti, Mich., November 13, from tuberculosis, aged 36.

Leander D. Stockton (Examination, Ohio), a well-known practitioner and banker of Carrollton, Ohio, died suddenly at his home in that place, October 29, from heart disease, aged 68.

Robert B. Cloud, M.D. University of Louisville, Medical Department, 1892; local surgeon for the Southern Railway Co., died at his home in Austell, Ga., November 2.

Dana A. Locke, M.D. Chicago Homeopathic Medical College, 1886, died at his home in Potterville, Mich., October 27, from cerebral hemorrhage, after a short illness, aged 68.

William A. Ball, M.D. Toronto University Medical Faculty, 1894, died at his home in Toronto, from heart disease, November 3, after an illness of six months, aged 38.

John S. Guisinger, an old practitioner of southern Ohio, died at his home in Pemberton, October 21, from pneumonia, after an illness of two weeks, aged 90.

Samuel H. Gordon, M.D. Medico-Chirurgical College of Philadelphia, 1898, died at his home in Newark, N. J., November 10, from acute gastritis, aged 35.

William Hobson, M.D., an eclectic practitioner of Conway Springs, Kan., died suddenly while making a professional call in that place, November 4.

Franklin H. Harne, M.D. College of Physicians and Surgeons, Baltimore, 1880, died at his home in Bethlehem, Pa., November 1, aged 65.

Lewis B. Mitchell, M.D. University of Nashville, Medical Department, 1858, died at his home in Brinkley, Ark., November 8, aged 78.

Hiram Jefferson Wells, M.D. University of Nashville, Medical Department, 1854, died at his home in Nashville, November 3, aged 71.

William Shafer, M.D. Jefferson Medical College, Philadelphia, 1884, died at his home in Camden, N. J., November 9, aged 55.

E. Howe Davis, M.D. Albany (N. Y.) Medical College, 1852; died at his home in Elmira, N. Y., November 3, aged 88.

Deaths Abroad.

James Finlayson, M.D., LL.D., F.F.P.S., Glasg., physician to the Western Infirmary, Glasgow, died unexpectedly at Glasgow from apoplexy, aged 65. Born in Glasgow, he was educated at the university, where he had a brilliant career, taking the degree of M.B. with honors. In 1875 he was appointed physician to the Western Infirmary, and in 1883 physician to the Royal Hospital for Sick Children. He was a successful physician, an excellent teacher and a prolific writer. His best known work was his "Clinical Manual," published in 1878, which reached three editions in England and two in America under the title of "Clinical Diagnosis." He wrote the article on "Diagnosis" in Keating's "Cyclopedia of the Diseases of Children"; an "Account of the Life and Works of Maister Peter Lowe, the Founder of the Faculty of Physicians and Surgeons, Glasgow," and an "Account of the Life and Works of Dr. Robert Watt, Author of the Bibliotheca Britannica." His contributions to the medical journals were voluminous, amounting to about 150. He was much respected both by his colleagues and fellow-citizens, and his highly critical judgment was valued and sought in difficulties. He had none of the rhetorical powers of the great systematic lecturers of former days, but his teaching was thorough, both scientifically and practically. He was no great believer in large classes and

huge laboratories for students, but thought that individual attention from the teacher was the great essential. Apart from medicine he was a man of wide culture, interested in literature, archeology and theology. After the retirement of Sir William Gairdner he was the leading consultant in Glasgow and the west of Scotland. He was unmarried.

F. Roncati, M.D., formerly professor of psychiatry and director of the insane asylum at Bologna, Italy, died early in October, bequeathing his property to the asylum. It is proposed to remodel it and give it his name, and to erect a tablet to his memory in the city hall, as he always took a prominent part in the administration of the affairs of the city and province.

A von Rothmund, M.D., professor of ophthalmology at Munich until he retired at the age of 70, died October 27, aged 76. The *Münch. med. Wochft.*, No. 31, 1900, contained an excellent biographical sketch, with his portrait and a list of his principal works.

Queries and Minor Notes

ASKS INFORMATION CONCERNING SANITARIUM.

NORTH ADAMS, MASS., Oct. 26, 1906.

To the Editor:—I wish to obtain information concerning a sanitarium for the treatment of drug habits, conducted, I think, by Catholic monks in Canada. GEORGE A. FAGAN, M.D.

WANTS INSTITUTION FOR WEAK-MINDED CHILDREN.

Dr. E. E. Bevington, New Paris, Ohio, asks if any reader of THE JOURNAL can recommend to him a private institution for weak-minded children.

EUCALYPTUS TREES AND MALARIA.

PEARSON, MD., Nov. 15, 1906.

To the Editor:—Are there any who believe that *Eucalyptus globulus* planted near a house or marsh exerts an antimalarial influence, and are *Eucalyptus coccifera* and *gummi* supposed to act in the same way if planted near a marsh? Very respectfully,

A. L. HODGDON.

ANSWER.—The planting of groves of eucalyptus to ward off malaria has not been successful in the opinion of most observers. A conspicuous example is cited by A. Celli (Malaria, 1900) in the case of Tre Fontana, which continues to be an intensely malarial locality in spite of the fact that there is a fine grove of these trees there. Similar views are expressed by Marchiafava and Bigmani in the Twentieth Century Practice of Medicine, Vol. XIX. In fact, the presence of trees near a house is regarded as prejudicial because they are likely to harbor great numbers of insects. Scheube, however, says (Diseases of Warm Countries, 1903, p. 159): "As the smell of eucalyptus trees and castor-oil plants is said to keep off mosquitoes, it may be well to plant some near the dwelling on the chance of their doing so."

EASY LESSONS IN POLISH.

SPRINGFIELD, MASS., Nov. 3, 1906.

To the Editor:—Is there a Polish work published whereby a physician can learn enough of the language to get along with Polish patients? If there is such a book kindly give me publisher's name and address. M. L. SLUTSKIN, M.D.

ANSWER.—The only book of the kind in English and Polish of which we can learn has been long out of print. There are a number of phrase books and guides to conversation for Germans wishing to obtain a smattering of Polish. Those who understand German will find very useful a little pamphlet costing 55 cents, published by B. Behr's Verlag, Steglitzerstrasse, Berlin W. 35. The work is entitled "Leitfaden der polnischen und deutschen Sprache," by Forster and Fischer. Perhaps some of our readers may be able to give further information that may interest physicians who do not speak Polish but who have Polish patients.

TREATMENT OF INTRACAPSULAR FRACTURE OF FEMUR.

———, ILL, Nov. 5, 1906.

To the Editor:—What is the "Maxwell treatment" of intracapsular fractures of the femur and what results are claimed for it? R. N. L.

ANSWER.—Maxwell's treatment of intracapsular fractures of the femur consists in the application of extension in two directions, longitudinally and laterally, in opposition to the displacing forces. He describes the method as follows: "Longitudinal extension is applied in the usual way by adhesive strips running along the sides of the thigh and the leg, beyond the foot to which the weight is suspended. Lateral extension is applied by placing a strip of muslin, 5 inches wide, around the thigh as closely to the body as possible, the patient being on his back. A splint should be adjusted to the inner aspect of the thigh to keep the lateral extending band from cutting. The pulley at the side should be placed opposite the crest of the ilium and about 4 inches above so that the lateral extension will act as relates to the body, outward, slightly forward and upward. Counter extension is secured by making the body perform the duty. The bed is elevated at the foot, the side corresponding with the fracture, one foot; the other 8 inches; the head post on the fractured side (the side on which the pulley is attached), 4 inches. In cases of fracture of the right thigh, the body will gravitate toward the left-hand head post, being in opposition to the two extending forces. In this way we bring the two fragments in nearly and as accurately in coaptation as we can in any other fracture of the femur, and they are as easily maintained in that position. The rough and jagged surface of the fractured neck is carried away from the inner surface of the capsule and ceases to fret and irritate it, thereby to a large extent removing the cause of inflammation of the joint, which is an important factor in the causes that defeat union. The inner surface of the capsular ligament rendered tense by lateral extension is made to apply itself closely to the sides of the neck, and in that way gives support to the plastic callus. Weight sufficient for longitudinal extension (about 14 pounds) should be applied, the leg brought down to its normal length as determined by measurement and comparison with the uninjured one. A steady pull on the side extension band will soon bring the hip to its proper fulness. By comparison it will be quite easy to determine when the trochanter is as prominent as the well one. Eight or nine pounds will maintain it in that position until the irritability of the muscles subsides, when both weights may be gradually diminished to one-half or less." Dr. Maxwell claims for this method, better coaptation of the fractured ends; greater comfort to the patient, and as good results as are obtained by other methods of fixation.

The Public Service

Army Changes.

Memorandum of changes of station and duties of medical officers, U. S. Army, week ending Nov. 17, 1906:

Loving, Robert C., asst.-surg., ordered to proceed from Newport News, Va., to West Point, N. Y., and report to the Superintendent, U. S. Military Academy, for duty.

Bevans, James L., asst.-surg., detailed to duty with Provisional Government, Havana, Cuba.

Church, James R., asst.-surg., detailed to duty with Provisional Government, Havana, Cuba.

Bartlett, C. J., asst.-surg., granted fourteen days' leave, beginning about November 2, with permission to visit the United States.

Smart, Robert, asst.-surg., will, in addition to his other duties, give medical attention to the 17th and 18th Batteries Field Artillery, during the absence of Captain Bartlett, asst.-surg.

Cowper, H. W., asst.-surg., ordered to proceed from Camp Columbia, to Caibarien, Cuba, for duty.

Richards, R. L., asst.-surg., relieved from duty at Caibarien and ordered to Santa Clara, Cuba, for duty.

Stone, John H., asst.-surg., relieved from duty with 11th Cavalry, Camp Columbia, and ordered to Matanzas, Cuba, for duty.

Duval, Douglas P., asst.-surg., relieved from duty at Matanzas and ordered to Camp Columbia, Cuba, for duty.

Miller, E. W., asst.-surg., relieved from duty at Camp Columbia and ordered to Santa Clara, Cuba, for duty.

Webb, Walter D., asst.-surg., ordered to proceed from Camp Columbia to the United States and report in person to the Surgeon General, U. S. Army.

Hansell, H. S., asst.-surg., relieved from duty at Camp Columbia, and ordered to Bejueal, Havana, for duty.

Patterson, R. U., asst.-surg., will, in addition to his other duties, give medical attendance to the Second Battalion, Engineers, Camp Columbia, Havana, Cuba, during the illness of Captain Morrow, asst.-surg.

Manly, C. J., Baker, David, Steer, Samuel L., asst.-surgs., ordered to proceed to Havana, Cuba, and report in person to the commanding general, Army of Cuban Pacification, for assignment to duty.

Hallock, H. M., surgeon, left Madison Barracks, N. Y., *en route* to New York City for medical treatment.

Snyder, Henry D., surgeon, left Fort Sam Houston, Texas, on detached service with troops *en route* to Fort Reno, O. T.

Duncan, William A., asst.-surg., on expiration of leave of absence to report to medical superintendent of Army Transport Service, San Francisco, for duty.

Foster, Charles L., asst.-surg., relieved from duty in the Army Transport Service, and to report to the commanding general, Department of California, for assignment to duty at Army General Hospital, Presidio, San Francisco.

Eastman, William R., asst.-surg., relieved from duty at Army General Hospital, Presidio, San Francisco, Cal., and ordered to Fort Lawson, Wash., for duty.

Hess, Louis T., asst.-surg., relieved from duty at Fort Lawton, Wash., and ordered to Fort Porter, N. Y., for duty.

Love, Albert G., Jones, Harold W., asst.-surgs., relieved from temporary duty in the Department of California, and will proceed on the first available transport sailing from San Francisco to the Philippine Islands, and on arrival at Manila will report to the commanding general, Philippines Division, for assignment to duty.

Glennan, James D., surgeon, detailed as a member of the examining board at Fort Monroe, Va., during the absence on leave of Major W. Fitzhugh Carter, surgeon.

Gapen, Nelson, asst.-surg., left Columbus Barracks, Ohio, with troops to Presidio of Monterey, Cal.

Russell, F. F., asst.-surg., relieved from duty at the Presidio of San Francisco, and will repair to Washington, D. C., and report in person to the Surgeon General of the Army for temporary duty.

Brown, Wilmont E., contract surgeon, left Fort Walla Walla, Wash., on leave of absence for three months.

Ashburn, James K., contract surgeon, left Fort Lincoln, N. Dak., on leave of absence.

Hammond, William G., dental surgeon, left Fort Logan, Colo., on leave of absence for one month.

Craig, Emmett J., dental surgeon, granted an extension to his leave of absence to include Dec. 4, 1906.

Miller, William G., contract surgeon, granted leave of absence for one month.

Slayter, John T. H., contract surgeon, ordered from San Francisco to Fort William Henry Harrison, Mont., for duty.

Hughes, Michael E., contract surgeon, arrived at Newport News, Va., on leave of absence for four months from the Philippines Division.

Mills, Frederick H., contract surgeon, relieved from further duty in the Philippines Division, and on the transport *Ingalls,* and ordered from Newport News, Va., to Fort Assinniboine, Mont., for duty.

Adair, George F., contract surgeon, left Fort Washington, Md., and arrived at Fort Wadsworth, N. Y., for duty.

Navy Changes.

Changes in the Medical Corps, U. S. Navy, for the week ending Nov. 17, 1906:

Edgar, J. M., surgeon, to U. S. R. S. *Wabash,* Navy Yard, Boston.

DeBruler, J. P., P. A. surgeon, detached duty in the Bureau of Med. and Surgery, Navy Department, and duty at the Naval Medical School Hospital, Washington; to the *Paducah.*

Gardner, J. E., medical inspector, detached U. S. R. S. *Wabash,* Navy Yard, Boston; to home and wait orders.

De Lancy, C. H., P. A. surgeon, detached *Paducah*; to the U. S. R. S. *Hancock,* Navy Yard, New York.

Manchester, J. D., P. A. surgeon, detached U. S. R. S. *Hancock,* Navy Yard, New York; to Naval Hospital, Naval Home, Philadelphia.

Geiger, A. J., P. A. surgeon, detached Naval Hospital, Mare Island, Cal.; to Naval Station, Guam.

Zalesky, W. J., asst.-surgeon, orders of October 31, 1906, modified, when detached *Newport* to U. S. T. B. *Stringham,* for duty with Third Torpedo Flotilla.

Brooks, F. H., asst.-surgeon, to Naval Hospital, Mare Island, Cal.

Angeny, G. L., surgeon, detached Naval Hospital, Naval Home, Philadelphia; to Naval Station, Guam.

Johnson, M. K., surgeon, detached U. S. S. *Iowa;* home and wait orders.

Crandall, R. P., surgeon, detached duty U. S. R. S. *Hancock* to *Georgia.*

Leach, Philip, surgeon, when discharged treatment Naval Hospital, New York, to duty on the U. S. R. S. *Hancock.*

Shook, F. M., asst.-surgeon, detached duty Navy Yard, Mare Island, and to duty at the Naval Hospital, Mare Island, Cal.

Means, V. C. B., surgeon, detached duty at Naval Recruiting Station, San Francisco; to duty at Navy Yard, Mare Island, Cal.

Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ended Oct. 31, 1906:

Eager, J. M., assistant surgeon-general, granted leave of absence for fourteen days, from October 26, 1906.

Stoner, Geo. W., surgeon, directed to proceed to Charleston, S. C., for special temporary duty, upon completion of which to rejoin his station at Ellis Island, N. Y.

Carmichael, D. A., surgeon, granted leave of absence for sixteen days, from November 14.

Brooks, S. D., surgeon, detailed as inspector of unserviceable property at San Diego Quarantine Station.

Williams, L. L., surgeon, granted leave of absence for seven days, from October 30, under Paragraph 189 of the Regulations.

Blue, Rupert, P. A. surgeon, directed to report to the Bureau for instructions relative to the inspection of certain stations of the service in the State of Virginia.

Grubbs, S. B., P. A. surgeon, granted leave of absence for one day, Oct. 30, 1906.

Anderson, J. F., P. A., surgeon, leave of absence granted for one month, from November 5, amended so as to be effective Oct. 29, 1906.

Willig, C. W., P. A. surgeon, directed to proceed to Scranton, Miss., for special temporary duty, upon completion of which to rejoin his station at Gulf Quarantine Station.

Stimson, A. M., asst.-surgeon, granted leave of absence for seven days, from Oct. 29, 1906, under Paragraph 191 of the Regulations.

Collins, G. L., asst.-surgeon, directed to proceed to Norfolk, Va., for special temporary duty, upon completion of which to rejoin his station at Cape Charles Quarantine Station.

Frost, W. H., asst.-surgeon, relieved from duty on U. S. Revenue Cutter Chase and assigned to duty at the Revenue-Cutter Service School of Instruction, Arundel Cove, Md.

McCormac, J. T., acting asst.-surgeon, granted leave of absence on account of sickness for thirty days, from September 17.

Thornton, M. J., acting asst.-surgeon, granted leave of absence for fourteen days, from November 7.

Wetmore, W. O., acting asst.-surgeon, granted leave of absence for six days, from October 24.

Richardson, S. W., pharmacist, granted leave of absence for four days from October 24, under provisions of Paragraph 210 of the Regulations.

APPOINTMENT.

George K. Kepler appointed pharmacist of the Third Class, effective from date of oath.

BOARDS CONVENED.

A board of medical officers was convened to meet at Washington, D. C., on Nov. 5, 1906, for the physical examination of officers of the Revenue-Cutter Service. Detail for the board: Assistant Surgeon-General W. J. Pettus, Chairman; Asst.-Surgeon-General J. W. Kerr, Recorder.

A board of medical officers was convened to meet at San Francisco, Cal., on Nov. 1, 1906, for the purpose of making physical examinations of applicants for cadetships in the Revenue-Cutter Service. Detail for the board: Surgeon H. W. Austin, Chairman; Asst.-Surgeon F. H. McKeon, Recorder.

A board of medical officers was convened to meet at Seattle, Wash., on Nov. 1, 1906, for the purpose of making physical examinations of applicants for cadetships in the Revenue-Cutter Service. Detail for the Board: Asst.-Surgeon H. G. Ebert, Chairman; Acting Asst.-Surgeon F. R. Underwood, Recorder.

LIST OF CHANGES FOR SEVEN DAYS ENDED NOV. 14, 1906.

Geddings, H. D., asst.-Surgeon-general, directed to proceed to Ellis Island, N. Y., for special temporary duty, on completion of which to rejoin his station.

Stoner, G. W., surgeon, granted leave of absence for three days from Nov. 7, 1906, under Paragraph 189 of the Regulations.

Gassaway, J. M., surgeon, granted extension of leave of absence for five days.

Cofer, L. E., P. A. surgeon, granted leave of absence for one month and eight days from Nov. 21, 1906.

Goldberger, Joseph, P. A. surgeon, granted leave of absence for twenty-one days, to be taken en route from Mexico City to Washington, D. C.

Amesse, J. W., P. A. surgeon, granted extension of leave of absence for five days.

Steger, E. M., asst.-surgeon, directed to report to the medical officer in command, Ellis Island, N. Y., for duty.

Spratt, R. D., asst.-surgeon, granted leave of absence for one month and ten days from Dec. 6, 1906.

Frost, W. H., asst.-surgeon, granted leave of absence for one day, Nov. 4, 1906.

Long, H. D., asst.-surgeon, temporarily relieved from duty at Ellis Island, N. Y., and directed to proceed to Washington, D. C., for temporary assignment to the Government Hospital for the Insane.

Frick, John, acting asst.-surgeon, granted leave of absence for thirty days, From Dec. 1, 1906.

Safford, M. V., acting asst.-surgeon, granted leave of absence for ten days, from Nov. 9, 1906.

Straw, E. E., acting asst.-surgeon, granted leave of absence for ten days from Oct. 15, 1906.

Walker, T. Dyson, acting asst.-surgeon, leave of absence granted for ten days from Oct. 18, 1906, amended to read for eight days from Oct. 23, 1906.

Walker, R. T., acting asst.-surgeon, granted leave of absence for five days from Nov. 25, 1906.

White, R. C., acting asst.-surgeon, granted leave of absence for thirteen days from Sept. 28, 1906, on account of sickness.

Rogers, Edward, pharmacist, temporarily relieved from duty at Stapleton, N. Y., and directed to proceed to Washington, D. C., for temporary duty.

Scott, E. B., pharmacist, granted leave of absence, without pay, for thirty days, from Nov. 7, 1906.

Keen, Walter H., pharmacist, granted leave of absence for thirty days, from Dec. 1, 1906.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service during the week ended Nov. 16, 1906:,

SMALLPOX—UNITED STATES.

District of Columbia: Washington, Oct. 27-Nov. 3, 1 case.
Illinois: Galesburg, Nov. 3-10, 15 cases.
Indiana: South Bend, Oct. 27-Nov. 10, 16 cases.
Iowa: Farley, Oct. 10-Nov. 12, 14 cases.
Louisiana: New Orleans, Nov. 3-10, 5 cases.
Maine: Bangor, Nov. 10, 3 cases.
Nebraska: Omaha, Oct. 24-31, 1 case.
North Carolina: Greensboro, Oct. 27-Nov. 3, 1 case.
Ohio: Findlay, Oct. 27-Nov. 3, 1 case, imported.
Wisconsin: Appleton, Oct. 27-Nov. 3, 1 case.

SMALLPOX—FOREIGN.

Africa: Cape Town, Sept. 22-Oct. 6, 16 cases.
Brazil: Bahia, Sept. 29-Oct. 13, 5 cases; Rio de Janeiro, Sept. 30-Oct. 14, 3 cases.
France: Paris, Oct. 13-27, 6 cases.
Greece: Athens, Oct. 6-13, 1 death.
India: Bombay, Oct. 9-16, 2 deaths; Calcutta, Sept. 29-Oct. 6, 4 deaths.
Russia: Moscow, Oct. 6-20, 4 cases, 1 death; Odessa, 12 cases, 1 death; St. Petersburg, Sept. 29-Oct. 13, 6 cases, 2 deaths.
Spain: Barcelona, Oct. 21-31, 5 deaths; San Feliu de Guixols, Oct. 20-27, 1 death.
Turkey: Constantinople, Oct. 14-21, 1 death.

YELLOW FEVER.

Brazil: Rio de Janeiro, Sept. 30-Oct. 13, 2 cases, 2 deaths.
Cuba: Cruces, Nov. 12, 3 cases; Cuevitas, Nov. 7, 1 case; Havana, Nov. 10-14, 5 cases; Santa Clara, Nov. 12, 1 case.
Nicaragua: Managua, Oct. 6-13, 1 death.

CHOLERA.

India: Bombay, Oct. 9-16, 6 deaths; Calcutta, Sept. 29-Oct. 6, 20 deaths; Madras, Oct. 6-12, 14 deaths; Rangoon, Sept. 29-Oct. 6, 2 deaths.

PLAGUE.

Australia: Cairns, Sept. 8-15, 2 cases.
Austria: Trieste, Nov. 12, present.
Brazil: Bahia, Sept. 29-Oct. 6, 1 case; Rio de Janeiro, Sept. 30-Oct. 13, 14 cases, 8 deaths.
India: General: Sept. 29-Oct. 6, 7,301 cases, 5,832 deaths; Bombay, Oct. 9-16, 54 deaths; Calcutta, Sept. 29-Oct. 6, 9 deaths; Rangoon Sept. 15-Oct. 6, 107 deaths.

Medical Education and State Boards of Registration.

COMING EXAMINATIONS.

MISSOURI State Board of Health, Kansas City, November 26-28. Secretary, J. A. B. Adcock, Warrensburg.

NEW MEXICO State Board of Health, Santa Fe, December 3. Secretary, Dr. B. D. Black, Las Vegas.

PENNSYLVANIA State Medical Examining Board, Industrial Hall, Philadelphia, December 4-7. Secretary, Dr. Joseph E. Willetts, Pittsburg.

WYOMING Board of Medical Examiners, State Capitol, Cheyenne, December 5. Secretary, Dr. S. B. Miller, Laramie.

DELAWARE State Medical Society Examining Board, Dover, December 6, and by the Homeopathic Board at Wilmington on same date. Secretary of the Medical Council, Dr. P. W. Tomlinson, Wilmington.

OHIO State Board of Medical Registration and Examination, Columbus, December 11-13. Secretary, Dr. Geo. H. Matson, Columbus.

IOWA State Board of Medical Examiners, Office of State Board of Health, Des Moines, December 11-13. Secretary, Dr. J. F. Kennedy, Des Moines.

VIRGINIA Medical Examining Board, Richmond, December 11-14. Secretary, Dr. R. S. Martin, Stuart.

MARYLAND Board of Medical Examiners, 847 N. Eutaw St., Baltimore, December 12. Secretary, Dr. J. McP. Scott, Hagerstown.

CALIFORNIA State Board of Medical Examiners, San Francisco, December 18. Secretary, Dr. Chas. L. Tisdale, Alameda.

OKLAHOMA Board of Medical Examiners, Guthrie, December 26. Secretary, Dr. J. W. Baker, Enid.

South Carolina Reciprocity.

COLUMBIA, S. C., Nov. 10, 1906.

To the Editor:—Please state in THE JOURNAL that the South Carolina State Board of Medical Examiners does not reciprocate with the Ohio board or the New Jersey board.

W. M. LESTER, M.D., Secretary.

Illinois July Report.—Dr. J. A. Egan, secretary of the Illinois State Board of Health, reports the written examination held at Chicago, July 11-13, 1906. The number of subjects examined in was 16; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 76, of whom 66 passed and 9 failed, and one did not complete the examination. The following colleges were represented:

PASSED. College.	Year Grad.	Per Cent.
Bennett Med. Coll., Chicago	(1906)	77, 85
Dearborn Med. Coll. (1906), the grades of 75 and 77 were reached by one each, 78 and 79 by three each, 80 by two, 81 by five, 82 by four, 83, 84, 85 and 89 by one each.		
Hahnemann Med. Coll., Chicago	(1905) 78; (1906)	83, 86
Hering Med. Coll	(1905)	79
Harvey Med. Coll	(1905)	80
Jenner Med. Coll	(1906) 76, 80, 81,	81, 84
National Med. University	(1906) 77,	78, 80
Northwestern Univ. Med. School	(1905) 83; (1906) 82,	86, 91
College of P. & S., Chicago	(1905) 78; (1906) 78, 79,	80, 84
Rush Med. Coll	(1903) 83; (1905) 87; (1906)	95
Michigan Coll. of Med. & Surg	(1891)	82
Baltimore Med. Coll	(1906)	79, 83
University of Michigan, Coll. of Med	(1903)	91
Barnes Med. Coll., St. Louis	(1906)	75, 75
St. Louis Univ. (Marion-Sims-Beaumont Med. Coll.)	(1906)	76, 79, 82
College of P. & S., St. Louis	(1906) 75,	78, 88
Washington University, St. Louis	(1906)	83
University of Pennsylvania	(1906)	85
Jefferson Med. Coll	(1906)	78, 88

FAILED.		
Bennett Med. Coll., Chicago	(1906)	72
Dearborn Med. Coll	(1906) 67, 71,	72, 74
Harvey Med. Coll	(1899)	56
St. Louis Univ. (Marion-Sims-Beaumont Med. Coll.)	(1906)	74
Barnes Med. Coll	(1905)	74
College of P. & S., St. Louis	(1906)	72

Rules Governing Examinations in Nebraska.—Dr. George H. Brash, secretary of the Nebraska State Board of Health, sends us the following, governing the examination for license.

1. An examination is required before a license is granted to practice medicine in Nebraska. The law requiring such procedure went into effect Aug. 1, 1903. Reciprocity is permitted.

2. Each applicant is required to fill and acknowledge application blank furnished by the board. The affidavit must be corroborated by the exhibition of his diploma.

3. Each applicant, if he graduated after Aug. 1, 1898, must show proof that he has attended four full courses of lectures at a recognized medical college, no two courses being in the same year.

4. Each applicant, if he graduated after Aug. 1, 1891, and prior to Aug. 1, 1898, must show proof that he has attended three full courses of lectures at a recognized medical college, no two courses being in the same year.

5. Applicants who graduated at a recognized medical college prior to Aug. 1, 1891, must show proof of having attended two full courses of lectures.

6. A fee of $25.00 must be paid on filing the application for examination, except that for graduates of medical colleges located in Nebraska the fee is $10.00. The fee is not returnable in case of failure to pass or non-appearance for examination.

7. Examinations are always in charge of one or more members of the State Board of Health.

8. Each candidate is known by his number, which is arranged as follows: Envelopes are numbered and each contains a blank bearing the corresponding number of which the applicant writes his name and address, this completed blank is returned by the applicant to the envelope and the envelope sealed by him.

9. Each candidate places on his answer papers the number given him; no other marks of identification are allowed on the answer papers.

10. The answer papers are collected and at once sent by express to the member of the board having charge of that subject. Each member examines the answer papers and marks each candidate by placing the marking opposite the candidate's number. These markings are sent to the secretary, who tabulates them and presents the same to the members of the board at a meeting which is held shortly after each examination. When the markings are completed, the envelopes containing the names are opened and these names are placed opposite the corresponding numbers.

11. No dishonest methods are tolerated and any candidate who disregards this rule is debarred from further examination. This rule includes the giving or obtaining of aid.

12. Ten questions are given on each paper, and all subjects for examination are covered by the question papers given.

13. The time allowed for each examination paper shall not exceed two hours.

14. No candidate is allowed to leave the room after the question papers have been distributed until he has completed his answers and delivered the same to the member in charge.

15. The examination is in writing and in the English language.

16. A general average of 75 must be attained. Any candidate failing to secure an average of 75 shall be considered to have failed utterly and shall not be entitled to another examination on that application.

17. Candidates from all schools shall answer in common all questions submitted except the questions on materia medica and practice, which are adapted to the school of practice accepted by the candidate. The answer papers on subjects peculiar to any one school of medicine are sent to the members of this board who are representatives of such school.

18. Candidates shall submit to an examination in the following branches, to-wit: Anatomy, physiology, chemistry, materia medica and therapeutics, practice of medicine, surgery, obstetrics and diseases of women, pathology and such other branches as the board shall deem advisable.

Rules Governing Examinations in Maryland.—Dr. J. McP. Scott, secretary of the Board of Medical Examiners of Maryland, sends us the rules governing the licensing examination in that state. They are as follows:

1. Help of any kind must be removed from the reach and sight of the candidate.

2. The examiner must retain the question papers securely in his own possession. Under no circumstances shall he distribute any examination papers before the exact time arrives for the examination on that particular subject.

3. The time for each examination paper shall not exceed three hours.

4. There shall not be more than eight nor less than six questions to each branch.

5. No candidate shall, under any circumstances, communicate in any way with any other candidate nor have books or helps of any kind. Any candidate violating this rule shall be debarred from that particular examination.

6. At the close of the examination each candidate must subscribe his or her name and postoffice address to the following declaration, constituting a part of the identification card, place the card in the envelope, seal the same and deliver it, with his or her final answer paper, to the secretary:

I, ———— now at the close of this examination, declare that, prior to these examinations, I had no knowledge of the questions to be proposed, and have neither given nor received explanations or other aid in answering any of them.

(Signed) ————

Every set of answers lacking this declaration and signature, however satisfactory in other respects, will be rejected, and in no case can this omission be supplied after the papers have reached the secretary of the Board of Examiners.

7. Any candidate detected in trying to give or obtain aid shall instantly be dismissed from the room, and his or her paper for the entire examination canceled. Likewise will the papers of any one be canceled who is found guilty of violation of the pledge that "explanations or other aid" had been neither given nor received during the examinations.

8. If any candidate withdraw himself or herself, without permission, from the sight of the examiner, his or her examination shall be closed. This rule permits a candidate to withdraw from the room and return only by the consent of the examiner.

9. A correct set of answers to the questions of any one paper shall entitle the candidate to the full mark for that subject, viz: one hundred points. Partial or imperfect answers shall be rated by the examiners in accordance with their degree of fulness and correctness.

10. All examinations shall be written in the English language, in ink, and must show that the applicant has received proper high school or academic education. Evidence of neglected preliminary education will have great influence with the examiners in determining ratings of papers.

Rules Governing Examinations in Illinois.—Dr. J. A. Egan, secretary of the Illinois State Board of Health, sends us a statement of the rules governing the licensing examination in that state, as follows:

1. The examinations of the Illinois State Board of Health are conducted by the secretary, assistant secretary and chief clerk of the board. The members who prepare the questions and grade the answers do not attend the examinations. The identity of the candidate is not known to the examiners. The candidate is known by a number which is given to him.

2. The questions are mimeographed in the office of the State Board of Health, and are taken to the examination in separate sealed packages, to be opened as required for use.

3. No candidate is admitted to the examination, unless he presents a card of admission, which is issued to all who make application within a stipulated time. The rules of the State Board of Health concerning examinations, are printed on the reverse of this card.

4. The secretary is assisted by several monitors—approximately one to every fifteen candidates—who watch the candidates, and see that they comply with the rules of the board. Each candidate is seated at a table by himself. The examinations are conducted on level floors, never in amphitheaters.

5. But one set of questions is given out at a time. The hours allotted for each subject are printed on a poster displayed in the examination room. All papers are taken up at the expiration of the time limit, and all candidates are required to begin the examination in each suceeeding subject at the same time.

6. Candidates are required to write on the paper furnished them by the State Board of Health. They are not permitted to have any papers or documents on the table except the examination papers and their photographs and cards of admission. Candidates are required to keep their photographs on their tables, in plain sight, until they are taken up.

7. A candidate is not allowed to leave the room during the examination, unless absolutely necessary, and then only when accompanied by a monitor, who goes with the candidate wherever he goes.

8. All candidates are required to appear in person before the secretary for identification, with a properly certified photograph. This identification takes place at such time during the examination, as the Board may elect, and is sometimes repeated during the examination. The State Board of Health will not examine the papers of a candidate who fails to appear for identification during the examination.

9. No persons excepting the secretary, his assistants and the candidates are allowed in the room during the examination.

After the examination, all papers are taken to the secretary's office, the number given the candidate at the examination is erased and another (serial) number is substituted. After being recorded, the papers are then sent to the members of the State Board of Health for examination and rating.

Rules Governing Ohio Examinations.—Dr. George H. Matson, secretary of the Ohio State Board of Medical Registration and Examination, sends us the following rules observed by that board in conducting examinations. These instructive rules will doubtless interest other examining boards.

1. Questions are submitted and approved by the board at its meeting preceding the examination. They are then sealed until not more than ten days prior to the examination, when the president and secretary have them printed, and again sealed until the hour of examination in the given subject.

2. At the beginning the applicant is given an envelope containing a numbered card on which he writes his name and address, enclosing it in an envelope, which is sealed and placed in custody of the secretary until examination grades are handed in. The number given is used on the examination paper. Under no circumstances does the applicant's name appear on the examination paper.

3. Examinations begin on second Tuesday of June and December, and continue for three days. Examination periods, 8 a. m. to 10:30 a. m.; 10:30 a. m. to 1 p. m.; 2 p. m. to 4:30 p. m.

4. All examinations are in English and written with ink. Paper is furnished.

5. On the first Tuesday of July and January the board submits grades and passes on applicants examined.

6. The examinations consist of the following subjects: Anatomy, physiology, chemistry, materia medica and therapeutics, principles and practice of medicine and pathology, surgery, obstetrics, physical diagnosis, and diseases of women and children. Ten questions are given in each subject.

7. Questions given the applicant are returned with the answers.

8. Explanations of questions and criticism or inspection of the answer papers during the examination are positively prohibited.

9. Applicants are not permitted to communicate with each other, nor to have in their possession any books or helps of any kind, nor to question any examiner concerning questions under consideration. Any applicant violating this rule is debarred from that particular examination.

10. Applicants must be present at the beginning of each period. They must furnish their own pens and holders.

11. An applicant detected in trying to give or obtain aid is instantly dismissed and his papers for the entire work canceled.

12. If an applicant withdraws, without permission, from the sight of the examiner, his examination is closed.

13. At the close of the entire examination each applicant must subscribe his name and number to the following declaration, place it in an envelope, seal the same and deliver it to the secretary: "I, ————, pledge my word and honor, without mental reservation or evasion, that prior to the examination I had no knowledge of the questions to be proposed, and that during the examination just completed I have neither given to nor received from a fellow candidate, or from any other source whatsoever, any information on the subjects treated of in the examinations, and that I have read and fully understand the import of this declaration." Printed forms are supplied for this purpose. Any set of answers lacking this signed declaration is rejected.

14. An average of not less than 75 per cent. entitles the applicant to a license, provided that he has otherwise complied with the law.

Society Proceedings

COMING MEETINGS.

Southern Surg. and Gyn. Assn., Baltimore, Dec. 11-13.
American Public Health Assn., Mexico City, Dec. 3-7.

PUBLIC HEALTH DEFENSE LEAGUE.

Meeting held in New York Nov. 15, 1906.

Mr. Austen G. Fox in the Chair.

In the City of New York, at the Hudson Theater, there was held a conference of public-spirited men and women. The dangers to the public health and morals incident to the indiscriminate sale of so-called "patent medicines," adulterated drugs and impure foodstuffs and like evils are daily coming home to the conscience of the American people. To an extent never before realized, the country is to-day aroused to the enormity of these evils and dangers. The question naturally arises, "What is the public going to do about it?" The charlatan has for years asked that question in insolent defiance; now the public is asking it in response to a feeling that it must do something in self-defense. The conference was called for the purpose of answering this question, "What is the public going to do about it?"

The following compose the conference committee: Dr. Wendell C. Philips, Silas F. Hallock, Dr. Floyd M. Crandall, Dr. Henry W. Cattell, Walter F. C. Tichborne, Albert M. Austin. Dr. Walter Lester Carr, Mr. Howard J. Rogers, Dr. Ernest J. Lederle, Mr. J. M. Rice, Harold P. Brown, Dr. Henry S. Stearns, Livingston Farrand, Rev. J. J. Wynne, Dr. William M. Polk, O. E. Edwards, Gaylor S. White, Dr. Frank Van Fleet, Eugene O'Dunne, Rev. Thomas R. Slicer, Dr. Thomas Darlington, Austen G. Fox, Dr. William L. Browning, Robert E. Belcher, Champe S. Andrews, John S. Cooper.

DR. FRANK VAN FLEET told of the influences at work that brought about the convention, the primary one being the Medical Society of the County of New York. He told of the formation of this medical society and what it had done in punishing violators of the medical law at a cost of about $5,000 a year, together with what the society obtained in the way of fines. During the past six years there have been over 600 prosecutions with over 400 convictions; the expenditure in money over and above what was received in fines was somewhere in the neighborhood of $12,000. They have had to contend with a lack of financial and moral support. The lawyers for the defense said that the society was doing this work for selfish motives; therefore, there was developed a popular prejudice which ought to be overcome. He told of Champe S. Andrews' work as counsel of the society; what he has done with the postoffice authorities in preventing men filling the mails with filthy and obscene stuff which is intended to defile the sanctity of the home. It became necessary to form a national society. Mr. Andrews and he attended a meeting of the wholesale druggists in this city, but were unable to agree on the work or plan of campaign. But they did succeed in interesting one of their number, a wholesale manufacturer, who sent a check for $1,000 to assist in carrying on the work. He advised great care in the selection of members, because they will be called on to urge the enactment of laws for the protection of public health; their greatest activity will not be along the line of public prosecutions and new laws, but in the line of education. They should begin with themselves and then educate the lawyers, judges and the public. He thought it would not be best for the physicians to take too prominent a part in the work, as they are always likely to be charged with self-interest.

MR. AUSTEN G. FOX said that this is a matter of national import. One hundred years ago the County Medical Society was founded in New York City, and this was seventeen years after the first president of the United States was inaugurated in New York City. Those that framed the constitution stated that one of the greatest objects was to secure such a constitution which had for its chief object the promotion of the general welfare. But there can be no general welfare apart from public health and public morality. So this meeting assembled, representing so many different cities or organizations from almost every state in the Union, to carry out one of the primal purposes in the formation of the federal constitution. Good work may be done here and there locally, but to accomplish the object desired requires making this movement of interest to all. No mere resolutions will accomplish anything. It is time for the community to realize the evil that threatens it. Exposures of quacks and quack medicines may put one or two out of business. Laws are needed that will make these offences punishable by fines and imprisonment. The enforcement of criminal laws should not be placed in the hands of a private organization, but the organization can wage the fight to bring the sponsors of these abuses to justice.

PRESIDENT MCGOWAN of the Board of Aldermen, in welcoming the delegates to New York, said that this undertaking should have the hearty coöperation of the people to bring their efforts to a successful issue. Every right-thinking man and woman and child desires good and pure food, good and pure air, good and pure morals. Unless we have all these we can not hope for good citizens; we can not hope for healthy people or a moral nation.

MR. AUSTEN G. FOX said that the great power will be the press, which heretofore has been most recreant in its duty. He felt sure that the newspapers are willing to coöperate. The Federal Government is already at work along the lines they intend to follow. He referred to the noble purposes that actuate the *Ladies' Home Journal and Collier's Weekly*.

MR. CHARLES F. STEWART, a reporter on the Cleveland *News*, told of his experience in getting after the quacks in Cleveland, and what his paper has done in suppressing them. So far as Cleveland is concerned, quacks have been put out of business; firms that have been paying $80,000 a year for postage stamps alone and whose annual business was over $600,000, have been forced to stop work. (See THE JOURNAL, November 10, pages 1568 and 1579.)

MGR. LAVELLE of St. Patrick's Cathedral, speaking for Bishop Farley, assured the conference of the hearty coöperation and sympathy of Bishop Farley, and said that anything that the laity and clergy of the Catholic Church in America can do to help on the crusade will glady be done.

MRS. MARTHA M. ALLEN, head of the Department of Medical Temperance of the W. C. T. U., said that nine years ago at the convention in Buffalo they started their crusade against the use of alcohol in proprietary medicines. At the close of her address some reporters came to her to obtain some facts and she told them of the percentages of alcohol contained in some of the proprietary medicines, and the reporters said they could not publish those facts because it would interfere with the advertising interests of their papers. They would publish nothing on this subject. Mrs. Allen assured the new society of the support of 300,000 women of the United States who will help do their part for the benefit of public health and morals. She said that some of the things they were organized to do they had been trying to do for many years past. They have been criticised for saying so much about beer, with its small percentages of alcohol, and so little about alcoholic medicines. This is simply a misrepresentation. The papers report what they say about beer and not what they say about the medicines. She told of one person who had taken for rheumatism over 12,000 bottles of Hostetter's bitters during a period of thirty years. She also called attention to instances she knew of drunkenness being caused by taking peruna and other "patent medicines."

On motion, the following resolutions were adopted:

WHEREAS, Medical quacks and charlatans, by their outrageous practices, are continually robbing their helpless victims and undermining the public health, and

WHEREAS, Many manufacturers of so-called "patent medicines" are debauching the public health and morals by the sale of alcohol and narcotics and many dangerous poisons under the guise of medicines, and by following the most pernicious customs and practices in the conduct of their business and the exploitation of the public, and

WHEREAS, Many manufacturers of drugs and food substances are persistently treating their wares with harmful adulterants and other vicious substances, to the great detriment of health and danger to life, and

WHEREAS, Many newspapers entering American homes contain alluringly false advertisements of adulterated foods, and vicious patent medicines, and criminal quacks and charlatans; now, therefore, be it

Resolved, By the conference of delegates from religious, professional, charitable, philanthropic and public welfare societies, in convention assembled at the Hudson Theater, New York City, November 15, that by reason of the foregoing conditions some concerted action against these evil conditions by public-spirited men and women is necessary for the preservation of the public health and morals and the purity of the American home. Be it further

Resolved, That for the coördination and coöperation of the forces willing and able to combat these frightful abuses, the said conference hereby approves of the formation of a national society for the preservation of the public health, whose objects shall be as follows:

(*a*) To obtain and disseminate accurate information concerning practices and conditions of every kind that are dangerous to the public health and morals, and to work for the enlightenment of the public on all matters affecting these subjects.

(*b*) To work for the enactment of laws in the United States, all Territories, and colonial possessions, for the protection and preservation of the public health and morals, including those matters mentioned in sub-division (*c*) hereof.

(*c*) To assist the constituted authorities in the enforcement of all laws affecting the public health, including those laws for the prevention of quackery, charlatanism, and criminal practices in the healing art, whether by licensed or unlicensed practitioners; the prevention of adulteration and substitution of drugs and food substances; the prevention of the sale of narcotics, alcohol, and dangerous substances of every kind, whether under the guise of proprietary remedies and so-called patent medicines and nostrums and remedies, or whether sold as narcotics in violation of law; the prevention of the admission to the United States mails of all newspapers and printed matter of every sort advertising any business injurious to the public health or morals, and to prohibit the advertising of such business in any way. The mention of any one or more particular words or terms in this paragraph shall not be construed as limiting or qualifying the general terms "public health" or "public morals." Be it further

Resolved, That the public health conference committee, under whose direction this conference has been held, together with such additional mmbers as they may select, is hereby continued, and appointed as a committee to prepare and present to the legislature of the State of New York an act to incorporate a society, the object, purposes, powers and provisions of which act shall be such as to provide for the formation and operation of a national society with the objects expressed in this resolution.

MR. CHAMPE S. ANDREWS presented for consideration a draft of a charter modeled after the charter of the American National Red Cross, in which the objects and purposes of the

organization are stated to be as set forth in the above resolutions.

Dr. Charles A. L. Reed of Cincinnati, representative of the American Medical Association, said in part:

The object of this conference is certainly a very meritorious one and all the more gratifying to physicians because it comes from the people as distinguished from the medical profession. It is, therefore, the sign of popular awakening to an evil over which society has been slumbering with too much tranquility for all too long a time. But it is to be remembered in approaching a practical solution of quackery that it exists to-day, as it has existed in all ages, by virtue of patronage derived from two apparently opposite sources, namely, ignorance and superculture; ignorance of the kind that believes in charms and incantations; superculture of the sort that would reorganize society, revise the plans and specifications of the universe, furnish a new chart for Heaven, and instruct God Almighty how to administer law. I see these conditions are only apparently opposite for the soul of the whole difficulty is the same in both instances; in the one there having been a failure to acquire, in the other, a failure to preserve a sense of the normal relations of things in life. The evil of quackery and charlatanism exists, therefore, not merely in the fact that we have quacks and charlatans, but that we have elements of society that demands them. This points to a depth of the evil that makes it all the more difficult to master. The task embraces, obviously, not merely legal regulation of quacks and charlatans, but the difficult task of educating the ignorant, and the vastly more difficult task of uneducating the supercultured. But difficulties only make tasks more attractive. So we must do these things, not alone here in New York—although this is a good beginning place; not here and there in spots in different parts of the country, but we must do them in a general way all over the country; for if we do not, with mails and transportation facilities always and everywhere available, we shall scarcely mitigate the evil at all.

Now this brings us to what I believe to be the very kernel of the matter. We are confronted by the fact that, so far as all regulative laws touching the practice of the healing art are concerned, they are, and must be, enacted by the different states by virtue of, and in accordance with, the police power reserved to them under the constitution. National regulation of this question, save as it applies to the mails and interstate commerce, is conceded to be impossible. It becomes a matter of primary importance, therefore, not only that these laws, but that police laws in general, should be as nearly as possible uniform, on a plane of high efficiency in all the states. Now the next important fact is that social, educational and commercial conditions have become so uniform all over the country that there has arisen a demand for correspondingly uniform laws dealing with these features of our social lives. The failure to get such uniformity in legislation from the different states has lead to an appeal to the congress for national laws dealing with what, in many instances are really state conditions, the regulation of which belongs to the prerogative of the different states. In some instances the congress, by strained construction of the Constitution, has responded to this demand. In other instances, where congress has failed to furnish such laws, many very good people say that there has been no delay in getting action through executive order issued without reference either to the law or the constitution. This state of affairs comprises what many very good people recognize as a dangerous tendency to the centrallzation of power at Washington. While I am in no sense a states right man of the original pattern, I do believe in observing the restrictions of the constitution and in maintaining the prerogatives vouchsafed to the states by that instrument.

Now, what is the remedy of this condition of things? What is the remedy for the specific evil, to consider which this conference has been called? So far as it is a question of laws at all it obviously lies in the direction of the enactment of uniform laws by the states, which laws shall be supplementary to, and in harmony with, national laws, wherever national laws deal with the same subject. And it seems to me that this conference can do nothing better, can subserve no higher public need than to resolve itself into national uniform laws-association. Such an association would be competent to deal in an educational way, not only with questions of national legislation, but more particularly with those of state police, bringing the two into harmony. It could embrace within its scope not alone the question of quackery and charlatanism, but such questions as charities and corrections, pure food and drugs, the status of the profession in the public services, state and national public health administration, regulation of the practice of medicine, the social evil, divorce, temperance, extradition, insurance, transportation, and such other questions, the diversity of laws relating to which leads to confusion and public detriment. Such an association, national in scope, organized on a broad plane, would not only deal more effectively with the special questions now under consideration by this conference, but would subserve a useful purpose in the body politic.

Dr. Reed offered the following resolution:

First. That the conference hereby resolves itself into an association to be known as the American Uniform-Laws Association, whose objects it shall be to secure the enactment of new laws and such amendments to existing laws, national and state, as will make them practically uniform and in harmony with each other relating to the subjects of charities and corrections, pure foods and drugs, the status of the profession in the public services, state and national public health administration, regulation of the practice of medicine, the social evil, divorce, temperance, extradition, insurance, transportation and such other subjects as a committee on permanent organization hereinafter to be approved shall deem it wise and expedient to embrace in the plan of the association.

Second. That the president of the association be and is hereby authorized to appoint a committee on permanent organization, whose duty it shall be (a) to prepare a constitution and by-laws for an association with sections in accordance with the preceding motion; (b) to elect officers for the general association and for the sections of the same; (c) to arrange a program, and (d) select a place where the first meeting of such association shall be held during 1907.

Mr. Eugene O'Dunne, Baltimore, deputy state attorney, approved the resolution. He said that the evils that are intended to be reached by this organization will aid greatly in driving the criminals to the wall; this organization can prepare the cases, get the needed data and furnish them to the prosecuting attorney. Therefore, this new organization comes as a very welcome thing, and the benefits will be far-reaching. If the men and women present knew fully the conditions which exist and could see the anguish of the mothers, their weeping, because of the the children taking soothing syrups so called, they would rise up in anger whenever "patent medicines" and quacks are mentioned. This organization, he said, should go further than the mere prosecuting of these offenders. The very life and foundation of society for coming generations, he said, is being sapped by the employment in factories of children under age.

He endorsed the resolution and urged its adoption. If the papers continue to insert these advertisements they will be little better than the criminals behind the bar. He hoped for the ardent coöperation of the press. Many papers in Baltimore refuse these advertisements. He suggested that the name of the new organization should be the Public Health Defense League.

Rev. Thomas R. Slicer offered an amendment to the resolution that the name proposed by Mr. O'Dunne, "Public Health Defense League," be inserted.

The resolution and amendment were carried.

Mr. Thomas W. Barlow, District Attorney of Philadelphia, spoke of the work of Mr. Anthony Comstock and referred to him as the one living force that stands between the children of this country and a flood of immoral literature.

Mr. Anthony Comstock believed that this organization has built grander than any had conception of. He asked how many realize the facilities for reaching all the children in the country? How many realize the dissemination of the worst pictures, criminal drugs, articles and instruments for immoral uses into the schools, seminaries and colleges of this country unbidden and unsought? There are 20,000,000 boys and girls in this country between the ages of 5 and 18, and the postoffice offers facilities for reaching every one of them. Anyone can drop into a mail box the most infamous, degrading and soul-destroying literature, and if sealed no power can interfere with its being forwarded, and such literature is being constantly sent to schools and colleges. For thirty odd years the New York Society for the Suppression of Vice has been pelted with misrepresentations, but it has to a great measure cleansed the mails from literature that is worse than smallpox.

MISSISSIPPI VALLEY MEDICAL ASSOCIATION.

Thirty-second Annual Meeting, held at Hot Springs, Ark., Nov. 6-8, 1906.

(*Continued from page 1674.*)

Insurance Fees.

In response to a letter from the Kentucky State Medical Association, the executive committee took up the question of insurance fees and unanimously endorsed the action of that body in its stand for a uniform payment of $5 for life insurance examinations.

Some Mental Symptoms Due to Disease of the Nasal Accessory Sinuses.

Dr. J. A. Stucky, Lexington, Ky., reported ten cases, all of which gave evidence of chronicity having existed for a long time. All presented prominent characteristic symptoms of suppuration, and were submitted to the usual diagnostic tests. All were operated on after the Killian method. In two cases, in addition to invasion of the frontal and ethmoid, the sphenoid was involved. In eight other cases the maxillary sinus was likewise involved in the suppurative process. Probably in the ethmoid or its offshoots, the middle turbinate, is to be found the cause for the majority of cases of infection of the frontal, maxillary and sphenoidal sinuses. In these and many other cases of chronic ethmoiditis Dr. Stucky has noticed one or several of the group of symptoms associated with

this disease mentioned by Beaman Douglas, the cause of which has not been explained. It is evidenced by slow deterioration of the mental faculties, an inferior quality of work, loss of memory, disability for continued application, over-anxiety, general incapability, and procrastination.

In neurotic subjects and those with lowered vitality from any cause, an ethmoidal, sphenoidal, or frontal affection may start the vicious circle, composed of the sinus affection proper, and the neurasthenic or hysteric conditions, which later reach a form and degree which sometimes allow us to classify the bearer as one "bordering on insanity."

Metabolic Aspects of Over-Feeding and of Under-Feeding.

DR. RALPH W. WEBSTER, Chicago, said the term over-feeding or forced feeding means the giving of an amount of food which furnishes the body more energy than it needs, regardless of whether the addition be in the form of proteid, carbohydrate, or fat. Errors in diet are productive of various disorders as a result of the overtaxing of the digestive, absorptive, assimilative, or excretory organs. He referred to the obese, diabetic, and gouty subjects, on the one side, and the neurasthenic, neuralgic, and chlorotic patients, on the other.

Over-feeding is only a therapeutic measure, and not a causative factor in disease. An excess of food, in the form of fat or carbohydrate, exerts, even when given in large amounts, only a slight increase in the energy relation of the system. This applies to an immediate increase in the oxidative processes and not to the later effects of the reserved fat or carbohydrate. Only a part of such excess is burned up in the system, the chief part being stored in the various depositories, subject to the checking orders of the system. On the addition of fat to the diet, almost the total excess of energy is turned to the advantage of the body, not in the form of increased energy, but rather in the form of latent energy as a deposition of fat.

An increase of proteid in the diet raises the general tissue metabolism, as evidenced by the increased oxidation. This primary increase in the oxidative processes, which is effected by a meal rich in proteids, lasts for eight to ten hours. This fact may be expressed more briefly in the statement that every addition of proteids increases the proteid decomposition, the system soon adapting itself to a new equilibrium. It is erroneous to refer every loss of nitrogen to an increased decomposition of body proteid. There is no reason for supposing that tissue proteid is decomposed in any different way than is food proteid.

The following general effects of a long-continued underfeeding are to be recognized: 1. The proteid decomposition sinks to a certain point beyond which further decomposition is serious. The body at this point adapts itself to a fairly permanent equilibrium, as shown by the fact that not so much body proteid is lost in the latter periods as in the beginning. Nitrogenous equilibrium can be maintained on a lower proteid addition than is customary, provided the calorie need is covered. 2. Long-continued under-feeding, aside from very slight degrees of calorie deficit, lead to constant loss, not only of body fat, but also of body proteid, it being immaterial whether the proteid intake be large or small. The absolute height of the N-excretion depends on the amount of proteids, but the maintenance of nitrogenous equilibrium is independent of the amount as a balance is established to suit the intake. A calorie poor diet, which is rich in proteids, may protect the N-loss or may even raise it for a time, but the final result will be the same as if all parts of the diet are simultaneously reduced. 3. Whenever the addition of food lessens the calorie deficit, a building-up of cell material takes place, although the calorie need at this time may not be completely satisfied. This condition lasts until the body is accustomed to the new equilibrium, when N-loss begins anew, unless the calorie need is absolutely covered.

Surgical Treatment of Intestinal Obstruction.

DR. H. O. WALKER, Detroit, Mich., reported 11 cases of intestinal obstruction. Seven of them were chronic, but 2 of these became acute, making practically 6 acute and 5 chronic cases of obstruction of the bowel. In 6 cases the obstruction was in the small intestine, in 5 in the large intestine. Two of these cases involved both the small and large intestines. The mortality was 5, making a percentage of 45.5 per cent., a much better record than is usually obtained, yet he firmly believes that if he had seen these cases earlier there would have been little doubt that 3 of the 5 patients who died could have been saved, showing that the great mortality, as Moynihan puts it, is "the mortality of delay." The advantage of early diagnosis and early operation can not be emphasized too strongly.

DISCUSSION.

DR. T. J. WATKINS, Chicago, agreed with the essayist as to the importance of early diagnosis and of early operation. His experience leads him to believe that early operations for intestinal obstruction are almost certain to result in cures, whereas late operations are almost certain to result fatally. He recalled 8 acute cases in which he operated in the last two years. Six patients were operated on within six or twelve hours after obstruction had taken place; all recovered. The other two patients were operated on late, and both died.

DR. EDWIN WALKER, Evansville, Ind., referred to one cause of delay in operating in cases of intestinal obstruction—the use of cathartics. Cathartics are very much over-rated remedies, in his judgment. Last year he looked up the subject and was impressed with the ignorance of the general profession in regard to the action of cathartics and the method of prescribing them. Cathartics are productive of much harm in cases of intestinal obstruction. In fact, very few intestinal diseases of any kind are benefited by them.

DR. F. F. LAWRENCE, Columbus, Ohio, said the time when the physician should not use cathartics is when intestinal obstruction is suspected. If there is a volvulus, an intussusception, obstruction by bands, cathartics will cause intestinal peristalsis, intestinal perforation, and death. Placing the patient in the knee-chest or Trendelenburg position, and rectal inflation with air, oil, or water, are equally pernicious.

Migraine.

DR. C. S. CHAMBERLAIN, Cincinnati, Ohio, said that he has come to the conclusion that Rachford's plan of treatment is the only one which is not injurious to the patient, and which can be depended on for relief in most cases, and for cure in a considerable ratio of chronic cases. This treatment was described fully in THE JOURNAL, Oct. 17, 1903, page 985.

As this form of dispensing the preparation proposed by Rachford is inconvenient, Chamberlain had had it made in the form of a granular effervescent salt, and is convinced that the prescription in this form is fully as efficient as in the more expensive form of a carbonated solution.

(To be continued.)

MEDICAL ASSOCIATION OF THE SOUTHWEST.

First Annual Meeting, held at Oklahoma City, Okla., Oct. 31, 1906.

The Second Vice-president, DR. P. S. MITCHELL, Iola, Kan., in the Chair.

About 300 physicians attended this meeting, representing Missouri, Arkansas, Texas, Kansas, Oklahoma and Indian Territory and Oklahoma, was merged into this association.

Addresses of welcome were delivered by Mayor Messenbaugh on behalf of the local authorities, and by Dr. L. Haynes. Buxton, on behalf of the local medical profession. Replies were made by Dr. George West, Eufaula, I. T., and Dr. J. N. Jackson, Kansas City, Mo.

Papers were read before three sections, surgery, general medicine, and eye, ear, nose and throat.

Officers Elected.

The following officers were elected for the ensuing year:

President, Dr. C. M. Rosser, Dallas, Texas; vice-presidents, Dr. J. P. Runyan, Little Rock, Ark.; Dr. W. F. Sawhill, Concordia, Kan.; Dr. John Punton, Kansas City, Mo., and Dr. E. O. Parker, Guthrie, Okla.; secretary-treasurer, Dr. F. H. Clark, El Reno, Okla.

Section on General Medicine: Chairman, Dr. S. C. James, Kansas City, Mo.; secretary, Dr. C. C. Goddard, Leavenworth.

Kan. Section on Surgery: Chairman, Dr. J. N. Jackson, Kansas City, Mo.; secretary, Dr. B. F. Fortner, Guthrie, Okla. Section on Eye, Ear, Nose and Throat: Chairman, Dr. E. H. Cary, Dallas, Texas; secretary, Dr. R. E. Runkle, El Reno, Okla.

The association is to meet annually, in the fall of the year, and all physicians in the states mentioned above, who are in good standing in their respective state societies, are eligible to membership.

An executive committee, consisting of three members from each state, determines the place of meeting.

Therapeutics

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulæ and outlines of treatment are answered in these columns.]

Dysmenorrhea.

The treatment of dysmenorrhea is often puzzling to the general practitioner who, for various reasons, must assume the charge of such cases. A. Routh, in *British Med. Jour.*, states that when complete obstruction to the menstrual flow is present, the condition must be relieved by incision, while partial or relative obstruction is best treated by dilatation. In the latter instance he prefers rapid dilatation under anesthesia, followed by plugging with gauze. In some cases he uses tents.

In relative obstruction, as in cases of retroverted or subinvoluted uteri, replacement is necessary with iodized phenol applications to the endometrium or in some cases curettage followed by the administration of ergot given between the menstrual periods to encourage involution. In such event the ergot should always be discontinued three days before time for menstruation if much pain is present during this period.

In the nervous form of dysmenorrhea, the so-called spasmodic type, the treatment is essentially prophylactic and medical rather than surgical. In these cases general treatment is necessary, which should include physiologic rest, moderate exercise in the open air, if possible, and a carefully regulated diet. The bowels and skin should be kept active by purgatives and baths; the clothing should be of wool; the patient's mind must be kept occupied, including some occupation involving practical sympathy for others. In anemic cases Routh recommends the following combination as an excellent one to correct such conditions:

℞.	Liq. ammon. acetatis	3ii	8 |
	Ferri et ammon. citratis	gr. vii	50
	Tinct. calumbæ	f3ss	2 |
	Liq. arsenicalis	m. iii	20
	Magnesiæ sulph.	3ss	2 |
	Aquæ chloroformi q. s. ad	f℥i	30 |

M. Sig.: To be taken at one dose, and such a dose repeated after each meal.

One week previous to the time for menstruation he recommends that potassium bromid grains 10 (.65) be added to the foregoing combination, or sodium salicylate if there is a rheumatic tendency.

If the dysmenorrhea still persists he advises the following combination to relieve the pain:

℞.	Tinct. card. co	f3ss	2 |
	Tinct. zingiberis fort	m. v	30
	Liq. ammon. acetatis	f3iv	15 |
	Antipyrini	gr. v	30
	Potassii bromidi	gr. xv	1 |
	Aquæ caryophylli q. s. ad	f℥i	30 |

M. Sig.: To be taken at one dose, when the pain is present, and repeated in two hours if necessary.

If stronger sedatives are required he recommends a combination similar to the following:

℞.	Antipyrini	gr. vi	40 |
	Caffeinæ citratæ	gr. iii	20 |

M. Fiat cachet No. i. Sig.: To be taken at one dose.

If the extremities are cold of if the patient feels chilly, prompt relief is given by having the patient inhale a nitrite of amyl pearl (3 minims), or by the administration of nitroglycerin grain 1/100 (.0006) hypodermically. Alcoholics, opium or chloral should be avoided especially in neurotic individuals in order to avoid any tendency toward formation of a habit.

In what is known as the congestive form of dysmenorrhea the pain is sometimes so severe as not to be relieved by antispasmodics, but in many instances it will yield to extract of cannabis indica grain 1/3 (.02), or a combination similar to the following:

℞.	Pulv. hydrastis	gr. v	30 |
	Ext. belladonnæ	gr. 1/12	005 |
	Potassii bromidi	gr. v	30 |

M. Fiat capsula No. i. Sig.: One such capsule three times a day.

At the same time efforts should be made to relieve this congested condition by producing activity in other excretory organs, the liver, bowels, kidneys and skin.

To relieve the pelvic congestion hot vaginal douches (110 F.) containing borax or the tincture of iodin may be ordered. In severe cases he advises that the cervix be punctured or leeches applied once a week to relieve the venous engorgement. As a substitute for this treatment he states that glycerin tampons be inserted.

In cases of ovarian dysmenorrhea he advises turpentine stupes or hot bran poultices over the abdomen. He advises against operative measures except when there is an undeveloped uterus.

Gout.

The following combinations are recommended by the *Deutsch. med. Wochenschrift* in the treatment of acute gout:

℞.	Tinct. colchici	m. xx	1 | 30
	Potassii citratis	gr. xx	1 | 30
	Aquæ chloroformi	f℥i	30 |

M. Sig.: One such dose to be taken every four hours until the pain ceases.

The foregoing should be preceded by a purge. Or:

℞.	Tinct. colchici	m. xx	1 | 30
	Tinct. belladonnæ	m. v	30
	Tinct. cimicifugæ	m. vi	40
	Potassii bicarb.	gr. xii	75
	Infus. gentianæ co. q. s. ad	f℥i	30 |

M. Sig.: One such dose every four hours in water.

Pharmacopeia for Infants.

Grünbaum, in the *Practitioner* (London), under this title tabulated a list of preparations to be used in the various forms of medication in the treatment of infants. The doses calculated are for infants aged three months and weighing 13 pounds or more. Infants under one month should receive one-half the dose here calculated, and those over six months, double the dose.

LOTIONS.

As lotions to be used in diseases of infants he recommends the following combinations:

Lotio acidi borici:

℞.	Acidi borici	gr. xv	1 |
	Aquæ	f℥i	30 |

M. Fiat lotio.

Lotio acidi carbolici:

℞.	Phenol	gr. viii	50 |
	Aquæ	f℥i	30 |

[This constitutes approximately a 2 per cent. solution of phenol.]

M. Fiat lotio.

Lotio acidi carbolic cum boracc:

℞.	Glyceriti acidi carbol.		
	Glyceriti boracis, āā	m. vi	40 |
	Aquæ q. s. ad	f℥i	30 |

M. Fiat lotio.

Lotio aluminis:

℞.	Aluminis	gr. iv	25 |
	Aquæ	f℥i	30 |

M. Fiat lotio.

Lotio ammonii chloridi:

℞. Ammonii chloridi.....gr. xv 1
Aquæ .....fʒi 30 | 30

M. Fiat lotio.

Lotio calaminæ:

℞. Calamini prep.....gr. xxx 2
Zinci oxidi.....gr. xv 1
Glycerini .....m. xx 1
Solutio calcis.....fʒiss 45
Aquæ .....fʒi 30 | 30

M. Fiat lotio.

Lotio carbonis detergens:

℞. Sol. picis (coal) alc.....m. xii
Aquæ .....fʒi 30 | 75

M. Fiat lotio.

Lotio paraffini compositus:

℞. Paraffin .....ʒiii 90
Balsami peruviani 3ii 8
Hydrarg. oleatis 3i 4
Olei oliviæ .....ʒi 30

M. Fiat lotio. Sig.: Apply with a brush.

Lotio plumbi:

℞. Sol. plumbi subacetatis.....m. vi
Aquæ .....fʒi 30 | 40

M. Fiat lotio.

Lotio plumbi cum opio:

℞. Tinct. opii 3ss 2
Lotio plumbi .....ʒi 30

M. Fiat lotio.

Lotio potassii chloratis cum boraci:

℞. Potassii chloratis
Sodii boratis, āā.....gr. vi
Aquæ .....fʒi 30 | 40

M. Fiat lotio.

Lotio sodii biboratis:

℞. Sodii biboratis
Sodii bicarb., āā.....gr. xv 1
Glyceriti acidi carbol.....m. xv 1
Aquæ q. s. ad.....fʒi 30

M. Fiat lotio.

Lotio zinci chloridi:

℞. Zinci chloridi.....gr. i
Aquæ .....fʒi 30 | 06

M. Fiat lotio.

Lotio zinci sulphatis:

R. Zinci sulphatis.....gr. ii
Aquæ .....fʒi 30 | 12

M. Fiat lotio.

APPLICATIONS.

Applicatio glycerini borici:

℞. Glycerini .....ʒv 150
Acidi borici .....ʒiii 90

M. by heating. Sig.: Use as a local application.

Applicatio boracis cum potassii chlorato:

℞. Potassii chloratis
Sodii boratis, āā.....gr. xii 75
Tragacanthæ pulv.....gr. iv 25
Glycerini 3i 4
Aquæ chloroformi q. s. ad.....fʒi 30

M. Fiat applicatio.

BATHS.

Balneum alkalinum:

℞. Sodii bicarb. .....ʒi
Aquæ at 96 F.....Oxl

M. Sig.: For a bath.

Balneum calidum:

Aqua 98 to 104 F.

Balneum frigidum:

Aqua 65 to 50 F.

Balneum sinapis:

℞. Sinapis .....ʒss
Aquæ (98 to 106 F.).....Oviii

Balneum sulphuratum:

℞. Potassii sulphuratæ .....ʒi
Aquæ (hot) .....gallons vii

Balneum tepidum:

Aqua 85 to 92 F.

Medicolegal

Test Under Statute as to Prescribing of Narcotics.

The Court of Criminal Appeals of Texas holds insufficient, in Blair vs. State, an indictment of a physician which was framed under section 2, page 45, of the Acts of the Twenty-ninth Legislature of that state, which prohibits certain parties from prescribing morphin and other narcotic drugs, under the provisions of said section, with the following proviso: "Provided, however, that the provisions of this section shall not be construed to prevent any lawfully authorized practitioner of medicine from prescribing in good faith for the use of any habitual user of narcotic drugs, such substance as he may deem necessary for the treatment of such habit." In order to bring the physician within the terms of this law, the court says, the indictment must allege such facts as make him amenable, and if he comes within the terms of the proviso, he has not violated this statute. Those who are brought within the proviso are not within the terms of the inhibition because excepted from the punishable provisions of the act. In order to bring a party within the provisions of this act it should be alleged not only that he did not prescribe it (here morphin) in good faith for the use of the person charged, but that he did not deem it necessary for the treatment of such habit. The good or bad faith is not the criterion. It is the good faith on the part of the physician prescribing the medicine or such substance as he may deem necessary for the treatment of such habit. If the prescription for the morphin was deemed necessary for the treatment of the habit of the person, then the physician is not within the purview of the statute, and is exempted by the terms of the law. The mere fact that he may or may not have given it in good faith is not sufficient. The good faith is measured by what the party prescribing deems necessary for the treatment of the habit. If the morphin was necessary for the treatment of the habit, the giving of it was not violative of the statute.

Elements Affecting Expectancy of Life and Damages for Injuries.

The Supreme Judicial Court of Maine holds, in the personal injury case of Haynes vs. Waterville & Oakland Street Railway, that the expectancy of life of a person injured is an element to be considered in awarding damages for the injury, and that, in determining this expectation of life, the age at which the last two deceased paternal ancestors died is a material factor. In this case, as bearing on the expectancy of life of the plaintiff, a boy about 10 years of age, when injured, his grandfather was permitted to testify, against objection, as to the age at which his own father and grandfather respectively had died. The court does not consider that this was error. It is common knowledge, it says, that physicians and life insurance companies regard the longevity of one's ancestors as an important factor in determining his expectation of life. The various "mortality tables" only give averages, and in an individual case the expectation may be higher or lower than that average by reason of many circumstances peculiar to that case, such as the presence or absence of inherited disease, deformity, etc. A descent from robust, long-lived stock gives promise of longer life than from frail, short-lived ancestry, other things being equal.

The loss of earning power, the court further holds, is not the extent of the damage sustained from a serious physical permanent injury to a person. the lost usefulness and enjoyment out of his prospective life are also elements of damage. For example, it says in this case that the total loss of the left hand by a boy of 10 years takes a great deal of usefulness and enjoyment out of his prospective life. The loss of earning power is by no means the extent of the injury. And a verdict of $6,500 it says was perhaps large, but not so glaringly excessive as to show clearly that sympathy or prejudice overcame the judgment of the jury.

Damages Recoverable for Wrongful Death of Physician.

The Court of Appeal, Second District, California, affirms, in the case of Annie T. Evarts and others vs. the Santa Barbara Consolidated Railway Co., a judgment for $12,000 for the death of a physician about 44 years of age, who had been

engaged in practice for 22 years, and whose death was caused by his being precipitated into an unguarded excavation of the company's while driving on a public street after dark. The court says that, as to the earning capacity of the physician, while it might properly be considered in determining the amount of the verdict, the same was not determinative of such amount. In this case, as in that of Cederberg vs. Robinson, 100 Cal. 96, and Butler vs. Ashworth, 102 Cal. 663, there was not presented to the jury the value of the services of the physician to his patients, or the amount of his earnings, yet there was evidence that he was a regular practicing physician, that he possessed a number of patients, some of whom he was attending at the time of his injury, and that he was a strong man in the prime of life; from which facts alone the jury would be authorized to give substantial damages. The amount of pecuniary loss to the family was for the jury to decide. This court can not say that it was excessive. The evidence admitted as to the ill health of the wife was not improper. Her situation and condition tended in some degree to establish the pecuniary loss sustained. The damages to be assessed were the plaintiffs' damages; compensation to themselves for pecuniary injury.

Must Avoid Preventable Delay in Getting to Hospital.

The Supreme Court of Arkansas holds, in St. Louis Southwestern Railway Co. vs. Reagan, an action brought by the latter party wherein he recovered a verdict for $2,000 for the company's failure to furnish him prompt transportation to its hospital and prompt treatment after his arrival, that the judgment of the lower court must be reversed for error in the treatment of the subject of transportation. It holds that it was error to instruct the jury that if there was an agreement by the company in case of injury to furnish the plaintiff transportation to its hospital, and if it failed to do so, he was entitled to recover for whatever suffering and pain there may have been caused to him by reason of the delay in furnishing him transportation, notwithstanding he may have been able to pay for such transportation. Rather should the jury have been instructed to the effect that if they found from the evidence that the plaintiff was injured while in the service of the company, was entitled by virtue of an implied contract with it to be transported free of charge to its hospital for treatment, and the company failed or neglected to promptly furnish transportation to him to go to the hospital, by reason whereof his injury was increased, yet if he had the means by which he could have paid his way and thereby reached the hospital promptly, it was his duty to have done so, and thereby avoided increased injury; and if it was found that he did have the means and failed or neglected to use it he could not recover any sum as damages which resulted from the delay of the company in furnishing him transportation to the hospital.

It appeared in this case that the transportation to the hospital would have cost but $6, and that the company offered evidence to show that when the plaintiff arrived at the hospital he had over $3,000 cash in his possession; but, having been injured on the 8th of the month he waited until the 12th for a pass, instead, as the court says, of paying his fare and afterwards compelling the company to restore the amount paid. This delay, no doubt, acted unfavorably on his wound, and was the cause of considerable suffering on his part, but as he had it in his power to have avoided this delay by buying a ticket, the court thinks it was his duty to have done so. Suppose, it says, the company had never furnished him a ticket, could he with $3,000 in his pocket have been justified in refusing to spend $6 for a ticket and in allowing his leg to mortify so that amputation would be necessary, and, if he did so, could he justly demand of the company compensation for the loss of a leg? It was his duty, when the company failed to carry out its contract, to do what he reasonably could to avoid further injury to himself, and the court is of the opinion that he could not recover for pain and suffering under such circumstances, for he had it in his power to have avoided such injury. And it holds that it was error to refuse to allow evidence that he had money with which he could have bought a ticket.

It must be remembered, the court also says, that the railway company was under no obligation to enter into a contract of the kind set up by this plaintiff. The law did not require the company to enter into a contract to carry its employes to a hospital when injured. In refusing to perform such a contract the company was guilty of no breach of duty to the public, nor of any tort. The damages must be assessed as in ordinary cases of breach of contract and only those damages could be recovered as were the natural and proximate consequences of the defendant's breach of contract. When a party has the money with which to purchase a ticket the natural and ordinary damages which would result from a breach of a contract to give him free transportation would be the price of the transportation agreed to be furnished. If the plaintiff in this case had the money with which to have purchased a ticket, the court sees no reason why he should be allowed to recover damages for failure to furnish him a ticket beyond the price of the ticket. For if, having the money to buy a ticket, he voluntarily exposed himself to additional pain and suffering rather than pay the price of a ticket, his suffering caused by the delay was as much due to his own inaction as to that of the company, and he ought not to be allowed to hold the company liable for pain and suffering that he could have avoided by such a slight expenditure on his part.

Current Medical Literature

AMERICAN.

Titles marked with an asterisk (*) are abstracted below:

Medical Record, New York.

November 10.

1 *Plea for a More Rational Therapy in Tuberculosis. F. M. Pottenger, Monrovia, Cal.
2 *Neurasthenia. H. Richardson, Baltimore.
3 *Electricity in the Treatment of Disease. J. V. Shoemaker, Philadelphia.
4 *Postoperative Gastric Paralysis—Acute Dilatation of the Stomach. W. A. Bastedo, New York.
5 Importance of a Clear Understanding of the Vasomotors and the Utilization of Their Function to Get Best Therapeutic Results. W. C. Abbott, Chicago.
6 Syphilis of the Nasal Fossæ. A. Bardes, New York.
7 Obliterative Endarteritis of Femoral Distribution with Gangrene of the Feet. E. H. Eising, New York.
8 *Use of Oxygen in Asphyxia Neonatorum. C. D. Spivak, Denver, Colo.

1. **More Rational Therapy in Tuberculosis.**—Pottenger says that the original tuberculin of Koch and his later preparations, as well as numerous preparations made by other men, if used properly, will stimulate the cells of the individual suffering from tuberculosis to the formation of defensive bodies, as is shown by the increase of the agglutinating and opsonic power of the blood. There are also certain sera which seem to furnish the antibodies already formed, which are of some value. The best known of these are the Fisch, Maragliano and Marmorek sera. One of the chief aims of the physician should be to maintain nutrition at the highest point. The hygienic-dietetic-open-air treatment has for its basis the betterment of nutrition. Open air, Pottenger declares, is not a cure for tuberculosis. Used properly, however, it is one of the greatest aids to nutrition that can be employed. Open air should be supplemented by proper food and carefully regulated rest and exercise to make it most effective. Hydrotherapy is another measure of great value. The cheering and toning effect of sunshine is a very potent factor in aiding nutrition. The giving of raw meat or muscle juice is also indicated. All distressing symptoms and complications should be carefully managed.

2. **Neurasthenia.**—Richardson classifies the etiologic factors of neurasthenia under four heads: 1, Mental strain; 2, disturbances of digestion, malnutrition and autointoxication; 3, toxemia from infectious diseases; 4, traumatism and shock. It is apparently the vasomotor system which is principally affected. All emotions act on this system of nerves. An important etiologic factor from a therapeutic standpoint is a gouty constitution. In a case of this kind the urine is intensely acid and the carbon nitrogen factor is very low.

3. **Electricity in Treatment of Disease.**—Shoemaker says that electricity is always the same in itself, but that success in its use depends largely on the personal skill and good judgment of the operator. Electricity may be used to produce local necrosis or an eschar; to disturb the electrical relations of the nerves and muscles; to modify metabolism; to act as a temporary stimulant to nutritive processes, and especially to the nervous system and circulatory apparatus; to accomplish certain local effects by stimulating physiologic functions; to destroy parasites on the surface of the body; to produce electrolysis; to produce intense light; to produce a high degree of heat, and to produce magnetic effects. In general, he considers electricity only an adjuvant to other treatment.

4. **Postoperative Gastric Paralysis.**—Bastedo reports 3 cases of acute dilatation of the stomach. One was of the postoperative paralytic type; the other two were without paralysis and were due, respectively, to the ingestion of a heavy meal in a chronically dilated stomach, and to the artificial dilatation with gas of a stomach which had an obstructed pylorus. In the first case paralysis of the stomach, pylorus, and probably part of the duodenum, had quickly followed an operation for the removal of both tubes and one ovary. There was a large amount of secretion. It was noted that vomiting did not seem to lessen the distension to any great extent, nor did belching bring forth any large quantity of gas. In the second and third cases acute dilatation occurred without paralysis.

8. **Use of Oxygen in Asphyxia Neonatorum.**—Spivak reports two instances in which new-born infants which had been given up by the physician as hopelessly asphyxiated, were revived by the use of oxygen. A stream of this gas was turned into the nostrils of the baby by the attending nurse.

Boston Medical and Surgical Journal.

November 8.

9 Classical Symptoms of Hysteria. P. Janet, Paris, France.
10 *Achylia Gastrica. F. W. White, Boston.
11 *Sterility in the Male; Its Operative Treatment when Due to Bilateral Epididymitis. W. C. Quinby, Boston.
12 The Analytic Method in Psychotherapeutics. H. Linenthal and E. W. Taylor, Boston.

10. **Achylia Gastrica.**—White reports 7 cases and emphasizes the following points: 1. Simple achylia gastrica is a relatively common condition. It made up nearly 5 per cent. of this group of cases. 2. The diagnosis must be made from the physical examination of the patient and his stomach contents and feces. The symptoms are not characteristic. 3. Cases in which there is entire lack of HCl secretion, but in which very minute traces of pepsin or rennin are retained are not achylia in the strictest sense of the word, but are best classified as achylia. 4. In making the diagnosis of gastric cancer, remember the frequency of simple achylia, which may resemble it closely. The examination of the feces for invisible blood is especially useful here. 5. The etiology of simple achylia is unproved; its course suggests a functional origin. 6. Its most satisfactory treatment is hygienic and dietary.

11. **Sterility in Male.**—Quinby states that the following points may be emphasized: In all cases of sterility both husband and wife should be examined carefully. Sterility in a certain number of instances is due to the stenosing effects of a bilateral epididymitis. When so caused it may be relieved by an anastomosis between the vas and epididymis below the point of occlusion, as has been demonstrated on guinea-pigs by the author and on dogs by Martin. Such an operation offers practically no risk to life. Its performance is not difficult, needing only familiarity with the anatomy and pathology, proper suture material and gentleness in manipulation. The first suture material tried by Quinby was the finest spring-brass wire, such as is employed in the needle of the hypodermic syringe. One end of this was filled smooth and sharp and the rest of the wire annealed in the flame up to within about one-eighth of an inch of the sharp end. This was then used as a needle and thread combined. The extreme softness of the tissues, however, soon made it evident that no form of wire, however fine and pliable, would answer the purpose. Therefore, a strand of the finest sewing silk, No. 000, was divided into thirds and threaded into a so-called Beader's needle. This was found to answer all requirements. It was found that the anastomosis made by splitting the vas longitudinally was more easily performed than after cross-section. This longitudinal splitting offers a more extensive surface to be apposed to the epididymis.

New York Medical Journal.

November 10.

13 Presentation of Portrait of Dr. Carl Fortunatus Munde. A. Jacobi, New York.
14 *Study of Three Thousand Four Hundred and Thirty-six Cases of Senile Cataract. C. A. Oliver, Philadelphia.
15 *Treatment of Persistent Occipito-Posterior Positions. G. L. Brodhead, New York.
16 Epidemic Cerebrospinal Meningitis in Birmingham, Ala., During the Past Year. J. M. Mason, Birmingham, Ala.
17 *Surgical Treatment of Certain Lesions of the Upper Abdomen. J. B. Boucher, Hartford, Conn.
18 Importance of Early Recognition of Nasal Obstruction, and Its Relation to Later Respiratory Disturbances. F. A. Faught, Philadelphia.
19 Review of Recent Work in Clinical Pathology, Sputum, Gastric Contents, Feces. T. W. Hastings, New York.
20 Symptomatology and Diagnosis of Gastric Ulcer. M. R. Barker, Chicago.
21 *Appendicitis; A Plea for Complete Operations in Pus Cases. W. D. Ward, Rochester, N. Y.

14. **Senile Cataract.**—Oliver's study shows that the average age of operation for senile cataract is about 63 years. The occupation of the male played an important part in regard to the maturity and even the causation of the cataractous condition. The unskilled laborer gave the highest operative age average, 66 years. The skilled workmen gave the lowest age for the operative procedure, 68 years. The high-grade artisan showed no lenticular condition fit for removal at an average age of 63 years. The brain worker gave a very high operative age average, 65 years.

15. **Occipitoposterior Positions.**—Brodhead emphasizes the great importance of a thorough examination to determine the precise position of the head before any forceps operation is undertaken. He mentions as the most favorable conditions for succesful forceps rotation the well-flexed head, the low position of the vertex and careful attention to the technic of the operation.

17. **Surgical Treatment of Lesions of Upper Abdomen.**—Boucher discusses the functional and organic diseases of the liver and its ducts, the stomach, duodenum and pancreas, and, indirectly, the vermiform appendix.

21. **Appendicitis.**—Ward reviews the literature, in part, and reports several personal cases to show that complete and thorough work can be done safely in the region of the appendix, even though pus is present, and that it should be done, as it will give better results than any other method. He condemns the waiting policy.

The Lancet-Clinic, Cincinnati.

November 10.

22 *Wounds of the Liver. J. E. Cannaday, Hansford, W. Va.

22. **Wounds of Liver.**—Cannaday reports 6 cases of injury of the liver in which the treatment adopted shows the value of controlling liver hemorrhage by suture, making the peritoneal toilet by dry sponging instead of irrigation, and the avoidance of packing and drainage.

St. Louis Medical Review.

November 3.

23 *Case of Sympus (or Symmelus) Dipus. L. U. Singer, Clearfield, Iowa.

November 10.

24 Pathologic and Clinical Diagnosis of Sarcoma. (To be continued). M. G. Seelig, St. Louis.
25 Dr. Simon Flexner's Work on Experimental Cerebrospinal Meningitis and Its Serum Treatment. O. H. Brown, St. Louis.

23. **Case of Sympus Dipus.**—Singer's patient was one of twins; the other, the first-born, was a normally formed and healthy male child, is still living, and has never been sick. The parents are both strong and healthy. It was a breech presentation and the cord was clear of the body, not wrapped round it in any way. The child lived two hours and cried lustily. It could move its arms and head. There appeared to be only one bone (femur) in the upper part of the limb, but two fused bones in the lower part. The feet were distinct. Most, if not all, of the pelvis was recognizable. The rudiment of St. Hilaire's additional appendage, resembling a tail placed immediately above the anal region, was present.

As to the external organs of generation, there was an opening, but Singer could not tell whether it was an anus or a vaginal opening. Neither feces nor urine was passed. The parents have no other theories to account for the condition of the child. They have previously had five healthy children, the first two being twins, and all are doing well.

Journal of Infectious Diseases, Chicago.

October 30.

26 *Oral Administration of Antitoxins for Prevention of Diphtheria, Tetanus, and Possibly Sepsis, etc. C. T. McClintock and W. E. King, Detroit, Mich.
27 *Phagocytosis of Red Corpuscles. L. Hektoen, Chicago.
28 *Observations on the Opsonic Index and the Antipneumococcal Power of the Blood in Pneumonia. H. E. Wolf, Chicago.
29 *The Production of Cytotoxic Sera by the Injection of Nucleoproteids. R. M. Pearce and H. C. Jackson, Albany, N. Y.
30 *Streptococci from Scarlatinal and Normal Throats and from other Sources. G. F. Ruediger, Chicago.
31 New Simple Method for Staining the Polar Bodies of Diphtheria Bacilli. A. A. Epstein, New York.
32 A Simple Method of Sterilizing Blood for Cultural Purposes. E. P. Bernstein and A. A. Epstein, New York.
33 *Mouth Disinfection in the Prophylaxis and Treatment of Pneumonia. A. Wadsworth, New York.

26. Oral Administration of Antitoxin.—McClintock and King show that antitoxins for diphtheria and tetanus may be given by mouth and absorbed in sufficient amount to show markedly antitoxic properties in the blood of the treated animal. This result has been obtained by the use of certain drugs with the serum: on the one hand, drugs that inhibit digestion; on the other, those that promote absorption. It remains to be shown what are the best drugs for this purpose and in what quantities. Their experiments also show that the toxins of diphtheria and tetanus are absorbed from the alimentary canal, provided digestion is inhibited. This may point to a method for slow, gradual immunization of animals or men, and also suggests an explanation of many cases of toxemia, due to the absorption of putrefactive products when digestion is deranged. When antidiphtheria serum alone is given to guinea-pigs by the stomach, absorption does not take place with any degree of uniformity. It is interesting to note that the so-called sensitizing action of horse serum when given to guinea-pigs by the mouth is not nearly so great as when injected subcutaneously or into the peritoneum.

27. Phagocytosis of Red Corpuscles.—The principal results of Hektoen's experiments may be summarized as follows: Normal serum may contain opsonins for heterologous and in some instances also (human serum) for homologous erythrocytes. Repeated injections with alien blood commonly give rise to the accumulation of hemopsonins in the blood. Immune hemopsonic serum may contain common or non-specific hemopsonins, as well as specific hemopsonins directed particularly against the corpuscles of the blood employed for the injection. Immune hemopsonins possess a high degree of resistance to heat and other influences. Hemopsonins render red corpuscles susceptible to phagocytosis by various leucocytes, including the homologous, but the phagocytic activity of different leucocytes toward opsonized erythrocytes may vary. Human serum may contain agglutinin and opsonin for human erythroyctes. This appears to be the case especially in typhoid fever. The corpuscles of various individuals vary in their susceptibility to agglutination and phagocytosis by human leucocytes and the phagocytic power of leucocytes may vary. Autoagglutinins and auto-opsonins appear to occur occasionally. The demonstration of opsonins for human corpuscles in human serum may help us to a better understanding of the phagocytosis of erythrocytes that occurs in infectious and other processes.

28. Opsonic Index and Antipneumococcal Power of Blood in Pneumonia.—Wolf finds in pneumonia that the pneumococcic-opsonic index is first decreased, but that in favorable cases it rises, reaching its height soon after crisis, while in early fatal cases it remains consistently low. The estimated total antipneumococcal index (estimated from the leucocytic index and the opsonic index) is early increased and remains high until crisis is complete in cases with favorable termination. The experimental injection of dead virulent pneumococci produces a similar evolution in the antipneumococcal index in normal persons as that which occurs in pneumonia; but dead avirulent pneumococci seems to have no effect on the pneumococcic-opsonins. Injection of patients suffering with lobar pneumonia with pneumococcal vaccines seems to exert a favorable influence on the course of the disease, as indicated by an apparent decrease in mortality and by early crisis, but a great deal of further work is necessary before any conclusion of final value can be drawn.

29. Production of Cytotoxic Sera by Injection of Nucleoproteids.—Pearce and Jackson's experiments do not support the theory that specific cytotoxic sera may be developed by the injection of nucleoproteids as claimed by Beebe, but indicate, rather, that such sera have certain mildly toxic properties acting in a general way and affecting especially the principal excretory organ, the kidney. Beebe's claims for a specific pancreas serum based on the demonstration of reducing substances in the urine, especially in the absence of histologic changes in the pancreas, seems to be untenable in view of the finding by Jackson and Pearce of like reducing substances in the urine of normal dogs.

30.—This article is practically identical with that which appeared in The Journal, Oct. 13, 1906, page 1171.

33. Mouth Disinfection in Prophylaxis and Treatment of Pneumonia.—Wadsworth's investigations show that pneumococci, as compared with other pathogenic bacteria, are extremely susceptible to plasmolytic action of saline and alkaline solutions and also to the antiseptics which act in this way. But the susceptibility to antiseptics in general varies greatly and especially under different conditions. In broth media the pneumococci are readily destroyed; in exudates the albuminous material and detritus interfere with the action of many antiseptics; in sputum, disinfection by harmless solutions is extremely difficult. Of all the commercial solutions studied—listerine, borine, borolyptol, glycothymoline, odol and Sciler's solution—none proved efficient when tested on pneumococci under the conditions most favorable for their actions. Formalin, lysol and hydrogen peroxid failed to act on the pneumococcus in exudates. Alcohol alone, of all the antiseptics studied, proved efficient when tested on the pneumococci under all the conditions of the experiments. Observations on the diffusion of the different solutions with the secretions of the mouth under different conditions showed that the presence of salts in isotonic quantities and alkalies was of a positive, if slight, value. The rapid diffusion obtained with alcoholic solutions is greatly accelerated by the addition of glycerin. Finally, the results of these experiments suggested the use of hot solutions. As shown by the practical studies, cleansing the mouth with simple isotonic salt solution removes a certain amount of secretion and with it some of the infectious material, but does not destroy the bacteria. With the alcohol wash many of the bacteria are destroyed, the contaminated secretions are more rapidly removed and at the same time disinfected, and, finally, the natural resources of the tissues are more safely and efficiently aided in the elimination of the infectious material. It was thus determined that alcohol solutions containing glycerin and salts in bland quantities are in every particular more efficient than any of the washes hitherto recommended for mouth cleansing or disinfection; 30 per cent. of alcohol being the strongest that can be comfortably and habitually used in the mouth and the weakest that will give reliable disinfection.

The present research with reasonable precision shows that not only is the simple cleansing best effected with bland alcoholic solutions, but as disinfectants in the mouth these solutions, of all those studied, alone possess practical value. Wadsworth recommends the following solutions:

℞.	Sodium chlorid	gr. xl	8
	Sodium bicarbonate	gr. xx	1 4
	Glycerin		
	Water (dist.), āā	f℥iss	45
	Alcohol	f℥v	150
	Spirits of chloroform	f℥ii	8
	Oil of wintergreen	Oxx	10,000

Dilute with water in equal parts.

For convenience in hospital practice the solution is so made up that the addition of water in equal parts gives the strength desired. The flavoring spirits of chloroform and oil of wintergreen lose their strength after keeping a few weeks, so that it may be wise to guard against this by the substitution of

her flavoring agents. Owing to the sweet taste and the aporation of the chloroform and oil of wintergreen this solu-on has not proved so satisfactory in private practice as ose containing other flavoring agents. Although it was found at the solution may be varied to suit the taste of the tient by the use of different flavoring agents, the following rmula has given Wadsworth the best results:

℞.	Sodium chlorid (C. P.)	3ss	2
	Sodium bicarbonate (C. P.)	gr. x	7
	Water (dist.)	f℥ii	60
	Glycerin	f℥i	30
	Alcohol	f℥v	150
	Thymol		
	Menthol, āā	gr. i	07
	Oil of wintergreen	gtt. iii	18
	Oil of cinnamon	gtt. ii	12
	Oil of eucalyptus	gtt. v	30
	Tincture of cudbear	f℥iss	6
	Tincture of rhatany	f℥ss	2

M. Sig.: Dilute with equal parts of water.

In preparing these solutions the salts should be dissolved the water before adding the alcohol. Even when carefully ade up a cloudiness or a precipitate may appear in the solu-on, especially in those containing the tincture of rhatany. y adding two or three of the flavoring oils a less pronounced aste is obtained than when only one is used.

American Journal of Urology, New York.
October.

34 Primary Carcinoma of the Uterus. K. Vorpahl, Germany.
35 *Prostatic Albumin and Albumose. E. G. Ballenger, Atlanta, Ga.
36 *Oxaluria as a Cause of Prostatic and Urethral Disturbance. G. K. Swinburne, New York.
37 Chronic Catarrhal Nephritis. I. N. Danforth, Chicago.

35. Prostatic Albumin and Albumose.—According to Ballenger, the presence of albumin and albumose in the urine voided after massage of the prostate, when that passed before is normal, is as reliable in the diagnosis of prostatitis, or an abscess draining into the urethra, as renal albumin is in the diagnosis of kidney disease. This condition was constantly found in twenty-five patients with inflamed prostates. In two of these, with acute prostatitis, the first urine for a few days, showed as much as 1 per cent. of proteid, without evidence of renal disease at any time. The test was negative in fteen patients with healthy prostates and vesicles. The ecognition of this prostatic and vesicular proteid affords a ery simple method of making a positive diagnosis of prosatitis and seminal vesiculitis (when in excess) and is available in mild obscure cases whether a microscope be at hand r not. A study of these secretions had led Ballenger to he conclusions that spermatorrhea, instead of being a neurosis r due to a patulousness of the seminal ducts, is really caused y a low-grade inflammation of the seminal vesicles and the mpullations of the vas deferens, which should be borne in ind in the treatment of these conditions. The inflammation auses an increase in the secretion which mechanically washes ut the spermatozoa.

36. Urethral Disturbance.—In the past year Swinburne has ad twenty-six cases of oxaluria, presenting a variety of ymptoms, but the greater number of these cases show the ame general set of symptoms. There is a history of a revious gonorrhea of a recent or remote date; ever since the ttack there has been a persistent burning pain in the canal, sually at the end of urination, sometimes quite sharp and f a nagging character. Some patients have been the victims f every sort of application their physicians could think of nd have been their despair. There may or may not be resent a mucopurulent discharge; generally they show nothng but a few shreds in the urine. Such patients have been old it was their imagination; that they were cured. All ave oxaluria; some cases have yielded readily to treatment, ther patients persist with their symptoms and their oxaluria n varying degree, sometimes better and sometimes worse. Some of these cases are apt to develop renal calculus.

Journal of Cutaneous Diseases, New York.
October.

38 *Infectious Dermatitis Gangrenosa. G. W. Wende and C. A. Bentz, Buffalo, N. Y.
39 Case of Parakeratosis Variegata. H. G. Anthony, Chicago.
40 An analysis of Sixty-Five Cases of Bullous Diseases of the Skin. W. T. Corlett, Cleveland.
41 *Case of Multiple Keloid. E. D. Newman, Newark, N. J.

38. Infectious Dermatitis Gangrenosa.—Wende and Bentz report a case of infectious gangrene, first shown by a bullous eruption, changing to necrosis, variable in distribution and extent, apparently originating through autoinoculation from a chronic leg ulcer. There was absence of constitutional symptoms during development of the skin lesions; secondary general infection and death from septicemia. In the bullæ and gangrenous lesions of the skin during life, as well as in the internal organs at the autopsy were found streptococci, staphylococci, diplococci and bacilli.

41. Multiple Keloid.—Newman reports the case of a man, aged 49, white, miner, who had a large number of keloidal growths, situated on his forehead, scalp, neck, chest, back, groins, arms and lower extremities; they are of variable size, measuring from 8 mm. to 20 cm. in length, and from 8 mm. to 18 cm. in width. The growths cause him no inconvenience whatever.

Journal of Mental Pathology, New York (Vol. vii, No. 5).

42 A Cretin Dog and Its Thyroid Apparatus. U. Cerietti and G. Perusini, Rome Italy.
43 *Genesis of Genius. L. G. Robinovitch, Paris.

43. Genesis of Genius.—Robinovitch states that an examination of a number of biographies shows that: 1. The majority of great men were not the issues of youthful parents, and a very small minority only were first offspring. 2. The majority of great men were born when their parents were nearer thirty years of age and above, than twenty or below. 3. The majority of great men were the youngest offspring, and in some instances even the youngest offspring of the youngest offspring, while only a small minority were first born. 4. In other words, parents who have reached the age of mature cellular potentiality are most apt to give birth to great men and geniuses. 5. Youthful parents seldom give birth to gifted children because such parents have undeveloped systems with potential energy that is below par. There is a period in the lives of the parents when their cellular potentiality is at its height, and the offspring conceived at such a period, is fortunate indeed.

Archives of Pediatrics, New York.
October.

44 *Septic Endocarditis. B. K. Rachford, Cincinnati.
45 Health of New York School Children from the Point of View of the Department of Health. J. J. Cronin, New York.
46 *Relation of Weight to the Measurements of Children During the First Year. E. C. Fleischner, New York.

44. Septic Endocarditis.—Rachford reports a case of septic endocarditis which later became ulcerative. The patient, a boy, was suffering from a moderately severe attack of scarlet fever. There was a previous history of pertussis and repeated attacks of severe tonsillitis. During the attack of scarlet fever the child suffered severely from sore throat and a nonsuppurative adenitis involving the cervical glands, especially on the left side. About the fifth day an endocarditis was discovered, which ran a moderately severe course, resulting in cardiac hypertrophy and permanent injury to the mitral valve. At no time did the urine contain albumin or casts. Thirty-five days after entering the hospital, there were slight fluctuations in the temperature, which were thought to be due to the adenitis. The heart was slightly enlarged and there was a systolic murmur at the apex transmitted outward, but there were no signs of cardiac distress or other evidence of acute disease of the heart. The temperature soon became normal, the cervical glands were gradually reduced in size, and the child's general condition steadily improved, until sixty-eight days after entering the hospital, when convalescence seemed established, he was sent back to the Children's Home in a fairly good condition.

Six days later the child was returned to the hospital with a temperature of 103.5 F. and severe ulcerative tonsillitis. An examination revealed that he was suffering from a severe ulcerative stomatitis in addition to the tonsillitis referred to. The cervical glands were again very much enlarged and the left side of the face was swollen from an ulcer on the mucous membrane of the cheek that had been started by a ragged

tooth. The systolic murmur at the apex was louder and rougher; the heart action was slightly irregular, its dulness was increased, and palpation revealed a thrill at the apex. It was apparent from the history and from the child's present condition that he was suffering from a new infection which had entered through the tonsils and produced systemic intoxication and a second attack of endocarditis. The treatment ordered embraced a cathartic, rest, quiet, fluid diet, small doses of whiskey and antiseptic washes for the mouth and throat. The tonsillitis finally disappeared, but the stomatitis and ulceration on the inside of the left cheek continued giving a very fetid odor to the breath. The patient finally developed a fine purpuric rash over the whole body, and the discharges from the bowels contained some blood and mucus. Three weeks later a well-developed measles rash appeared. At this time the stomatitis, which had continued, became very much worse, and the ulceration on the inside of the left check had spread to such an extent that the whole cheek was swollen and a distinct area of tumefaction was developed. The child died about four and a half months after the onset of the illness.

46. **Relation of Weight to the Measurements of Children.**—Fleischner summarizes his paper as follows: (1) The height and circumference of head, chest and abdomen in normal well-nourished children increase as the weight. (2) The height, and the circumference of the head and chest in fairly well-nourished children likewise increase primarily as the weight, although in this class of patients, age plays more of a part than in the well nourished. (3) It is in the poorly nourished children that age plays its most important part, and the measurements of these children, compared with the well nourished, increase most rapidly in the last part of the year. (4) In the poorly nourished children, most of whom are probably somewhat premature, when the weight is below normal, all the measurements are correspondingly below normal. (5) When the weight is stationary the increase in the measurements is very small, depending on the slight influence which age has on the growth of the infant notwithstanding the weight. (6) The measurements of infants of the same weight, notwithstanding the age, are very similar. The small difference depending, as when the weight of a child is stationary, on the very slight influence of age on growth. (7) The final conclusion can be drawn that during the first year of life the primary factor in the increase of the measurements of the body is steady, consistent increase in the weight, the influence of age being secondary and much less important.

Southern California Practitioner, Los Angeles.

October.

47 Vienna; Its Opportunities for Postgraduate Work. D. Fulton, Los Angeles.
48 *Drainage. H. S. Gordon, Santa Ana.
49 Meningitis. W. H. Roberts, Pasadena.
50 Cancer. W. B. Power, Redlands.
51 *The Substance and the Shadow in Medicine. W. B. Sawyer, Riverside.
52 Labor. C. Magee, Los Angeles.

48. **Drainage.**—Gordon advocates early drainage in acute pelvic inflammation because the clinical picture does not always tell what the final result may be. A fatal sapremia may not produce marked constitutional symptoms at the beginning, yet the patient may die in forty-eight hours from the initial chill, or the streptococci may be rapidly invading the tissues outside the uterus and a fatal peritonitis result. After the pus has formed outside the uterus the most conservative would institute drainage, but why, he asks, wait for this and risk the chance of septicemia, pyemia or general peritonitis? Why not drain earlier and avoid this risk to the patient, and reduce the mortality in such cases to a minimum.

51. **Substance and Shadow in Medicine.**—Sawyer discusses the underlying principles of the practice of medicine, its relations to the other learned professions, and within, to isms and pathies; the true aim of medicine, the veritable doctor, the quack, the causes of quackery, the attitude of the press, the attitude of the clergy, the attitude of the legal profession, the so-called old school; homeopathy, Christian science, osteopathy, eclecticism, and out-and-out quackery.

Journal of Nervous and Mental Disease, New York.

November.

53 The Cerebral Element in the Reflexes and Its Relation to the Spinal Element. G. L. Walton and W. E. Paul, Boston.
54 Case of Landry's Paralysis, with Recovery. W. Sinkler, Philadelphia.
55 *Limited Area of Anesthesia, Epileptiform Attacks of Hemialgesia, and Early Muscular Atrophy in a Case of Brain Tumor. M. Prince, Boston.
56 Sexual Infantilism with Optic Atrophy in Cases of Tumor Affecting the Hypophysis Cerebri. H. Cushing, Baltimore.

55. **Limited Area of Anesthesia.**—Prince reports a case showing as the result of a cerebral lesion: (1) Circumscribed limited area of anesthesia; (2) marked muscular atrophy, appearing early; (3) epileptiform attacks of hemialgesia of a peculiar nature; (4) loss of the muscular sense, astereognosis, ataxia and paresis, increasing to ultimate paralysis. The diagnosis was that of cerebral tumor, located primarily in the cortical arm area, probably centralized in the postcentral convolution, and from there extending backward into the parietal region and forward into the anterior central convolution. In the hope of relief, an operation was recommended, and done. The findings, taken in connection with the history of the case, are compatible with the theory that the postcentral convolution is sensory, including both the tactile and muscular senses, and possibly stereognosis. The interesting points in the case are: The original limitation of the (tactile) anesthesia to the neck and side of the head, conforming to the view that there is a focal localization of sensation in the cortex, as with movements; the slight degree of its intensity; the peculiar attacks of pain, spreading by segments; and the muscular atrophy. The last, in the beginning, was out of proportion to the paralysis. The patient died.

New York State Journal of Medicine.

October.

57 Methods of Research into the Causes of Epilepsy. W. P. Spratling, Sonyea, N. Y.
58 *Sterile Water Anesthesia in the Operative Treatment of Diseases of the Rectum and Anus. S. G. Gant, New York.
59 Phlebitis Following Aseptic Abdominal Operations. A. T. Bristow, Brooklyn, N. Y.
60 Prevention and Treatment of Eclampsia. B. Cohen, Buffalo, N. Y.
61 Procidentia Uteri. R. Waldo, New York.
62 Henry Darwin Didama. J. L. Heffron, Syracuse, N. Y.
63 History of the Medical Society of the State of New York. (To be continued.) J. J. Walsh, New York.

58.—This is practically identical with the article which appeared in the *New York Medical Journal*, Oct. 13, 1906.

Wisconsin Medical Journal, Milwaukee.

October.

64 Surgical Shock. J. S. Reeve, Appleton.
65 Relation of Blood Pressure to Surgery. A. H. Levings, Milwaukee.
66 Submucous Resection of the Nasal Septum. R. H. Brown, Chicago.
67 Treatment of Sepsis. J. M. Dodd, Ashland.

Fort Wayne Medical Journal-Magazine.

October.

68 Six Simultaneous Cases of Scarlet Fever in one Family. H. J. Burwash, Chicago.
69 Management of Chronic Glandular Affections. L. P. Drayer, Ft. Wayne.
70 Vaccinia. H. O. Bruggeman, Ft. Wayne.
71 Retrodeviation of the Uterus. A. S. Jaeger, Indianapolis.

Columbus Medical Journal.

October.

72 Anal Fistula. E. A. Hamilton, Columbus.
73 Present Position of Radiation in Treatment. G. Sichel, London, England.
74 *Results of Operative Treatment of Varicose Veins of the Leg by the Methods of Trendelenburg and Schede. R. T. Miller, Jr., Baltimore.

74.—See abstract in The Journal, Sept. 29, 1906, page 1057.

Journal of the South Carolina Medical Association, Greenville.

October 21.

75 Are we Doing our Full Duty by the Laity? S. C. Baker, Sumter.
76 Surgical Shock. E. D. Tupper, Summerville.
77 Syphilis of the Ear. W. P. Porcher, Charleston.
78 Headaches; Cause and Cure. E. W. Carpenter, Greenville.
79 Practice of Ethics. J. L. Fennel, Waterloo.

Brooklyn Medical Journal.

October.

80 Hemorrhagic Disease of the Newly Born. (To be continued.) C. H. Goodrich, Brooklyn.
81 Tuberculous Osteitis. W. C. Schoenijahn, Brooklyn.
82 Case of Hysteria due to Eyestrain. G. M. Gould, Philadelphia.
83 Case of Mastoiditis in a Boy of 13 Years. Operation Followed by Attacks of Purpura. W. C. Braislin, Brooklyn.

Journal of the Outdoor Life, Saranac Lake, N. Y.

November.

4 Hawaii, A Land of Perpetual Sunshine and Verdure. J. W. Girvin.
5 Climate of Fort Grant, Graham County, Arizona. I. W. Brewer, Fort Huachuca, Ariz.
6 Some Personal Observations on the Management and Treatment of Pulmonary Tuberculosis at a Climatic Resort. B. Cornick, San Angelo, Texas.

Journal of the Minnesota State Medical Association and the Northwestern Lancet, Minneapolis.

November 1.

7 Relation Between Pathology and General Medicine. F. F. Wesbrook, Minneapolis.
8 Wear and Care of the Nervous System. L. M. Crafts, Minneapolis.
9 Modern Treatment of Chronic Purulent Otitis Media. C. J. Holman, Mankato, Minn.
10 Operative Treatment of Chronic Empyema of the Maxillary Sinus, with Special Reference to the Intranasal Method. W. R. Murray, Minneapolis.

The Canada Lancet, Toronto.

November.

01 President's Address, Toronto Medical Society, Oct. 4, 1906. R. D. Rudolf, Toronto.
02 Climate of Prescott, Arizona. I. W. Brewer, Ft. Huachuca, Ariz.
03 Health of School Children. A. J. MacKenzie, Toronto.
04 Various Gross Pathologic Conditions of the Urethra as Revealed by the Urethroscope. N. E. Aronstam, New York.

Kansas City Medical Index-Lancet.

November.

05 Retrocecal-Retroperitoneal Appendicitis. C. L. Hall, Kansas City.
06 Impressions of a Recent Trip Abroad. J. Punton, Kansas City.
07 Vertigo. G. W. Robinson, Kansas City.
08 Chronic Mastoiditis. H. G. Tureman, Kansas City.

St. Louis Courier of Medicine.

November.

09 Intubation for the Severe Paroxysms of Pertussis. E. W. Saunders, St. Louis, Mo.

Buffalo Medical Journal.

November.

00 Student Ideals. J. E. King, Buffalo.
01 "End of Season" Illness. W. H. Birchmore, Brooklyn, N. Y.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical ectures, single case reports and trials of new drugs and artificial oods are omitted unless of exceptional general interest.

British Medical Journal.

October 27.

1 *The Growth of Truth. W. Osler.
2 *Hospital Treatment of Curable Cases of Mental Disorder. E. Goodall.
3 *Some Principles of the Treatment of Fractures. J. E. Bowser.
4 *Bacterioscopic Analysis of Excremental Pollution. E. Klein.
5 Estimation of Blood Pressure. T. Lewis.
6 Present Status of Military Medical Arrangements in Canada. J. T. Fotheringham.
7 *Amino Acids and Metabolism. L. F. Barker.
8 *Over-nutrition and Under-nutrition. R. H. Chittenden.
9 *Some Aspects of Heart Block. Professor Aschoff, J. Mackenzie, J. Erlanger, G. A. Gibson, and others.
10 *Case of Stokes-Adams Disease. J. Barr.

1 and 11. **Growth of Truth.**—In this, the Harveian oration, Osler discourses eloquently on the growth of truth, or the acquisition of the knowledge which makes it possible to solve the most perplexing problems with which the medical man is confronted. Dr. Osler says, in part:

> History is simply the biography of the mind of man; and our interest in history, and its educational value to us, is directly proportionate to the completeness of our study of the individuals through whom this mind has been manifested. To understand clearly our position in any science to-day, we must go back to its beginnings, and trace its gradual development, following certain laws, difficult to interpret and often obscured in the brilliancy of achievements—laws which everywhere illustrate this biography, this human endeavor, working through the long ages; and particularly is this the case with that history of the organized experience of the race which we call science.
>
> In the first place, like a living organism, Truth grows, and its gradual evolution may be traced from the tiny germ to the mature product. Never springing, Minerva-like, to full stature at once. Truth may suffer all the hazards incident to generation and gestation. Much of history is a record of the mishaps of truths which have struggled to the birth, only to die or else to wither in premature decay. Or the germ may be dormant for centuries, awaiting the fulness of time.
>
> Secondly, all scientific truth is conditioned by the state of knowledge at the time of its announcement. Thus, at the beginning of the seventeenth century, the science of optics and mechanical appliances had not made possible (so far as the human mind was concerned) the existence of blood capillaries and blood corpuscles. Jenner could not have added to his inquiry a discourse on immunity; Sir William Perkin and the chemist made Koch possible; Pasteur gave the conditions that produced Lister; Davy and others furnished the preliminaries necessary for anesthesia. Everywhere we find this invariable filiation, one event following the other in orderly sequence—"Mind begets mind," as Harvey says; "opinion is the source of opinion. Democritus with his atoms, and Eudoxus with his chief good, which he placed in pleasure, impregnated Epicurus; the four elements of Empedocles, Aristotle; the doctrine of the ancient Thebans, Pythagoras and Plato; geometry, Euclid" (*De Generatione*).
>
> And, thirdly, to scientific truth alone may the *homo mensura* principle be applied, since of all mental treasures of the race it alone compels general acquiescence. That this general acquiescence, this aspect of certainty, is not reached *per saltum*, but is of slow, often difficult growth—marked by failures and frailties, but crowned at last with an acceptance accorded to no other product of mental activity—is illustrated by every important discovery from Copernicus to Darwin.
>
> The growth of Truth corresponds to the states of knowledge described by Plato in the *Theaetetus*—acquisition, latent possession, conscious possession. Scarcely a discovery can be named which does not present these phases in its evolution. Take, for example, one of the most recent: Long years of labor gave us a full knowledge of syphilis; centuries of acquisition added one fact to another, until we had a body of clinical and pathologic knowledge of remarkable fulness. For the last quarter of a century we have had latent possession of the cause of the disease, as no one could doubt the legitimate inference from discoveries in other acute infections. The conscious possession has just been given to us. After scores of investigators had struggled in vain with the problem, came Schaudinn with an instinct for truth, with a capacity to pass beyond the routine of his day, and with a vision for the whole where others had seen but in part. It is one of the tragedies of science that this brilliant investigator, with capabilities for work so phenomenal, should have been cut off at the very threshold of his career. The cancer problem, still in the stage of latent possession, awaits the advent of a man of the same type. In a hundred other less important problems, acquisition has by slow stages become latent possession; and there needs but the final touch—the crystal in the saturated solution—to give us conscious possession of the truth.

The principal text of this paper is the discovery of the circulation of the blood by Harvey.

2. **Treatment of Mental Disorder.**—Goodall urges that as many recent and curable cases of insanity as possible be treated in mental wards attached to general hospitals, and that the county asylums be employed as convalescent homes for such patients drafted from the hospital. In the matter of prophylaxis Goodall urges the prohibition of marriage to persons released from asylums, and the inflictions of penalties in all cases in which the responsibility for illegitimate procreation among such can be fixed.

3. **Treatment of Fractures.**—According to Bowser, massage and movement may be employed with advantage in the majority of cases of fractures. Extreme mobility of the bony fragments or the existence of displacements capable of being reproduced are contraindications for the employment of massage and movement, at least, as an immediate treatment. The use of simple means to avoid displacement may be combined with massage and movement, the retentive apparatus being usually removed and replaced daily. Bowser advises that complicated apparatus should be avoided.

4. **Bacterioscopic Analysis of Excremental Pollution.**—Klein states that in the bacterioscopic analysis of shellfish, water and other materials polluted with excremental matters the MacConkey medium (sodium taurocholate, peptone, glucose, litmus, water) in Durham fermentation tubes is admittedly of advantage, since it allows the free development of *B. coli communis* and other coli-like microbes, whereas it exerts a certain restraining influence on some other microbes. The second medium which is of great advantage in the analyses is broth with sodium taurocholate. The broth is ordinary nutrient beef broth, to which sodium taurocholate is added in the same proportion as phenol in Parietti broth, that is, 5 c.cm. of a 5 per cent. solution to 400 c.cm. of broth.

7. **Amino Acids in Metabolism.**—It appears that the whole series of proteins consists essentially of simple amino acids, the chains being quantitatively and qualitatively variously formed. Obviously these amino acids must form the basis of the whole protein metabolism. Barker discusses some of the medical problems to be or to some extent even already illuminated by the application of the chemistry of the amino acids and the change which they form.

8. **Over-Nutrition and Under-Nutrition.**—Chittenden refers to feeding experiments carried out on 11 men who lived for a period of five consecutive months with a proteid metabolism corresponding to from 7 to 8 grams of nitrogen a day, with maintenance of body weight, nitrogen equilibrium, and without

discomfort or loss of bodily vigor. All these men showed a very decided gain in muscular strength while living on this lowered proteid intake. Chittenden is of the opinion that the physiologic evidence so far accumulated by dietetic experiment on man, reinforced by the more or less reliable evidence of thousands of individuals living at a lower level of proteid metabolism, indicates that the normal requirements of the body for proteid food do not demand more than one-half the amount called for by existing standards. In his judgment the daily consumption of proteid food far beyond the amount required to maintain health, strength, mental and physical vigor, body weight and nitrogen equilibrium, constitutes a form of over-nutrition as serious in its menace to the health and welfare of the human race as many other evils more striking in character. Chittenden believes that there are more people suffering to-day from over-eating, over-nutrition, than from the effects of alcoholic drink.

9. **Heart Block.**—Aschoff reports the results of investigations made by his pupil, Tawara, on 112 hearts with reference to heart block. Tawara's investigations established the fact that both in man and in all the animals examined the bundle of His begins in the neighborhood of the anterior edge of the coronary vein, and then passes forward on the right side of the auricular septum below the foramen ovale, lying close on the auriculoventricular septum, which passes obliquely from the left above to the right below. Just above the place of insertion of the median flap of the tricuspid valve, and before it makes its way into the auriculoventricular connective tissue septum proper, this muscle bundle forms a special knot-like thickening produced by a confused mass of muscle fibers. From this knot a process arises which penetrates the fibrous septum, and runs along just below the pars membranacea septi and dorsal to the muscular ventricular septum, dividing then into two main branches, which pass obliquely downward, one on either side of the ventricular septum under the endocardium. For a full and complete description of these findings the reader is referred to the original article.

10. **Stokes-Adams Disease.**—Barr found that when his patient took a long, deep breath and then held his chest expanded as long as possible, the following events occurred: During the deep inspiration there were two beats of the heart and two pulses at the wrist; then the pulse disappeared in the carotid, brachial, radial and femoral arteries, and remained absent for several beats. At the same time the impulse of the heart disappeared, and the clear, loud first sound and systolic murmur were replaced by a low, dull-toned, obscure sound, and the second sound was not audible. After four or five systoles, which Barr attributed to the right ventricle, the clear first sound and systolic murmur and the double second sound reappeared and were associated with a return of the pulse in all the arteries, while the man's chest was still expanded. Here undoubtedly the blood was stored up in the lung reservoir, and the proper systoles of the left ventricle and the pulse in the arteries did not appear until the reservoir overflowed. The patient had several epileptic seizures during the periods of suspended breathing with the chest expanded. These attacks always occurred after the pulse had ceased for about 20 seconds. The patient died with symptoms of heart block. Barr is not convinced that the usual explanation of some degenerative changes in the auriculoventricular bundle of His can satisfactorily account for the phenomena of this disease.

The Lancet, London.

October 27.

11 *The Growth of Truth. W. Osler.
12 Words and Things. T. C. Allbutt.
13 Some Aspects of Dilatation of the Heart. A. M. Gossage.
14 *A Series of Cases Treated by the Injection of Bacterial Vaccines. E. Turton and A. Parkin.
15 *Detection of Sugar in Urine and Its Significance in Connection with Life Assurance. A. M. Kellas and F. J. Wethered.
16 *An Unusual Case of Thrombosis of the Lower Part of the Lateral Sinus, of Aural Origin. A. Bronner.
17 *Case of Pericarditis Following Head Injury; Paracentesis. J. Gillan.
18 *Disinfectant Properties of Hypochlorites of Sodium and Magnesium as Produced by Electrolysis. D. Sommerville and J. T. A. Walker.
19 Case of Poisoning by "X. L. All Vaporizing Fumigator." E. J. Blackett.

11.—See abstract No. 1 on preceding page.

14. **Treatment of Bacterial Vaccines.**—The plan followed by Turton and Parkin has been to treat each case on its merits usually beginning with a small dose, watching the behavior of the opsonic index and continuing the dose, increasing or diminishing it as the occasions demanded. Previous to treatment they ascertained the exact causal germ of the disease and estimated the opsonic index of the patient for that particular germ. The authors are extremely pleased with the results obtained by this treatment. The amount of benefit derived from the treatment varied in each case. The acute cases were the more difficult to cure, because there was not always time enough to raise the opsonic power to such a degree as to influence the course of the disease. Among the conditions treated were bacillus coli infections, tuberculous infections of the skin, kidney, lungs, bones, intestines and lymph glands, and staphylococcus infections. In 4 cases the treatment failed absolutely. These were 2 advanced cases of pulmonary tuberculosis, a hopeless case of hip and spinal disease, and a case of tuberculous meningitis.

15. **Detection of Sugar in Urine.**—The following method is considered by Kellas and Wethered as the most convenient when testing for sugar in the urine for life-insurance purposes. Either dilute the urine until its specific gravity is from 1912 to 1015 (e. g., a urine of specific gravity from 1025 to 1030 would require dilution with an equal volume of water) and then mix with an equal volume of Fehling's solution, or add a large proportion of Fehling's solution as indicated above; then boil for a few seconds. If no precipitate forms within two minutes it may confidently be concluded that there is no sugar present of pathologic import; 0.4 per cent. or more would generally under such conditions give an orange to red precipitate within one minute of reaching the boiling point, while from 0.2 to 0.25 per cent. would give a precipitate within two minutes. The authors state further that these safranan tests if used as an auxiliary to the Fehling test might alone be sufficient to settle troublesome cases in which small quantities of sugar and large quantities of creatinin cause the latter test to be uncertain.

16. **Thrombosis of Lateral Sinus.**—Bronner's case, which followed mastoid disease, never presented any swelling or tenderness over the mastoid or over the jugular vein. The walls of the lateral sinus were practically normal and the thrombosis was situated low down in the bulb of the jugular.

17. **Pericarditis Following Head Injury.**—Gillan's patient was injured by a large wheel, the wound extending from the upper part of the posterior triangle of the neck to the parietal eminence, and passing immediately behind the auricle. There were no signs of brain compression or irritation, but it seemed clear that there was some septic condition within the skull, probably a septic meningitis. About five weeks after the infliction of the injury the pericarditis manifested itself. On the seventh day of the existence of this complication six ounces and six drams of fluid were removed by paracentesis. Two days after tapping the temperature fell to normal. The remainder of the fluid was absorbed so quickly that at the end of a week the cardiac dulness seemed normal.

18. **Disinfectant Properties of Hypochlorites.**—The experiments made by Sommerville and Walker showed that the hypochlorites produced by electrolysis, like all hypochlorites, are unstable and, in the presence of organic matter, untrustworthy disinfectants.

Journal of Tropical Medicine, London.

October 15.

20 Principles of Diet in Tropical Campaigns. A. Duncan.
21 Food of the Natives of India. G. H. Fink.
22 Food and Digestion in Warm Climates. J. Cantlie.

The Clinical Journal, London.

October 10.

23 *Cases of Disease of the Spinal Cord. N. Moore.

October 17.

24 *Duodenal Ulcer. R. Hutchison.
25 Nasal Obstruction; Submucous Turbinectomy. W. Stuart-Low.

October 24.

26 *Some Cases of Gallstones. J. Bland-Sutton.
27 Diseases of the Abdomen. W. H. Allchin.

23. **Disease of Spinal Cord.**—This is a clinical lecture, in which Moore discusses 5 cases, one of Morvan's disease, a case of transverse myelitis, one of poliomyelitis and 2 cases of locomotor ataxia.

24. **Duodenal Ulcer.**—Hutchison believes that it is right to try medical treatment first in doubtful cases, but that when the diagnosis is no longer in dispute no time should be wasted, timely gastroenterostomy insuring a cure in almost every case.

26. **Cases of Gallstones.**—Bland-Sutton reports the following cases: 1. Bilateral salpingitis with calculous mucocele of the gall bladder. A cholecystectomy was done and the patient made an uneventful recovery. 2. Bilocular (hour-glass) stomach due to perforation of this viscus by gallstone. The left (cardiac) loculus was anastomosed with the jejunum, and the perforation in the wall of the pyloric loculus was sutured to the peritoneal edges of the wound and drained externally. The patient made an uninterrupted recovery. The fistula closed in 10 days. 3. Intestinal obstruction by a gallstone impacted in the ileum about six inches from the ileocecal valve. By careful manipulation of the bowel the stone was made to pass through the valve into the large bowel. It was passed four days after the operation. The gallstone had ulcerated its way from the gall bladder into the duodenum. It measured three inches in circumference around its minor axis and was about an inch and a half long. 4. Recurrence of gallstones after operation. The two attacks occurred five years apart and in both instances a single large stone was removed. 5. Acute calculous cholecystitis in a patient 76 years of age. The cystic duct was firmly plugged by a calculus and the gall bladder contained many pure white cholesterin calculi. A cholecystectomy was done and the patient recovered.

Medical Press and Circular.

October 17.

28 *Therapy of Exophthalmic Goiter. Professor Schiesinger.
29 Actinomycosis of the Vermiform Appendix. T. H. Kellock.
30 Tuberculous Cervical Glands. J. Marnoch.
31 *Future Prospects of the Medical Profession. L. H. Ormsby.

October 24.

32 Surgical Aspects of Tuberculous Peritonitis. F. J. Steward.
33 *Three Cases of Uterine Fibroids of Unusual Interest. F. B. Jessett.
34 Earliest Possible Recognition of Malignancy in Tumors. F. T. Paul.
35 Diagnosis of Some Forms of Dyspepsia. W. G. Barras.

28. **Therapy of Exophthalmic Goiter.**—Schlesinger vouches for the value of phosphorus in the treatment of exophthalmic goiter. He usually prescribes half a milligram in a pill and gives two pills daily. The same quantity of phosphorus may be given in cod-liver oil. In prescribing arsenic he has used for several years the cacodylates. Sodium cacodylate, he states, may be given in 1 or 2 cg. doses by the mouth or intramuscularly without danger. Strychnin, as a tincture, may be given with quinin for tonic purposes with great benefit. To relieve him Schlesinger favors a mixture consisting of ammonium bromid, 0.2 gm; codein phosphate, 0.1 gm, and sodium bromid, 1 gm.

31. **Future Prospects of Medical Profession.**—Ormsby discusses the army and navy medical services as a career for the practitioner of medicine.

33. **Uterine Fibroids.**—Jessett reports 3 cases. In the first case the fibroids, which had become calcified, were removed and the patient recovered. The case was of interest on account of the relative absence of symptoms pointing to the presence of fibroids of the uterus. There was no enlargement of the abdomen, no interference of the functions of the rectum or bladder, and no hemorrhage. The second case was one of severe menorrhagia caused by fibroid of the fundus of the uterus which was removed by vaginal hysterectomy. The third case was one of pelvic abscess of unknown origin.

Annales de Dermatologie, Paris.

Last indexed, page 76.

36 (VII, No. 5.) *Etude de la nutrition dans les dermatoses. L. Brocq and J. Ayrignac.
37 (No. 6.) *Cas d'épithéliomatose de Paget à forme pigmentaire. Une théorie du cancer du sein. C. Audry.
38 *Xéroderma pigmentosum: 2 cas. J. Nicolas and M. Favre.
39 *Sclérose atrophique de la peau et myosite généralisée. G. Petges and C. Cléjat.
40 Fibromes miliaires folliculaires; sclérodermie consécutive. W. Dubreuilh.
41 (No. 7.) *Erythème cutané en larges placards extensifs avec atrophodermie à type maculeux chez un tuberculeux. J. Nicolas and M. Favre.
42 *L'apoplexie hepatique dans la syphilis. Ruptures spontanées du foie. E. Devic and L. Bériel.
43 Chancres syphilitiques nains de la lèvre et de la langue (dwarf chancres on lip and tongue). B. Bord.

36. **Nutrition in Various Dermatoses.**—For six years Brocq and Ayrignac have been conducting research on this subject with a perseverance worthy of more brilliant results. They found in psoriasis that the urine is modified to a certain extent but variously in different cases, without any characteristic changes. They urge that in the study of nutrition the patients should be put on a special, standard diet as the findings differ according to the food ingested. As a general impression from their research on psoriasis, they believe that various causes may induce the affection or that it may develop on different soils.

37. **Paget's Epitheliomatosis.**—Audry reports a peculiar case of Paget's disease in a brunette of 54. She had nursed two children, but with the left breast only, owing to abscesses in the right breast the first time. The right breast was the one affected. Histologic study of this case and of three others in his experience has convinced him that the entire mammary apparatus may be regarded as a simple nevus, according to Unna's ectodermic conception of nevus carcinoma. The importance and the frequency of clinical carcinomata originating in a soft nevus, and the reticulated and carcinomatous structure of such tumors, entirely distinct from the structure of other cutaneous epitheliomata, demonstrate the analogy between mammary carcinoma and cutaneous carcinoma developing from a nevus. In consequence he concludes that mammary carcinoma should be considered a cutaneous nevus carcinoma according to Unna's meaning of the term.

38. **Xeroderma Pigmentosum.**—One of the two patients whose cases are described was a child of 2 and one a woman of 71. The latter lived an out-of-door life and the exposed regions were those affected, as also on the child. The affection was more serious and progressive in the child, but great improvement was noted after an attack of measles. The epitheliomata dropped off and some of the warty growths retrogressed, but the other features of the affection persisted unmodified and the improvement will probably be transient. Similar transient improvement was obtained in the other case by Roentgen treatment.

39-41. **Atrophic Sclerosis of the Skin and Generalized Myositis.**—The diagnosis in the case described was extremely difficult. The edema first noticed suggested Quincke's disease. Incipient sclerodermia is often confounded with this affection or with myxedema. The progress of the case suggested sclerodermia, but differed in several respects from the classic types. The diagnosis was finally modified to atrophic sclerosis of the skin with generalized myositis in a possibly tuberculous patient. Hypertrichosis was observed, paralleling the erythematous lesions, especially on the hands. Tuberculosis had been merely suspected before death as there was not the slightest expectoration, and percussion and auscultation were out of the question on account of the spontaneous sufferings of the patient and the intense pain elicited by the least pressure on the thorax. Autopsy revealed large cavities in both lungs. The histologic lesions were those of sclerodermia, with small bodies of an indeterminate nature in the derma and epidermis. Petges and Cléjat ascribe the syndrome to tuberculous toxi-infection from the ulcerative foci in the lungs, which were swarming with bacilli.

Nicolas and Favre describe another type of dermatosis developing in a tuberculous patient which they attribute to the same cause, impregnation of the organism by the tuberculous toxins. They call the case a toxituberculide with extensive erythematous patches and skin atrophy of the macular type.

42. **Apoplexy of the Liver in Syphilis.**—Devic and Bériel report a case and summarize twenty from the literature in which sudden and profuse intraparenchymatous hemorrhage in the liver produced hepatic apoplexy. This group of spontaneous ruptures of the liver exists apart from the group of traumatic lesions of the organ, and may include cases of dubious origin. The apoplexy of the liver may be the result

of rupture of vessels or of a hemorrhagic infarct. Syphilis may be regarded as the most common cause of these accidents on account of the vascular lesions which it engenders.

Semaine Médicale, Paris.

44 (XXVI, No. 42.) *Revision de la question de l'aphasie: que faut-il penser des aphasies sous-corticales (aphasies pures)? P. Marie.

44. **Revision of the Question of Aphasia.**—Marie's revolutionary views were summarized and discussed in The Journal, Aug. 11, 1906, page 436. He rejects the distinction between cortical and subcortical aphasia, declaring that aphasia from a focal lesion is never exclusively cortical; the white substance seems to play as important a part as the grey in the pathologic physiology of aphasia. The various forms of aphasia are linked together by a host of transitions, but it is possible to distinguish between an intrinsic aphasia in which the zone of Wernicke (zone of language) or the fibers derived from it are directly and notably affected by the lesion (aphasia of Broca, of Wernicke), and an extrinsic aphasia in which the zone of Wernicke with its fibers is not directly involved. The lesion is located outside of this zone either in the lobulus lingualis and fusiform lobules (pure alexia, pure word blindness), or in the zone of the lenticular nucleus (pure anarthria, pure motor aphasia). The third, left frontal convolution plays no special rôle in the function of speech. The true language center is in the zone of Wernicke. It should not be regarded as solely a sensory center, but an intellectual center. Every lesion of this center determines in proportion to its extent, besides the disturbances in the power of speech, a defect in the comprehension of spoken words and in the capacity for reading and for writing, as also the loss of certain ideas of a didactic order. Anarthria is characterized clinically by loss of the power of speech with retention of comprehension for words in reading and writing. It is produced by a lesion in the lenticular zone, the lesion interfering with the coördination of the movements necessary for the articulation of words, without true paralysis of the muscles. The aphasia of Wernicke is produced by a lesion in the zone of Wernicke. Marie here presents an array of clinical and postmortem findings to sustain these views, and replies in detail to various objections that have been urged against them.

Dermatologische Zeitschrift, Lassar's, Berlin.

Last indexed xlvi, page 164.

45 (XIII, No. 1.) *Action of Finsen Light on Normal Skin.—Wirkung des konzentrierten elektrischen Bogenlichtes (nach Finsen) auf die normale Haut. K. Zieler.
46 Anatomie und Klinik der Monilethrix (Aplasia pilorum intermittens). J. Guszman.
47 *Zur Uebertragung der Alopecia areata (transmission). T. Mayer.
48 *Unglückliche Zufälle bei Hg.—Injektionen (to avoid mercurial enteritis). Harttung.
49 (No. 2.) Zur Klinik des Favus. F. Paulus.
50 Dellenbildung bei Lichen ruber planus der Schleimhaut (of mucosa). H. Vörner.
51 (No. 3.) Zur Histologie der Mykosis fungoides. A. Brandweiner.
52 Zur Anatomie des Favusscutulum (crust). F. Paulus.
53. (No. 4.) Ueber konjugale, familiäre Lepra and erblich lepröse Entartung (Paraleprose). K. Hirschberg (Riga).
54 Fall von Urticaria pigmentosa maculosa. H. Vörner.
55 2 gebessertem resp. geheiltem Sarkom mit Hülfe von Röntgen-Strahlen. L. Stembo.
56 Der Hautfarbstoff als Schützmittel und der partielle Albinismus (protecting action of skin pigment). F. B. Solger.
57 (No. 5.) Lichen ruber pemphigoides. G. Trautmann.
58 Strichförmige Hauterkrankungen (linear cutaneous affections). L. Fischel.

45. **Action of Finsen Light on Normal Skin.**—Zieler's experiments all confirmed the assumption that the essential action of the Finsen light on the skin includes necrosis as the primary effect, affecting predominantly the more susceptible elements, the cells (epithelium, glands, endothelium, etc.), rather than the connective tissue. The action includes further an acute inflammatory hyperemia caused by reflex action from irritation of the vascular system, accompanied by serous or serofibrinous exudation with migration of leucocytes, hemorrhages, stasis and thrombosis. The acute inflammatory reaction is the essential factor in the curative process in Finsen treatment.

47. **Transmission of Alopecia Areata.**—Mayer relates that twelve out of thirty-five policemen attached to a certain station developed alopecia areata in turn. When temporarily off duty they were in the habit of sleeping in beds at the station, and the patches of alopecia developed in all on the parts of the head that came in contact with the pillows. He adds a few examples of similar transmission of the affection among children.

48. **To Avoid Enteritis During Mercurial Treatment.**—Harttung has had occasion several times to observe alarming, acute hemorrhagic enteritis develop in the course of mercurial treatment, frequently intractable to all ordinary measures. His attention was called to a statement of Kobert's in regard to the remarkable tolerance of opium eaters for corrosive sublimate. He has known an instance in which 1.8 gm. of corrosive sublimate was taken daily by an opium eater without untoward effects. He ascribes this to some combination of the opium and the sublimate in the intestines, resulting in an insoluble compound which is harmlessly evacuated. Harttung applied the knowledge thus learned to the treatment of enteritis, and found that opium, given at the first symptoms, immediately arrested the trouble. All the symptoms subside at once and no further complications are observed. The mercurial treatment can be continued without further mishap. He now warns patients, commencing mercurial treatment, of the possibility of acute hemorrhagic enteritis from the effects of the mercury, and gives them some opium drops to take if symptoms develop. His experience has been invariably favorable.

Deutsche medizinische Wochenschrift, Berlin and Leipsic.

59 (XXXII, No. 41.) *Examination of the Heart When Lying on Left Side.—Ueber die Untersuchung des Herzens in linker Seitenlage. Goldscheider.
60 Die Indikations-Stellung zur Behandlung der Geburt bei Beckenenge (management of birth with contracted pelvis). J. Pfannenstiel.
61 *Ueber die primäre Tuberculose der Milz (spleen). F. Franke.
62 Ileus durch Obturation der Flexura coli sinistra. P. Manasse.
63 Gibt es eine chronische Appendicitis? Oberndorfer.
64 Behandlung der Herzmuskelschwäche mit elektrischen Strömen (electric treatment of weakness of the heart muscle). Tillss.
65 Ueber Embryonale Transplantation. H. Spemann.
66 *Die sogenannte Schul-Anämie (school anemia). Unruh (Dresden).
67 Ueber schmerzlose Injektion löslicher Quecksilbersalze (painless mercurial injections). T. Mayer.

59. **Examination of Heart When Lying on Left Side.**—If a person lies on his back and then gradually rolls over on the left side, the apex of the heart will sometimes become displaced until the beat can be felt on the axillary line. The axis of the heart is directed toward the left and the apex is thus brought into closer contact with the wall of the thorax and for more of its extent, and the interspaces are wider. In some cases in which the tense pulse and pronounced second aortic sound indicated hypertrophy, Goldscheider reports that certainty was not obtained until the heart was examined with the patient lying on the left side, when the apex beat became much more distinct. He adds that it is possible to outline the left limit of the heart with great precision by percussing while the patient gradually rolls from the left side on his back, especially in case of dilatation toward the left. In a large number of patients, mostly arteriosclerotic, the heart was examined as they lay on the left side. In the majority of those with sound hearts the apex beat became displaced from 2 to 8 cm. toward the left. In 11 cases in which it was impossible to distinguish the apex beat, either reclining, sitting or standing, it became evident in 6 as soon as the patients turned toward the left side. In arteriosclerosis the displacement of the apex toward the left was constant and pronounced, and in 76 per cent. the displaced apex presented considerable resistance. In 2 cases in which no other sign of hypertrophy could be detected it was revealed by this resistance of the apex. Cardiac defects were almost invariably accompanied by this displacement of the apex beat. The phenomenon is not so striking in case of much hypertrophy or dilatation as in the incipient or mild cases of hypertrophy of the left ventricle with slight dilatation, which may first be revealed by the resistance of the displaced apex beat. The displacement of the apex beat is most pronounced in cases of sclerosis of the arch of the aorta. The amount of displacement is not so pronounced as the change in the force of the apex beat, especially in cases accompanied by dilatation. The finding of a resistant apex beat does not suggest atheromato-

sis of the aorta, but rather increased blood pressure, increased work on the part of the heart or hypertrophy of the left ventricle. The displacement is more marked in the absence of excessive dilatation or hypertrophy and of stasis in the lungs, which impede the displacement. It occurs with or without arteriosclerosis, although in the great majority of cases signs of the latter are evident. The patient should breathe deep in case the apex beat does not become evident with ordinary breathing, and he must relax his muscles.

61. **Primary Tuberculosis of the Spleen.**—Franke reports a case, which he says is the twenty-ninth on record, of primary tuberculosis of the spleen. The spleen was removed in 10 cases, and 7 of these patients were permanently cured. He removed the spleen in his case, but recovery was delayed by pleuropneumonia, first on one side and then on the other, and the patient was removed from the hospital too soon and died on the way home, possibly from pulmonary embolism. The diagnosis of primary tuberculosis of the spleen is not an easy matter. Cyanosis was observed in only 3 of the 29, and in many cases the blood findings were normal. The tuberculin test and an exploratory laparotomy are indicated in dubious cases. Since Vanverts in 1897 collected 295 cases of splenectomy to sustain his assertions that the spleen is not an indispensable organ, further experience has confirmed his views, so that it is now accepted that the spleen can be removed even on mere relative indications. If splenectomy were done oftener and earlier, many lives would be saved and long illnesses prevented, Franke affirms, mentioning his removal of the spleen, which was enlarged to three or four times its normal size, in a case four years ago. The idiopathic hypertrophy of the spleen in this case was probably due to chronic influenza from which the woman had long suffered, and which may be a more frequent cause of hypertrophy of the spleen than is generally recognized. The patient was then so weak and anemic that she could scarcely walk, but she is now well and active.

66. **The So-called School Anemia.**—Unruh ascribes to myocarditis, albuminuria or hypoplasia of the heart and large vessels a large proportion of the disturbances which are generally attributed to school anemia. He believes that myocarditis occurs much more frequently than is generally recognized, not only after diphtheria and scarlet fever, but after other infections, even mild tonsillitis. The relics of the myocarditic process may persist for years; the tendency to myocarditis seems to increase with age. In albuminuria the child need not be kept out of school, but it must be remembered that muscular exercise is far more liable to arouse a not quite healed albuminuria or to cause a relapse than dietetic errors. Girls are affected more frequently than boys, and puberty is the age generally noted. The school can scarcely be incriminated in this form of albuminuria; treatment requires great circumspection, although not necessarily excluding the child from school. Hypoplasia of the heart and large vessels is a transient disturbance in growth, more common in boys, and most frequent about the seventh and eleventh years. In regard to sports and exercise, anemic and chlorotic children, myocarditic heart muscles and the conditions due to transient defective development all require to be guarded from physical strain. Such children should not be allowed to share in the swimming, bicycling, tennis playing and gymnastics of the others. They do not need exercise, they need to be spared, and the physician in deciding when the child can join again in the sports of his mates should not allow himself to be influenced by the child's will and subjective feelings, nor by the opinion of the parents or the wishes of the other scholars. Every case of so-called school anemia requires careful examination, especially of the heart. The child's heart does not possess the tolerance generally ascribed to it; as a rule the heart is extremely sensitive during childhood. Fortunately it recuperates readily under the appropriate diagnosis and treatment, above all when it is spared unnecessary exercise and strain.

Münchener medizinische Wochenschrift.

68 (LIII, No. 36.) *Protection of Internal Organs in Roentgen Work.—Ueber Schädigungen innerer Organe durch Röntgen-Bestrahlung und Schutzmassnahmen dagegen. P. Krause.
69 Roentgen Technic.—Beitrag zur Blendentechnik. A. Machol.
70 Zur Diagnose der Aortenaneurysmen. J. Strasburger.
71 *Ueber den Zwerchfell-Reflex und die Zwerchfell-Innervation (of diaphragm). O. Hess.
72 Rektum-Amputation nach Witzel mit Erhaltung des Sphinkter externus. F. Wenzel.
73 Ein Beitrag zur Lehre von den Mesenterialzysten. W. Evelt.
74 *Hefetherapie der Gastroenteritis im Kindesalter (yeast for children). P. Sittler.
75 Eine neue Form hysterischer Zustände bei Schulkindern (epidemic tremor among school children). P. Schutte.
76 *Eine Ringprobe auf Azeton (ring test). F. Lange.
77 Der extravesikale Urin-Separator nach Heusner. F. Tromp.
78 Beitrag zum Instrumentarium für die Publotomie. O. Gelssler.
79 *Fälle operativ behandelter Hyperplastisch-stenosierender Ileokökatuberkulose. H. Baum.

68. **Protection Against Roentgen Ray Injury.**—Krause reviews the literature on the subject of the effect of the Roentgen rays on the internal organs, and describes the protecting measures in use at von Strümpell's clinic at Breslau. The individual operating the Roentgen apparatus stands in a wooden cabinet, 186 cm. tall, 126 cm. long and 106 cm. wide, coated on the outside with thick sheets of lead covered with waxed cloth to prevent contact with the lead. The tubes are inspected through two small windows of lead glass, 6x8 cm. The cabinet has room for the interrupter and condenser, etc., and for a chair. The box with the diaphragm is lined with lead, and for nearly three years a very large one has been used, 52x54x95 cm., which holds the largest sized tubes. The diaphragm box can be easily raised or lowered, and an observation window of lead glass at the back has a shutter to cover it. The box not only protects against injury from the rays, but it insures complete darkness for the ray illumination. The examiner wears an ulster and mittens made of lead-impregnated rubber stuff, and goggles of lead glass, or the fluorescent screen is covered with a sheet of lead glass. Lead aprons to protect the genital organs are recommended, but are seldom used. The patient is protected with two sheets of lead foil sewed into waxed cloth or washable rubber cloth. Pigmentation of the exposed skin has been prevented in his experience by interposition of a shirt, or a piece of thin parchment or silk paper. In order to prevent lead intoxication he is very careful to see that everything containing lead is scrupulously covered with impermeable material, waxed cloth or the like. The German law holds the chief responsible for injury sustained by his assistant or subordinates in Roentgen work as well as by the patient.

71. **Innervation of the Diaphragm.**—Hess has been studying the diaphragm reflex and calls attention to the way in which the anterior and the posterior parts of the diaphragm behave differently in action. He thinks this can be explained only by assuming a dual system of innervation, which assumption is sustained further by the fact that the embryonal development of these parts of the diaphragm proceeds separately. The anterior part of the diaphragm is innervated by the intercostal nerves, while the posterior part is innervated by the phrenic nerves. When he presented this communication at a meeting of the local (Marburg) medical society he exhibited a patient with congenital impotency of both phrenic nerves. During respiration the anterior part of the diaphragm behaves normally, owing to the normal intercostal innervation of this part, but the posterior part remains passive.

74. **Yeast in Gastroenteritis in Children.**—Sittler states that yeast has been found a very satisfactory remedy in various cases of gastrointestinal affections in children at the Strassburg polyclinic for internal and children's diseases. The benefit was particularly striking in enteritis accompanied by much putrefaction in the intestines. The yeast preparations alone triumphed in several very severe cases that had not responded favorably to calomel, bismuth, or lavage of the intestines. In other cases the ordinary measures seemed to do no good until reinforced by the yeast.

76. **Ring Test for Acetone.**—Lange has modified the Legal test and rendered it simpler and more reliable by substituting ammonia for the sodium hydrate. This avoids the disturbing creatin reaction. The urine to be tested is treated with glacial acetic acid and then with a few drops of a freshly prepared solution of sodium nitro-prussid; a few cubic centimeters of ammonia are then cautiously poured on top of the mixture. In case of the presence of acetone, a bright violet ring appears at the point of contact. The violet ring grows brighter and brighter without spreading wider, irrespective of

the quantities used in the test-tube or conical glass. The reaction was most distinct in his tests when 15 c.c. of urine and from 0.5 to 1 c.c. of acetic acid were used. Acetone, 0.025 per cent., is readily detected by this test. Alcohol and aldehyd do not give the reaction.

79. Tuberculous Ileocecal Processes.—Baum has operated in 7 cases of tuberculous processes in the ileocecum causing hyperplastic stenosis. The results have confirmed his assumption that the tuberculous ileocecal tumor is a comparatively harmless, purely hyperplastic form of primary intestinal tuberculosis. Ordinary appendicitis may have something to do with its origin. The microscopic findings are similar to those in the hypertrophic form of lupus. The stenosis is the cause of the symptoms observed, and is best treated by resection of the ileocecum at a single operation. Exclusion of the part affected is a palliative operation to be reserved for debilitated patients. In conclusion he warns that simple laparotomy should be the limit of intervention in all cases of extensive tuberculous peritonitis.

Virchow's Archiv, Berlin.

Last indexed, XLVI, page 1656.

80 (184, No. 2.) Ueber Plasma-Celien in dem entzündlichen Infiltrate eines Krebstumors des Magens (in gastric cancer). B. P. Sormani.
81 Multiple Primär-Tumoren. P. Frangenheim.
82 Zur Myelom-Frage. O. Lubarsch.
83 Zur Histologie der sogenannten akuten Leukämie. D. Veszprêmi.
84 Einige Bemerkungen ueber das meningeale Cholesteatoma im Anschluss an einen Fall von Cholesteatoma des 3. Ventrikels. F. Scholz.
85 Ueber die sogen Klappenhämatome am Herzen der Neugeborenen (valvular hematoma in the newly-born). Fahr.
86 Ueber bakteriologische Blutuntersuchungen an der Leiche (blood in the cadaver). M. Otten.
87 Alkoholismus und Leber-Cirrhose. F. Klopstock.
88 (No. 3.) Ueber Ferment-Immunität. H. Hildebrandt.
89 *Zur Pathologie der toxischen Graviditäts-Myelitis. F. Rosenberger and A. Schmincke.
90 Zum Experimental-Studium von Nebennieren-Glykosurie (suprarenal glycosuria). A. Velich (Prague).
91 *Ueber "peptische" Magen-Geschwüre, postmortale und pseudovitale Autodigestion. E. Neumann.
92 Das Traktions-Divertikel des Esophagus. H. Ribbert.
93 Vorkommen von Fett in Geschwülsten (fat in tumors). M. Dunin-Karwicka.
94 Origin of amyloid Bodies.—Entstehung der Amyloidkörperchen im Centralnerven-System. G. Catola and N. Achucarro.
95 Hansemann's Malakoplakia vesicæ urinariæ und ihre Beziehungen zur plaque förmigen Tuberkulose der Harnblase (of bladder). R. Kimla (Prague).
96 Zur pathologischen Anatomie der Aktinomykose beim Menschen. Schlagenhaufer.

89. Myelitis of Pregnancy.—Rosenberger and Schmincke describe a case of fatal ascending myelitis in a hitherto healthy primipara during pregnancy. Her husband was also healthy. The ascending character of the affection led to disturbances in speech with a bulbar syndrome. The symptoms were of the most varied character from paralysis, decubitus, etc., and signs of general intoxication (heart murmurs, parenchymatous nephritis), to psychic disturbances (stupor, motiveless hilarity). Delivery was artificially induced at the fifth month, and was followed by marked improvement, but the symptoms returned and death followed about seven months later. The fetus did not seem to be affected by the disease and lived for several hours. The affection was probably of toxic origin, the toxins acting principally on the heart and kidneys. Myelitic foci were found in the spinal cord but no bacteria. The outcome is either complete restitution in case of brief local action, or sclerosis of the parts involved in the severer cases. The affection seems to be independent of syphilis and of the condition of the fetus. The pregnancy is the cause, as artificial delivery cures or materially improves the patients. The myelitis has been known to recur at a successive pregnancy and to subside again after abortion. The tendency to recurrence is marked; possibly the presence of a myoma or absorption of septic poison from a decubitus, as in the case reported, may enhance the disposition to recurrence.

91. Peptic Ulcer.—Neumann thinks that the influence of mycotic invasion has not been considered enough in the study of the etiology of peptic ulcers. He refers to Pick's case, in which the diaphragm was perforated and two of the costal cartilages destroyed by a round gastric ulcer. The question as to the participation of infectious processes deserves further study, he adds. The gastric juice is bactericidal as a rule, but it does not afford an unconditional protection. Bacteria which flourish only on alkaline or neutral media can be excluded. He regards autodigestion as extremely improbable.

Zeitschrift f. Geb. u. Gynäkologie, Stuttgart.

Last indexed, page 1336.

97 (LVIII, No. 2.) *Ueber das Vorkommen von Kohlehydraten im Fruchtwasser bei Diabetes der Mutter (carbohydrates in amniotic fluid). Offergeld.
98 *Vaginale Total-Exstirpation bei totalem Vorfall des Uterus (total prolapse). P. Kirchgessner.
99 Zur Kenntnis der sekretorischen Tätigkeit des Amnion-Epithels. L. Mandl.
100 *Ueber intrauterine Erysipel-Infektion des Neugeborenen. A. Scheib.
101 Zur pathogenität peptonisierender Streptokokken. Id.
102 *Ueber Scopolamin-Morphium-Analgesie in der Geburtshilfe (in obstetrics). O. Lehmann.
103 Ueber das Oberflächen-Papillom des Eierstocks und seine Beziehung zum Cystadenoma serosum papillare (of ovary). S. Gottschalk.
104 Possibility of Embedding of Ovum Above Internal Os.—Möglichkeit der Einnistung des Eies über dem inneren Muttermund. M. Hofmeier.
105 Das untere Uterin-Segment. L. Aschoff.

97. Carbohydrates in Amniotic Fluid in Diabetes.—Offergeld concludes from the personal experience and research reported and from study of 55 articles bearing on the subject, that diabetes is an extremely dangerous and unfortunate complication of pregnancy. A pregnancy in a diabetic woman generally has a grave prognosis both for mother and child; the outcome is never certain. Even after sacrificing the life of the child, it is always doubtful whether the mother can recuperate. Whether or not to deliver the woman at once must be decided for each individual case, but if the decision is in favor of it, there must be no further delay. General anesthesia should be avoided in such cases, but possibly spinal or scopolamin-morphin anesthesia might take its place. Salus has recently published reports of 3 cases of pregnancy in diabetics. In two of the women it had preceded the pregnancy, and in the other, dextrose and acetone were eliminated periodically during the pregnancy for the first time. The women were delivered spontaneously at term of viable children, and in the first 2 cases the glycosuria subsided after delivery. In Offergeld's personal case, a diabetic woman in the seventh month of pregnancy, with considerable hydramnion, suddenly was seized with diabetic coma. The fetus was evidently killed by the same agent as caused the exacerbation in the mother. The glycemia in the mother was intense, and dextrose was discovered in the amniotic fluid and in the milk. The mother had lost the power of assimilation for dextrose alone, but in the fetal organism the carbohydrate metabolism was modified much more severely, as the other carbohydrates were elaborated in very abnormal fashion. By immediate delivery it proved possible to save the mother. It acted by improving the circulation as the hydramnion was evacuated, and by modifying the metabolic processes in the mother by removal of the fetus.

98. Vaginal Total Extirpation in Case of Total Prolapse of the Uterus.—Kirchgessner states that the after-results in 40 cases of total prolapse of the uterus treated by total removal of the organ were much better than in women treated by more conservative measures. In the latter a tendency to recurrence required correcting operations later. The finest results were observed when the bladder was carefully drawn out of the way and its wall sutured to that of the rectum, with fixation of the stumps of the adnexa and a plastic operation on the perineum to conclude the vaginal operation.

100. Intrauterine Erysipelas.—Scheib reports a case in which the conditions suggested that the mother must have become infected with streptococci during the course of labor. During some obstetric maneuver a small erosion was made on the child's palate. It became infected from the mother's streptococci and the child was born with erysipelas of face and scalp, and pleurisy. The mother developed a serious septic endometritis with streptococci in the blood, of the same strain as those found in the child.

102. Scopolamin-Morphin Anesthesia in Obstetrics.—Lehmann paid particular attention to the heart, kidneys and general condition in 70 lying-in cases in which scopolamin and morphin were injected for what he calls "Subkutanallgemeinanalgesie"—"subcutaneous general analgesia." He regards the

method as a valuable addition to our means of alleviating or abolishing the pains of childbirth, but remarks that the increased proportion of asphyxia among the children warns that its use must be restricted for the present to well-equipped maternities. He found that amounts as small as 0.008 gm. morphin and 0.0003 gm. scopolamin were ample in some cases.

Zeitschrift f. klinische Medizin, Berlin.

Last indexed, page 1518.

106 (LIX, Nos. 5-6.) Subjektive Geschmacksempfindungen. Glycogeusia subjectiva, Kakogeusia subjektiva. (Taste sensations). W. Sternberg.
107 Das Verhalten des Harneisens bei Hypergiobulie (behavior of iron in urine). R. A. Abeles.
108 Ueber die präzipitinogene Eigenschaft trypsinverdauten Rinderserums (precipitating properties of beef serum after trypsin digestion). P. Fleischmann.
109 *Beitrag zur Klinik der Zwerchfellähmungen (paralyses of diaphragm). I. Ohm.
110 *Ueber Dikrotie bei Aorten-Insuffizienz. Goldscheider.
111 *Ueber Miliaria epidemica. W. Scholz.
112 (LX, Nos. 1-2.) *Ueber neurotische Knochen-Atrophie und die Frage der trophischen Funktionen des Nerven-Systems. Goldscheider.
113 *Die Röntgen-Therapie bei Leukämie und Pseudoleukämie. G. Joachim.
114 *To Test Force of Heart.—Ueber Kraftmessung des Herzens. F. Levy.
115 *Das Krankheitsbild der Lichtheimschen motorischen Aphasie (transkortikale motorische Aphasie). M. Rothmann.
116 *Ueber Myasis intestinalis. Wirsing.
117 *Heart Affections Among Working Classes.—Ueber Herzerkrankungen in der Berliner Arbeiterbevölkerung. Lubenau.
118 Ueber experimentelle Rückenmarksveränderungen nach Blutinjektion (changes in spinal cord after injection of blood). J. Kentzler.
119 "Diagnose und Pathogenese der im Kindesalter häufigsten Form der Concretio pericardii cum corde." O. Hess. Reply to Flesch.

109. **Paralysis of the Diaphragm.**—Ohm has had occasion to study a case in which the diaphragm was paralyzed. The patient was a waiter, 16 years old, who presented acute and extreme paresis of the diaphragm in consequence of rheumatic neuritis of both phrenic nerves in acute articular rheumatism. Clonic contractions of the phrenic nerves were noticed at first, assumed to be the motor response of the nerves to the irritation. The Roentgen rays showed that the diaphragm was in the expiration position, not varying during quiet breathing, but with deep breathing it rose and fell a trifle. During the deep breathing also the costal arches and epigastrium receded. Both sides of the chest behaved alike. The scalenus and intercostal muscles could be seen in vigorous vicarious action, and a spasmodic singultus movement could be noted in the chest and epigastrium, recurring three or four times a minute, without an audible hiccough in the throat. In 3 other cases he observed a paralytic condition of the diaphragm due to extension to the muscular part of the diaphragm of an inflammatory process in the costal pleura. The patients were under treatment for pleuritis or pneumonia. One was a man of 49 with mild fibrinous pleuritis, who suddenly exhibited extreme dyspnea, with very rapid pulse and respiration and intense pain in the left chest. The left side of the chest was seen to remain immovable during respiration. The percussion and auscultation findings, the tympanitic area of resonance, suggested a possible encapsulated or subphrenic pneumothorax, acute dilatation of the stomach, hernia of the diaphragm or elevation of the diaphragm from acute paralysis. Radioscopy confirmed the latter assumption. The severe symptoms continued for four days with remittent fever (the temperature previously had been normal or subfebrile). The fifth day considerable improvement was manifest, and by the end of a week the findings in the chest were alike on both sides. In the third case the pneumonia had developed in a probably tuberculous lung. In all 3 cases the symptom-complex localized in the lower half of the left chest was the same in each. In each a fibrinous pleuritis was known to exist. The inflammatory process had evidently spread to the diaphragmatic pleura, and had entailed acute paresis either by neuritis of the motor terminals of the phrenic nerve or by myositis of the diaphragm, which in turn had produced acute eventration of the diaphragm.

110. **Dicrotic Pulse with Aortic Insufficiency.**—Goldscheider states that he has recently had under observation 3 patients with aortic insufficiency and an unmistakable dicrotic pulse. The dicrotic characteristics varied at different times and even on the two sides at the same time, in some instances. He regards this as evidence that vasomotor conditions have much to do with the development of the dicrotic pulse. His experience has convinced him that the appearance of a pronounced dicrotic pulse in case of aortic insufficiency testifies that the mitral valve is also beginning to show evidence of insufficiency.

111. **Epidemic Miliary Fever.**—Scholz of Graz reports the details of an epidemic of 126 cases of an acute inflammatory disorder of the sweat glands characterized by the appearance of small vesicles with much burning, itching, pains, fever and chills, and extraordinarily profuse sweats, affecting adults exclusively, usually between the ages of 20 and 40. The mortality amounted to 16.7 per cent., and about 2,5 per cent. of the population were affected. The disease appeared sporadically in 38 different villages, but was finally stamped out by strict isolation of the patients. In some the disease recurred several times. No treatment seemed to be effectual. The patients preferred to wrap themselves in blankets and shrank from the slighest current of air. The German name for the disease is *Schweissfrieseln*, which might be translated as sweat-shivers.

112. **Neurotic Atrophy of the Bones.**—Goldscheider gives an illustrated description of a case of neurotic atrophy of the bones of the hand following a fall in which the upper left arm was injured on an iron picket fence. The bone was not directly injured at the time, but the soft parts were extensively wounded and the arm was kept in a sling for three months. After the wound healed the movements of the forearm and hand were somewhat restricted. The patient was 16 at the time, and in the course of years the fingers became contracted like claws, and the terminal phalanges gradually shortened. The skin of the hand was always cool and rather livid. The nails disappeared, and radioscopy showed merely rudiments of the terminal phalanges of the fingers. The literature on the subject is reviewed, the general conclusion being that peripheral neurotic atrophy of the bones is probably due to a morbidly enhanced nervous condition of excitability of the nerves—in which the vessels also participate—combined with a disturbance in the centripetal conductibility.

113. **Roentgen Treatment of Leukemia and Pseudoleukemia.**—Joachim relates the details of 28 cases and discusses the various aspects of Roentgen treatment and the results to be anticipated. He thinks that a cure is out of the question, but that in many cases the improvement is such as to restore the feeling of health for years. The fact that Roentgen treatment does not help in all cases, and may do harm in some, is a feature common to many other therapeutic measures. The prognosis depends essentially on the more or less pronounced anemia, and the way in which the anemia is influenced by treatment. In case of myelemia, the prognosis depends chiefly on the resistance of the myelocytes. In any event, the cases of myelemia in which the number of leucocytes does not correspond to the size of the spleen should be regarded as the least favorable. He advocates a trial of Roentgen treatment in every case without fail. It should be suspended or restricted in case the anemia increases or the general health shows serious changes. It may be possible, he adds, that cases in which Roentgen treatment does not seem to help, may be modified by other measures, such as a course of arsenic, so that after a time the Roentgen treatment may be resumed with good results. In one case of myelemia the patient was so much improved that she passed through a subsequent pregnancy without exacerbation of her condition, and is still, two years later, free from noticeable disturbances. The results were better when the spleen and lymph glands were exposed rather than the bones.

114. **Measurement of the Energy of the Heart.**—Levy has been testing Katzenstein's method of determining the force of the heart. It was described in these columns on page 159, of volume xliii, 1904. After determining the blood pressure and the pulse on the reclining patient, both of the femoral arteries are compressed with the middle finger of each hand at Poupart's ligament, the other fingers testing whether the compression is absolute. With normal heart energy, the blood pressure then rises by from 5 to 15 mm. mercury while the pulse remains unaffected or drops. On relinquishing the compression

the blood pressure gradually returns to normal. In case of hypertrophy of the heart, aortic insufficiency, aortic sclerosis or nephritis, the blood pressure rises much higher during the compression. A slightly enfeebled heart is not able to raise the blood pressure when the obstruction to the circulation is interposed, and with a much enfeebled heart the blood pressure actually sinks under the compression, while in both events the pulse becomes more or less accelerated. The respiration is kept superficial during the compression. The results of Levy's research have confirmed the great value of this means of determining the power of the heart. It is especially instructive in examining the heart after acute infectious diseases and in heart affections of all kinds, and it will be found a valuable aid in examining in case of accidents and for life or accident insurance. It must not be forgotten, however, that in very excitable, nervous and emotional patients the findings can not be accepted as always reliable.

115. **Transcortical Motor Aphasia.**—Rothmann summarizes what has been written on the subject of transcortical motor aphasia, and describes a pure case observed in a man of 82, with illustrations of the autopsy findings. They confirm Lichtheim's views in every respect and also Gall and Broca's localization of the cerebral functions. The features of the case speak against Marie's recently announced views.

116. **Intestinal Myasis.**—Wirsing reports 3 cases in which maggots were evacuated from the human intestine. The patients were children under 5, one a breast nursling. There were no disturbances from the presence of the maggots in the infant; the flies had probably deposited their eggs in the anus as the child was taking an air bath at an open window. The older child had long suffered from gastrointestinal disturbances, and an exacerbation was treated with calomel, after which about 50 maggots were voided. Differentiation is difficult, as the symptoms are not characteristic. Prophylaxis is the main point, avoiding ingestion of meat and cheese on which flies are liable to have deposited eggs.

117. **Heart Affections Among Wage-Earners.**—Lubenau's patients were men performing manual labor, who suddenly developed symptoms of weakness of the heart, dyspnea, vertigo and pain in the heart. Prompt and appropriate treatment in the Beelitz sanatorium soon restored complete earning capacity, with apparently no tendency later to weakness of the heart when abuse of alcohol or tobacco is avoided. In 2 cases of neurosis of the heart, prompt treatment improved, but a tendency to recurrence persisted, and after two courses of treatment the patients were advised to seek some other less laborious work. His experience has been that not only excessive physical, but also excessive mental work, is liable to bring on a neurosis of the heart. This class is recruited from cashiers, typesetters, telephone operators, bookkeepers and others whose work requires great concentration of attention. In 2 cases the neurosis developed following influenza, and in others after scarlet fever or other infectious disease. He has also had some experience with neuroses of the heart developing in the course of gastrointestinal disturbances and subsiding as these were controlled. In one case attacks of syncope from childhood were substituted later by attacks of palpitations and headache, assumed to be of an epileptiform nature, although no other sign of epilepsy could be detected. In case of hypertrophy and dilatation of the heart, prompt, appropriate treatment and change to a less strenuous work restore complete earning capacity. In a number of instances he observed heart disturbances in persons of rather undeveloped physique. Their work had not been very laborious, but yet it was beyond their physical capacity owing to their slightly defective development. The results of treatment were less favorable in these cases than in those of true neurosis. Hydriatic procedures are freely used at the sanatorium.* When general neurasthenic symptoms are prominent, the galvanic or faradic two-cell electric bath has been found very useful. In case of violent and recurring tachycardia, the patient reclines for several hours a day with an ice-bag or coil over the heart. Toward the end of treatment systematic exercises are given to accustom the heart to resumption of its ordinary tasks.

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

The American Illustrated Medical Dictionary. A New and Complete Dictionary of the Terms Used in Medicine, Surgery, Dentistry, Pharmacy, Chemistry, and the Kindred Branches, with their Pronunciation, Derivation, and Definition, including much collateral Information of an Encyclopedic Character. By W. A. N. Dorland, A.M., M.D. Fourth edition, revised and enlarged. Flexible Morocco. Pp. 836. Price, $4.50 net. Philadelphia: W. B. Saunders Company, 1906.

Diet in Health and Disease. By J. Friedenwald, M.D., Clinical Professor of Diseases of the Stomach in the College of Physicians and Surgeons, Baltimore, and J. Ruhräh, M.D., Clinical Professor of Diseases of Children in the College of Physicians and Surgeons, Baltimore. Second edition, thoroughly revised and enlarged. Cloth. Pp. 728. Price, $4.00 net. Philadelphia: W. B. Saunders Company, 1906.

Saunders' Pocket Medical Formulary, With an Appendix, Containing Posological Table; Formulas and Doses for Hypodermic Medication; Poisons and their Antidotes; etc. By W. M. Powell, M.D. Eighth edition, thoroughly revised, enlarged and adapted to the eighth revision (1905) of the U. S. Pharmacopeia. Flexible Morocco. Pp. 299. Price, $1.75 net. Philadelphia: W. B. Saunders Company, 1906.

Atlas and Text-Book of Human Anatomy. By J. Sobotta, Professor of Anatomy in the University of Würzburg. Edited with additions by J. P. McMurrich, A.M., Ph.D., Professor of Anatomy in the University of Michigan. Vol. I. Bones, Ligaments, Joints, and Muscles. With 320 Illustrations, mostly in colors. Cloth. Pp. 258. Price, $6.00 net. Philadelphia: W. B. Saunders Company, 1906.

A Text-Book on the Practice of Gynecology, for Practitioners and Students. By W. E. Ashton, M.D., LL.D., Fellow of the American Gynecological Society, etc., with Ten Hundred and Fifty-seven New Line Drawings Illustrating the Text by J. V. Alteneder. Third edition, revised and enlarged. Cloth. Pp. 1097. Price, $6.50 net. Philadelphia: W. B. Saunders Company, 1906.

A Syllabus of Materia Medica. Copiled by W. Coleman, M.D., Professor of Clinical Medicine and Instructor in Materia Medica and Therapeutics in Cornell University Medical College, etc. Third edition, revised to conform to the Eighth Decennial Revision of the U. S. Pharmacopeia. Cloth. Pp. 186. Price, $1.00. New York: William Wood & Company.

Prevalent Diseases of the Eye, A Reference Handbook, especially Adapted to the Needs of the General Practitioner and the Medical Student. By S. Theobald, M.D., Clinical Professor of Ophthalmology and Otology in the Johns Hopkins University, etc. Cloth. Pp. 551. Price, $4.50 net. Philadelphia: W. B. Saunders Company, 1906.

A Treatise on Surgery. By G. R. Fowler, M.D., Examiner in Surgery, Board of Medical Examiners of the Regents of the University of the State of New York, etc. Containing 888 Text-Illustrations and four Colored Plates, all Original. Vol. II. Cloth. Pp. 714. Price, $15.00 net. Philadelphia: W. B. Saunders Company, 1906.

Diseases of the Stomach, A Text-Book for Practitioners and Students. By M. Einhorn, M. D., Professor of Clinical Medicine at the New York Post-Graduate Medical School and Hospital, etc. Fourth edition, revised. Cloth. Pp. 559. Price, $3.50 net. New York: William Wood & Company.

Obstetrics for Nurses. By J. B. De Lee, A.M., M.D., Professor of Obstetrics, Northwestern University Medical School, etc. Second edition, thoroughly revised and enlarged. Cloth. Pp. 510. Price, $2.50 net. Philadelphia: W. B. Saunders Company, 1906.

Technic of Operations on the Intestines and Stomach. By A. H. Gould, M.D., of Boston. With 190 Illustrations, Mostly Original. Several of them in Colors. Cloth. Pp. 302. Price $5.00. Philadelphia: W. B. Saunders Company, 1906.

A Text-Book of Obstetrics. By B. C. Hirst, M.D., Professor of Obstetrics in the University of Pennsylvania, etc. Fifth edition, revised and enlarged. Cloth. Pp. 915. Price, $5.00 net. Philadelphia: W. B. Saunders Company, 1906.

Photoscopy (Skiascopy or Retinoscopy). By M. D. Stevenson, M.D., Ophthalmic Surgeon to the Akron City Hospital, etc. Illustrated. Cloth. Pp. 126. Price, $1.25 net. Philadelphia: W. B. Saunders Company, 1906.

Tabes Dorsalis, The Lumleian Lectures, Delivered before the Royal College of Physicians, London, March, 1906. By D. Ferrier, M. D., LL.D., F.R.S. Cloth, Pp. 122. Price, $1.50 net. New York: William Wood & Company.

A Book About Doctors. By J. C. Jeaffreson. The Doctor's Recreation Series, Charles Wells Moulton, General Editor. Vol. IV. Cloth. Pp. 516. Price, $2.50. Akron, Ohio: The Saalfield Publishing Company.

The American National Red Cross, Chartered by Congress, Jan. 5, 1905. Bulletin No. 4. Issued by the Central Committee, October, 1906. National Headquarters, Washington, D. C. Paper. Pp. 100.

Outlines of Human Embryology, A Medical Student's Handbook of Embryology. By G. R. Satterlee, M.A., M.D. First edition. Cloth. Pp. 173. Price, $1.25 net. New York: John Wiley & Sons, 1906.

Abdominal Operations. By B. G. A. Moynihan, M.S., F.R.C.S. Second edition, thoroughly revised. Cloth. Pp. 815. Price, $7.00 net. Philadelphia: W. B. Saunders Company, 1906.

The Journal of the American Medical Association

Published under the Auspices of the Board of Trustees

VOL. XLVII. CHICAGO, ILLINOIS, DECEMBER 1, 1906. No. 22.

Original Articles

UTERINE MYOMATA COMPLICATING PREGNANCY.*

WITH CASES.

E. E. MONTGOMERY, M.D.

Professor of Gynecology, Jefferson Medical College.

PHILADELPHIA.

The probability of conception by a woman who suffers from myomatous growths of the uterus will depend on their situation.

Growths of the submucous or interstitial varieties increase the disposition to sterility, not so much from the presence of the tumor as from the accompanying endometritis which is certain to be associated with intrauterine growths. Subperitoneal and interstitial growths which do not especially encroach on the uterine cavity should not interfere with the occurrence of conception.

One would naturally expect that uterine growths would partake of the greatly increased current of nutrition which is directed toward the uterus with the advent of pregnancy and become larger. In the majority of cases this is what occurs. A growth which has been quiescent frequently actively increases in size, while growths which were immature often under the stimulation of pregnancy attain very great size. The increase in size is not always a result of growth, but the tumor from a process of necrobiosis becomes edematous, presenting a condition in which fluctuation is so distinct that the examiner may suspect the existence of a cyst. The weight and growth of the tumor may cause the enlarging uterus to become impacted in the pelvis, or its growth may be so rapid that with the pregnant uterus the abdominal distension may be so great and the patient become so uncomfortable or the pressure symptoms so marked that operative interference becomes necessary to save the patient's life.

The complication of pregnancy by myomata would naturally be expected to be a cause of abortion or premature labor, but a study of the statistics of pregnancy does not seem to show an increase of the frequency of such interruption over what is found to occur in uncomplicated pregnancy. The occupancy of the uterine structure by a number of growths necessarily interferes with the rhythmical action of the muscle fiber and renders the uterine contractions feeble and ineffective. When the growths are situated in the fundus of the uterus or above the brim of the pelvis they may exert no influence on pregnancy; when below the brim in cervical growths, or in subperitoneal with a long pedicle, they may prove obstructive. The irregular and feeble contractions increase the frequency of manual or instrumental delivery of the fetus and of the placenta.

The danger to the patient is not ended with the termination of the labor. The irritation to which the growth of lowered vitality is subjected by the prolonged labor, the bruising which must occur during the instrumental and manual delivery, with the rapidly reduced nutrition which is associated with involution, must favor necrotic processes and consequently endanger the lives of both mother and offspring.

The possibility of such a train of disasters from which a married woman, the victim of myomatous growths, may be the sufferer should justify a prophylactic operation to avoid their occurrence. The character of the operation must necessarily be governed by the age of the patient, and especially by the number, size and situations of the growths. In subperitoneal and submucous growths in women under 35 years of age there should be no question of the wisdom of myomectomy in the majority of cases. In interstitial growths, when the tumors are moderate in size and few in number, enucleation should be selected. The greater the mutilation or spreading out of the uterine wall or when it has to be opened in a number of places in order to expose and remove the growths, the convalescence following operation must be more or less stormy, and one might very naturally question whether the cicatricial changes resulting in the uterus would render it fit to undergo the necessary evolution for the completion of pregnancy or afford sufficiently firm contractions to effect delivery and prevent postpartum hemorrhage.

That the ability to effect a safe delivery is not precluded by the enucleation of such growths has been made evident to me by four cases in my own experience, three of them during the course of pregnancy and one before the marriage of the woman, who has subsequently given birth to a child. The history of the latter is as follows:

Miss L., a Japanese woman, aged 33, patient of Dr. A. B. Shimer, of Atlantic City, came under my observation in February, 1903.

History.—Patient was suffering from a mass in the abdomen, which she ascribed to a blow received when a child. Her menstruation was regular, lasting about a week, rather free and occasionally associated with dysmenorrhea. She suffered some pelvic pain which increased in severity after she first noticed the growth in the previous August. An irregular nodular mass was found occupying the median portion of the abdomen, extending about two inches above the symphysis and a little to the left. The tumor was movable from side to side and rectal examination disclosed it as a part of the uterus, and the pelvis was also occupied by a growth. The uterus seemed to be so occupied by the growths that I advised hysterectomy.

Operation.—In the latter part of April, at St. Joseph's Hospital, an abdominal incision was made for the purpose of doing a hysterectomy, but as the growths were so situated in the anterior and posterior walls of the uterus that enucleation seemed possible, the growths, thirteen in number, were enucleated without opening into the uterine cavity. The anterior wall

* Read in the Section on Obstetrics and Diseases of Women of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

of the uterus was very much mutilated, but was quilted together, making a very respectable appearing organ. To avoid its falling back into the pelvis the fundus was secured forward by two turns of the continuous catgut, which closed the wound in the parietal peritoneum.

This patient developed an infection in the abdominal wound from which considerable pus was discharged. Four weeks subsequent to the operation a slough was withdrawn from the depths of the wound, which contained the catgut sutures em-

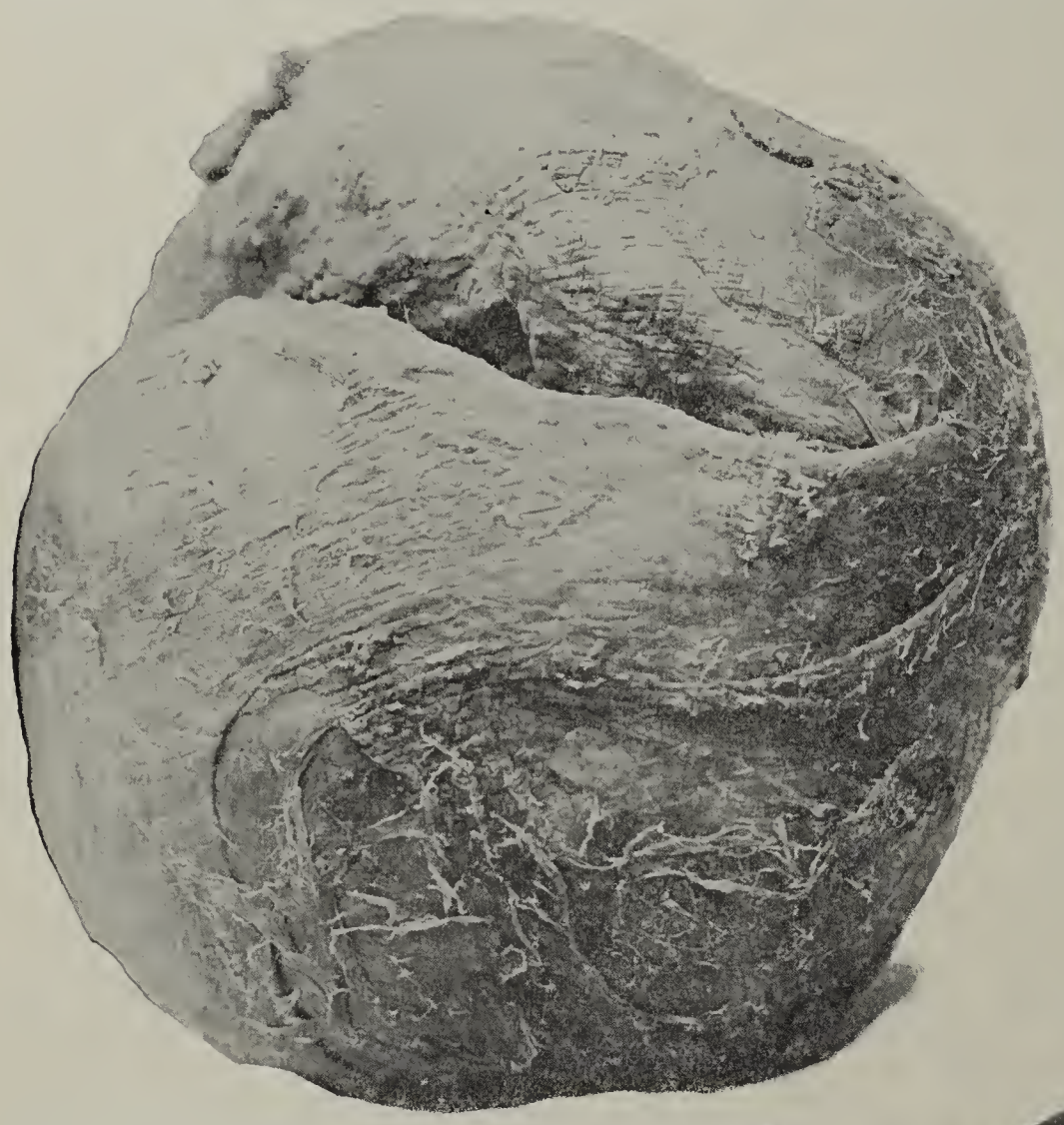


Fig. 1.—Tumor, natural size, removed from the posterior wall of pregnant uterus without interference with its normal course.

ployed to quilt together the wounds in the fundus of the uterus, after which the wound was closed rapidly, and she was discharged well, June 16.

Postoperative History.—For the following additional history I am indebted to Dr. Shimer: She was married Oct. 14, 1903, and gave birth to a healthy female child weighing seven and one-half pounds, Nov. 14, 1904. The presentation was vertex in an occipito-posterior position and consequently resort was had to forceps, by which the perineum was slightly torn. The laceration was at once repaired and the convalescence uneventful. She has enjoyed excellent health since the birth of her child.

This case is not quoted as a justification for imperiling the patient by so severe an ordeal, but as an evidence that a patient may have marked cicatricial changes produced in the uterus without rendering that organ incapable of performing its functions satisfactorily in a subsequent labor.

CONDITIONS THAT JUSTIFY INTERFERENCE DURING PREGNANCY.

The question in which we are more directly interested is what shall be done for the woman suffering from myomatous growths who has become pregnant? In deciding this question, the marvellous profundity of Nature's resources should not be forgotten and interference should be for urgent symptoms and not merely because of the presence of the growth. The conditions which would seem to justify interference during gestation are: 1, persistent and more or less continuous pain over the abdomen; 2, such rapid growth of the combined tumors and uterus that life is in danger from pressure on vital organs; 3, such a situation the growth as will make it a positive obstruction on the completion of pregnancy; 4, indications, hemorrhagic and otherwise, that abortion or premature labor is impending.

The first condition may result from impaction of the uterus or growth within the pelvis and the consequent pressure, and frequently may be obviated by efforts to displace upward the tumor while the patient occupies the knee-chest position. Such efforts should be practiced with the greatest prudence, as cases are recorded in which large veins in the wall of such tumors have been ruptured, causing fatal hemorrhage. The pain may result from partial rotation of the uterus when large tumors occupy the anterior and posterior walls of the uterus. Such a condition demands radical measures for its relief. Equally radical procedures will be demanded when the conditions are complicated by acute disease of the appendages and the appendix. When the uterus was previously the seat of large subperitoneal and interstitial growths, the increase in size from the normal growth of pregnancy plus that arising from the added nutrition of the tumors will often result in so enormous a distension that the functions of respiration, circulation and nutrition are so impaired as to demand prompt relief.

In the early stages of labor it is very difficult to determine that a growth situated even within the inferior zone of the uterus will necessarily prove an obstacle to labor,

Fig. 2.—Myomas occupying interstitial side of uterus while the opposite contains a three-months' fetus. Complete hysterectomy.

for very frequently such growths may be pushed or are drawn up by the expanding cervix. Danger of such obstruction may be inferred when the tumor is subperitoneal with a pedicle long enough to permit it to drag below the expanding body or when an interstitial

growth in the posterior wall permits the expansion of the uterine body above it. Such a growth of large size will prove a serious obstacle in a forthcoming parturition. Recurring bleeding with intermittent painful contractions indicates an irritation of the uterus which renders the expulsion of the uterine contents probable.

PROCEDURE.

What shall be the operative procedure? Experience has taught that artificial production of abortion or premature labor is more grave than the continuance of the pregnancy. Incidental disturbance of the growth by uterine contractions and by manual or instrumental interference, ineffective uterine contractions with subsequent retention of portions of membrane, fragments of placenta and blood clots, render the field more favorable for saprophytic or septic infection.

Hysterectomy, either complete or partial, without doubt, affords the procedure attended with the least mortality for the mother, but it absolutely dooms the other life and precludes all hope for offspring and, consequently, should be accepted only where there is no hope for the continuance of the pregnancy or when alternative measures are absolutely contraindicated.

Prior to the fifth month the existence of pregnancy does not form a bar to the enucleation of growths; on the contrary, the distension of the pregnant uterus renders the demarcation of the growth more distinct and its enucleation more readily accomplished.

The manipulation of the uterus required for the removal of the growth and repair of the wound does not seem to increase the tendency to expulsion of the uterine contents. Indeed, the improved nutrition of the uterus seems to favor more rapid repair of the injury.

The operative injury does not seem to exert any unfavorable influence on the subsequent parturition, as shown by the following cases:

CASE 1.—Mrs. W., aged 27, a patient of Dr. D. S. Hollenbeck, of Shamokin, Pa., underwent operation at Jefferson Hospital, Feb. 25, 1902, for myomatous growths complicating pregnancy. The abdomen was very much larger than normal for a pregnancy of four and one-half months, and on examination a large growth was found on either side of the pelvis and the woman complained of almost continuous pain.

Operation.—The abdomen was opened and the uterus being brought out, presented a myoma five inches in diameter in the posterior wall, and a second two inches in the anterior. These growths had caused a rotation of the uterus so that they lay on either side of the pelvis, and to this was attributed the discomfort. Each of these growths was enucleated and the raw surfaces with some difficulty covered with peritoneum. The uterus was returned to the abdomen and the wound closed with continuous catgut in the peritoneum and aponeurosis, and interrupted silkworm through all the tissues above the peritoneum.

Postoperative History.—Convalescence was uninterrupted and her physician informs me she was delivered at term, of a child weighing thirteen pounds, after a somewhat prolonged labor. Her subsequent convalescence was normal and health good.

CASE 2.—Mrs. L. B., aged 33, a patient of Dr. J. R. Montgomery, of Buckhorn, Pa., was operated on at my clinic, at Jefferson Hospital, Nov. 2, 1902.

History.—Besides a hard tumor filling up the pelvis, surmounted by a more elastic mass above, the character of which could not be definitely determined, she was a victim of Graves' disease, having a large tumor of the thyroid gland, a mitral murmur and a pulse of 140.

Operation.—The administration of an anesthetic was deemed too grave an undertaking, so the abdomen was opened under spinal anesthesia. The exposure thus secured, revealed that the elastic mass was the fundus of the uterus, occupied by a three months' fetus. The bladder had been dragged up and was lying over this portion of the uterus. After walling back the intestines the hard tumor was drawn from the pelvis by the traction of a myoma screw, and was found to occupy the greater portion of the posterior uterine wall. After this enucleation an opening in the peritoneum three inches in diameter was left, which was closed by quilting together the uterine wall with continuous catgut covered with a similar suture in the peritoneum. The uterus was replaced in the abdomen and the wound closed. The tumor was found necrotic. The patient left the hospital, December 6, in good condition, having had an undisturbed convalescence.

Postoperative History.—A letter from Dr. Montgomery, written Oct. 26, 1903, informs me that she completed her pregnancy without disturbance, had a normal labor, and that both mother and child were in excellent health.

CASE 3.—Mrs. N., a patient of Dr. E. E. Graham, of Philadelphia, underwent operation at St. Joseph's Hospital for pregnancy complicated by a fibroid in the uterus.

Operation.—The tumor was situated in the pelvis, having developed in the posterior wall and was with considerable difficulty raised from the pelvis (Fig. 1). The capsule was incised and the tumor enucleated, bleeding vessels were secured by catgut ligatures and the tissues quilted together with the same material and the peritoneum closed over it by a separate suture.

Postoperative History.—Like the others, her convalescence was very satisfactory. She was delivered at full term of a living child, April 27, 1905, twenty-eight weeks following the operation, and has since enjoyed good health.

In all of these cases the irritability of the uterus was controlled by the use of morphin for the first few days subsequent to the operation.

Fortunately, the cases are infrequent in which it will be found necessary to operate during the course of pregnancy, but the danger to the patient and the responsibility of the attendant without operation will often be greater than that experienced when operation has been done as in three of the cases above cited.

DISCUSSION.

DR. AUGUSTUS P. CLARKE, Cambridge, Mass., said that in a series of 1,000 cases of labor he met with only 1 case in which there were two subperitoneal fibroids, each tumor having a preternaturally long pedicle. The patient was 33 years old, and when first seen was four months pregnant. The pregnancy was allowed to go on to full time. The labor was natural and not attended with any mishap. The patient subsequently had two other labors, each at full term and normal in course. The patient, nevertheless, suffered subsequently from the pressure of those fibroids and their unfavorable action was mainly exerted on both ureters and the kidneys, causing chronic inflammation and contraction of those organs and general edema, which led to a fatal result. The autopsy showed that both fibroids had undergone calcareous degeneration, and that an early resort to surgical measures undoubtedly would have saved the patient much suffering and have afforded her many years of usefulness and enjoyment. Dr. Clark said that rapidly growing interstitial or subserous fibro-myomata should, when practical, be removed as early as possible. He has had many such cases in which operative measures have proved most satisfactory. He said it is surprising to note how many women have been the subjects of uterine myomata and became pregnant and, unless the tumor assumed a rapid growth, went through the labor without meeting with any untoward consequences. A preternaturally long pedunculated uterine myoma, in his experience, is to be considered a dangerous growth.

DR. H. J. BOLDT, New York, speaking of the liability of abortion occurring if a myomectomy be done during gestation, said that that depends on the individual experience. One operator will never gather enough material to decide definitely for the profession. So far as his experience goes, he has found that pedunculated and subperitoneal tumors are not likely to cause abortion if operated on during gestation. Others are

always likely to cause abortion. No matter how likely the appearances are that a woman is likely to have obstruction during confinement, it rarely occurs; and unless there are positive indications we should not interfere in any way with the pregnancy and not consider the induction of abortion.

Dr. A. H. Tuttle, Cambridge, Mass., referred to two cases of pregnancy complicated with uterine myomata. In the first case the patient was very much upset with symptoms of inflammatory and strangulatory complications, which progressed until, when in about the fourth month of her pregnancy, it was deemed necessary to make an exploratory incision and determine the exact condition of things. A diffuse myomatous condition of the posterior wall of the uterus was found which interfered with the upward extension of the organ. With gentle manipulation the uterus was loosened and raised from the pelvis and the abdomen closed without further treatment. In spite of the fact that the manipulations of the uterus were of the most gentle nature, severe contractions set in and seriously threatened to terminate the pregnancy. Under full doses of opium this complication was controlled, and the case progressed to term without further trouble. A difficult labor was rewarded with a living child, and since the uterus has been removed.

The second case presented four uterine myomata on the anterior surface. The largest, of about hen's egg size, was undergoing gangrenous changes when it first came under his notice, and the indications for their removal were complete. The mother was then between four and five months pregnant. The tumors were completely removed, every care being exerted not to disturb the uterus. The parts healed by primary union without any complication, and a perfectly normal child was delivered at term.

From the total absence of contraction pains and complications in the second case where there was surgical interference without manipulation of the uterus, and the presence of severe contractions in the first case where there was no surgical treatment but considerable manipulation, it would seem that much manipulation of the pregnant uterus will not be tolerated and that in the surgical treatment of the gravid uterus, handling or disturbing the position of the uterus should be avoided as much as possible.

Dr. A. E. Benjamin, Minneapolis, said that there are three indications for operating on these cases. First, the pain experienced; second, the location of the tumor; and third, degeneration. A great many of these women complain of pain which gradually increases, with symptoms of abortion. Two cases of this sort he operated on without any trouble following. He had one degenerative case. The patient made a good recovery. Dr. Boldt referred to the position of the tumor. In one case with a large tumor filling the pelvis, death of the child resulted, because the attending physician was unable to deliver the child without crushing the head. The woman passed through the ordeal and later came to operation. This tumor was so large and fixed low in the pelvis that it seemed almost impossible that a child's head could pass through the opening.

Dr. J. H. Carstens, Detroit, said that if the tumor is at the fundus he lets it alone; if it is down low it ought to be enucleated, or if it is in the posterior cul-de-sac and adherent, it must be operated on. If it can be lifted over the brim of the pelvis, operation is unnecessary. Sometimes a tumor is found between the uterus and the bladder. A tumor at this point grows rapidly and interferes with the process of delivery. These tumors may be removed by vaginal section.

Dr. S. P. Warren, Portland, Me., said that the first Cesarean section made in Maine was performed for a fibroid complicating delivery. He has seen but two cases in an obstetric practice of thirty years in which fibroids obstructed labor; one case was associated with eclampsia and acute nephritis at the sixth month, the mother dying of sepsis a week postparum, and the other case required craniotomy before delivery. At the second labor of the same woman there was no fibroid found in the uterus. She had not been operated on for it, but the fibroid, which was as large as a child's head at the first, had entirely disappeared at the second labor.

Dr. C. C. Frederick, Buffalo, N. Y., has seen five cases of pregnancy complicated with fibroids in the last ten years. He agreed with Dr. Carstens that fibroids below the ileo-pectineal line, if seen early enough, should be enucleated or Cesarean section must be resorted to. He has had the same experience with fibroids at the junction of the cervix and body. These should also be enucleated. In answer to the question last asked, he has twice seen labors with fibroid tumors in which the tumor was discovered at the time of the labor, and in both these cases the tumors were absorbed or disappeared, leaving only a little nodule. What occurs is a simple process of absorption during involution.

Dr. W. B. Dorsett, St. Louis, Mo., referred to a case in which he wanted to do an enucleation, but found the tumor holding the uterus down under the promontory of the sacrum. He was unable and afraid to remove it because it seemed to dip too deeply down. He simply delivered the uterus from the pelvis and the woman went on to labor. He said that a great many ovarian tumors are removed during pregnancy, and they are probably attended by more danger to the life of the child than when a myomectomy is done, because the nerve supply is more apt to be interfered with and as a result miscarriage occurs. In the case of a soft myomatous tumor the question of operation depends on the individual case.

Dr. Miles F. Porter, Ft. Wayne, Ind., differed with Dr. Carstens. He thinks that any tumor, no matter where it is located, that is likely to interfere with pregnancy or labor, should be removed by operation. He has seen a pregnant woman who also carried an eight pound fibroid, but the abdomen would not carry both, hence the tumor was removed, the child was carried to term and born without accident.

Dr. E. E. Montgomery, Philadelphia, was in hearty concord with those who advocated non-interference in these cases unless there are absolute indications for interference. He said that it is true that in the subsequent development of pregnancy, the distension of the uterus would lift the tumor out of the pelvis and not interfere with delivery. It is only in the early stages of pregnancy that enucleation should be performed. With regard to the tumor being an interstitial one, in all three of his cases the tumors were interstitial, and at least two-thirds of the uterine wall was entered, and in one the opening was nearly five inches across the denuded surface. It seemed as though the fetus, covered by little more than a membrane, was projecting through. The patient recovered without marked inconvenience and later gave birth to a 13-pound child. These tumors are very vascular and great pressure may lead to rupture of the vessels and hemorrhage and even death of the patient. If the patient is not suffering inconvenience from the too great size of the tumor, he should prefer her to go on to the completion of the pregnancy.

EXCISION OF CANCER OF THE HEAD AND NECK.

WITH SPECIAL REFERENCE TO THE PLAN OF DISSECTION BASED ON ONE HUNDRED AND THIRTY-TWO OPERATIONS.*

GEORGE CRILE, M.D.
CLEVELAND, O.

Though signal advances have been made recently in many surgical problems, the treatment of cancer of the head and neck has, it would seem, neither received the attention nor kept the pace of progress in other fields. These unhappy cases are too often regarded as specters at the clinic. The operative treatment is hampered by tradition and conventionality, and the tragic ending of so large a proportion of these cases has held back lay and even professional confidence.

In this paper it is intended to present an outline sketch of the conclusions regarding the surgical treat-

* Read in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

ment of cancer of the head and neck in the curable stage. The etiology, the diagnosis and the pathology will not be considered. It is generally admitted that cancer is primarily a local disease. Each case, then, is presumably at some period curable by complete excision.

The immediate extension from the primary focus is principally by lymphatic permeation and metastasis in the regional lymphatic glands. Secondary foci in distant organs and tissues are probably due to cancer emboli. A careful study of 4,500 cases, exclusive of the thyroid gland, traced to their original report in literature, made for me by Dr. Hitchings, showed that in less than 1 per cent. have secondary cancer foci been found in distant organs and tissues. That is to say, in cancer of the head and neck, death almost always occurs by local and regional development of the disease. The collar of lymphatics of the neck forms an extraordinary barrier through which cancer rarely penetrates (Figs. 1 and 2). Every portion of this barrier is surgically accessible. Paired organs or distinctly one-sided foci usually metastasize regularly, while unpaired organs, as the tongue, or the mesial tissue, such as the nose and the middle of the lip, metastasize irregularly (Fig. 3).

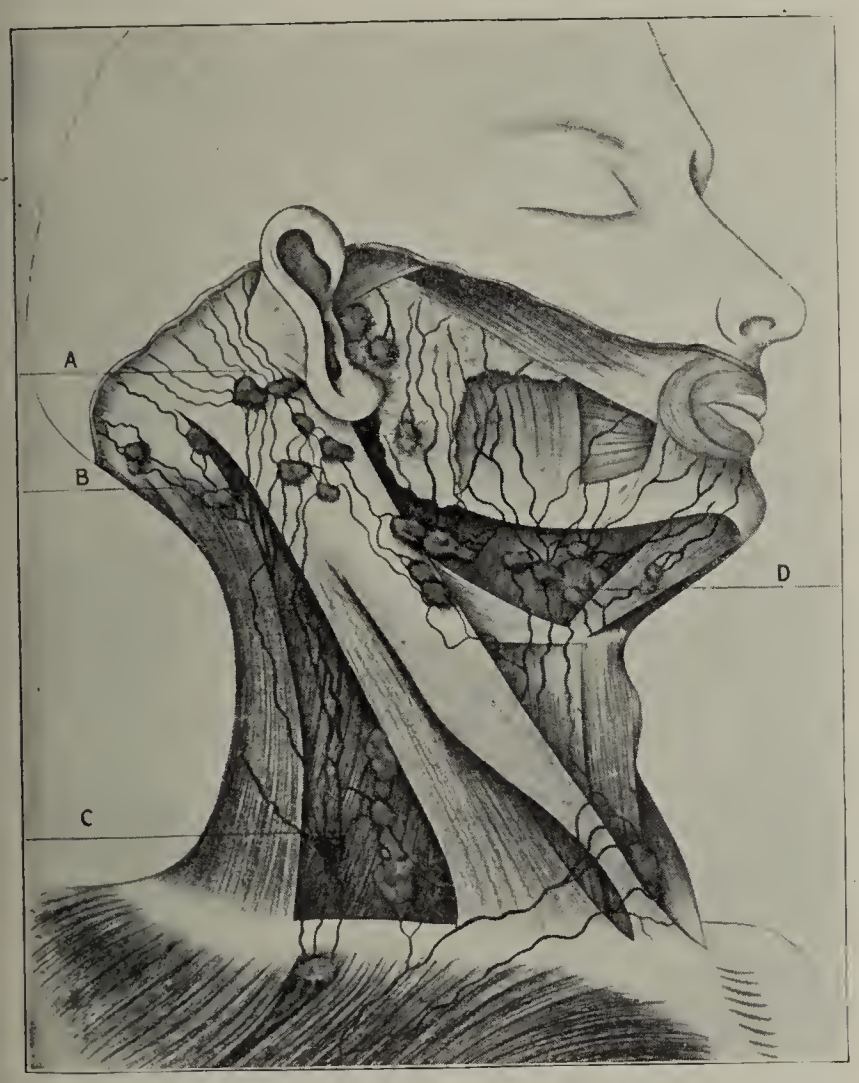


Fig. 1.—(From Gray, Poirier, Cuneo and Toldt.) The distribution of the superficial lymphatics. A, Posterior auricular glands. B, occipital gland. C, superficial cervical gland. D, submaxillary gland.

After the lymphatic stream has been blocked, as by carcinomatous invasion, it may flow in any direction and every sort of irregularity in the further metastases may follow, but always somewhere within the accessible lymphatic collar. After all, how much more favorable such distribution is than that of certain other organs, as, for instance, the breast with its thoracic and abdominal metastases, the stomach and intestines with their inaccessible retroperitoneal metastases?

What, then, is the best method of surgical attack? An incomplete operation disseminates and stimulates the growth, shortens life and diminishes comfort. Local excision of the primary focus only is as unsurgical as excision of a breast, leaving the regional glands. Excision of individual lymphatic glands, as one would excise a tuberculous gland, not only does not afford permanent cure, but is usually followed by greater dissemination and more rapid growth. Judged by analogy and experience, the logical technic is that of a "block" dissection of the regional lymphatic system as well as the primary focus on exactly the same lines as the Halstead operation for cancer of the breast. Such a dissection is indicated whether the glands are or are not palpable. Palpable glands may be inflammatory and impalpable glands may be carcinomatous. A strict rule of excision should, therefore, be followed (Figs. 4 and 5).

In the last 63 cases we have divided them into two classes: (a) those in which the lymphatics were obviously enlarged, (b) those in which they were not enlarged. The enlarged lymphatics were presumed to be carcinomatous (this was, of course, not always correct). In this group the lymphatic-bearing tissue was widely (the entire lymphatic-bearing tissue of that side) excised, because when once the lymph stream is choked by metastasis further dissemination may travel in any direction. When there are no palpable glands the lymphatic drainage area only is excised.

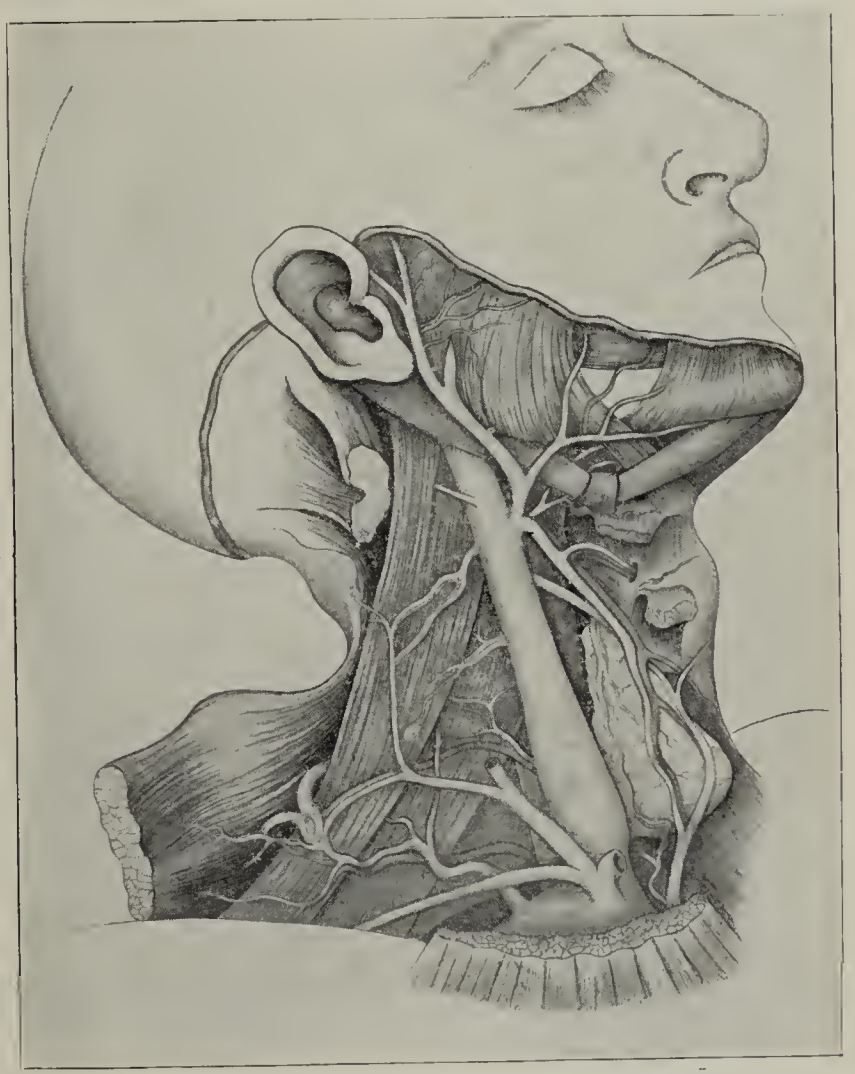


Fig. 3.—(Gray.) Emphasizing the venous tree, easy to excise in toto but difficult to dissect individually from lymphatics.

Next in importance to the block regional and local excision is that of a strict avoidance of all handling of carcinomatous tissue so long as the lymphatic channel remains intact, thereby avoiding further dissemination of the growth. Retraction should be entirely on sound tissue and blunt dissection should be the exception.

If the foregoing be mainly true, what, then, are the salient features of the plan and technic, and what are the principal dangers to be avoided? We shall not here con-

sider the preliminary preparation of the patient nor the after-care, but shall address ourselves to the immediate operative problem as to how to secure the highest immediate recovery rate and the most probable permanent cure. What, then, are the immediate dangers attending such operations? Infection, local and broncho-pulmonary, stands first, then hemorrhage, shock and exhaustion.

Infection.—In the present status of surgery, infection may be dismissed without discussion in all clean dissections of the neck in which the wound does not communicate with the mouth, the air passages or the esophagus. The greatest infection risk exists when an extensive dissection wound of the neck communicates with the mouth or air passages, as in cancer of the tongue or of the larynx. In the latter instance experience has emphatically taught us that the primary wound in the neck should not be made at the same time that the larynx is excised. A preliminary tracheotomy is doubly indicated, as, aside from the short circuiting of respiration and fixing the trachea, it produces a wall of protective granulations across the top of the dangerous mediastinal area. After the establishment of this barrier, together with the superficial treatment of the stump of the trachea, but little risk of broncho-pulmonary infection remains.

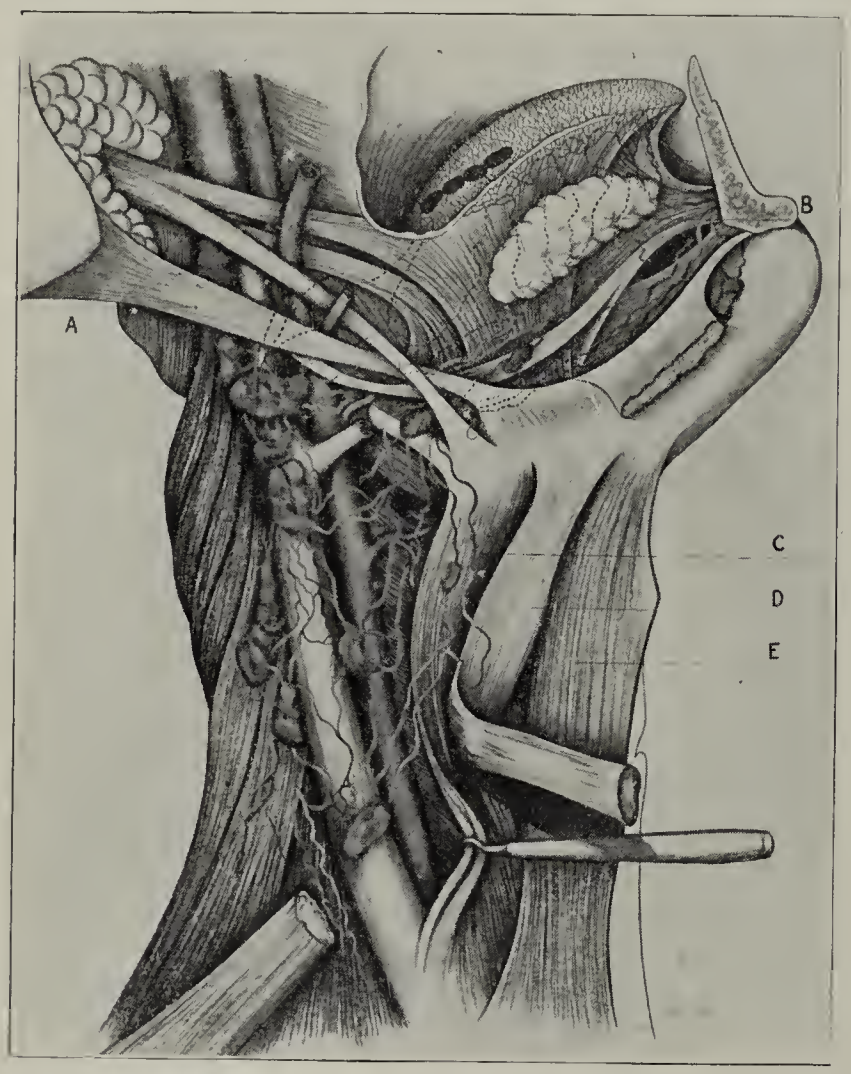


Fig. 4.—(From Poirier and Cuneo.) In cancer of the tongue the metastases extend well down as this cut illustrates. Sometimes the first point of metastasis is in the gland lying between the internal jugular and the omohyoid. A, posterior belly of digastric. B, submaxillary gland. C, thyrohyoid. D, omohyoid. E, sternohyoid.

In the case of the tongue the operation is best made in two stages. It is now well known that the immediate and perhaps the most important factor in the causation of broncho-pulmonary infection in operations within the mouth is the inspiration of blood at the time of the operation. This may be absolutely prevented by the adoption of a simple method which I have heretofore described in the *Annals of Surgery*. The method consists of passing closely fitting rubber tubes through the nares into the pharynx, opposite the epiglottis, then close gauze packing of the pharynx, after drawing the tongue well forward. With the exception of operations requiring the removal of the entire base of the tongue, complete control of blood inhalation is thereby accomplished. Incidentally, this separates the surgeon and the anesthetizer, permitting each to do his work unhampered by the other. Mucus that otherwise might collect in the throat is absorbed at once by the gauze packing. The prevention of vomiting is almost wholly under the control of an even anesthesia. The many other features of the prevention of infection will not here be considered.

Hemorrhage.—The control of hemorrhage is important on its own account and almost equally on account of the maintenance of a dry field, affording opportunity for a clean and precise dissection. The arterial hemorrhage is best controlled by temporary closure of the common or external carotid artery. Permanent closure of the common carotid, on account of the high percentage of cerebral softening in the cancer period of life, should be avoided. Permanent closure of the external carotid, while it is not attended by this risk, carries with it approximately a 2 per cent. mortality rate from the washing away of the thrombus of the ligatured stump, causing cerebral embolism. At all events, it is unnecessary. In 61 cases I have temporarily closed the common or the external carotid without immediate or remote complications. Proper closure of this vessel should be attended with little more risk of thrombosis or embolism than closure by tourniquet or by pressure applied on the skin. This part of the technic must be done with absolute gentleness, the lumen merely closed, the walls not compressed. The troublesome venous hemorrhage may be minimized by placing the patient in the partial upright posture with a sufficient even pressure on the lower extremities and the trunk up to the costal borders to prevent gravitation of blood. Probably the most convenient means for accomplishing this is by my rubber pneumatic suit. By this device almost any posture may be assumed without serious risk of cerebral anemia by gravity. It is interesting to note the collapse of the veins as the patient is taken from the horizontal to the head-up inclined posture. In atheromatous subjects, presenting a high blood pressure, I have seen marked hemorrhage, even pulsating hemorrhage, from the branches of the external carotid when the common was closed. This is easily demonstrated to be due to the passing of the blood of the opposite artery through the brain, causing a reverse stream through the internal carotid of the clamped side to the bifurcation of the common, then up the external carotid, causing pulsating hemorrhage from the branches of the latter. When this occurs, as soon as the external has been exposed, its

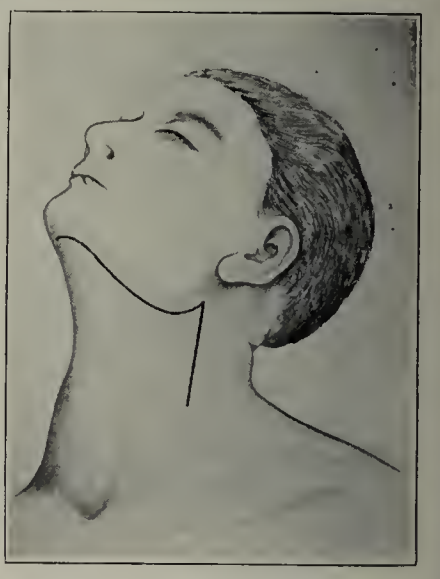


Fig. 5.—An incision which exposes the regional lymphatics which are excised in cases of lateral cancer of the lip without palpable metastases. After metastases have occurred, excision of the entire lymphatic bearing tissue of the side of the neck should be done.

lumen may be closed by a clamp, thereby ending the reverse as well as the direct stream of blood.

Shock and Collapse.—In these extensive operations prevention of shock and collapse may be effectively accomplished. The important shock-producing factors are: the number and intensity of surgical contacts, as forcible retraction, vigorous and repeated sponging, blunt dissection, tearing, etc.; the loss of blood; mismanaged anesthesia, and the duration of the operation. The principal factors causing collapse are: interference with the trunk and certain branches and terminals of the vagus, excessive hemorrhage, air emboli and anesthetic accidents.

To minimize the foregoing, the operative field should be subjected to the very minimum trauma by the employment of ample operative space, sharp dissection, minimum retraction, by preserving the field free from blood and minimizing the sponging. The loss of blood

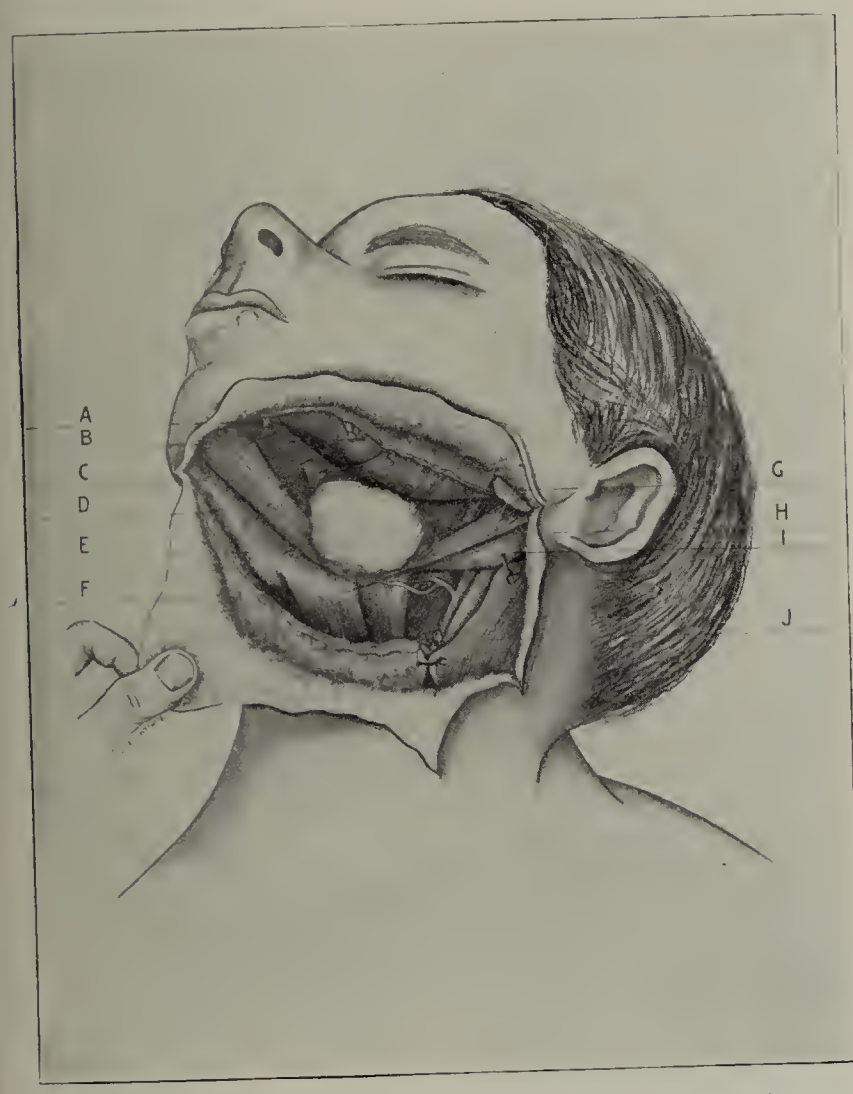


Fig. 6.—(Continuation of Fig. 5.) The regional lymphatic bearing tissue is removed by a block dissection, leaving the salivary gland in the cases in which the lymphatics are free from metastases, and excising it when any of the regional glands are involved. A, submental. B, facial veins and artery. C, gustatory. D, digastric. E, submaxillary. F, platysma. G, parotid gland. H, lingual. I, digastric. J, sternocleidomastoid.

may be reduced to a minimum by methods already suggested. A hypodermic injection of atropin is given half an hour before beginning the operation for the purpose of paralyzing the nerve endings of the vagus in the heart, thereby wholly preventing an inhibitory collapse from direct or reflex inhibition through the vagus or its branches and controlling bronchial secretion. Morphin favors quiet anesthesia and partially supplements the general anesthetic. By taking advantage of the distribution of the sensory nerves, the supply of which is rich in the skin and superficial fascia while scanty in the deeper planes of the neck, but little ether, in addition to the morphin, is required during the latter dissection. This is analogous to the ether-morphin anesthesia in certain prolonged abdominal technics, in which the less painful part of the operation is done principally under the morphin factor of the anesthetic alone. The factor of hemorrhage may now be practically eliminated, and with it air embolism.

In operations on the tongue it is well to remember that the lingual arteries may be closed by the firm pressure of the gauze packing at the base of the tongue in the technic of tubage. In neck dissections the desired standard of the technic is attained when the field is so clear that the minute tissues, such as individual lymphatic vessels, are clearly and distinctly seen, and when one would not expect to damage even the sympathetic nerve unintentionally.

In estimating the possible shock, collapse or exhaustion, it is well to bear in mind that in the cancer period of life there are apt to be cardio-vascular changes of im-

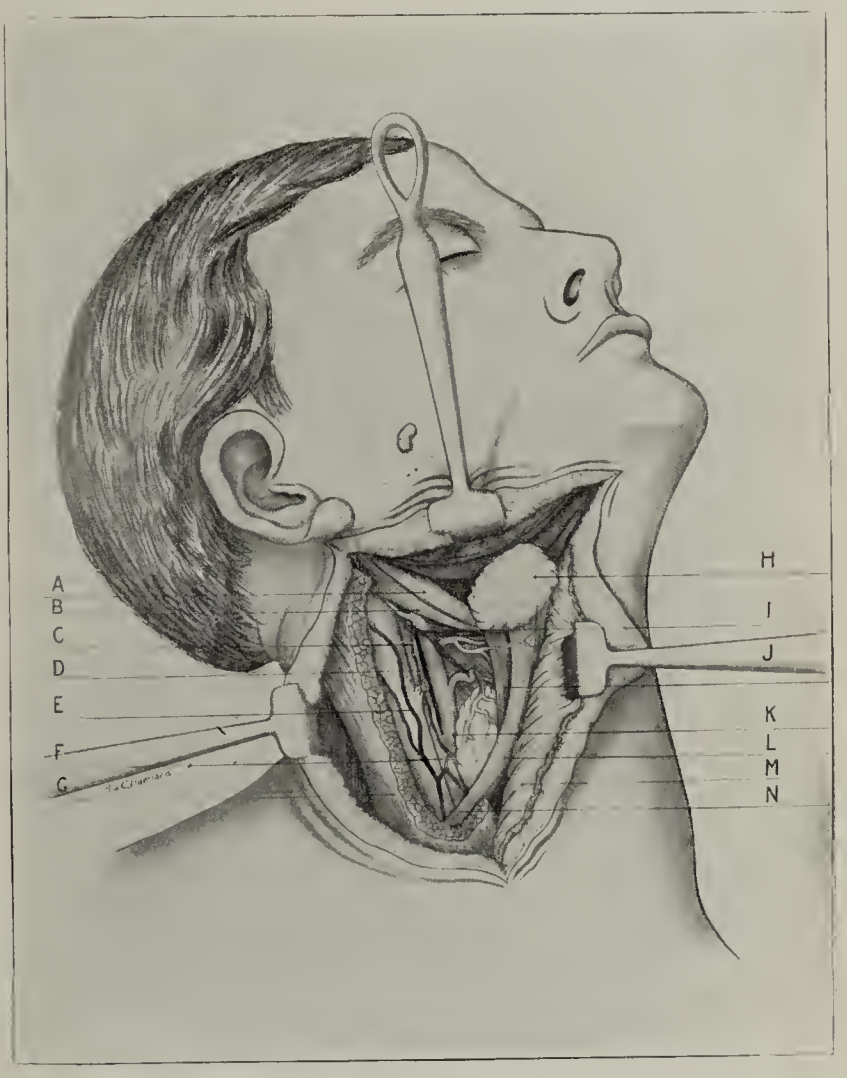


Fig. 7.—Drawing from a case of epithelioma of the face near the ear. There were no palpable glands. The local block dissection here included a portion of the sternomastoid so as to afford a better exposure of the parotid group of glands, thereby protecting against injury of the facial nerve or the jugular. In this instance the lower part of the parotid gland was excised. The submaxillary was left. A, sternohyoid. B, digastric. D, internal carotid. F, carotid. G, sternocleidomastoid. H, submaxillary gland. I, hypoglossal. J, thyrohyoid. K, external carotid. L, omohyoid. M, platysma. N, internal jugular.

portance. A high degree of atheroma, a senile heart, or a chronic myocarditis are all important factors which should be met before the day of operation by such therapeutic measures as digitalis, nitroglycerin, etc., as may be indicated. Unless these factors are anticipated but little can be done in the midst of an operation toward their mitigation. When the wound is large, one must not forget the importance of moist saline compresses to prevent the effect of exposure to the air.

The practical application of the foregoing data may be illustrated in the technic for the excision of carcinoma.

of the floor of the mouth invading the lower jaw with extensive metastases in the submaxillary lymphatic glands. In this instance one would be compelled to take the double risk at one scance. Assuming all preliminary preparations to have been made, the patient is given an injection of 1/4 morphin and 1/100 atropin half an hour before beginning of anesthesia. After completion of anesthesia the pharynx is cocainized to prevent reflex inhibition from manipulation; two rubber tubes closely filling the nares and having perforations at the distal end are pushed down to the level of the epiglottis, the tongue is then drawn well forward, a large piece of gauze packed firmly into the pharynx, completely filling it, the brunt of the packing being made at the sides of the tubes, preventing their compression; the patency of the tubes and easy respiration is readily verified; a T-tube is then connected up with an inhaler and the anesthetizer takes his place a foot or more from the field of operation, giving him the opportunity of continuing an

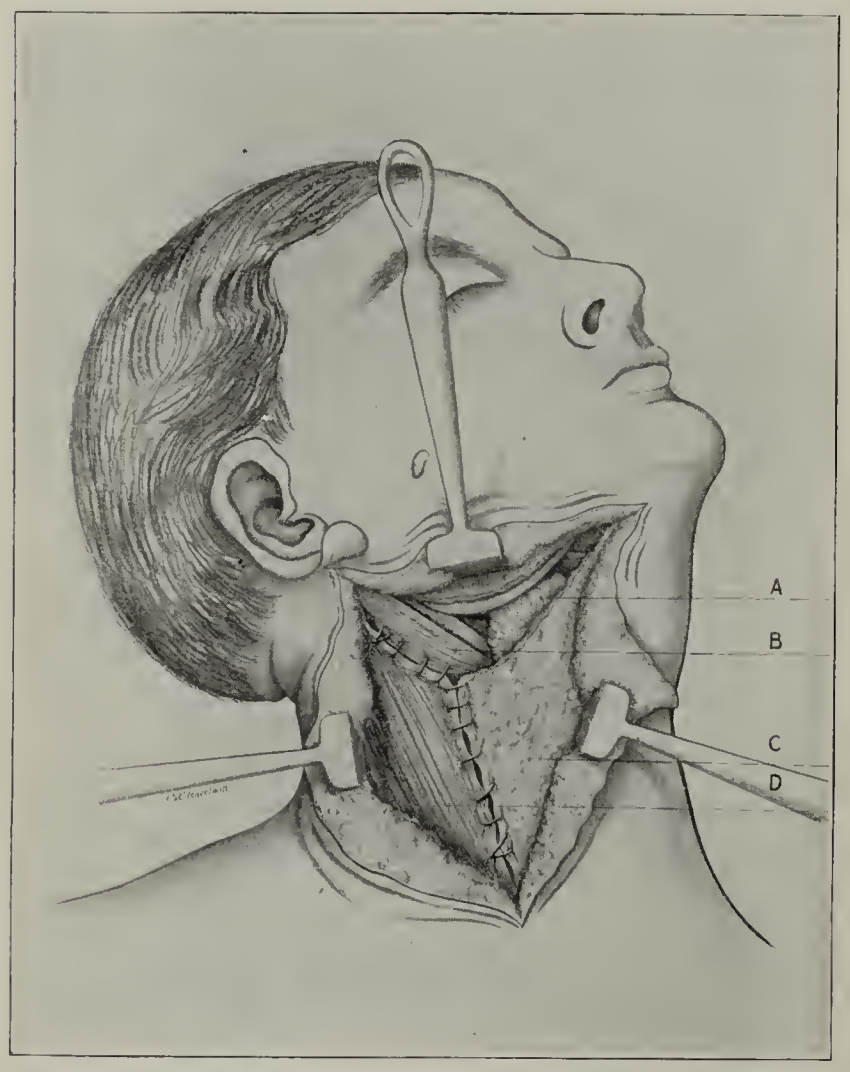


Fig. 8.—(Continuation of Fig. 7.) A method of closing the deeper plane of the neck by suturing the longitudinally split border of the sternomastoid to the platysma and the digastric. A, sublary gland. B, posterior belly of digastric. C, platysma. D, sternomaxillary gland. B, posterior belly of digastric. C, platysma. D, sternomastoid.

even, uninterrupted anesthesia, allowing the surgeon full control of the operative field, absolutely preventing the entrance of any blood into the pulmonary tract, and permitting the operator to place the patient in any position he wishes.

The rubber suit has been placed and laced during the administration of the anesthetic, and is now sufficiently inflated to merely support the circulation of the extremities and the abdomen up to the costal arches. The patient is then placed in the inclined posture, head up, and the skin incision over the common carotid artery just above the clavicle is made (Fig. 6). The artery is exposed by an intermuscular separation of the sternomastoid, its outer sheath nicked, the vessel exposed and temporary closure made. The complete skin incisions are then made, the skin reflected back over the entire area of the field. The sternomastoid is divided, the internal and the external jugulars are secured, tied double and divided at the base of the neck (Fig. 7). The dissection is then carried from below upward into the deep plane of the neck behind the lymphatic glands, working first at the sides, then posteriorly, carrying upward all the fascia, muscles, veins, fat and connective tissue until the floor of the mouth is reached (Fig. 8). The lower jaw is then divided at a safe distance on each side of the growth. The floor of the mouth and the border of the tongue are then similarly divided, completing the block.

In very critical cases, an assistant experienced in the use and purpose of the sphygmomanometer is placed in charge of the management of the circulation. If the pressure falls below a certain point the pneumatic pressure is increased, and after the operation the suit is gradually decompressed, but in operations in the mouth in which there may be some oozing, and in which the posture of the patient may measurably prevent inhalation of blood, by continuing the rubber suit the patient may be allowed to come out of the anesthetic in the head-up posture. The pneumatic suit may be gradually decompressed after the circulation has reached a safe physiologic status.

Clinical.—My experience consists of 132 operations for cancer of various parts of the head and neck. A study of the literature convinces me that one could obtain the safest conclusions from his own experience, as it is impossible to get a precise knowledge of the plan, purpose and descriptions of the work of other surgeons. I have, therefore, depended largely on my own tables for my conclusions.

Fig. 9.—Skin incision for block excision of the gland bearing tissue of the entire side of the neck. A procedure always done when glands are involved.

In the first part of this series we now appreciate as we could not then, that incomplete operations do more harm than good. Our principal errors on this point consisted in the removal of individual glands, in allowing insufficient space for the dissections, in regarding hemorrhage too lightly, in handling carcinomatous tissue, in limiting the dissection only to tissues known to be infected; in short, in not doing a complete, comprehensive operation. The early and vigorous return growth clearly proved the fallacy of our technic. Experience, too, more clearly taught us what cases should be considered inoperable. We have never seen benefit from excising a recurrent malignant tumor which had transgressed lymphatic glands and freely invaded the deeper planes of the neck. If, on the other hand, the deep planes were free and the skin involved, there still remained hope of cure.

Superficial epitheliomata in aged subjects, appearing on various parts of the skin of the face, usually about the nose, rarely metastasize. The block dissection when done in cases in which the lymphatic glands of the neck are already involved, is most radical. In all these the key to the situation is the complete ex-

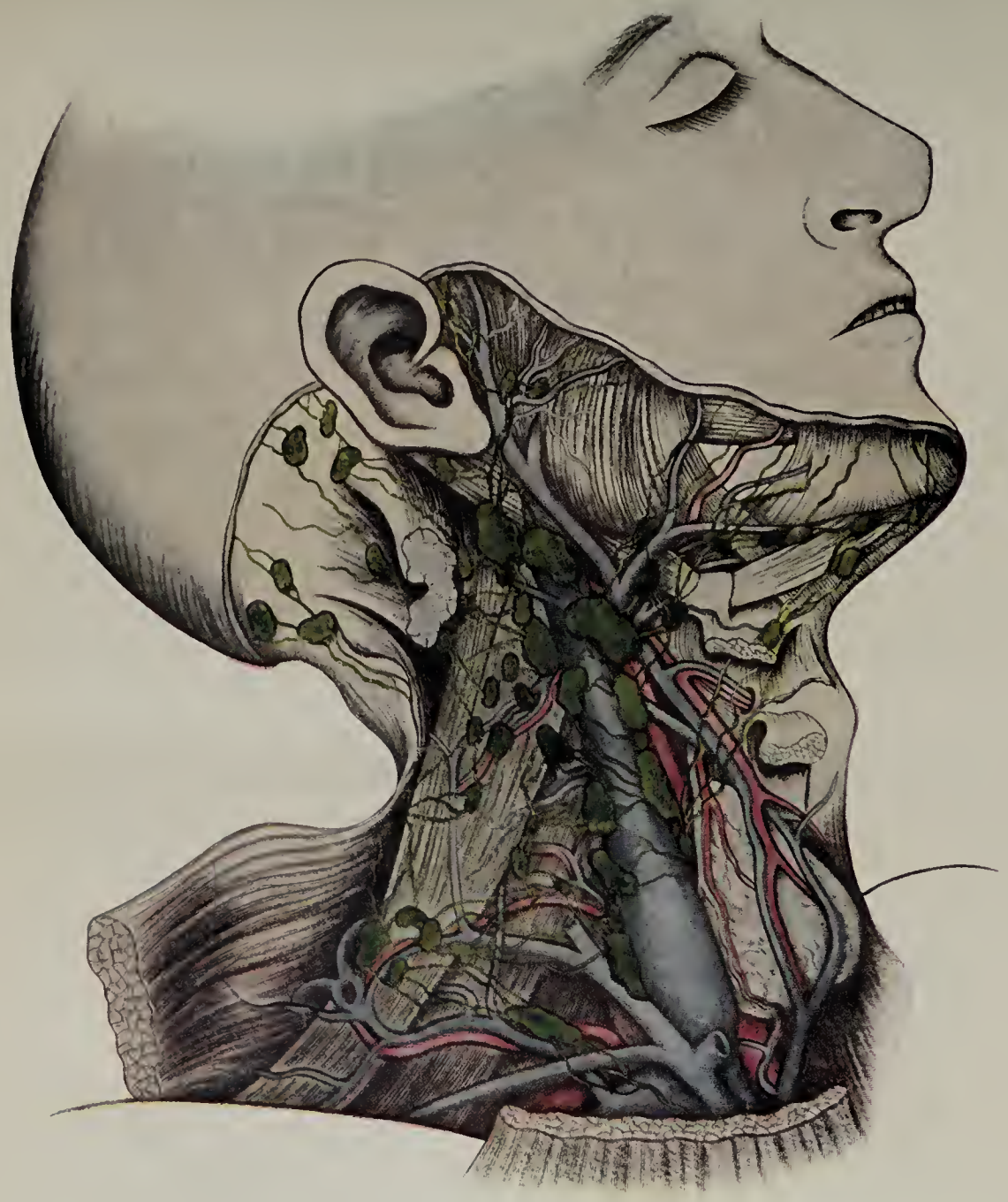


Fig. 2.—(Modified from Gray and Cuneo.) The intimate relationship between the venous and the lymphatic systems and the difficulty of entirely excising the lymphatic system and leaving the venous intact. Also how easily both may be excised together.

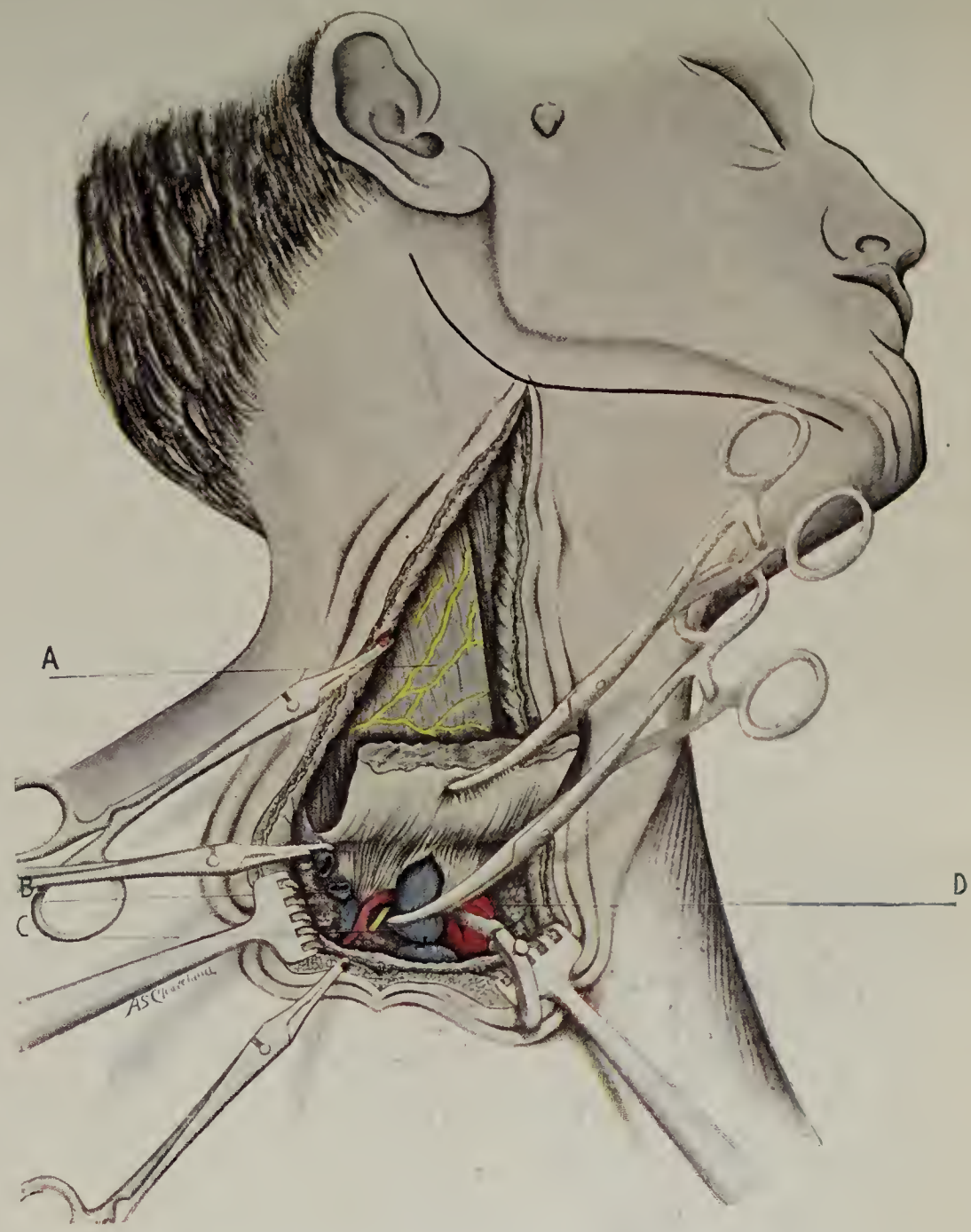


Fig. 10.—The sternomastoid is divided near the clavicle. The vein is exposed, tied in two places, and divided. The carotid is closed with the author's special clamp. The skin and platysma are then dissected back on the entire side of the neck. The deep plane of the neck down to the region having no lymphatic gland tissue is opened from below and laterally upward, and the relation of the sternomastoid muscle and the cervical fascia is noted. The most complete exposure of the deep lymphatics is afforded by a complete excision of this muscle. This and the following cut suggest again the necessity of doing a dissection in planes parallel to the surface. A, sternocleidomastoid. B, external jugular. C, internal jugular. D, common carotid.

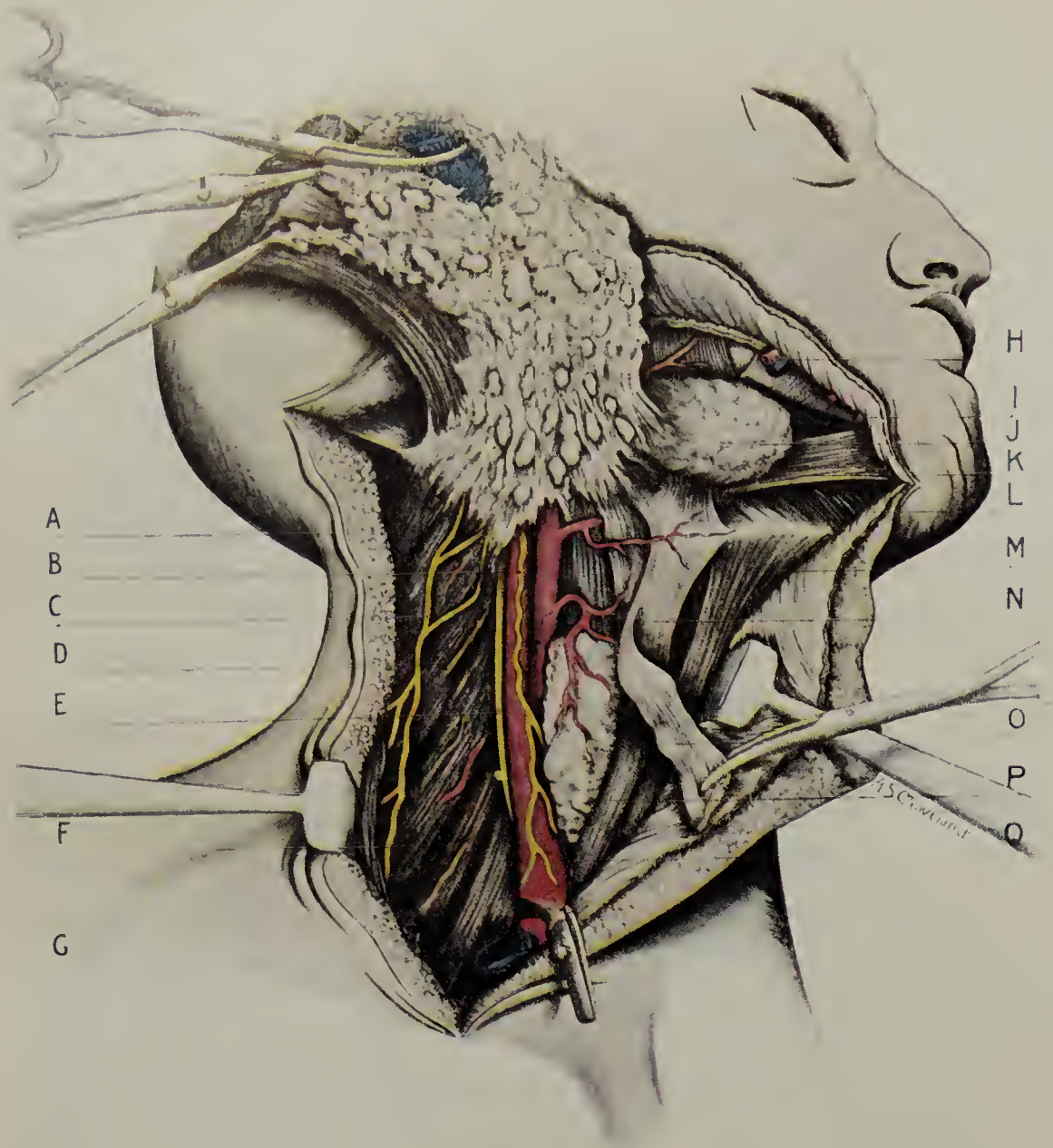


Fig. 11.—The entire mass of lymphatic gland bearing tissue is excised *en bloc*, and handled as little as possible. This dissection becomes easy when followed in the deep plane. The entire block of tissue is finally divided above, including the vein. A, splenius. B, hypoglossus descendens. C, spinal accessory. D, elevator ang. scapuli. E, pneumogastric. F, scalenus posticus. G, internal jugular. H, facial vein and artery. I, submental. J, submaxillary. K, digastric. L, mylohyoid. M, sternohyoid. N, omohyoid. O, thyroid gland. P, thyrohyoid. Q, carotid.

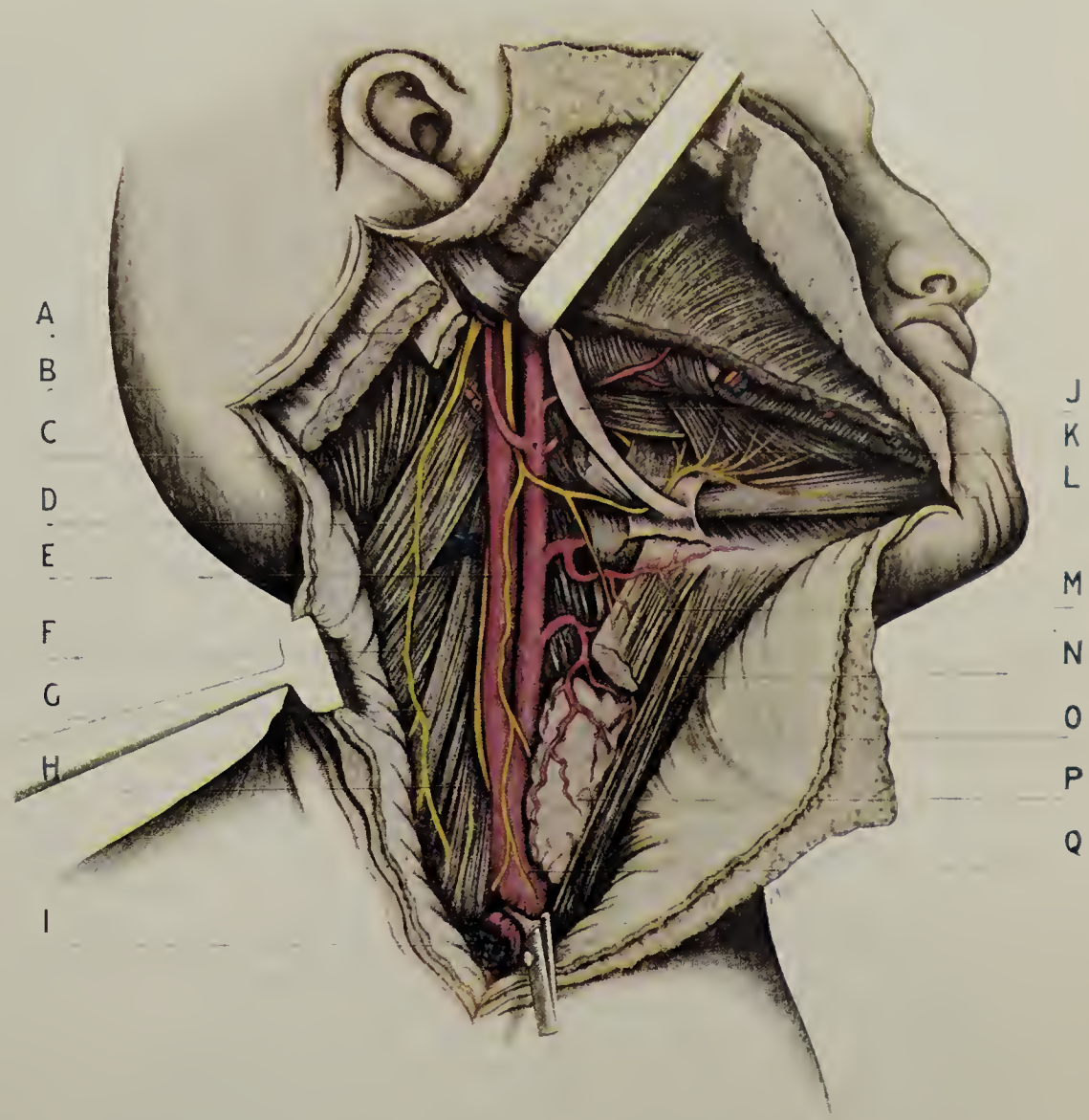


Fig. 12.—(Drawn from life.) Complete block excision of the regional lymphatic system. Note complete removal of all tissue lying between the platysma and the deep muscular plane in which no lymphatic glands lie. The artery and nerves remain. The excised block includes fascia, fat, salivary and part of the parotid glands, sternomastoid, omohyoid, part of the stylohyoid, the entire venous system, and all the lymphatic vessels and glands in this region. This is quite as comprehensive and complete as the Halstead excision of the breast. A, digastric. B, sternocleidomastoid. C, spinal accessory. D, splenius. F, elevator angull scapuli. G, pneumogastric. I, internal jugular. J, stylohyoid, K, myiohyoid. L, digastric. M, omohyoid. N, sternohyoid. O, platysma. P, thyroid gland. Q, carotid.

cision of the internal jugular vein (Fig. 2). In one case both the internal and external jugulars of one side were excised their whole length from the bottom to the top of the neck; when, several months later, metastasis appeared on the opposite side of the neck, a similar excision of both veins was made on this side also, but only after it was discovered what the compensating route for the return circulation was. It was found that some of the superficial branches of the jugular had assumed the size of the internal jugular and were evidently the principal veins of compensation. Following the excision of the internal and external jugulars of the opposite side of the neck there was not the slightest circulatory disturbance, congestion, or any hint of insufficient return circulation (Fig. 9).

Since the adoption of the plan and practice as here described, in 1898-1899, we have seen most encouraging results not only in the immediate recovery rate, but in the permanent cures. We have now apparent cures in patients in whom at the time of operation, various stages of cervical metastases were demonstrated. Among them was a case that was so large and so extensively involved the skin that the patient's physician lanced it, supposing it to be an abscess. This has passed the three-year period. Better selection of cases and improved technic have materially reduced the immediate mortality rate.

It is not intended here to assume that all cancers in the various tissues of the head and neck are alike curable, but when once the lymphatics of the neck are involved the surgical problem and the risk are independent of the location of the primary lesion.

SUMMARY OF AUTHOR'S OPERATIVE CASES.

NUMBER OF CASES, 132.

Age.

Mean age 50, youngest 28, oldest 77; 90 observations.

Cases between ages of 20 and 30 years	1
Cases between ages of 30 and 40 years	14
Cases between ages of 40 and 50 years	21
Cases between ages of 50 and 60 years	18
Cases between ages of 60 and 70 years	29
Cases between ages of 70 and 80 years	6

SEX AND SOCIAL STATE.

Females, 15; males, 96. Married, 40; single, 10.

LOCATION OF PRIMARY FOCUS AND IMMEDIATE RESULTS.

Location.	Operations.	Recoveries.	Deaths.
Epithelioma lateral margin eye	6	6	0
Carcinoma of face (including maxillæ)	15	14	1
Carcinoma of lips	31	31	0
Carcinoma of floor of mouth	4	1	3
Carcinoma of soft palate	1	1	0
Carcinoma of alveolar process	2	2	0
Carcinoma of pharynx	1	1	0
Carcinoma of tongue	12	10	2
Carcinoma of tonsil	2	2	0
Carcinoma of nose	5	5	0
Carcinoma of scalp	2	2	0
Carcinoma of lymphatic glands	23	20	3
Carcinoma of parotid	5	5	0
Carcinoma-branchiogenic	4	4	0
Carcinoma of larynx	15	13	2
Carcinoma of thyroid	4	4	0
	132	121	11
			8 per cent.

OTHER DATA.

Mean duration of disease prior to operation, 1 year. In the last 21 operations there has been no fatality.

Total number of cases operated	132
Total number of cases traced	106
Number of these known to be living	47
Number of these that did not have radical block dissection.	96
Number of these operated over 3 years ago	67
Number of these traced	48
Number who have passed 3 years	9
Number of radical block dissections	36
Number of block dissections over 3 years	19
Number of these traced	12
Number of block dissections of patients living who have passed the 3 year period	19

0 to 1 year	5	6 to 7 years	1
1 to 2 years	5	7 to 8 years	0
2 to 3 years	0	8 to 9 years	0
3 to 4 years	2	9 to 10 years	0
4 to 5 years	2	10 to 11 years	1
5 to 6 years	3		

Number that did not have block dissections now living....28

0 to 1 year	6	4 to 5 years	3
1 to 2 years	10	5 to 6 years	2
2 to 3 years	3	7 to 8 years	3
3 to 4 years	0	16 to 17 years	1

There were twenty-three operations for cancer metastases in the cervical lymphatics following operations for the excision of the primary focus alone. Some of these were in my own early cases in which I was led to excise only the primary focus, either by the pleading of the patient or because the trifling primary lesion scarcely seemed to warrant excision of the regionary lymphatics (Figs. 10 and 11). The majority have been drawn from other sources. It would seem that the end results in this class of cases are the real test of the effectiveness of any method. The end results here are certainly equal to that of cases of axillary involvement in breast cancer. Increasing experience confirms us more and more in the belief that there has been too much conventionality in the technic. The evolution of the technic has so much minimized the operative risks that the chief consideration at present may be given to the complete excision of the last vestige of the disease along the lines of the principles underlying operations for cancer in general.

I would direct especial attention to the fact that among the 48 traced cases operated on more than three years ago, in which the radical block dissection was not made, nine are living; while among 12 traced cases among the block dissection cases operated on more than 3 years ago nine are living. The radical block dissection has, therefore, shown itself to be four times more effective than the less radical (Fig. 12).

Our general conclusions are that, since the head and neck present an exposed field, cancer here, unlike that of the stomach, the intestines, or even the breast, may be recognized at its very beginning; that every case is at some time curable by complete excision; that the field of regional metastases is exceptionally accessible; that cancer rarely penetrates the extraordinary lymphatic collar of the neck; that the growth tends to remain here localized; that by applying the same comprehensive block dissection as in the radical cure of breast cancer and by freely utilizing the modern researches of surgery the final outcome in cases of cancer of the neck and head should yield better results than that of almost any other portion of the body.

DISCUSSION.

Dr. H. M. S. Dawbarn, New York City, took a somewhat different ground, though with the same object in view, the prevention of hemorrhage. Although he has tied the external carotid artery over 100 times, he does not expect to tie this artery hereafter with any such frequency. In the June number of the *International Journal of Surgery*, he said, he gave his technic and reported four cases of brain operation with so little hemorrhage that the artery forceps were hardly needed at all, and in which for half an hour at a time the anesthesia could be laid aside because the patient was lying there with just such an anemia of the brain as is present in normal sleep. By constricting the limbs at the junction of the body tightly enough to accumulate blood in them, there results partial anemia of the head and trunk, and then there is no need of the rubber suit or the posture described by Dr. Crile. There is also very much less pressure at the mouth of the cut vessels. By this simple procedure one can operate in the most vascular region almost without any severe bleeding at all. Such usually bloody operations as excision of the upper jaw and removal of adenoids can be performed comparatively bloodlessly. It is carrying out the same principles in head, neck and trunk, as is done in operations on the extremities by bleeding into the trunk. When operating on the trunk he advised bleeding into the extremities. As soon as the tourniquet is released, as an essential corolary, Dr. Dawbarn applies boiling water by means of gauze wrung out of it with thick rubber gloves. The surface is blanched at once and then there is not that bleeding that ordinarily follows the release of the tourniquet.

If skin and mucous membranes are avoided, the heat will never be found injurious even to delicate tissues.

Dr. D. N. Eisendrath, Chicago, said that in every operation it is essential to remove the lymphatics which drain the field of operation. There are, however, early cases, he said, where it is hardly justifiable to adopt the thorough blocking method Dr. Crile suggested, where a less radical procedure is preferred. Three years ago he began in every case of carcinoma of the lips and tongue to remove the lymphatics in a thorough manner. In these cases nine-tenths practically of all the lymphatic drainage is toward the glands which lie in the submental region between the two anterior pillars of the digastric muscles and in the submaxillary lymph glands lying on the capsule of the salivary gland and within the gland itself. In every case of that kind it is necessary to remove all of the contents of the submaxillary triangles on both sides of the neck at the primary operation, and this should be done as thoroughly as possible, removing not only the fat and fascia, but also the submaxillary and salivary glands. In carcinoma of the tongue surgeons ought to adopt a procedure almost as radical as that mentioned by Dr. Crile. The lymph drainage from the tongue not only goes into the glands into which the lip drains, but also into the deep glands under the sternocleidomastoid muscle, and in some instances even into the glands of the parotid region itself. In these cases one ought to make an incision something like Dr. Crile described. The incision Dr. Eisendrath makes in these cases is slightly different from Dr. Crile's incision. He begins midway between the lower border of the lower jaw and the upper border of the thyroid, from one sternocleidomastoid muscle to the other. By retracting the flap he completely exposes the submaxillary triangles. When the incision is extended this is done from the upper angle of the transverse incision, i. e., from the middle of the sternocleidomastoid muscle down to the clavicle. This enables him to remove every gland from around the muscle without resecting it. In case the internal jugular is involved, it is well to respect that also. Dr. Eisendrath said that no surgeon should content himself simply by removing the primary growth and then dismissing the case. He should remember that in 99 per cent. of the cases metastases occur not in the body, but locally in the regional glands. By removing these and their surrounding fat and fasciæ, as well as the veins and muscles, if they are involved, the permanent results will be better.

Dr. George Crile, Cleveland, excises the vein and muscle only in cases in which metastases have already occurred in the lymphatic glands. When metastases can not be demonstrated, only the regional glands that are known to drain the field of the original focus are excised. He said that the functional value of the internal jugular vein and the sternomastoid muscle is not such that one need hesitate to remove them, provided it will add, even to a slight degree, to the certainty of complete excision of the disease. The provision for return circulation of the veins is many times greater than is needed. Dr. Crile in one case removed both the internal and the external jugular veins. Later metastasis occurred in the opposite side, and after the neck was opened he found that compensation had taken place in some subcutaneous veins near the median line, these having enlarged to the size of the internal jugular. He then removed both the internal and the external jugulars of the remaining side, and there was not the slightest circulatory disturbance at any time.

Give Drugs for Exact Purposes.—Shattuck, in the *Boston Med. and Surg. Jour.*, lays down general rules for the giving of drugs: to do no harm; to have a clear idea whether we give the drug—as a specific, a curative, a palliative or a placebo; to give the drug uncombined, if possible, though to this rule there are many exceptions. When using an efficient drug one should be sure that the preparation is efficient; and should continue its use until either the desired effect or toxic manifestations are produced. The *Medical Times* adds the comment that one should be sure the druggist is an accurate compounder and uses fresh material.

DISPENSING VERSUS PRESCRIBING.*

M. H. FUSSELL, M.D.
PHILADELPHIA.

Much is written in various medical journals, much is spoken by men, leaders in the medical profession, of the nostrum evil, of the impropriety of physicians using any preparation of drugs the full formula of which is not known.

Many writers, with great justice it seems to me, insist, as Billings has done in a recent article, that mixtures put out by manufacturing firms, especially when such compounds contain on their labels the various diseases for which it is a specific, are just as objectionable as various secret remedies in which we are not certain of the exact proportions of the various ingredients.

Sal vitæ has on its label a list of fourteen or fifteen ingredients said to be in the compound. It also states just exactly the therapeutic use of each supposed ingredient. It is a blotch on the escutcheon of a manufacturing pharmacist.

A certain preparation containing eight ingredients, the exact proportions of each being given, is said to be a formula used by a famous French specialist. It is prepared by a reputable firm; it is handsome in appearance and pleasant to the taste. It is an excellent example of the kind of mixture against which Billings speaks. The fact that it is said to have originated with an eminent physician is used by the smooth-tongued agent as a specious argument for its use. Doubtless if it does not cost too much it graces the shelves of hundreds of dispensing physicians.

The great advance made in the practice of medicine and surgery in the past century has come because of the heroic labors of men working in pathologic and bacteriologic laboratories, delving for the cause of disease and its remedies; because of men working in hospitals and at the bedsides of private patients studying the clinical aspect of diseases and how best they are prevented and controlled; because of men working in pharmaceutical laboratories searching for the best forms of drugs and their most useful and active ingredients. Of these three classes of men, the second division claims or should claim the great majority of practicing physicians.

The opportunity is given to each individual practicing medicine to add somthing, be it ever so little, to the sum total of medical knowledge, and thus to the good of mankind. It can be done, is daily done, by thousands of men and women by a careful physical examination of each patient, by recording of observations, by a careful selection of the proper treatment and the means of applying that treatment, and is made efficient by submitting these observations to the medical public.

This paper will have to do with one of the last statements: The means of supplying to patients the treatment necessary by drugs. What shall a young physician do? Shall he dispense from his own office or from his medicine case? Or shall he write a prescription to be filled by a pharmacist? What I shall have to say must relate only to a physician practicing in proximity to a reputable pharmacist. I can see no way at present for the country doctor to work except by dispensing. It appears to me that the choice of these two methods will depend entirely on the education and the character of the young physician.

If he has been instructed that the giving of drugs is a small, but important, item in the duties of an honest

---

* Read in the Section on Pharmacology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

physician, if he has been carefully drilled in the principles of practice, which may be summed up as examine your patient, study the case, apply the proper treatment, if these things have been pounded into him while a student at college, if he has accepted the great office of a physician, recognizing the terrible responsibility which goes with it, realizing that human life and the happiness of a family may depend on his conduct of his cases, then it seems to me time will soon be such a great item to him that he must give it the study of his cases and not waste it by becoming a mere mechanical drug dispenser.

If, on the other hand, he has been improperly taught, if he has been led to search for a drug remedy for consumption, for cough, for palpitation of the heart, or for any other symptom or disease, if he has taken up medicine as a method of making a living merely, as a means of amassing a fortune, then I suspect he will soon fall into the habit of drug dispensing.

I take it that the majority of men have entered medicine without any adequate appreciation of its great responsibility, that many graduate with little idea except that they are to get patients to treat and thereby to make a livelihood. For these this paper is written.

What is before the young man of this character?

He desires to practice medicine honestly. He must, perforce, settle in a suburb of a large city or in a country town. He must make a living. He desires to make it quickly. He sees around him young men with large practices. He finds that many of them are dispensing their drugs. He is importuned by agents of drug concerns, who soon swarm on him, to buy each and every special mixture put up for diarrhea and for vomiting, as well as antibilious and antigrip remedies. The arguments that the manufacturing chemist has spent fortunes to make the drug or mixture active, that the formulæ are those used by a great physician, have their effect and he is soon in possession of a full line of drugs with which to begin practice. God save the mark!

It appears that inquiry into the following propositions will settle whether or not dispensing should be practiced:

First.—Is dispensing for the advantage of the patient?

Second.—Is dispensing to the pecuniary advantage of the physician who dispenses?

Third.—What effect does dispensing have on the manner in which the physician conducts his cases?

Fourth.—What effect has dispensing on legitimate pharmacy?

I fully realize that dispensing *per se* is not harmful. I recognize the fact that most men in active practice properly carry an emergency case from which to take drugs for immediate use. I can conceive of a method of dispensing which, if strictly adhered to, would be of great advantage to both physician and patient, but I do not believe that any such a method is practicable and at the same time conducive to the greatest good of patient and physician. I am firmly convinced that a study of the act of dispensing as it is practiced to-day will prove, beyond doubt, that all four of the foregoing propositions will be so answered that an instant vote will be given against it.

Inquiry among many men who practice this method has developed the following facts:

Almost every man interrogated said that he first began dispensing because some neighbor was doing it. In order to get patients he was forced to follow his neighbor's custom. Every man said that it pays because the office visit is paid for in cash and because patients are attracted, thinking that it is cheaper to go where they can get medicine and advice for one fee.

They were all agreed that better control is had over the patient, because he is ignorant of the medicine he is taking and can not have the drug renewed without consulting the physician. Most of them frankly admitted that they continue the practice because it pays and that they are fully aware that they do not study their cases well, but rather prescribe for the symptoms (a few maintained that they study their cases well).

All admitted that special formulæ are largely used, and some defended that practice because they believe that formulæ used by eminent physicians are better than they could suggest. One man said that he dispenses only when the patient could not pay for the medicine.

Let us now take up the four propositions just stated above:

First.—Is dispensing for the advantage of the patient? If it is, then surely it is proper and should be practiced by us all.

Let us inquire. For the sake of argument we will consider that the patient is examined properly and that a proper diagnosis is made. The drugs which are in the office of any man who dispenses must either be in the form of pellets, pills or ready-made mixtures or powders. Few men can possibly compound their own prescriptions, in the first place they are not skilled and, secondly, they can not give the time necessary. Ready-made pills, powders or mixtures are almost without exceptions set formulæ either put up at the suggestion of the physician himself or by the manufacturing pharmacist.

Every case treated by drugs should have the drugs or formula especially fitted for the individual case. No set formula can possibly fit for a great number of cases. Even though the formula should be proper, the infirmity of age overtakes almost all drugs kept in the stock of a dispensing physician and makes them prohibitive. I know of one who buys his quinin pills and Blaud pills by the thousand!

Is it cheaper for the patient?

The person treated believes that if he can get his medicine and advice for one fee (and that is the usual practice) he is getting much for his money. For a fact he is given as much medicine as will last him a week or a few days and must then return. By the testimony of physicians who know, the patient returns much more often than he would do if he were given a prescription, and, therefore, the cost is as great to him. As I have said in another place, a cheap doctor is usually a bad lot.

Frequently when a certain amount of a drug is desired but is not in stock another amount of the same drug or a similar drug is given in its place; substitution is constantly practiced. This is properly decried in pharmacists and should be shunned by physicians. It would then appear that dispensing does not favor the patient, but is a distinct disadvantage to him. It costs him as much; he may get a bad form of drug unsuited for his case.

Second.—Is dispensing for the pecuniary benefit of the physician? Yes and no. Unquestionably, in certain districts, a young man can get more patients more quickly and get more money at first than if he limits himself to prescribing in the same district. The difference in the rapidity with which two men, one of each class, acquire a practice proves this. There is a limit, however, both to the number of the patients thus attracted and to the ability of the doctor to attend to them. The fees

are usually small and the dispensing physician rarely attends the best class of patients. Consequently as he advances in years he finds himself with the same class of patients with which he began practice.

Assuredly a rapidly growing practice which pays is attractive to any man who needs money, but let him be not deceived. A rapidly growing practice does not by any means prove that the physician is a good one or that he will do good work. Again let him remember that assuredly, and I say this advisedly, one case well studied, though the fee be small, will lay a much surer foundation for future practice and honor than many cases not studied and attracted because the physician is cheap.

The only possible sure ground on which to build a practice which continues to grow with increasing pecuniary rewards with the years, and a reputation which is worth more than money, is to treat the cases for themselves, for the sake of the patient, and not for the money one can receive in his early years.

Third.—What effect does dispensing have on the manner in which a physician conducts his cases?

I approach this proposition with much misgiving. All of us are frail, few of us live up to our ideals. We all make mistakes whether we dispense or prescribe. I feel, however, that dispensing so magnifies the business part of medicine to the detriment of true, careful practice, that this fact alone is a weighty argument against the habit.

As before stated, the only proper method successfully to practice medicine is to take a history of every case, examine every patient with the greatest care and prescribe accordingly. I am fully aware that simply writing a prescription will not cause any physician to study his patients. I know that it is quite possible for a physician to study his patients and then dispense what he feels to be the proper remedy. Does he do it? And does he continue to do so? The majority of patients in our early years come to us for the relief of some troublesome symptom. They care little whether the physician studies their case or not, so they are relieved. Now, the drug dealt out by the physician himself which will promptly cure a symptom is such a great advertisement to the doctor, who is at once thought to have some peculiarly potent remedy not possessed by others, that it at the same time becomes a pecuniary advantage and a greater danger to him. The next patient who comes with the same symptom, though perhaps from an entirely different cause, will expect the same treatment. It is a brave doctor, indeed, who can tell or will tell his patient that the drug he prescribed for X will not do for him, though he has the same symptom. Likely the same or a similar drug will be prescribed.

The habit grows until in the vast majority of instances the doctor soon neglects the finer part of his work, he does not examine every patient, he rarely examines the urine, never the blood or sputum, and his very success in obtaining patients and money ruins him as a physician. And this, I believe, is because he dispenses. It is such a troublesome matter to make a proper diagnosis that the physician, by nature chosing that which is pleasant and easy, falls into the habit of really neglecting his patients.

The man who prescribes is not thought to possess a remedy peculiar to himself, he is not put under so great and frequent temptation as his dispensing brother, and he thus gradually comes to study the cases better. I do not for a moment mean to suggest that dispensing alone could cause ill results, but if the young physician is one of the class which are all too numerous, to which I have before alluded, it will be the straw which breaks him, and I verily believe that quick success to which dispensing can lead is such a terrible pitfall that it may ruin him.

Prescribing should encourage skilled men to study and to practice pharmacy. It is quite true that many pharmacists to-day are not skilled, they will prescribe across the counter, they fill their drug shelves with nostrums, they substitute.

All this is bad, and no physician should allow his prescriptions to be filled by such a man. There are usually on hand one or more pharmacies where one can get what he orders put up as he directs, and where the druggist does not prescribe. Such men should be encouraged.

There is no temptation for the physician to substitute if he prescribes. He can write for what drug he pleases in what proportion and in what form it suits him.

Prescribing gives much less prominence to the business side of medicine, the mere getting of money. It is not selling drugs.

It is ordering a formula compounded for a condition which should be studied. I believe that one becomes much less routine under those circumstances. If it helps to make the use of ready-made formulæ less common, then surely it should be done by all.

To summarize:

Dispensing often gives to the patient drugs unfitted for his case, at greater cost to himself than if he obtained them on prescription.

It helps to make it easy for the doctor to become routine and to neglect the proper study of his cases.

It ruins the druggists in the neighborhood and leads them to become nostrum venders.

DISCUSSION.

DR. HENRY D. JUMP, Philadelphia, said that three points in the consideration of this subject must be counted in making a decision: The interest of the patient, the interest of the physician and the character of the medicines used. He agreed with Dr. Fussell that dispensing is bad for the patient, who will not recover so rapidly from the use of ready-made pills and mixtures as he would from prescriptions freshly prepared for his particular ailment. It is to the physician's advantage to dispense, because he has control of the prescription, because the patient must return to him and pay a fee for a new supply of medicine, and because he will certainly at the beginning gain many new patients on account of cheapness. Ultimately, however, the physician must suffer because his patients do not recover promptly and because his practice will be largely limited to the poorer class. Finally, Dr. Jump said, tablets and pills made up as they are, in large quantities, are not reliable in constituents, solubility or dosage. He has known persons salivated by calomel tablets in which the supposed dose was too small to produce such results, and he has seen ready-made pills excreted in the feces in practically the same form that they were given.

DR. H. R. SLACK, LaGrange, Ga., declared that the present tendency toward dispensing as against prescribing is due to the careless way in which most of our schools and hospitals teach prescribing, and the trend toward therapeutic nihilism, which prevails throughout the country generally. In 1895 he spent some time in medical centers—Baltimore, Philadelphia, New York—but in one of the newest, best equipped medical schools and best equipped hospitals he found the most careless prescribing. The young men who were house physicians spent hours making physical examinations and then would write "KI mixture," "C. P. mixture," etc. Dr. Slack would ask the ingredients, and they would reply, "I don't know." They could not tell. Dr. Slack went to Dr. Osler and lodged complaint, and told him that he did not think that it was doing justice to the postgraduate men who had to practice

medicine with a view to curing their patients, that they came to the hospitals and colleges expecting to learn just what was in the medicines prescribed. He found the same true in Philadelphia and New York. He said that he thinks the nostrum evil is largely due to this carelessness in teaching and prescribing in the hospitals and schools of the country, and the young man who has not been taught how to write a prescription feels hesitancy in writing one. They are taught that such and such tablets or preparations have been tried and the result is that they keep the tablets and ready-prepared nostrums to give the patients when they come.

DR. W. D. CALVIN, Fort Wayne, Ind., said that the arguments used in this paper have a tendency to make those physicians who dispense appear in a bad light. While he admits the absurdity of giving any one patient such a collection as in the case exhibited, he has likewise found many a house where physicians in writing their prescriptions have filled the closets with unused or half-used medicaments. The physicians who prescribe such quantities of medicines are not fair examples of their class—of those who write prescriptions—any more than the doctor referred to by Dr. Fussell is an example of the very large number of physicians who dispense. Dr. Calvin agreed with Dr. Fussell that physicians should study their cases. Physicians can not review any of the fundamental branches in the medical course too frequently, and in this review they should make a study of materia medica and therapeutics. The best colleges have well-founded laboratories of materia medica which are just as important as any other laboratories. The student can learn the nature and uses of drugs only by seeing, tasting, handling these drugs, and becoming thoroughly conversant with them. After the student goes into the world to practice, if he has simply to depend on his pen and paper, so far as his acquaintanceship with drugs is concerned, he is losing a great deal. Dr. Calvin has made it a practice to change to another firm if he can find a better drug, and that is the point that one can not overcome when one is writing prescriptions. The young physician who dispenses will, therefore, derive more benefit from materia medica than the one who writes his prescriptions. In Indiana, Dr. Calvin said, the practice of dispensing is growing, and growing very rapidly. The physician who dispenses and dispenses properly will see that his drugs are not old. Frequently one will find on the musty shelves of the drug store drugs that were they pure whisky would be mellow with age. Another reason why it is advisable to dispense is that it overcomes the tendency and the pronounced habit of pharmacists all over this country of refilling prescriptions and substituting. The argument made against the physician who dispenses is that he is liable to substitute. He is not nearly so liable to do this as the druggist. At one time Dr. Calvin prescribed entirely and so can consider the question from the two standpoints. As to the quality of physicians who dispense, in our county, state and national societies we do not find the men who are dispensing inferior to those who are writing prescriptions, nor do we find their results inferior. Another reason for dispensing is that it leads to the use of fewer drugs, and Dr. Cabot's article, read before the Section on Practice of Medicine, in regard to the use of drugs is most appropriate. Dr. Calvin declared that when he says that 95 per cent. of his work to-day is done with less than 15 drugs he does not doubt that every physician present will say that 95 per cent. of his work may be done with 10. We have come to the time when prescriptions of 10 or 15 ingredients are no longer used. Whenever we can use a single drug it is our duty to do it. If we want to use one of the alkaloids of opium, he asked, should we give opium containing 17 alkaloids, resins and so on? Dr. Calvin said that he could cite many other reasons for dispensing in preference to prescription writing did not time forbid.

DR. C. A. E. CODMAN, Philadelphia, believes that dispensing tends to make the physician careless and works to the detriment of the patient. The physician is led to believe he can see more patients in a shorter period of time, and then he gets in the habit of not stripping his patients. At present the students are taught that they should not treat anyone unless stripped to the waist nor until a careful physical examination has been made. Second, the physician is led to believe that he can treat the patient entirely by symptoms, not by a thorough diagnosis; this also works to the harm of the patients. Many young men who start out are harassed financially, and they are led to believe that they can support themselves by dispensing. In large cities, where the hospital evil exists, these places take the very patients that the young man should have to provide him with bread and butter. The young man who has gone through a long college course must support himself. If that physician will try to stick it out he will win in the end by prescribing. Dispensing will give him a class of patients which will always cling to him. He will not go upward and forward and get the families that should help him. Prescribing leads a man to use mixtures containing eight and ten drugs. If he studies his case he comes down to simplicity and his pharmacopeia will range from six to ten drugs and not to mixtures which contain from eight to ten.

DR. MARY E. DUNNING, Newburgh, N. Y., does not believe in physicians dispensing to any great extent, but stated that they should never prescribe the habit-producing drugs. As physicians, she said, we should never write a prescription from which by indiscriminate refilling the patient can acquire a habit.

DR. EDWARD A. TRACY, South Boston, agreed with Dr. Fussell that physicians should not prescribe or dispense those old-fashioned prescriptions which have 10 or 15 ingredients in the mixture. Dr. Tracy has done prescription writing for 11 years. He found the evil of substitution was such that he did not get results in the treatment of his patients, and he was driven to get medicines himself so as to know that they were what he wished his patients to have. For the last four years he has dispensed medicines, mostly the active principles. He gets the drugs and studies them before he uses them on his patients, and finds that he can get the results which materia medica taught him he should expect from these drugs. A physician, he said, can treat patients by dispensing in a far more scientific manner than by the prescription method, because seeing the patient every day, he can give the drugs which the symptoms call for. While dispensing and prescribing have nothing to do with examining the patient, Dr. Tracy believes that every physician who gets results must thoroughly examine his patient. He agreed with Dr. Dunning that habit-producing drugs should never be prescribed, but, when necessary, dispensed. Dr. Tracy said that his remarks against substitution may seem too sweeping, it may be that it is a local affair, but he fears that commercialism has taken hold widely of the pharmacists of the country. For that reason he prefers to dispense his own drugs so that he knows what the patient gets.

DR. F. R. DAME, Medford, Mass., said that it has been claimed that a physician is apt to buy his tablets in large quantities, with the result that they become old. That is a thing that the physician has entirely under his own control, and we can not be sure that it does not happen in the druggist's stock. If it happens in the physician's supplies it is his own fault. The habit of using made-up formulas for certain conditions should be abandoned, but tablets made up as an individual drug are certainly an advantage in dispensing. It has been suggested that a physician is apt to buy where he can buy cheapest, getting an inferior class of goods. It does not seem to Dr. Dame that that is a good argument, since a physician who respects his business will see to it that his goods are the best. As to dispensing a dozen different kinds of tablets, Dr. Dame knows a physician who gives four and five prescriptions in an individual case, each of which contains three and four different preparations, so that it can not be argued that dispensing would tend to make complex prescribing. There is a happy medium in this question. It may be to the physician's advantage, also to the patient's advantage, that the physician dispenses certain things, whereas, no doubt it is a disadvantage to dispense entirely, as we may be tempted to substitute something for a drug we may happen to be out of.

DR. M. I. WILBERT, Philadelphia, said that the commercializing of the physician, as a result of his dispensing his own drugs, is a feature that has been overlooked by many who dispense. He knows from experience with physicians who are

dispensing drugs that every one of them has gradually gotten into the same habit of looking for cheap preparations. A man ordering 500 Blaud's pills will send out requisitions and get prices on this quantity, and nine times out of ten he takes the cheapest. He does not buy the best that can be had because the best will cost from 20 to 100 per cent. more than he would have to pay for the same pills from irresponsible manufacturers.

Dr. N. B. Bayley, Haverstraw, N. Y., said that he thinks the physician is as apt to buy cheap drugs as the pharmacist who dispenses the physician's prescriptions. He does not believe that the physician will buy the cheapest, that is, the poorest drugs. He will learn the reliable firms from whom to purchase, as well as the pharmacist. Dr. Bayley has seen the physician who writes prescriptions order equally as many drugs for the individual patient as he who dispenses from his office; it is the physician and not the manner of prescribing that dictates the result. That unwise patients will give their prescriptions to their friends to have filled and used, may be some financial discredit to the physician, but on the whole that is not a large evil. As to whether a physician shall dispense or prescribe, the environment and exigencies of his practice will be the best guide. He can do either or both without criticism. The worst evil in prescribing drugs is to order mixtures and compounds of which the physician has little or no knowledge of the contents—and this irrespective of the fact whether he dispenses or writes prescriptions.

Dr. C. S. N. Hallberg, Chicago, said that he sometimes hears of irregular, quackish practices pursued by members of the regular profession. In regard to the statement, "We know the druggist buys the cheapest drugs," Dr. Hallberg asked how the physician making the statement knows that, and if he is familiar with the tests of the Pharmacopeia. Physicians know nothing about that. It is the prerogative of the pharmacist to identify and to pass on the purity, quality and strength of medicines. The physician is neither by training, experience nor environment fitted to it. Why, he asked, bring in these irregular practices of substitution and of prescriptions being refilled without the physician's order? What else can one expect when in Boston the "largest retail drug establishment in America" prides itself on the fact that for nearly one hundred years it has never kept a prescription on its file, but hands it back to the patient. Physicians are to blame. What physician in Boston has any right to send a prescription to such an establishment which does not understand the first principles of pharmacy or medicine? The pharmacist is the only one who is competent to compound, prepare and, except in case of emergency, to dispense medicine. The fact that many violate this and counter prescribe has nothing to do with it. Who are the directors of the "World's Dispensary?" Who is the proprietor of the "Salveda" remedies? They are the doctors. There are physicians who are just as bad or worse than the pharmacists. It would be no more proper to accuse the pharmaceutical profession of irregular practices because they do occasionally counter prescribe, or because they do occasionally substitute than it would be to accuse the medical profession because there are advertising quacks and all kinds of fellows in their ranks. This question is "up to" the doctors. Physicians should demand that a prescription shall not go out of the hands of the pharmacist, and should give instructions to the pharmacist that the prescription is not to be repeated except on special order. The patient has no right whatever to the prescription. Dr. Hallberg admits that there are a few things which the physician may properly dispense. If physicians years ago had written for "Liquor ferri mangani peptonatus," people would not be haunting bargain stores asking for "pepto-mangan," and they would not be able to get it. There is a reasonable medium in this. There is no use in the pot calling the kettle black. Let us try and get together. Wherever a physician is located let him find a competent, honest, skilful pharmacist. The members of the American Pharmaceutical Association are found in almost every state. They are not sublime, but there is something that holds them together, and wherever one finds a member of the American Pharmaceutical Association, one can say, "My friend, I don't want that prescription to be repeated," and it will not be repeated.

Dr. M. H. Fussell, Philadelphia, declared that the vast majority dispense pellets, pills and compressed tablets. Many of these compressed tablets and pills are compound concoctions and there is no more reason to say that because a foolish physician will prescribe many things in one prescription that it justifies dispensing tablets containing numerous ingredients. Dr. Fussell said that men in his neighborhood, many of them reputable gentlemen, most of them graduates from the University of Pennsylvania or from the Jefferson Medical College, when they started to practice medicine, started to practice decent medicine and very soon fell away because, as a candid physician told Dr. Fussell just before he started for the session, "I tried for six months to do as you asked me to do, and regularly every six months I went to my people for the money for my rent. I put drugs in my office and I haven't had to go once."

A METHOD OF RECORDING CHANGES IN BODY WEIGHT WHICH OCCUR WITHIN SHORT INTERVALS OF TIME.*

WARREN P. LOMBARD, M.D.
ANN ARBOR, MICH.

Exact determinations of the rate at which metabolism is occurring within the body are of great practical as well as scientific interest. It is doubtful whether any method can be devised which will give more accurate results than those obtained from a subject living in a respiratory chamber, but this method in its most complete form requires an expensive plant, can not be used in the case of the sick and fails to give changes which occur within short intervals of time. In the hope of developing a method which, even though less exact, might be sufficiently accurate to meet practical requirements, and give information concerning changes in metabolism which occur from minute to minute, the work recorded in this paper was undertaken.

Higley, working with Bowen in the physiological laboratory of the University of Michigan, found that the movements of a delicate balance could be recorded on the blackened drum of a kymograph, without impairing the sensitiveness of the balance to any considerable extent. It was therefore thought that if a balance could be constructed capable of weighing from 70 to 80 kilos, with nicety, and if the scale pans had the form of a mattress, a man might lie at ease on one of the pans, and the rate of loss of weight per minute or any longer interval of time could be readily recorded ,and the amount of weight at any given moment be determined.

DESCRIPTION OF BALANCE.

Such a balance was constructed in the shops of the university, but it was found to be too sensitive to be used alone, for a man may lose more than a gram a minute, which is more than sufficient to turn the balance through the desirable working distance. It was therefore found to be necessary to control the movement of the balance by means of a spiral spring attached to one of its arms, i. e., to weigh by means of a combination long-arm and spring balance.

As used at present, the balance supports the weight and the spring does the weighing. The spring is fast-

---

* Read in the Section on Pathology and Physiology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

* From the Physiological Laboratory of the University of Michigan.

ened from above to the arm of the balance which supports the man; this side is over-weighted by 3 or 4 gm. and as the man loses weight, the spring contracts, drawing the arm of the balance upward. The spring is so arranged, that it can be attached to any desired part of the arm of the balance and so given any suitable leverage. The movement of the balance is recorded on a kymograph drum by means of a long lever, which magnifies the movement about ten times, and which is connected by means of a steel rod with the arm of the balance carrying the man. To avoid friction, the connecting joints are knife-edges, resting in grooves. The writing lever can be regarded as a delicate balance, a writing point suspended from one end to the lever, and a counterbalancing weight at the other end, having the places of the usual scale pans. The writing pointer is a light stiff strip of bamboo, 14 cm. long and 4 mm. wide, tipped with a paper writing point. The writing pointer is fastened a little to the inside of the center of the axis from which it is suspended, and so tends to swing slightly out of the vertical plane. This tendency is sufficient to keep the point always resting lightly against the drum.

With this apparatus it has been possible to obtain graphic records of the total loss of weight of a man or a dog, for example, during 2 minute intervals, at a number of periods within a few minutes of each other. The loss during longer intervals could be readily obtained by increasing the leverage of the spring, or using a stronger spring.

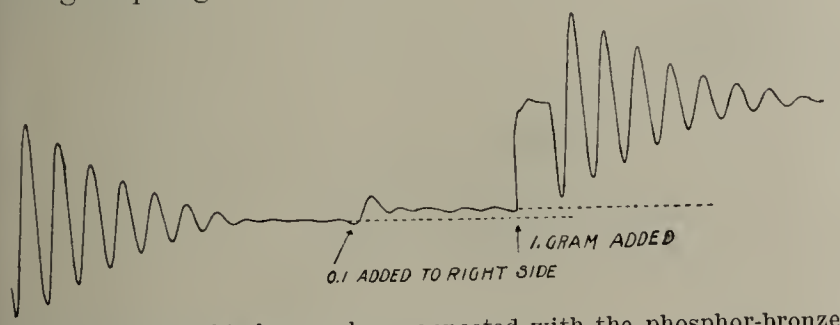


Fig. 1.—Test of balance when connected with the phosphor-bronze spring and loaded with 80 kilos on a side. The curve shows that it oscillates freely, and that 0.1 gram caused an evident deflection.

The balance itself is made of stiff steel tubing, welded into strong central and lateral brass castings, and has the form of the walking beam of an engine. The central knife-edge is about six inches long, and is made from a triangular bar of very hard cold drawn steel. It is supported at the ends in groves cut in two plates of well hardened steel. These plates rest on a horizontal steel bar, which is fastened at each end to a strong iron casting. These castings are secured by heavy lag screws to two 6x6 wooden joints which extend from the floor to the ceiling, where they are securely fastened. The plates containing the grooves for the knife-edge are not fixed on the supporting iron bar, but are free to make a certain amount of movement. Two bolts pass through holes in the iron bar and screw into the bottoms of the plates, but as the holes in the bar are a little large for the bolts, the plates can rotate and shift their position slightly in the horizontal plane. Moreover the bottoms of the plates are slightly convex in the direction of the groove and hence can rock a little on the supporting bar. The fact that the plates are free to move slightly in all but the vertical direction, enables the knife-edge to adjust the grooves to itself when it is placed in them. This arrangement reduces the friction between the central knife-edge and the grooves to a minimum, and gives the balance its great sensitiveness.

When at rest and weighted with 80 kilos on a side, the balance will turn to .02 gm. When in motion, it has a period of swing of 70 seconds for a double oscillation, and is still more sensitive to changes in weight. One decigram will cause the record on the drum to deviate 10 mm. As one can read two-tenths of a millimeter readily, a change in position of the balance corresponding to .002 gm. can be observed.

As has been said, the sensitiveness of the balance is so great that it is necessary to control its movements by connecting a spiral spring to one of the arms. The spring in use has an initial tension of 5.3 gm. and the balance thus harnessed, has a period of swing of about 50 seconds for a double oscillation, and one decigram deflects the lever about 2.7 mm. The errors due to calibration and reading the curves are probably now not more than 3 or 4 per cent., and with further refinement of the method, which is still in its infancy, will probably not to be more than 2 per cent. Figure 2 shows the curve of the loss of weights of alcohol, from an alcohol lamp burning on one of the scale pans of the balance.

EXPERIMENTS.

Not very many experiments have thus far been made, as the apparatus is undergoing modifications as to its finer details. The tables will serve to give an idea of

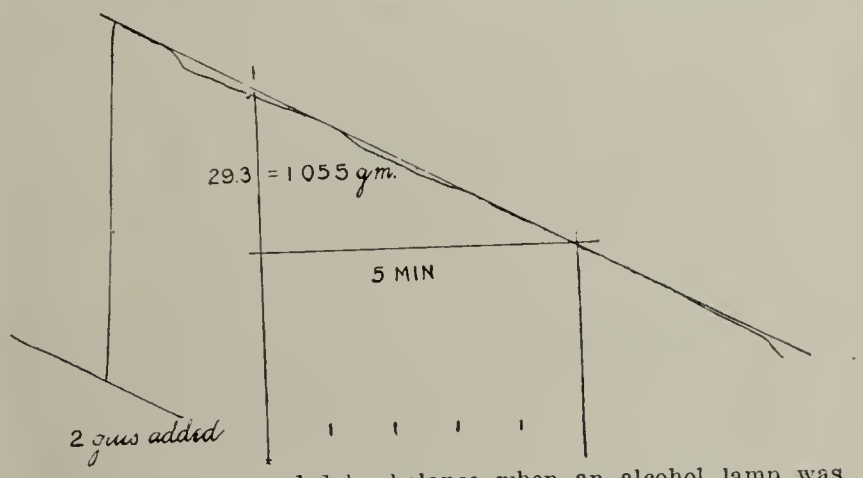


Fig. 2.—Curve recorded by balance when an alcohol lamp was burning on the right pan, the balance being loaded at the time with 80 kilograms on each side. When 2 grams was added to the side on which the lamp was, and the pan went down, the recording lever rose; as the lamp burned, the lever fell.

the character of the results which have been obtained and the possible uses of the instrument.

An experiment made on two men and one dog at about the same part of the same day, March 17, 1906, the room temperature being 18 C., gave the results in Table 1.

TABLE 1.

Subject.	Age.	Weight.	Total loss. a minute.	Average loss.	Widest. variation.
W. P. L.	50	71	.640		
			.735		
			.637		
			.689	.675	.098
F. M. A.	29	72	.670		
			.663		
			.698	.677	.035
Dog, Pat, asleep	3	18½	.147		

The loss per kilo was for W. P. L., .0095 gm.; for F. M. A., .0088 gm.; for Pat, .0079 gm.

Table 2 gives the results of experiments made on a man on three different days.

Apropos of the accuracy of the records of the balance, it is to be noticed that this man weighed 72 kilos, a little over 72,000 milligrams, and that the five determinations of the loss of weight on May 19 ranged from 505 to 529 milligrams, a difference of about 24 milligrams.

An illustration of the rapidity with which the balance responds to changes in the loss of weight is to be found

TABLE 2.

F. M. A., aged 29, weight 72 kilos.

Date.	Temperature.	Total loss of weight a minute.		Skin loss.	Lung loss.
May 17	27½C	1.327			
		1.260	A		
		1.165			
		1.228	(foot hurts)		
		1.210		.456	
		1.010	B		
		1.042			
		1.123		.439	
		Average 1.171		.447	.724
May 19	22C	.526	A		
		.529			
		.519			
		.505	B		
		.512		.161	.351
		Average .518			
May 24	24 ½C	.828		.356	
		A .907		.371	
		.781			
		.673		.371	
		.637	(asleep)		
		.778	(awake)		
		B .677		.209	
		.457			
		.617		.327	
		Average .706		.327	.379

in the curves obtained in experiments in which the breath was held. Often, in five or ten seconds after the man stopped breathing the slope of the curve changed, flattening as the loss from the lungs stopped; when the breathing was begun again, the respirations were very deep for a time, to remove the carbon dioxid which had been held back, and the curve fell more rapidly than before the holding of the breath; soon the curve flattened again, showing the rate of loss of weight to be decreasing. For a time, the rate of loss was less than before the breath had been held, because the improved ventilation of the lung following the holding of the breath lessened the output from the lung for a time. Finally the curve resumed its original slope.

Another illustration of the sensitiveness of the balance to small changes in the rate of loss of weight is to be found in the difference in the rate of loss of weight during sleeping and waking (see Fig. 3). During the experiment on F. M. A., May 24, the subject appeared asleep. The eyes were closed and the lids twitched. He was spoken to quietly and told to open his eyes. He was not startled and made no movement except to slightly change rhythm of respiration at the moment he was spoken to. The curve of loss of weight was seen to change its course as the eyes opened, beginning to fall more rapidly, showing probably an increased metabolism. The fact that the metabolism lessens as one passes from a state of activity to one of rest, is shown generally in the experiments. The loss of weight is always greater in the observations made soon after the subject takes his place on the balance than in those made after he has been lying there some time.

Still another illustration of the capacity of the balance to reveal slight changes in metabolism was observed in the record of May 17. The results of four successive observations were: 1.327, 1.260, 1.165, 1.228. The rate of loss of weight was lessening as the subject quieted down, until the last observation, when it was higher. This last observation came at the end of the drum, when the subject asked if he could change his position as his foot was becoming uncomfortable.

When the breath is held, the loss of weight depends on the rate of excretion from the skin alone. This, of course, should vary with the temperature and the amount of moisture in the air. The effect of external temperature on the rate of loss of weight from the skin was shown in the above experiments on F. M. A.

Temperature 22 C., May 19, loss per minute, 0.161.
Temperature 24 C, May 24, loss per minute, .356, .371, .371, .209, .327.
Temperature, 27 C, May 17, loss per minute, .0456, .439.

None of the figures which have been given is of any especial value, except as suggestions of character of the results which may be expected from the method.

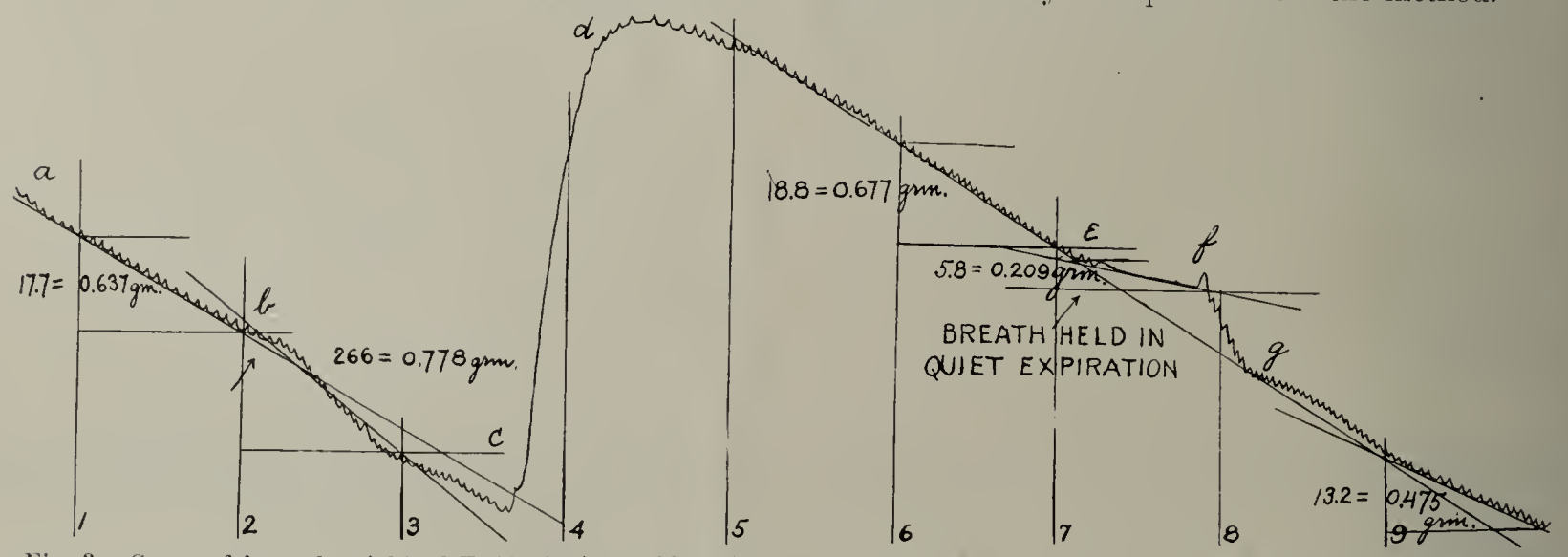


Fig. 3.—Curve of loss of weight of F. M. A. (aged 29, weight 72 kilos.), 5:30 p. m., May 24, 1906. Room temperature, 24.5 C.: hygrometer, 55 degrees. The small oscillations were caused by the respirations. Time is marked in minutes at the bottom of the curve. a-b, subject asleep; b-c, waking curve; at c, 4 grams added; d-e, waking curve; at e, breath held in quiet expiration; at f, a large inspiration when subject begins to breathe; f-g, curve shows rapid loss of weight following the holding of the breath. At b, he was partly asleep, eyes closed, lids twitching. He was told to open his eyes and did so. He was not startled and was not seen to make any other movement.

Higley found that two tubes, one bringing air and the other taking it away, can be connected with a balance without appreciably altering its sensitiveness. It is possible, therefore, for a man, while lying on a pan of the balance, to receive outside air through one tube and to give off air that he has breathed by another tube, at the same time he is being weighed.

The loss of weight from the lungs is the algebraic sum of the carbondioxid lost plus the water lost, minus the oxygen absorbed. If the subject should breath through a train of tubes, the first containing sulphuric acid to take up the water of the breath, and a second containing soda lime, to absorb the carbon dioxid given off, the amount of the loss of water and carbon dioxid from the lungs could be determined by weighing the tubes before and after the experiment. Further, if this train of tubes was on the same side of the balance as the subject, so that what he gave off from the lungs was held beside him on the balance, any recorded change in weight would be due to the loss of water from the skin and gain of oxygen by the lungs. If the loss by the skin was known,

the gain of oxygen could be calculated. A correction would have to be made for the water and carbon dioxid in the air breathed, or these would have to be removed before the air reached the subject.

Theoretically, it is possible by the gravimetric method to ascertain the total loss of weight by the body per minute, and to differentiate between the loss of weight from the lungs and skin, and this has been done in a number of cases. In addition to this, the loss of water and of carbon dioxid from the lungs, the gain of oxygen by the lungs, and, therefore, the respiratory quotient probably can be obtained. This has not been done, the development of this part of the method being as yet incomplete. How accurately the respiratory quotient can be ascertained by this method, and what difficulties may arise in the practical application of the method remain to be determined.

DISCUSSION.

DR. D. V. N. DEARBORN, Boston, enquired whether Dr. Lombard had made any studies of mental activity, as that would seem to be a proper method of getting at the mathematical status of that problem.

DR. LOMBARD said he had made no studies along that line that he cared to speak of then. When the patient wakes up there is a reaction. He had evidence of that. He did not think the loss of brain activity would show itself, but if there is brain activity there is change in the muscle tone which might show.

DR. GRAHAM LUSK, New York City, said that the same amount of oxygen would be given off by the same man. The differences which were noted were probably due to cases in which temperature varies according to differences in loss of moisture from the body. This depends on the temperature and the humidity of the air. At 27 C. there is comparatively small loss of heat, while at 22 C. the greater part of it would be lost through radiation.

DR. S. J. MELTZER, New York City, asked if the accumulation of carbon dioxid in the blood while the patient is holding his breath might not stimulate the sweat nerves and thus cause a loss of weight due to a greater production and evaporation of sweat?

DR. LOMBARD expected that the curve would go down more rapidly when the man was holding his breath, because he was then performing a muscular act. He found the other thing, however. Occasionally he found that if he holds his breath for a considerable length of time, instead of it going down slowly it will go down rapidly. If he holds only as long as he can conveniently do so, and then begins to breathe, he very rapidly regains his normal breath.

THE OPSONIC INDEX IN MEDICINE.

NATHANIEL BOWDITCH POTTER, M.D.
NORMAN E. DITMAN, M.D.
ERNEST B. BRADLEY, M.D.
NEW YORK CITY.

(*Continued from page 1725.*)

SPECIFICITY OF OPSONINS.

The results obtained by Wright and Douglas and by Bulloch[26] indicate the specificity of the opsonins, but to us the question seems as yet unsettled. Wright and Douglas[6] assume that a high degree of specificity exists, though their experiments, in which there was a decrease in the staphylococcic-opsonic index of serum to which typhoid bacilli had been added, would suggest that different bacterial opsonins possessed part of their power in common. Bulloch[26] bases his conclusions on the following experiments: Serum after being digested at 37 C. with staphylococci was freed from the bacteria by centrifugalization, when it was found that the supernatant, clear serum had lost all opsonic power for staphylococci, but "largely retained" the opsonins for tubercle bacilli; and, conversely, serum digested at 37 C. with tubercle bacilli and cleared by centrifugalization lost its tuberculo-opsonic power, but retained that for staphylococci. Simon, using his dilution method for estimating phagocytosis, has repeated these experiments a number of times, and in every case the opsonic power for staphylococci and for colon bacilli declined in about the same ratio.

Our experiments also give opposite results from those of Bulloch. Normal pooled serum from four healthy men was used in our test. This was divided into three parts and placed in tubes. In one tube staphylococci were thoroughly mixed with the serum, in another colon bacilli were mixed with the serum, and the third tube was used unaltered as a control. These were placed in the incubator at 37.5 C. for forty-five minutes, and at the end of that time were subjected to centrifugalization at high speed for thirty to forty minutes. The serum digested with staphylococci showed an opsonic index (the control tube being taken as 1.0) against staphylococci of 0.55, against colon, 0.12. The serum digested with colon bacilli gave an index against staphylococci of 0.26, but against colon of 1.4.

The high figures for the staphylococcic-opsonic index of the serum digested with staphylococci (0.55) and for the colon-opsonic index of serum digested with colon bacilli (1.4) are without doubt due to the fact that the bacteria were not thrown down completely by centrifugalization; but the results are given, as they show that staphylococci take from serum not only the opsonin for staphylococci, but also that for colon, and *vice versa*.

NON-BACTERIAL OPSONINS.

Opsonins for other cells than bacteria have been described. Hektoen[16] found opsonins for blastomycetes and probably trypanosomes. Barrat[27] and Hektoen have observed the presence of hem-opsonins in the sera of normal animals. We, working with human sera, have observed it twice in the serum of colored people with tuberculous lesions.

It is now well known that there are different kinds of bacterial antitropins, e. g., antitoxins, agglutinins, precipitins, lysins, and opsonins. Antitoxins neutralize the poisonous effects of certain bacterial toxins, the best known being those of diphtheria, tetanus, and botulismus. When, however, we investigate the blood fluids of animals inoculated with vaccines and bacterial products other than those mentioned, it is found impossible to demonstrate the existence of antitoxins, or, at any rate, the quantity of antitoxin is so slight that it eludes demonstration. On studying the experimental typhoid and cholera infections, Pfeiffer showed that the protective properties of the immune sera in these diseases are due to the presence of lysins. Experiments made in succeeding years have shown, however, that this doctrine of lysis is not of universal application. The study of immunity against microbes, like pneumococcus, staphylococcus, streptococcus, gonococcus and tubercle bacillus, has led to the greatest diversity of opinion; some claiming antitoxic properties, others lytic, and others phagocytic properties for the different sera.

INFLUENCE OF VARIOUS INFECTIONS ON OPSONINS.

In view of these facts, it is of interest to determine what infections influence the opsonin formation in the body as well as the effect of vaccines and antitoxins on opsonins.

26. Lancet, Dec. 2, 1905, p. 1603.

27. Proc. Royal Soc., 1905, vol. lxxv, p. 524.

The tuberculo-opsonic index in healthy individuals has been estimated by Bulloch[28] in a series of thirty-four medical students and thirty-two nurses. The average for the sixty-six cases was 0.95 with a maximum of 1.20 and a minimum of 0.80.

In twenty individuals Urwick[29] obtained an average of 1.006. We have made eighty-one observations on 19 supposedly normal persons and have obtained an average opsonic index of 0.988 with a maximum of 1.25 and a minimum of 0.73.[30]

Urwick[29] also proved that the tuberculo-opsonic index in healthy people does not vary except within narrow limits from day to day.

Our series of nineteen normals estimated during the past three months shows the following variations in four persons: 0.84 to 1.18; 0.81 to 1.10; 0.88 to 1.10, and 0.92 to 1.06. Wright and Douglas's normals varied between 0.85 and 1.2.

The tuberculo-opsonic index in different varieties of tuberculosis has been studied by a number of observers. Bulloch[28] examined one hundred and fifty cases of lupus from the mildest type to the most chronic and intractable and obtained an average index of 0.75, the figures being as follows:

Opsonic index. Between.	No. of Cases.	Percentage.
0.2 and 0.3	3	2
0.3 and 0.4	3	2
0.4 and 0.5	21	14
0.5 and 0.6	29	19.6
0.6 and 0.7	33	22
0.7 and 0.8	22	14.8
0.8 and 0.9	18	12
0.9 and 1.0	7	4.6
1.0 and 1.4	14	9.3

Urwick examined 54 cases of tuberculosis, including a number of cases of phthisis in various stages. In many of them, especially of phthisis, the index was above normal, with variations from 0.3 to 2.6. In 33 cases of phthisis, 25 showed an index above 1.0, seven below 1.0, and one was at 1.0.

Wright and Douglas[31] examined 16 cases of tuberculosis, including tuberculosis of skin and subcutaneous tissues, tuberculous laryngitis, cystitis, peritonitis, prostatitis, and tuberculous glands. The indices ranged from 0.4 to 0.9.

We have made observations on 39 cases of tuberculosis as follows: Tuberculosis of bones including spine, hip, knee, ankle, tarsus and tibia, in all 22; above 1.0 in five cases, below 1.0 in fourteen, and normal in three. Fourteen cases of pulmonary phthisis varying from 0.41 to 1.37; above 1.0 in one case, below in eleven, and normal in two; and isolated cases of lupus and tuberculous glands ranging from 0.96 to 1.51.

We have estimated the tuberculo-opsonic index in a series of patients with various infectious diseases. Table 1 shows our results.[32]

In 36 cases of tuberculosis, the tuberculo-opsonic index is below normal (0.75) in 25 per cent. of the cases, and above normal (1.2) in 8 per cent. of the cases; in other words, is abnormal in 33 per cent. of the cases. Of the cases which had high indices, 33 per cent were cases with a systemic reaction, and of those cases which had low indices, 66 per cent. had strictly local lesions.

Of 23 cases with infections other than with the tubercle bacillus, the tuberculo-opsonic index was below normal in 26 per cent., and above normal in 4 per cent. of the cases.

EFFECT OF OTHER DISEASES ON OPSONINS.

The effect which certain chemicals, of which lactic acid is an example, have on the opsonic action of serum has already been noted, and suggests the possibility that non-specific anti-opsonins may be important factors in the establishment and spread of various infections. It is possible that substances with anti-opsonic action arise in consequence of local metabolic disturbances. Hektoen suggests that perhaps it is in this direction that we should seek a better understanding of the so-called vital resistance variations which we believe permit the development of primary and secondary infections in which phagocytosis is an essential means of defense.

It was with an idea of throwing some light on this

TABLE 1.—TUBERCULO-OPSONIC INDEX IN VARIOUS INFECTIOUS DISEASES. EMULSION OF BACILLI GENERALLY IN 1.6 PER CENT. NaCl.

Diagnosis.	Index.	Diagnosis.	Index.
Tb. hip and spine	1.14	Pulmonary tb	1.00
Tb. spine	0.73	Tb. tarsus	0.85
Tb. spine	0.92	Tb. glands, jaundice	0.96
Tb. spine	1.01	Inthrathoracic growth tb. glands	1.51
Tb. spine and empyema	0.80, 0.80	Sycosis and debility, F. H. of tb.	0.88
Tb. empyema and peritoneum	1.02, 1.02	As. tb. pneumonia	0.84
Tb. knee	0.78	Ac. tb. pneumonia	0.86
Tb. hip	0.46	Pneumonia	1.10
Tb. hip, with temp.	1.00	Pneumonia	0.92
Tb. hip, with temp.	1.17	Pneumonia	1.01
Tb. hip, with temp.	1.13	Pneumonia	1.20, 0.89
Tb. hip, with temp.	0.80	Postpneumonia empyema.	0.84
Tb. hip	1.59	Postpneumonia empyema.	0.86
Tb. hip, apyrexia	0.75	Postpneumonia empyema.	0.75
Tb. hip	0.86	Typhoid	1.01
Tb. hip	0.85	Typhoid	0.68
Tb. ankle	0.59	Typhoid	0.68
Tb. ankle	0.75, etc.	Gono. arthritis	1.15, 1.09
Tb. ankle	0.90, etc.	Gono. arthritis,	0.67, 0.76, 0.79
Tb. ankle	1.05, 1.18	Gono. arthritis	0.94
Lupus	0.72, etc.	Osteomyelitis of tibia	0.51
Tb. pleurisy	0.89	Osteomyelitis, non-tb.	0.91
Pulmonary tb.	1.00, 1.05	Pus kidney	0.78, 0,61
Pulmonary tb.	0.50	Paral. agitans, cyst	1.38, 1.38
Pulmonary tb.	0.93	Malig. endocarditis	1.06
Pulmonary tb.	0.56, 0.25	Abscess of liver	1.10
Pulmonary tb.	0.41	Acne	1.10
Pulmonary tb.	0.87	Acne	0.86
Pulmonary tb.	0.91	Acne	1.07
Pulmonary tb.	0.88	Acne	0.85
Pulmonary tb.	0.89	Appendicitis	1.04
Pulmonary tb.	1.37		

TABLE 2.—OPSONIC INDEX IN NON-INFECTIOUS DISEASES.

Diagnosis	Index to tuber.	Index to Staph.	Index to pneumoc.	Index to colon
Secondary anemia	0.95	1.09	...	...
Cirrhosis (Folin's diet)	1.13	0.45*	...	...
Hodgkin's disease	0.85	1.00	...	...
Thoracic tumor	1.16	0.90	...	...
Icterus catarrhalis	0.98	...	...	1.02
Acute lymphatic leukemia	1.33	...	...	...
Purpura; multiple sclerosis	0.75	...	...	...
Cardio-nephritis	0.95	...	...	...
Chronic parenchymatous nephritis	0.95	...	...	...
Chronic parenchymatous nephritis	0.59*	...	...	...
Herpes zoster; hydrothorax	1.00	...	...	...
Chronic gout	0.98	...	...	...
Chronic gout	0.85	...	...	...
Paralysis agitans (cystitis)	1.38	...	...	...
Ringworm of body	0.88	...	...	...
Fracture of hip	0.79	...	...	...
Carcinoma of stomach	0.67*	...	...	...
Ovarian cyst	1.10	...	...	...
Hodgkin's disease	1.02	...	...	...
Carcinoma of stomach	1.06	0.93	0.72	1.50
Carcinoma of stomach	...	...	...	1.19
Pleurisy, serofibrinous	...	...	...	0.83
Cardio-renal	...	...	...	0.60*
Cardio-renal	...	...	...	0.66*
Intrathoracic new growth	0.90	...	...	...

* These figures are starred to emphasize low indices.

28. "Opsonic Content in Lupus," Trans. Path. Soc., London, 1905, vol. xvi, p. 334.

29. Brit. Med. Jour., 1905, July 22.

30. For the material used throughout our work we wish to express our thanks to the staffs of the New York, St. Luke's, Roosevelt, City, French, Ruptured and Crippled, and Hudson Street Hospitals, and to Dr. Linsly R. Williams.

31. "Action on Staphylococcus by Human Blood Serum," Proc. Royal Soc., July 22, 1904, vol. lxxiv.

32. Experiments performed in the Pathological Laboratory, College of Physicians and Surgeons, Columbia University.

question that we determined the opsonic indices of a number of conditions of disturbed metabolism, especially those of a non-infectious nature, with several organisms, with the results shown in Table 2.

At the present time it would be difficult to know how to interpret some of these figures. It is evident, however, that some very low as well as high indices may occur in the absence of any demonstrable infection. While several of the low indices are obtained in conditions in which there is some interference with the digestive function, two such cases (carcinoma of the stomach) show a comparatively high index.

We have attempted to compare the tuberculo-opsonic, staphylococcic-opsonic, streptococcic-opsonic, pneumococcic-opsonic, gonococcic-opsonic, and colon-opsonic indices in a few cases. Our results are exhibited in Table 3.

TABLE 3.—OPSONIC INDICES IN VARIOUS INFECTIOUS DISEASES TO TUBERCLE BACILLI AND OTHER GERMS.

Case No.	Diagnosis.	Index to Tb.	Index to Staphy.	Index to Pneu.	Index to Strept.	Index to Colon.	Index to Gon.
1.	Tb. hip and spine	1.14	0.72*	...	...	...	...
2.	Tb. hip	1.00	0.66*	...	...	...	...
3.	Tb. hip	1.13	0.78	...	...	...	...
4.	Tb. hip with temp. and abscess	0.85	1.00	...	...	...	...
5.	Tb. hip and sinus	1.59*	1.00	...	...	...	...
6.	Tb. knee, apyrexia	0.78	0.80	...	...	...	...
7.	Tb. ankle	0.89	0.76	...	...	...	...
8.	Tb. ankle	1.12	1.20*	...	...	...	...
9.	Tb. pulmonary	0.91	...	0.72*	...	...	...
10.	Tb. pulmonary	0.87	0.90	...	...	1.06	...
11	Tb. glands, jaundice	0.96	...	...	...	...	...
12.	Tb. glands, of mediastinum	1.50*	0.90	...	...	...	...
13.	Pleurisy tb.? (chest fluid)	0.78	...	0.95	...	...	...
	(blood serum)	0.89	...	1.09	...	...	...
14.	Syphilis (secondary)	1.02	0.83	...	...	...	...
15.	Gon. arthritis	1.09	1.20*	...	...	...	...
16.	Typhoid	1.01	0.77	...	...	0.94	...
17.	Typhoid	0.68*	1.15	...	...	1.06	...
18.	Typhoid	0.68*	1.07	...	...	...	...
19.	Pneumonia	0.92	...	1.12	...	...	...
20.	Pneumonia	1.20*	0.54*	0.96	...	...	...
21.	Pneumonia	1.01	0.94	0.76	...	...	...
22.	Pneumonia	1.10	...	0.75*	...	...	...
23.	Abscess of liver?	1.06	0.93	0.72*	...	1.50*	...
24.	Abscess of liver	1.10	0.61*	...	...	0.17*	...
25.	Empyema	0.75*	...	...	...	1.17	...
26.	Empyema, post-pneumonic	0.86	...	...	...	0.83	...
27.	Icterus catarrhalis	0.98	...	...	...	1.02	...
28.	Appendicitis, post-op.	1.04	1.09	...	1.00	0.75*	...
29.	Chronic gon. arthritis	0.67*	...	...	...	...	1.10
30.	Chronic gon. arthritis	1.15	...	...	...	...	1.20*
31.	Tb. meningitis	0.90	...	...	...	0.89	...
32.	Pulmonary tb.	...	0.67*	...	...	0.81	...
33.	Empyema of gall-bladder	...	1.02	...	...	1.43	...
34.	Normal.	0.98	1.00	...	...	...	...
35.	Normal.	0.97	1.00	...	...	...	...
36.	Normal.	1.00	1.00	0.88	...	...	...
37.	Normal.	1.07	1.00	...	1.10	1.10	...
38.	Normal.	0.92	1.00	...	0.80	0.88	...
39.	Normal.	1.10	...	1.10	...	...	...
40.	Normal.	0.83	...	0.91	...	...	...
41.	Normal.	1.00	...	...	...	0.81	...
42.	Normal.	1.00	...	...	...	1.10	...
43.	Normal.	0.99	1.10	...	...	1.00	...
44.	Normal.	1.05	...	...	...	1.00	...
45.	Normal.	0.81	...	...	...	...	1.03
46.	Normal.	1.09	...	...	...	...	1.04
47.	Normal.	1.05	...	...	...	...	0.92
48.	Normal.	1.00	0.97	...	...	...	0.98
49.	Normal.	0.92	...	...	...	...	1.01*
50.	Normal.	0.91	...	...	...	1.02	...
51.	Normal.	1.02	...	...	...	0.98	...

* These figures are starred to emphasize peculiarities in indices.

From Table 3 it will be seen that the indices in a few cases to different germs vary remarkably, but not as much as one would be led to expect from Wright's work. Cases 1 and 2 are worthy of note in showing low indices to staphylococcus with normal figures for tubercle bacilli. These cases had no sinus or staphylococcus infection. Case 6, being apyrexial, should have given a low index, one would expect. Case 20, one of lobar pneumonia, shows a low index to staphylococcus, a high index to tuberculosis, and normal to pneumococcus. Case 24 is the most remarkable case in the series. This patient had an enormous abscess of the liver which had been operated on about a week before these figures were obtained. Cases 23 and 33 would also indicate a certain specificity of the opsonins.

Staphylococcus.—Wright reported 20 cases of localized staphylococcic infection, viz., furuncles, acne, sycosis, etc., with indices varying from 0.1 to 0.88, with an average for the 20 of 0.62. In 25 cases with uncomplicated localized staphylococcic lesions, Bulloch reports that the index was "below normal constantly." We have been unable to find a list of indices of normal individuals to staphylococci. We have estimated the indices of 10 normal persons to staphylococcus and found them to range between 0.82 and 1.20, the average for 19 determinations being 0.98.[33] Three cases were examined at intervals during several months and showed variations in one case between 0.84 and 1.20, in another between 0.85 and 1.10, and in a third between 0.90 and 1.02.

Pneumococcus.—While Dr. Rosenow affirms that during the course of pneumonia up to and shortly after the crisis there is probably no increase in the pneumococcic-opsonic index, Macdonald[34] has found that at the commencement of the infection, while the temperature is in the ascendant, and during the fastigium, the opsonic index is below normal. With the onset of crisis, there is a striking rise in the opsonic content, the index rising critically as high as 1.6.

Typhoid.—In convalescent typhoid fever patients, a well-marked increase in the opsonin for typhoid bacilli has been noted, the index in some cases reaching as high as 4.0.

Streptococcus.—Ruediger[16] has noted an increase in the streptococcic-opsonic index of erysipelas serum.

Tables 4, 5, 6 and 7 show the effect of various infections on the opsonic index to staphylococcus, colon bacillus, gonococcus and pneumococcus, the first cases in the tables being caused by the specific organism employed.

TABLE 4.—OPSONIC INDICES TO STAPHYLOCOCCUS PYOGENES AUREUS.

1.	Abscess of liver	0.93	
2.	Abscess of liver	0.61	
3.	Appendicitis postoper.	1.09	
4.	Acne 0.75,	1.2	
5.	Furuncle	0.86	
6.	Dermatitis vegetans	0.82	
7.	Acne	0.94	
8.	Empyema	0.95	
9.	Empyema of gall-bladder.	1.02	
10.	Pleurisy, sero. fibrinous	0.95	
11.	Meningitis cerebro-spinal	1.01	
12.	Meningitis cerebro-spinal	1.02	
13.	Meningitis cerebro-spinal	0.84	
14.	Pneumonia	1.12	
15.	Pneumonia	1.09	
16.	Typhoid fever	0.77	
17.	Typhoid fever	1.15	
18.	Typhoid fever	1.07	
19.	Cirrhosis, Folin's diet.	0.45	
20.	Gonorrheal arthritis, 1.20,	1.01	
21.	Tubercular adenitis	0.90	
22.	Tubercular hip and spine	0.72	
23.	Tubercular hip and spine	0.66	
24.	Tubercular hip and spine	0.78	
25.	Tubercular hip with temp. abscess	1.00	
26.	Tubercular hip with sinus	1.00	
27.	Tubercular knee	0.80	
28.	Tubercular ankle	0.76	
29.	Tubercular ankle	1.20	
30.	Pulmonary tuberculosis	0.90	
31.	Pneumonia	0.98	

TABLE 5.—OPSONIC INDICES TO COLON BACILLUS.

1.	Abscess of liver, 0.17, 0.19,	0.26	
2.	Abscess of liver	0.46	
3.	Abscess of liver	1.50	
4.	Appendicitis (postop.)	0.75	
5.	Fecal fistula	0.52	
6.	Peritonitis (postop.)	1.00	
7.	Gallstones	1.1	
8.	Gallstones with jaundice	1.05	
9.	Gallstones	1.08	
10.	Empyema of gall-bladder	1.43	
11.	Pyonephrosis	1.49	
12.	Cystitis and paralysis agitans	1.10	
13.	Icterus catarrhalis	1.02	
14.	Typhoid fever	0.94	
15.	Typhoid fever	1.06	
16.	Abscess of spleen	0.73	
17.	Empyema (postpneu.)	0.83	
18.	Pulmonary tub.	1.06	
19.	Tub. glands, jaundice.	1.	
20.	Empyema	1.17	
21.	Empyema	0.83	
22.	Osteomyelitis of femur.	0.75	
23.	Diabetes	0.65	
24.	Normal	1.10	
25.	Normal	0.88	
26.	Normal	0.81	
27.	Normal	1.10	
28.	Normal	1.00	
29.	Normal	1.00	
30.	Normal	1.00	
31.	Normal	0.9	
32.	Normal	0.82	
33.	Normal	1.18	
34.	Normal	1.19	
35.	Normal	1.02	

33. The average count for at least three normal sera which have shown very slight variations was taken as 1.00.

34. Practitioner, November, 1905.

Of those diseases in which the staphylococcic-opsonic indices were below normal, two were caused by staphylococcus infections and three occurred in other conditions. Of those in which the indices were above normal, one was caused by staphylococcus infection and two occurred in other conditions (Table 4).

In the twelve normal cases in which the colon-opsonic index was obtained, the range extended from 0.81 to 1.19. These figures may, then, be used to define the normal limits of the colon-opsonic index in Table 5 of diseases due to the colon bacillus and other infections or diseased conditions.

Among the colon infections (Cases 1 to 13, Table 5) the index is below the normal in four conditions in which the liver, vermiform appendix, and intestine were involved; and above normal in three conditions in which the liver, kidney and gall bladder were the organs involved. Six of the 13 cases were normal. Of the diseases due to other causes than colon infections the index is below the normal in three cases, one case of diabetes and two inflammatory conditions; but in none is the index above normal.

TABLE 6—Opsonic Indices to Gonococcus.

Gonorrheal epididymitis-subacute	0.62
Gonorrheal epididymitis-subacute	0.77
Gonorrheal epididymitis-subacute	0.99
Gonorrheal epididymitis-subacute	0.87
Gonorrheal epididymitis-subacute	0.88
Gonorrheal epididymitis-subacute	1.01
Gonorrheal urethritis-subacute, 5 days	0.97
Gonorrheal urethritis, 7 days	0.95
Gonorrheal urethritis, 2 months	0.90
Gonorrheal urethritis, 4 months	0.77
Gonorrheal urethritis, 4 months	1.05
Gonorrheal urethritis, 6 weeks	0.83
Gonorrheal urethritis, 8 months	1.23
Gonorrheal arthritis	1.23
Gonorrheal arthritis	1.10
Gonorrheal arthritis	1.09

TABLE 7—Opsonic Indices to Pneumococcus.

Acute lobar pneumonia	1.12
Acute lobar pneumonia	0.96
Acute lobar pneumonia	0.76
Acute lobar pneumonia, eleventh day	1.15
Acute lobar pneumonia,, seventh day	0.75
Pulmonary tuberculosis	0.72
Pulmonary tuberculosis	1.06
Tubercular pleurisy	1.09
Normal	0.88
Normal	1.1
Normal	1.15
Normal	0.91

In the four normal cases in which the gonococcic-opsonic index was obtained, the range extended from 0.9 to 1.09. These figures may, then, be used to define the normal limits of the gonococcic-opsonic index in Table 6. Six of these cases have indices below the normal, though but one has an index below 0.75 and three have indices above 1.09.

In Table 7 the normal range in four cases was between 0.88 and 1.15. Two cases of pneumonia and one of pulmonary tuberculosis were slightly below the lower limit of the normal.

INFLUENCE OF ANTITOXINS ON OPSONINS.

The varied influence of chemicals and drugs on opsonins has already been mentioned and helps to explain the different effects on opsonins and phagocytic action of toxins of which diphtheria and tuberculosis toxins may be taken as examples. E. L. Walker[26] has shown that, while diphtheria bacilli are less susceptible to phagocytosis by human blood after destruction of the toxins by heating from 90 to 100 C., tubercle bacilli are more susceptible to phagocytosis after destruction of the toxalbumins by heating to from 80 to 100 C.

Another interesting factor and one which needs to be further developed is the influence of antitoxins on opsonins. Bradshaw and Glynn[35] have recently reported nine cases of normal men who had received diphtheria antitoxin and whose indices to tubercle bacilli averaged only 0.73. In one the index was 0.47 after three months. Walker[26] has shown that diphtheria antitoxin will apparently not neutralize these affinities of the toxin of the diphtheria bacillus which stimulate phagocytosis.

Bordet, Aronson, v. Lingelsheim and others have noted the greatly increased phagocytosis of streptococci in the presence of antistreptococcus serum. At present the principal serum used for therapeutic purposes in infections in the healing of which phagocytic immunity may be regarded as an essential phenomenon, is antistreptococcus serum. Hektoen affirms that in tests made a year ago by Dr. Ruediger and himself the antistreptococcus sera then in general use in this country were all shown to possess a lower opsonic index for various streptococci than normal horse serum, many samples being without any opsonic power, presumably on account of their age. Results of a similar nature were obtained by us with a specimen of antipneumococcus serum which was five days old; and also with an antigonococcus serum sixteen days old, which proved to have the most marked beneficial therapeutic effect.[36] It is difficult to say whether this was due to the age of the serum or to the fact that gonococci do not excite the formation of opsonins in immune sera. Our results, indicating the effect of age on immune sera, are shown in Table 8.

TABLE 8—Effect of Age on Immune Sera.

	Index.
Anti-pneumoc. serum, rabbit:	
Serum 5 days old	0.6
Serum fresh	1.6
Anti-diphther. serum, Board of Health serum (old)	0.4*
Anti-gonoc. serum, rabbit:	
16 days old	0.97*
30 days old	0.17*
Goat 12 days old	0.06*

* Normal human serum taken as 1.0.

These results would tend to show the importance of using sera which may depend for their action on their opsonic content, while they are still very fresh. It is more than possible that in infections in which leucocytosis is marked, such as pneumonia, streptococcus and staphylococcus infections, the failure hitherto to obtain the desired results with the use of immune sera prepared by adaptation against these organisms may be explained by the rapid diminution of opsonins here shown.

INFLUENCE OF VACCINES ON OPSONINS

The material which has been employed for therapeutic inoculations in other than tuberculous infections has consisted of a culture of the organism causing the infection, grown in broth or on agar. In the latter case a suspension of the bacteria is made in normal salt solution. After sterilization by exposure to a temperature of from 65 to 75 C. for half an hour and the addition of 0.5 per cent. lysol, this material, which is known as the "vaccine,"* is ready for inoculation. This suspension may be standardized by determining the number of bacteria per cubic centimeter of fluid.[37]

On the inoculation of any vaccine there is at first a period of diminished resistance to the organism employed. This is shown by a decline in the antibacterial power of the blood, the so-called "negative phase." Succeeding this there is an inflowing of and consequent increase in the protective elements of the blood. This is

35. Liverpool Med. and Chir. Jour., May, 1906.

36. We desire to express our thanks to Dr. Torrey, Cornell University Medical College, for the antigonococcus sera employed and for numerous cultures.

* Wright's nomenclature and explanation.

37. "Some New Procedures for the Examination of the Blood," Lancet, July 5, 1902.

the "positive phase," or the period of increased resistance. Most of these protective elements rapidly disappear, but leave behind a more or less permanent increase over the original. Wright speaks of the whole sequence as the "law of the ebb and flow and reflow and subsequent maintained high tide of immunity." Figure 1, selected from an article by Wright,[31] illustrates this "law."

This train of events succeeds inoculation of vaccine sufficient to cause a constitutional disturbance. When only a small dose of vaccine is given, the negative phase may be so insignificant and of such short duration as not to be capable of measurement, and the positive phase will be correspondingly diminished. On the other hand, if the dose of vaccine is too large, the negative phase will be unduly prolonged and a positive phase may not appear at all. The question of dose, then, is of the greatest importance, for, if too little is employed, no therapeutic effect will result. On the other hand, too large a dose is dangerous and so lowers the resistance of the host as to favor the multiplication of the bacteria. Such dangers with a single inoculation are, of course, greatly magnified by repeated inoculations. If a series of such inoculations are attempted during the negative phase, there will result a further fall in the protective substances or a "cumulation in the direction of the negative phase." Sooner or later a point will be reached when

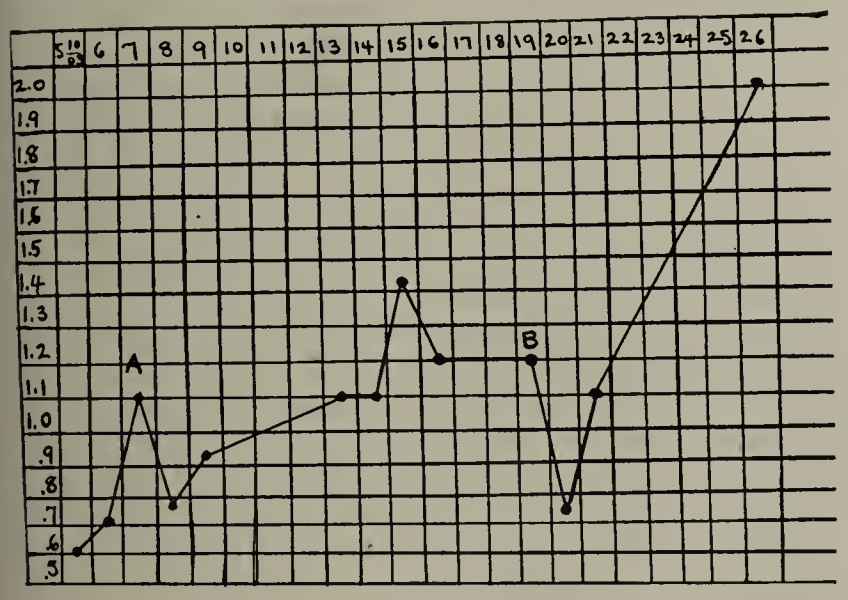


Fig. I

Fig. 1.—Case of a physician who had suffered from boils for four years (Proc. Roy. Soc., 1904-5, vol. xxiv, p. 150). A. Inoculated with 2,000 millions sterilized staphylococci derived from patient. B. The same repeated.

the organism will cease to respond to inoculation, and further doses of vaccine will not only do no good, but may bring the content of the blood in protective substances to a lower level than that from which it originally started.

Wright[38] considers that the result of the vaccination can not be estimated from the character of the constitutional disturbance, and with some reason urges the daily determination of the opsonic index to measure the effect. He advises the smallest possible initial dose sufficient to produce any negative phase and re-inoculation only after the subsequent positive phase has begun to diminish.

CLINICAL APPLICATION OF INOCULATION OF VACCINES CONTROLLED BY ESTIMATION OF THE OPSONIC INDEX.

Staphylococcus Infections.—Wright has cited 20 cases of very obstinate staphylococcus infection, including sycosis, boils, acne, etc., which he had treated by vaccination. These cases were selected as being particularly intractable. Various medical and surgical measures had previously been tried without success. Some were apparently cured by the vaccination, all showed a marked improvement. He suggested the possible utility of vaccinating patients before operations, especially operations on the nose and mouth, also of thus treating gleet, bronchitis, ozena, bacteriuria, etc.

Colon Bacillus Infections.—Wright and Reid[39] reported two cases of cholecystitis with persistent sinuses after operation. Both were inoculated with sterilized cultures of *Coli communis,* and as a result of the inoculations the opsonic index rose above normal, in one case to 4.0, and both soon showed marked improvement, with closure of the sinuses.

Pneumococcus.—Lyon[40] reports the use of pneumococcus vaccine in a case of pneumococcus empyema which had been running a very unsatisfactory course. Immediate improvement ensued and it resulted in entire recovery in two weeks. Figure 2 shows indices and size and intervals of inoculations.

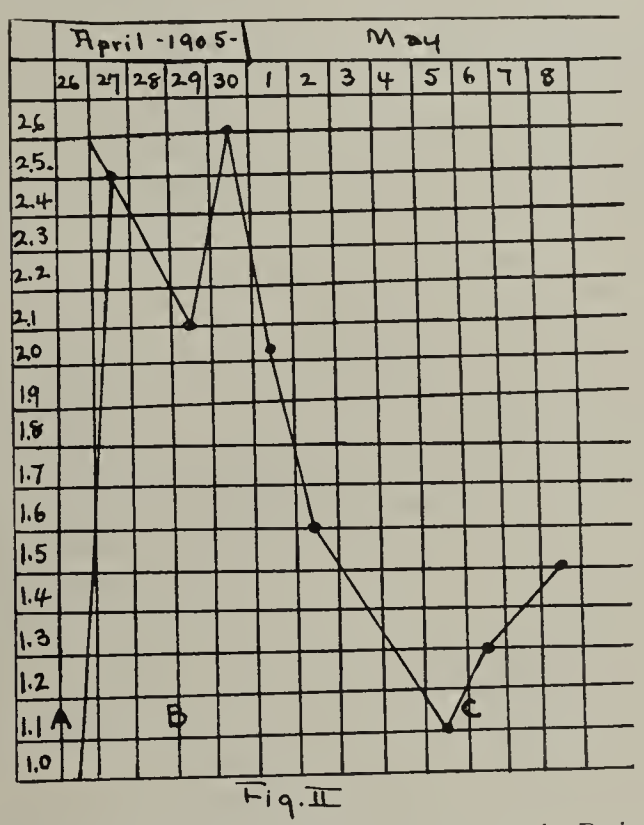


Fig. II

Fig. 2.—A. inoculation 100 million pneumococci; B, inoculation 200 million pneumococci; C, inoculation 100 million pneumococci.

Tuberculous Infections.—Wright has published results of treatment of a number of cases of localized tuberculous infection by means of inoculation of small doses of Koch's new tuberculin. This is analogous to other vaccines in that it consists of the comminuted bodies of tubercle bacilli brought into suspension in glycerin so that one cubic centimeter of the new tuberculin equals one milligram of tubercle powder. The cases reported thus far include tuberculous peritonitis, cystitis, glands and sinuses following an operation for their removal, tuberculosis of the subcutaneous tissues, lupus, etc. He has met with astonishingly good results in a very large proportion of cases, and his reports have done much to reinstate Koch's new tuberculin as a therapeutic remedy. The effect of tuberculin inoculations on the opsonic index in two of our cases is exhibited in Figures 3 and 4.

While the treatment of localized tuberculous infections

38. "General Principles of Therapeutic Inoculation of Vaccines on Result of Tuberculous Infections," Lancet, Dec. 2, 1905, p. 1600.

39. "Note on Two Cases of Cholecystitis Treated with Inoculation of Bacillus Coli," and "Note on the Phagocytosis of Red Blood Cells. Relationship of Temperature to Opsonic Curve in Acute Anthrax Infection," Lancet, Jan. 20, 1906, p. 159.

40. "Note on a Case of Empyema treated by Pneumococcus Vaccine, Lancet, June 24, 1905, p. 1718.

with tuberculin has met with considerable success in the hands of Wright, less promising results have been obtained in extensive tuberculous affections of the lungs. In the former case the absorption of toxins from the local site is so slight as to be insignificant in comparison with the amount of tuberculin necessary to produce a reaction on inoculation. In the case of extensive tuberculous pulmonary affections the amount of absorption of toxins is relatively much greater and, of course, more difficult to control. Hence, if absorption of large amounts of toxin from the pulmonary lesion should occur during the "negative phase" the effect would be to accentuate the degree of this phase, to diminish the power of resistance and, therefore, to aggravate the condition which the inoculations were intended to improve.

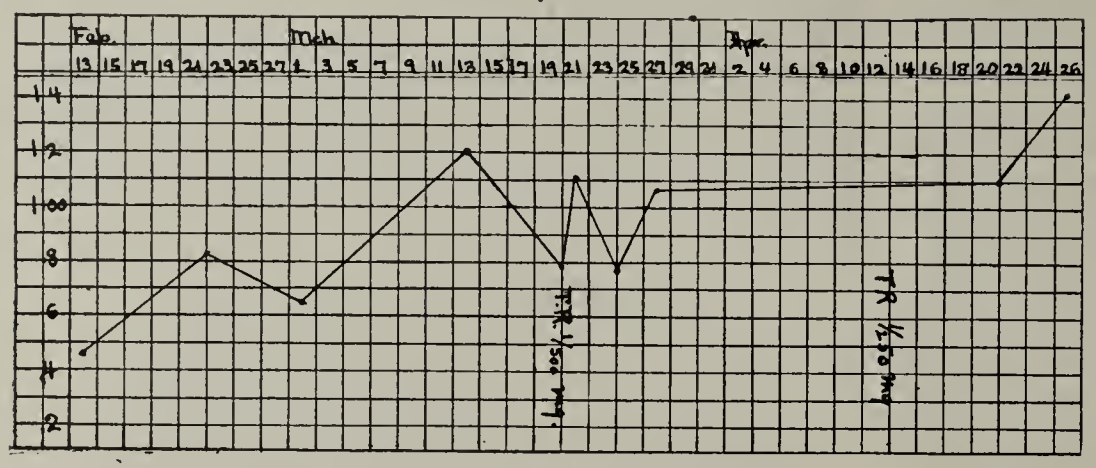


Fig. 3.—M. J., aged 35. Tuberculosis of hip joint treated with small doses of T. R. Result: Marked improvement.

Examples showing how the tuberculo-opsonic index in cases of pulmonary tuberculosis may be decreased by too great an absorption of tubercle toxins from the affected site are as follows: Wright cites two phthisical patients whose indices had never been lower than 1. They took part in a dance, both became ill, and their indices declined to 0.12 and 0.33, respectively. Another phthisical patient is mentioned whose index fell as a result of overwork to 0.2 from a level of over 1.0. If the amount of absorption of tubercle toxins is small the opposite effect may be produced by exercise by accentuation of the positive phase. This is shown in the case a child with tuberculous caries of the fibula,[41] whose tuberculo-opsonic index was raised from 1.4 to 1.7 by exercise, and from 1.0 to 1.7 by surgical manipulation. Meakin and Wheeler[42] have shown the same effect produced by exercise in cases of phthisis undergoing sanitarium treatment. By this means the tuberculo-opsonic index was raised from 0.7 to 1.5.

DIAGNOSTIC VALUE OF THE OPSONIC INDEX.

It has been thought that by determining the opsonic index on a case of doubtful diagnosis, some aid might accrue, especially if the reaction with various organisms should prove specific. Three methods have been devised:

A. Obtaining the opsonic index in blood serum.

B. Comparing the opsonic index of heated with unheated blood serum.

C. Comparing the opsonic index of blood serum with the index of exudate or transudate from the same case.

With reference to these methods, Wright and Reid[43] have furnished the only contribution. Their conclusions are as follows when diagnoses of tuberculosis have been attempted by means of the tuberculo-opsonic index.

A.—1. When a series of measurements of the tuberculo-opsonic index of the blood is persistently low, it may be inferred in the cases in which there is evidence of a localized bacterial infection which suggests tuberculosis that the infection is tuberculous in character.

2. When repeated examinations reveal a persistently normal tuberculo-opsonic index, the diagnosis of tubercle may with probability be excluded.[44]

3. When there is revealed by a series of blood examinations a constantly fluctuating opsonic index, the presence of active tuberculosis may be inferred.

4. When only a single blood examination is available, if the index is low, tuberculosis, either localized or systemic, may be inferred. If the tuberculo-opsonic index is high, systemic tuberculosis infection which is active or has recently been active may be inferred. If the tuberculo-opsonic index is normal or nearly normal, neither positive nor negative conclusions are warranted.[45]

B. Since there are developed in blood serum in those undergoing inoculation with tubercle vaccine, or as the case may be in those who have responded to tuberculous infection, certain opsonic-like substances which resist heating to 60 C. for ten minutes, tuberculosis may be inferred in those cases whose sera retain in any considerable degree the power of inciting phagocytosis after they have been so heated. Whether this point can be of much diagnostic value would seem rather doubtful from our observations which are shown in Tables 9 and 10.

It will be noticed from Table 9 that phagocytosis is largely destroyed in all cases in which the serum was heated to 60 C. for ten minutes, when a concentrated (1.6 per cent.) salt solution was employed. In one set of experiments[4] the normal serum gave the highest results after heating.

Table 10 shows several interesting points. It will be noticed that phagocytosis of all sera after heating is greater when a weak salt solution (0.1 per cent.) is employed, also that the tuberculous cases show somewhat

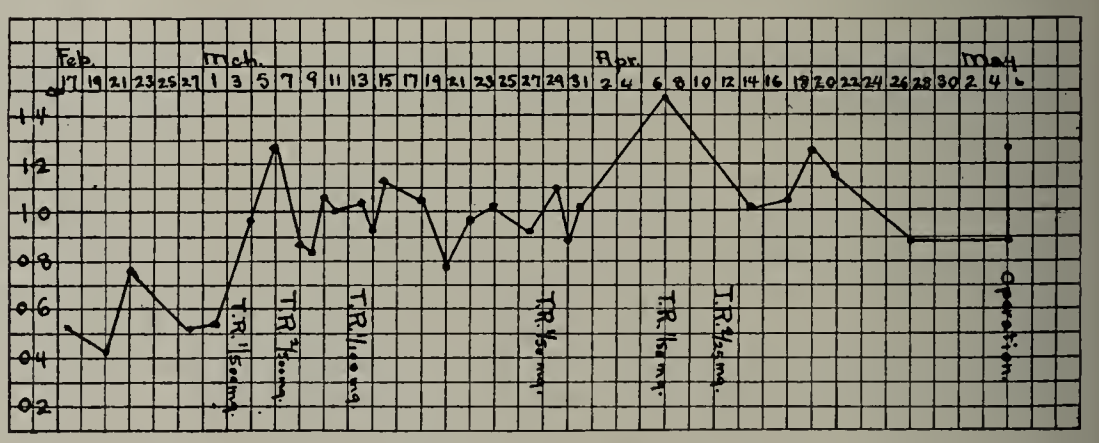


Fig. 4.—Case of tuberculosis ankle. No improvement clinically.

41. Medico-Chirurg. Trans., 1905, vol. lxxxix.
42. "Observations on Opsonic Index of Patients undergoing Sanitarium Treatment for Phthisis," Brit. Med. Jour., Nov. 25, 1905, p. 1396.
43. "Determination of Presence or Absence of Tubercular Infection by Examination of Patient's Blood," Proc. Royal Soc., 1906, vol. lxxvii.
44. Our results would lead to a still further qualification of this statement.
45. Our observations tend to confirm this statement.

higher indices than the normal. The patient with a tuberculous ankle in Experiment 1 had received five or six injections of therapeutic doses of Koch's new tuberculin during the three preceding months without any clinical improvement.

TABLE 9.—TUBERCULO-OPSONIC INDEX IN UNHEATED SERUM AS COMPARED WITH SERUM HEATED AT 60° C. FOR 10 MINUTES. EMULSION OF BACILLI IN 1.6 PER CENT. NaCl.

Experiment.	Diagnosis.	Unheated Index.	Heated Index.
1	Normal	1.0	0.03
	Normal	1.04	0.02
	Pulmonary tb	1.0 *	0.06*
	Pulmonary tb	0.59*	0.03*
2	Tb. spine	0.80	0.00
	Tb. ankle	0.79	.05
	Normal	1.00	.06
3	Tb. peritoneum, empyema	1.02	.03
	Tb. hip	1.20	.02
	Tb. ankle	0.75	.02
	Normal	1.08	.06
4	Tb. ankle	1.00	.2
	Tb. hip with temp	1.17	.05
	Dorsal Pott's	0.73	.02
	Tb. hip, Psoas abscess	0.86	.1
	Tb. hip with temp	0.80	.1
	Tb. spine, paraplegia	0.92	.02
	Normal	1.00	.25*
	Tb. ankle	0.93	.15
	Pulmonary tb	1.00*	.05*
	Pulmonary tb	0.41*	.02*
5	Normal	....	.1
	Children of tuberculous parents	1.00	.05
		0.96	.30*
		0.55	.02
		0.84	.03
		0.84	.00
		0.60	.00
		0.93	.03
		0.49	.00

* Figures are starred to emphasize peculiarities of indices.

TABLE 10.—TUBERCULO-OPSONIC INDEX IN UNHEATED SERUM AS COMPARED WITH SERUM HEATED AT 60° C. FOR 10 MINUTES. EMULSION OF BACTERIA IN 0.1 PER CENT. NaCl.

Experiment.	Diagnosis.	Unheated.	Heated.
1	Tb. ankle, ante-operative	0.89	0.45
	Tb. ankle, post-operative	1.26	1.60
	Normal	1.00	0.23
2	Normal	1.17	0.24
	Pneumonia tuberculosis	0.84	0.30
	Pneumonia tuberculosis	0.86	0.20
	Normal	1.02	0.14
	Normal	0.73	0.14

Wright and Reid[46] first called attention to the effect of the concentration of the salt solution on phagocytosis.

C. It is claimed by Wright that bacteria multiply in those regions of the body in which the amount of opsonin is low ("regions of low bacteriotropic pressure"), and his observations tend to show that fluids or pus from such regions contain a much smaller amount of opsonin than the blood serum obtained in the usual way from the finger. Assuming the specificity of the opsonins, he concludes that the presence of a tuberculous infection may be inferred when the tuberculo-opsonic index of such fluids is much lower than that of the blood serum. This method of diagnosis in tuberculous and other conditions has yielded the following results in nine of our cases:

1. Case of herpes zoster with serothorax (probably non-tuberculous):
   - Tuberculo-opsonic index of blood serum 1.0
   - Tuberculo-opsonic index of chest fluid 1.0
2. Case of tuberculous caries of spine with empyema:
   - Tuberculo-opsonic index of blood serum 0.8
   - Tuberculo-opsonic index of pus from chest 0.3
3. Case of pleurisy with effusion:
   - Tuberculo-opsonic index of blood serum 0.78
   - Tuberculo-opsonic index of chest fluid 0.89
   - Pneumococcic-opsonic idex of same case:
     - blood serum 1.09
     - Chest fluid 0.95
4. Case of empyema following pneumonia:
   - Tuberculo-opsonic index of blood serum 0.84
   - Tuberculo-opsonic index of pus from chest 0.00
5. Case of tuberculous meningitis (clinically):
   - Tuberculo-opsonic index of blood serum 0.9
   - Tuberculo-opsonic index of spinal fluid 0.93
   - Colon-opsonic index of same case:
     - Blood serum 0.89
     - Spinal fluid 0.83

In the following the difference between the colon-opsonic index of the blood and of the body fluids is shown:

6. Case of carcinoma of the stomach with ascites:
   - Colon-opsonic index of blood serum 1.19
   - Colon-opsonic index of ascitic fluid 1.13
7. Case of sero-fibrinous pleurisy with effusion:
   - Colon-opsonic index of blood serum 0.83
   - Colon-opsonic index of chest fluid 0.78
   - Staphylococcic-opsonic index of same case:
     - Blood serum 0.95
     - Chest fluid 0.92
8. Case of cardio-nephritis with hydrothorax:
   - Colon-opsonic index of blood serum 0.60
   - Colon-opsonic index of chest fluid 0.80
9. Case of cardio-nephritis with hydrothorax:
   - Colon-opsonic index of blood serum 0.66
   - Colon-opsonic index of chest fluid 0.66

Wright and Reid have cited several cases in which the difference between the index of the blood serum and the tuberculous exudate was marked. Case 2 is in accordance with their results. In Case 5 a diagnosis of tuberculosis is not suggested by the indices. The results in Case 4 would, according to Wright and Reid, justify a diagnosis of a tuberculous condition which did not exist. All the other cases show approximately no difference in the indices of blood serum and body fluids.[47]

Whether opsonins are limited to blood serum, exudates, transudates and chyle or are found in all body fluids is a matter of some interest. With this in view the contents of an ovarian cyst were tested with the following result:

Case of pulmonary tuberculosis having a tumor of the abdomen of which the diagnosis lay between ovarian cyst and tuberculosis of peritoneum. Operation showed a large ovarian cyst:
- Tuberculo-opsonic index of blood serum 0.95
- Tuberculo-opsonic index of cyst fluid 0.43
- Colon-opsonic index of same case:
  - Blood serum 1.10
  - Cyst fluid 0.08

The difference noted in this case between the indices of blood serum and cyst fluid may be due to the fact that the latter is a secretion and neither an exudate nor a transudate.

INFLUENCE OF HEREDITARY TENDENCY ON TUBERCULO-OPSONIC INDEX.

The question whether low indices are the cause or the effect of the infection is one of considerable interest The tuberculo-opsonic indices of a number of apparently healthy children of tuberculous parents are as follows:

TABLE OF CHILDREN OF TUBERCULOUS PARENTS.

	April 21.	April 28.
M. D.	0.85	0.65
R. D.	1.10	1.03
K. D.	1.08	1.05
L. M.	1.10	0.93
L. L.	1.10	0.82
L. J.	1.20	0.73
R. I.	...	0.72
H. R.	...	0.85
E. R.	...	0.88
N. R.	...	0.92
G. N.	...	0.84
J.	...	0.91

Several low indices occur in this series. In a number of picked cases of "sanitarium cures" of phthisis in its early stages, Bulloch constantly found low indices. Here,

46. 'Spontaneous Phagocytosis," Proc. Royal Soc., 1906, vol. lxxvii 1906.

47. In this connection it is worth observing that Simon in a recent paper, "A Contribution to the Study of Opsonins," has found that while transudates contain opsonins, the amount contained is ordinarily less than in the blood serum. For example, in a specimen of fresh hydrocele fluid he found only 6 per cent. of phagocyting leucocytes for a dilution of 1 to 20, and with a sample of ascitic fluid, 10 per cent. with the same dilution.

again, it would be important to know whether such cases relapsed, as so frequently happens. Bulloch believes the low index probably due to some hereditary or acquired imperfection in the mechanism by which antitropins are manufactured. In this connection it is interesting to note that Simon has recently found the opsonic content of serum to be diminished in some cases by starvation.

PRACTICAL VALUE OF OPSONIC INDEX.

In reviewing the work which has already been accomplished on opsonins,[48] the question of what practical use they may have is one of greatest interest.

The great difficulty will arise from the fact, probably, that changes more or less profound are indicated at times by only slight variations of the indices, and that the variation is frequently not far beyond the limits of error in a method where opportunities for small errors in technic are numerous.

Some aid in diagnosis may be had by determination of single indices; but before this can be considered a reliable method considerable work must be done to determine the degree of specificity of opsonins. Wright and Reid's work indicates that some diagnostic aid may be obtained by comparison of serum and exudates, and by the methods of heated and unheated serum.

A wider field of application will probably be in the control of inoculation of vaccines to determine the optimum dosage and regulation of frequency of the same, but this will be somewhat limited by the clinical difficulties of the method.

A field as yet but little explored, in which it may prove of great use, is in the determination of susceptibility to infection, especially in the inherited susceptibility to tuberculosis.

Perhaps its greatest usefulness will be found in the laboratory, where it may prove to be a convenient and rapid method of testing the virulence of organisms and the strength of sera which are dependent on opsonins for their beneficial effects.

In conclusion, we desire to thank Drs. Ewing, Wadsworth, Theobald Smith, Baldwin, Twichell, Dunham and Torrey for bacteriologic material supplied. We also desire to acknowledge very capable assistance on the part of Dr. Millicent Hopkins.

48. For additional literature the reader is referred to: Wright: "Treatment of Furunculosis, etc., by Inoculation of Staphylococcus Vaccine," Lancet, March 29, 1902; also "Treatment of Acne Furunculosis," Brit. Med. Jour., May 7, 1904; "Inoculation Treatment of Tuberculosis," Clinical Jour., Nov. 9, 1904; "The Serum Reactions of Tuberculosis," Lancet, May 9, 1903; Wright and Reid: Proc. Royal Soc., 1906, vol. lxxvii, p. 194; "Therapeutic Inoculation of Bacterial Vaccines," Brit. Med. Jour., May 9, 1903; "Certain New Methods of Blood Examination with Some Indications of Their Clinical Importance," Lancet, Jan. 23, 1904, p. 215; "A Short Treatise on Antityphoid Inoculation," London, 1904; "Measurements of Bactericidal Power of Blood," Proc. Royal Soc., 1902, August, vol. lxxi, p. 54; "Procedures for Testing and Judging by Naked Eye of Agglutinating and Bacteriolytic Effects Exerted by Sera (Spontaneous Agglutination)," Lancet, 1903, July 25, p. 214; Lancet, 1904, Aug. 6, p. 411; Wright and Reid: Proc. Royal Soc., 1906, vol. lxxvii, p. 194; Wright and Douglas: "Tuberculosis," Lancet, Oct. 22, 1904, p. 1138; Bulloch and Atkin: "Experiments on the Nature of the Opsonic Action of the Blood Serum," Proc. Royal Soc., 1905, vol. lxxiv, p. 379; Smith, R. Greig: "Agglutination and Leucocytosis," Proc. Linn. Soc., New South Wales, 1905, part 2, July 26; Cheyene: "Wright's Method of Treating Tuberculosis," Lancet, Jan. 13, 1906, p. 78; Park and Williams: Jour. Exp. Med., 1905, vol. vii, p. 403; Craw, J. A.: "Mechanism of Agglutination," Jour. of Hyg., January, 1905, vol. i, p. 126; Houston: "Dermatologic Therapeutics," Brit. Med. Jour., 1905, vol. i, p. 854 (A Reply); Pearce and Winne: Amer. Jour. Med. Sci., October, 1904.

Naming of Carbon Compounds.—The prefix iodo- is sometimes used to indicate the element iodin, thus iodobenzene is C_6H_5I, but the term is also used to indicate the group—IO_2.—*Pharm. Rev.*, August, 1906.

THE ROLE OF NUCLEIN IN THE ANIMAL ECONOMY.

WITH A STUDY OF URIC AND PHOSPHORIC ACID EXCRETION IN ONE HUNDRED AND TWENTY-NINE CASES.*

G. W. McCASKEY, A.M., M.D.
Professor of Medicine in Indiana Medical College, Medical Department of Purdue University.
FORT WAYNE, IND.

The motive for presenting this clinical study was found in some statements coming from respectable but forgotten quarters of current medical literature to the effect that the excretion of uric and phosphoric acids rose and fell together, statements contrary to my own observations. While I soon found that the simple refutation of these careless propositions would be very much like setting up a man of straw for the pleasure of knocking it over, yet the absolute and relative excretions of these final products of metabolism, under average conditions of diet in chronic nutritional disease, seemed to me to be of both practical and scientific interest. I therefore asked my assistant to glean from my notes the necessary data from about one hundred unselected cases. The result, as shown in the appended table, was 192 analyses in 129 cases, comprising 36 different diseases. With reference to the exact diagnosis of these cases it should be remarked that, unlike the acute infectious diseases, chronic nutritional disturbances do not lend themselves with facility to a precise classification adapted to tabular presentation. Two or three alternative diagnoses often present themselves, while obviously only one can be selected.

The method used in estimating the uric acid was the original Hopkins method by precipitation, first, with ammonium salts and, on resolution, again precipitating with HCl, as I had not yet adopted the simpler time-saving Folin modification. The phosphoric acid was estimated in terms of phosphoric anhydrid by the uranium process. In this connection I wish to say that my clinical laboratory adjoins my consultation room, and that, while most of the work was done by my former assistant, Dr. B. W. Rhamy, it was all done under my personal inspection, the titrations being often repeated in my presence in cases in which unusual results were obtained. In order to insure accuracy, I have frequently weighed a decigram of c. p. uric acid with the analytical balance and had the titration process verified in this way. I, therefore, feel that I can vouch for the accuracy of the results.

The particular reason for jointly studying uric and phosphoric acids from a clinical point of view lies in the fact that they are derived from the nucleins of the tissues and fluids of the animal body. With reference to uric acid this is exclusively true, and, while the possibility of the synthesis of uric acid from other bodies can not be denied, as it certainly occurs in birds even from urea, all the evidence tends to prove that uric acid in the human subject is either an immediate cleavage product of nucleinic acid or an oxidation product of other purin bases which are themselves end results of the disintegration of nucleinic acid, which is a product of the cleavage of nuclein, and this, in turn, from nucleoproteids.

With the phosphoric acid the case is entirely different. Besides the true nucleoproteids, we have another group of proteids, known as pseudonucleins or paranucleins,

* Read in the Section on Pathology and Physiology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

which are also rich in phosphorus, but which do not contain the purin group and hence do not give rise to the formation of uric acid. The casein of milk and the vitellin of egg yolk belong to this group of phosphorus-containing, purin-free proteids, and it is perfectly obvious that variations in the quantities of two such important foodstuffs can increase or diminish the output of the urinary phosphates without directly influencing either the formation or excretion of uric acid. If the nucleoalbumins could either be given in fixed amounts or eliminated from the diet, then the uric and phosphoric acid excretions would, in a general way, rise and fall together, although the percentage of phosphorus varies greatly in different nucleins. But, of course, such conditions could only be secured by the strictest experimental control.

The rôle of the nucleins, the probable antecedents of all the purin bodies, including uric acid, and very rich in phosphorus, appears to me to be one of the most interesting problems confronting both the clinician and the physiologic chemist to-day. They are widely distributed, but are especially prevalent in the nuclei of cells; hence glandular organs, such as the pancreas and the liver, made up, for the most part, of masses of cells, contain relatively large amounts. But the fluid constituents of the body also contain them in variable quantities. Vaughan and Novy have clearly demonstrated their presence in blood serum and, although this was denied by Hahn and others, it was fully confirmed by Lillienfeld, who found nucleinic acid in blood serum. It may, therefore, be considered definitely settled that the blood serum contains nuclein, which is, from any point of view, a most reasonable supposition, as the nucleins from disintegrating nucleoproteids in the leucocytes and tissue cells in general would naturally, if not necessarily, find their way into the fluid portion of the blood stream, their solution being favored by this alkalin medium.

The nucleins which, acording to Bunge and others, are acids, have most remarkable physical and chemical properties and stand in a class by themselves. Although they usually exist in combination with proteids as nucleoproteids, they are sometimes found, though I believe not in the human body, without combination with a proteid molecule. One of the most striking characteristics of the nucleins is their invulnerability to the action of gastric juice. This is the usual method of their isolation, as the action of pepsin and HCl dissolves the proteid, leaving the nuclein residue unaffected. In regard to the action on nucleins of intestinal digestive fluids there seems to be some conflict of opinion. It is stated by some that the nucleins are disintegrated by trypsin, although investigations carried out in the laboratory of Hoppe-Seyler seemed to show that they were entirely unaffected at least by artificial pancreatic digestion. The latest researches indicate that the nucleinic acids are somewhat changed by trypsin, but a complete cleavage with the liberation of phosphoric acid on the one hand and purin bases on the other is apparently disproven by the investigations of Iwanoff. It has been found, further, that considerable quantities of nuclein are present in the feces of dogs and it must be considered a mooted question to what extent, if at all, the nucleins are digested and absorbed.

We are waiting in the field of clinical medicine for two important services from the physiologic chemist. The first is the working out of an exact method for the accurate quantitative estimation of the nucleins which, so far as I know, has not been accomplished. When this is done the second service needed is an experimental study by exact methods of the proportion of the nuclein of the foods which reappear in the feces. Bunge says it is an entirely unsettled question as to whether the nucleins are absolutely indigestible or not. If they are indigestible they are certainly unabsorbable and our present conception of their rôle in dietetics would be entirely wrong. Such a conclusion does not appear credible in the light of clinical experience, and yet the increased elimination of uric acid on a diet rich in nucleins has been assumed by so important an investigator as Horbaczewski to be the result, not of the absorption and subsequent transformation of the nucleins of the food into uric acid, but the production in some way of a leucocytosis, to which he ascribes the increased uric acid output, although it seems to me that the part played by the leucocytes in the formation of uric acid has been exaggerated, insufficient stress being placed on the masses of nucleated cells found elsewhere, especially in the large glandular organs.

If the nucleins of food are finally proven to be indigestible, the only possible source of the nucleoproteids would be a synthesis from other proteids. The possibility of the synthesis of nucleins must be admitted on the basis of certain observations on the lower animals. Miescher, for instance, studying the ovary of the salmon, which travels up the Rhine annually to spawn, found that during the migration, which lasts from 4 to 14 weeks, the ovary increased from .4 per cent. to over 19 per cent. of the weight of the entire animal. The ovary is composed very largely of nuclein, and yet the salmon, during the entire journey, takes no food whatever, as the digestive canal is constantly empty. He found, further, that the large lateral trunk muscles diminished in weight sufficiently to account for the increase in the weight of the ovaries. This observation amounts practically to a demonstration that the nuclein of the ovaries was formed by a synthetic process from the muscular tissue, which is very poor in nuclein. While such facts can not be bodily transferred to human physiology, yet, taken in connection with the doubtful digestibility of the nucleins of food, they strongly suggest a synthetic origin to a greater or less extent for the nucleins of the body. The clinical importance of such a fact must be obvious to every one.

As bearing on the absorbability of the nucleins, it should be stated that they are decomposed to a certain extent by boiling with water, and that the ordinary culinary processes may liberate varying quantities of purin bodies, which are, of course, readily soluble and absorbable. In the presence of an acid, the cleavage is more rapid and complete. If the uncooked nucleins are entirely indigestible, then raw meat, if parasitic ova could be excluded, would furnish for the body a purin-free proteid food. On the other hand, the purin bodies can be very largely removed from finely comminuted cooked meat by repeated washings.

The nucleins appear to be both germicidal and in some of their cleavage products toxic in character. It seems to me that nothing can be more conclusive than the experiments of Vaughan, demonstrating the germicidal action of solutions of nucleins derived from the blood serum by the process of artificial gastric digestion and diluted with just enough culture medium to reproduce exactly their percentage solution in the blood. His experiments with cholera bacillus, with *Staphylococcus pyogenes aureus* and other organisms showed a remark-

able diminution in the number of colonies in a very brief time. It appears extremely probable that the nucleoproteids of the blood serum are at least in part the active agents in bacteriolysis and, further, that phagocytosis itself is a phenomenon of the nuclein contained in the leucocyte. The toxins of diphtheria and tetanus have actually been precipitated *in vitro* by nucleinic acid.

On the other hand, there appears to be accumulating evidence of the toxic character of some of the products of nuclein disintegration. As an indication of the remarkable analogues of the nucleins it is worth noting at this point that the chemical products of certain toxicogenic germs which were supposed to have caused typhoid fever were found by Freer to be nucleins. It should be stated at once that uric acid does not belong to the toxic list and that the evidence so far goes to show that uric acid in solution as an alkalin urate is non-toxic, and that its exclusive rôle in pathology is that of a mechanical irritant when precipitated from solution. The precise quantity which is eliminated may bear little or no relation to the amount formed within the organism. It has been estimated, for instance, on the basis of careful investigation by Burian and Schur, that only about 1/20 to 1/30 of the uric acid formed in carnivora is excreted as such. In dogs the quantity is about 1/6, while in man about ½ of the uric acid formed is thus excreted. While there is no reason to suppose that uric acid is to any large extent the antecedent of urea, there is the best of proof to show that uric acid is in part thus disposed of. This transformation has been demonstrated to take place in the liver of animals which had been removed from the body and an artificial circulation kept up. Uric acid thus perfused through the liver reappears as urea, so that in diseases such as leukemia, in which the quantity of uric acid excreted is notably increased, it may not be due at all to an increased formation of uric acid as a cleavage product of nucleins, but a more or less complete functional failure of those organs, a part of whose normal function it is to convert a probably variable proportion of the uric acid by a simple process of oxidation and hydrolysis into urea. Besides the liver, the muscular apparatus and probably other organs and tissues aid in the performance of this function, the precise arrangement varying with different animals.

It is the other less highly oxidized members of the group of purin bodies to which we must look for an explanation of the toxic phenomena resulting from nuclein disintegration rather than to uric acid, the most highly oxidized of the purin bodies and very readily converted into urea. Burian and Schur have shown that these bodies cause fever when injected into the circulation and the researches of Mandel point strongly to these bodies as the cause of certain types of aseptic fever. We have long suspected on clinical grounds that such fevers were due to vague, indeterminable metabolic disturbances, but we seem to be on the eve of a scientific exposition of their natural history. We are acquainted with four of these bases which we know are derived from the cleavage of nuclein, viz., xanthin, hypoxanthin, adenin and guanin, and some of these have been proven experimentally to be toxic in character. Their relationship to uric acid is not altogether clear, and probably is not constant. That they are interconvertible with the uric acid group has been substantially shown by Fischer, according to Vaughan, while Horbaczewski has reached the conclusion that in the cleavage of nuclein uric acid is the product if the cleavage is followed by oxidation and xanthin bases if it is not. It is possibly too soon to say that these xanthin bodies are intermediate steps in the formation of uric acid and urea, but Hammarsten thinks that such is probably the fact. Bunge says that they undoubtedly belong to the antecedents of urea and uric acid, as they exist in too large quantities in the tissues and too little in the urine to permit of their elimination unchanged.

In short, the latest researches along these lines appear to be forcing us back toward a fuller acceptance of the theory of oxidation as the method for disposing of these intermediate products of metabolism, the permanence of which would endanger the integrity of the organism. In the course of retrograde change the nucleoproteid is broken up into nuclein and proteid, the nuclein into one of the different forms of nucleinic acid and a proteid molecule, while nucleinic acid in its final cleavage gives us phosphoric acid and the purin bodies which include uric acid and the four nuclein bases already mentioned and many others, with the source of which we are not yet acquainted.

It thus becomes perfectly obvious that the quantity of purin bodies which have a lower oxygen content than uric acid is much more important from a clinical point of view than the quantity of uric acid itself, and their determination should be the line of investigation for the future. It is true that we have as yet no absolute standards, although Flatow and Reitzenstein found from 15 to 45 mg. in twenty-four hours. Any estimation of the purin bodies in the urine of patients who are drinking large quantities of tea or coffee is practically useless unless, indeed, it should be shown that heteroxanthins and paraxanthins are themselves toxic, as Solomon, Fischer and others hold. Furthermore, we must recognize, according to the best observers, individual as well as a specific and generic variation. In other words, the output of purin bodies, including uric acid, is constant for the individual under identical conditions of diet, etc., but varies as between different individuals.

But we can at least note the rise and fall of the xanthin bodies under different lines of diet and treatment. They can best be estimated by Salkowski's method, although it is very laborious and time-consuming.

Such appear to me to be the principal facts, with some admixture of more or less plausible hypothesis concerning the rôle of that remarkable group known as nucleins. When their physiologic chemistry has been fully written and their physiologic effects have been fairly well worked out an immense stride will have been made in the pathology of a large group of diseases, including gout and allied disorders and various acute and chronic toxic phenomena which are at present only imperfectly understood or not understood at all.

With reference to the table showing the parallel excretion of uric and phosphoric acid, only a few comments can be made, owing to the distance which I have been led in this preliminary discussion, fragmentary as it has been. It shows very wide fluctuations in the total output of both uric and phosphoric acid under the average conditions in a wide variety of chronic diseases, and it clearly shows what would be anticipated from the facts already set forth, that the variations in the excretion of these two products of metabolism bear no close relationship to each other. The average excretion of uric acid for the entire series of cases was .90 gm., while that of phosphoric acid, expressed in terms of phosphoric anhydrid, was 1.98 gm., the ratio being as 1 to 2.1. In a few cases the phosphoric acid was less than

TABLE OF URIC AND PHOSPHORIC ACID EXCRETION.

Case No.	Total Quantity Urine in 24 Hours.		Ratio of Uric Acid to Phosphoric Acid, the former being assum'd as 1	
	Uric Acid.	Phos. Acid.	Uric Acid.	Phos. Acid.
ALKAPTONURIA.				
1.	.597	1.03	1	1.72
ANEMIA.				
2.	.964	1.38	1	1.14
3.	.55	.9	1	1.63
4.	.5	2.38	1	4.76
Av.	.67	1.55	1	2.3
ANGINA PECTORIS.				
5.	.26	4.2	1	16.1
	1.064	2.35	1	2.2
	.787	2.1	1	2.66
	.735	.945	1	1.28
6.	.96	2.9	1	3.016
Av.	.56	2.499	1	4.45
ARTHRITIS.				
7.	.597	3.72	1	6.23
BELL'S PARALYSIS.				
8.	1.43	1.87	1	1.3
9.	.568	.455	1	.8
Av.	.999	1.162	1	1.16
BRAIN TUMOR.				
10.	1.73	2.82	1	1.62
	.926	2.14	1	2.31
11.	1.24	3.03	1	2.44
	1.13	2.99	1	2.63
12.	.535	1.2	1	2.24
13.	.469	.533	1	1.13
Av.	1.005	2.118	1	1.11
BRAIN SYPHILIS.				
14.	.39	1.36	1	3.48
	.74	1.23	1	1.63
15.	.822	2.64	1	3.21
Av.	.65	1.74	1	2.67
BRIGHT'S DISEASE.				
16.	1.44	1.52	1	1.04
	.74	1.79	1	2.42
	1.51	3.	1	1.98
	1.12	2.2	1	1.96
17.	1.64	1.62	1	.986
	.47	1.33	1	2.82
	1.29	1.68	1	1.3
	.506	1.68	1	2.29
	.835	1.23	1	1.46
18.	.49	1.08	1	2.2
19.	1.22	2.25	1	1.84
20.	.85	.595	1	.7
21.	.275	2.2	1	8.
22.	.1185	.54	1	4.55
23.	1.1	2.6	1	2.35
24.	1.15	2.72	1	2.36
25.	1.07	3.5	1	3.27
26.	.53	1.19	1	2.23
Av.	1.046	1.808	1	1.72
BRONCHITIS, CHRONIC.				
27.	.742	1.47	1	1.98
28.	.43	.65	1	1.51
Av.	.586	1.06	1	1.8
COLITIS.				
29.	1.274	3.64	1	2.85
30.	.81	1.47	1	1.81
31.	1.34	2.68	1	1.98
32.	.19	1.156	1	6.08
33.	.27	.72	1	2.66
34.	1.66	.95	1	.57
35.	.1	.56	1	5.6
36.	.297	.946	1	3.18
37.	.247	.585	1	2.36
38.	.93	2.57	1	2.76
	.432	2.16	1	5.
	.914	3.5	1	3.82

(*Continued on next column.*)

Case No.	Total Quantity Urine in 24 Hours.		Ratio of Uric Acid to Phosphoric Acid, the former being assum'd as 1	
	Uric Acid.	Phos. Acid.	Uric Acid.	Phos. Acid.
COLITIS.—*Continued.*				
	1.295	5.	1	3.86
	.73	3.57	1	4.89
	.956	2.55	1	2.66
	.948	5.42	1	5.5
	1.	3.79	1	3.79
	1.34	3.15	1	2.35
	.736	3.45	1	4.68
	1.11	4.2	1	3.18
Av.	.944	3.57	1	3.79
DIABETES.[1]				
39.	6.	2.6	1	.433
	8.17	2.17	1	.26
	4.63	2.9	1	.62
	1.9	2.26	1	1.18
	3.85	2.47	1	.64
	1.25	1.75	1	1.4
40.	1.85	4.76	1	2.57
	1.48	2.55	1	1.72
41.	4.04	2.62	1	.648
	2.41	3.59	1	1.49
42.	.95	2.8	1	2.84
43	.642	2.61	1	4.06
Av.	3.097	2.75	1	.88
EPILEPSY.				
44.	.46	.85	1	1.84
	.66	1.2	1	1.81
45.	1.29	4.48	1	3.47
Av.	.80	2.17	1	2.7
GASTRIC CANCER.				
46.	.906	2.4	1	2.64
47.	.75	1.6	1	2.13
Av.	.828	2.	1	2.4
GASTRIC ULCER.				
48.	.52	.41	1	.78
49.	.23	2.41	1	9.17
Av.	.37	1.41	1	3.8
GASTRITIS.				
50.	.593	.87	1	1.46
	.859	1.2	1	1.39
	1.24	2.45	1	1.97
	1.06	3.5	1	3.3
	.704	2.9	1	4.11
	.335	.94	1	2.8
	2.165	3.9	1	1.8
	1.04	1.94	1	1.86
51.	.45	1.14	1	2.53
	.83	1.48	1	1.78
	.685	.45	1	.656
	.9	.9975	1	1.108
	.75	1.32	1	1.76
	.572	1.84	1	3.21
	.854	1.23	1	1.44
52.	2.07	1.86	1	.898
	.76	1.92	1	2.52
53.	.79	1.53	1	1.93
	.456	1.35	1	2.96
54.	1.32	1.16	1	.878
55.	1.12	1.95	1	.74
56.	3.75	4.34	1	1.15
	1.3	2.28	1	1.75
57.	.29	1.04	1	3.58
58.	1.3	1.95	1	1.5
59.	.532	.85	1	1.59
60.	1.28	1.22	1	.95
61.	.507	2.14	1	4.22
62	.63	.92	1	1.46
63.	.683	1.92	1	2.81
64.	.71	1.24	1	1.74
65.	1.216	1.76	1	1.44
66.	1.04	2.66	1	2.55
67.	.329	1.	1	3.95
68	.3425	.3125	1	.91
69.	.66	1.24	1	1.88
70.	.5885	.6	1	1.014
71.	.758	1.68	1	2.21
Av.	.933	1.66	1	1.77

1. Uric acid estimation by ordinary methods is not considered reliable in diabetes as there appears to be some constituent of diabetic urine which increases the result (see preceding paragraphs).

Case No.	Total Quantity Urine in 24 Hours.		Ratio of Uric Acid to Phosphoric Acid, the former being assum'd as 1	
	Uric Acid.	Phos. Acid.	Uric Acid.	Phos. Acid.
EXOPHTHALMIC GOITER.				
72.	.975	3.51	1	3.59
HEART DISEASE.				
73.	2.31	2.28	1	.98
	.545	1.77	1	3.24
	.223	.675	1	3.02
74.	.1	.41	1	4.10
75.	.22	.69	1	3.13
76.	1.5	2.25	1	1.49
77.	1.77	1.07	1	.6
78.	.71	3.39	1	4.77
79.	.798	2.5	1	3.13
80.	.235	.7	1	2.97
81.	.28	1.23	1	4.39
82.	.32	2.38	1	7.43
Av.	.75	1.612	1	2.14
HEPATIC CIRRHOSIS.				
83.	.14	.48	1	3.4
HODGKIN'S DISEASE.				
84.	.648	1.69	1	2.6
HYPERCHLORHYDRIA.				
85.	.459	1.63	1	3.55
	.52	2.34	1	6.49
Av.	.489	1.98	1	4.04
HYSTERIA.				
86.	2.61	.518	1	.19
	.595	.337	1	.56
87.	.532	1.05	1	1.97
Av.	1.245	6.35	1	.5
INSANITY.				
88.	3.48	.93	1	.268
	1.06	1.5	1	1.41
	.9	2.43	1	2.7
89.	.456	1.2	1	2.63
	.432	1.575	1	3.64
90.	.372	1.02	1	2.74
91.	.31	.725	1	2.5
92.	.297	1.55	1	5.05
93.	1.	1.42	1	1.42
Av.	.823	1.372	1	1.66
LANDRY'S PARALYSIS.				
94.	1.	2.35	1	2.35
LEUKEMIA.				
95.	1.328	2.36	1	1.74
	1.66	2.37	1	1.42
Av.	1.49	2.36	1	1.57
LOCOMOTOR ATAXIA.				
96.	1.19	3.087	1	2.59
97.	.106	.92	1	8.67
Av.	.648	2.	1	3.1
MIGRAINE.				
98.	.775	1.9	1	2.45
NEURASTHENIA.				
99.	.52	1.74	1	3.34
	.654	1.4	1	2.14
100.	.233	1.045	1	4.48
101.	.82	1.63	1	1.98
102.	.596	1.32	1	2.21
	.644	1.12	1	1.73
103.	1.09	1.89	1	1.73
104.	.59	.9	1	1.52
105.	.54	1.	1	1.85
106.	1.36	4.32	1	3.17
107	.24	.44	1	.35
108.	.256	.65	1	2.53
109.	.191	1.	1	5.23

(*Continued on next page.*)

TABLE OF URIC AND PHOSPHORIC ACID EXCRETION—*Continued.*

Case No.	Total Quantity Urine in 24 hours.		Ratio of Uric Acid to Phosphoric Acid, the former being assum'd as 1	
	Uric Acid.	Phos. Acid.	Uric Acid.	Phos. Acid.
NEURASTHENIA—*Continued.*				
	.326	.496	1	1.52
110.	1.996	6.105	1	3.05
111.	.56	2.1	1	4.03
112.	.435	1.45	1	3.33
113.	.418	1.28	1	3.06
114.	.144	.75	1	5.2
Av.	6.11	1.612	1	2.6
NEURITIS.				
115.	.664	1.	1	1.5
OBESITY.				
116.	2.06	2.89	1	1.4
PARALYSIS.				
117.	.3	.36	1	1.19
118.	.786	1.62	1	2.06
119.	.95	1.52	1	1.6
Av.	.678	1.16	1	1.71
PYELITIS.				
120.	1.28	2.52	1	1.97
	1.38	2.52	1	1.82
	.8	2.4	1	3.
	.7	2.7	1	3.85
	.99	1.01	1	1.02
Av.	1.03	2.23	1	2.16
RENAL COLIC.				
121.	.757	2.15	1	2.84
122.	.73	2.85	1	3.82
Av.	.743	2.5	1	3.3
SEPTICEMIA.				
123.	1.77	.715	1	.42
SPLANCHNOPTOSIS.				
124.	.66	.64	1	.97
SPLENIC ANEMIA.				
125.	.854	.84	1	.98
	1.57	2.83	1	1.8
Av.	1.21	1.83	1	1.5
TUBERCULOSIS (PULMONARY).				
126.	.54	3.72	1	6.81
127.	2.16	2.47	1	1.14
128.	1.45	.41	1	.28
129.	1.165	2.295	1	1.97
Av.	1.328	2.223	1	1.67
Gen'l Av.	.91	1.98	1	2.1

the uric acid, so that we have an extreme range of the ratio from 1 to .28 up to 1 to 16.1, the former ratio occurring in the case of pulmonary tuberculosis with 1.45 gm. of uric acid and .41 gm. of phosphoric acid, the latter in a case of angina pectoris, in which there was .26 gm. of uric acid and 4.2 gm. of phosphoric acid.

Perhaps the most striking feature of the entire series of analyses is the utterly *bizarre* tendency constantly shown in the absolute and relative amounts excreted. Yet the final average comes well within the range of the acccpted standards. Onc surprising and possibly suggestive fact is the very large amount of uric acid excreted in Bright's disease, the average being something over 1 gm., while the average quantity of phosphoric acid was less than 2 gm. The large quantity of purin bodies, of which the uric acid may be taken as an imperfect index, is in line with the views already expressed concerning the toxic character of many of these bodies and the present conception of some sort of primary intoxication as the most probable initial phenomenon of that disease.

Another thing requiring explanation is the uric acid output in diabetes. It is pretty uniformly agreed that the results obtained by the Hopkins method in diabetes are unreliable and that some constituent of the urine in diabetic patients gives the reactions of uric acid, which, instead of being very high, is really less or only slightly greater than the average. It probably would have been as well to have omitted them, but they are allowed to stand with this explanation for whatever they are worth, as the cases had all been numbered and tabulated and the computations made before the question was reached. I have not gone over the literature of this question and so do not know the ground of this conclusion, which seems to be uniform, but I am at a loss to understand why uric acid should be below the normal in a disease attended with a tremendous urea output, perhaps the largest of any disease, and in which the morbid activity of metabolic processes would be expected to produce rapid nuclein disintegration with the production of large quantities of purin bodies.

It may seem a little curious at first sight that a clinical study of the uric and phosphoric acid excretion in so considerable a number of cases should not include a single case designated as gout. It is in part accidental, as I did not ask for selection of any particular group or groups of cases, and in fact it is due to the fact that gout was usually a subordinate diagnosis in my case records. At any rate, it appears to me to be unimportant, as I am fully convinced that uric acid is only an incident in gout and that neither its formation nor excretion is in any sense a key to the disease.

DISCUSSION.

PROF. GRAHAM LUSK, New York City, said it seemed to him that the purin base elimination has not been sufficiently investigated. It has been found by Dr. A. R. Mandel that the temperature in fever follows parallel with the elimination of these bases. This matter is being more fully investigated by Dr. Mandel.

LACTIC ACID IN METABOLISM.

WITH A NOTE ON THE CAUSE OF FATTY CHANGES IN THE ORGANISM.*

ARTHUR R. MANDEL, M.D.
AND
GRAHAM LUSK, PH.D.
NEW YORK CITY.

The first researches on the subject of metabolism sought to determine the quantity of proteid, fat and carbohydrate destroyed by an organism in a given time and under definite conditions. Much has recently been accomplished toward an explanation of the intermediary steps involved in the destruction of the foodstuffs by the organism. Thus glycocoll, a product of proteid metabolism, may be united with benzoic acid in the organism and be eliminated in large quantity in the urine, but no similar method will cause the elimination of leucin, or of alanin, products of proteid destruction.

The present research concerns the subject of the position of lactic acid in general metabolism, and represents work accomplished at various times during two and a half years, involving feeding experiments on 24 dogs.

---

* Read in the Section on Pathology and Physiology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

* From the Physiological Laboratory of the University and Bellevue Hospital Medical College.

Hoppe-Seyler believed that when dextrose was destroyed in the body it first broke up into two molecules of lactic acid. Neucki and Sieber[1] gave a diabetic patient 20 gms. of sodium lactate and found none of it in the urine. They concluded that the lactic acid was completely burned and that if the diabetic could acquire the power to split dextrose into lactic acid the further metabolism of the latter would be assured. They overlooked the fact of a small but definite rise in the output of dextrose in their diabetic patient, which to-day would be explained by assuming a synthesis of dextrose from the lactic acid ingested.

Embden and Salomon have endeavored to prove that dextrose may be synthesized from ingested lactic acid, by giving diabetic dogs sodium lactate. The dogs were depancreatized, but apparently not completely. In one case there was no sugar in the urine until after the administration of the lactate, and in another experiment the sugar output rose 10 gms. after administering large quantities of the lactate. These results are open to the criticism that the ingestion of sodium ions may increase the permeability of the kidney epithelium for dextrose (Fisher, Muderhill and Closson).

Some time before the publication of Embden's experiments mentioned above, we ourselves had given sodium lactate to a dog diabetic with phlorizin, and had found that 70 per cent. of the l-lactic acid given was convertible into dextrose, while the rest burned and reduced the proteid metabolism. In phlorizin diabetes there is little difficulty in establishing a definite ratio between nitrogen and sugar in the urine, which in fasting dogs approximates 3.65 gms. of dextrose to 1 gm. of nitrogen. Any dextrose present in excess of this ratio is "extra sugar" which must have some source other than proteid. In experiments with lactic acid ingestion, the "extra sugar" would represent the amount of sugar produced from lactic acid given.

The conversion of 70 per cent. of lactic acid into dextrose with a reduction in the proteid metabolism recalls the behavior of cane sugar in pancreas diabetes. Minkowski showed that the dextrose component was completely eliminated in the urine, while the levulose molecule was in part converted into dextrose and eliminated and in part burned, and reduced the proteid metabolism of the period.

We wished to find if a similar analogy existed for lactic acid, and therefore procured some d-lactic acid from Kahlbaum. This substance was not perfectly pure, but its subcutaneous ingestion in the form of a sodium salt resulted in one instance in its complete elimination as "extra sugar" in the urine of a diabetic dog. Its administration never resulted in a reduction in the amount of proteid destroyed. It appears, therefore, that d-lactic acid given to a phlorizinized dog may be completely converted into dextrose, while l-lactic acid may be in part so converted, and may in part burn within the organism. Just as dextrose is the sugar of the blood, so d-lactic acid is the acid found. The latter is present in all normal tissues and in increased quantities in arsenical and phosphorus poisoning.

The next question which arises is the possible production of lactic acid from dextrose in metabolism. Stoklasce has isolated a ferment from animal tissues which converts dextrose into lactic acid. The strict proof of this conversion is afforded by the experiments of Embden, who found that the percolation by blood of a liver rich in glycogen resulted in the accumulation of lactic acid in the blood. Also the percolation of a liver free from glycogen by a blood rich in sugar caused the formation of lactic acid, whereas the use of a blood poor in sugar had no such effect.

Claude Bernard saw that dextrose was convertible into glycogen and this again back into dextrose. It is evident that d-lactic acid may now be added to both ends of this chain forming the sequence: lactic acid, dextrose, glycogen, dextrose, lactic acid.

This is not the whole story, for lactic acid is known to be derived from proteid. Minkowski showed this when he extirpated the liver in birds and found ammonia and lactic acid replacing uric acid in the excreta, and in amounts proportional to the proteid metabolism. Also Asher and Jackson, after tying the arterial supply to the intestinal canal, spleen, pancreas, liver and kidney of a dog, noted an accumulation of lactic acid in the blood of the animal. The life of this dog was essentially carried on by the heart, which pumped blood through the muscles and lungs. Theoretically, lactic acid may arise from proteid through the hydrolysis of a substance like alanin, as is indicated in the following reaction:

$$\underset{\text{Alanin.}}{CH_3—CHNH_2—COOH} + H_2O = \underset{\text{Lactic acid.}}{CH_3—CHOH—COOH} + NH_3$$

von Noorden and Embden suggest the cleavage of leucin, a proteid decomposition product, into a radicle convertible into aceton and into alanin, which, as has been shown, is convertible into lactic acid. This cleavage of leucin is illustrated as follows:

$$\begin{matrix}CH_3\\CH_3\end{matrix}\!\!>\!CH—CH_2—CHNH_2—COOH$$

Radicle, convertible into aceton. $>$ Alanin radicle.

If alanin is convertible into lactic acid in the organism, it should also be convertible into sugar and, indeed, Neuberg and Langstein find that its ingestion increases the quantity of glycogen in the liver, and Amalagia and Embden show that it may bring about a large increase in the quantity of dextrose eliminated by a diabetic dog.

In phosphorus poisoning lactic acid accumulates in the tissues and blood of a fasting dog and appears in the urine. The urine is ammoniacal. Ray, McDermott and Lusk found on administration of phlorizin to such a dog that there was an elimination of dextrose in the urine which was in no way different from that excreted in uncomplicated phlorizin diabetes, and that the ammoniacal reaction disappeared. We have repeated these experiments and have analyzed the blood and urine for lactic acid as well as for nitrogen and dextrose.

It has been found that while lactic acid was present in normal blood, and in the blood and urine of dogs poisoned with phosphorus, it disappeared in all cases from both blood and urine when phlorizin diabetes was induced. Phosphorus poisoning will not cause lactic acid accumulation when dextrose is completely removed from the body, as in the case of phlorizin diabetes.

How is this to be explained? It seems to us that in phosphorus poisoning the lactic acid produced from proteid is synthesized in the organism (liver) into dextrose, and this dextrose when transported to the tissues is only partly burned, part of it reaching the lactic acid stage only, which lactic acid may return to the blood to be perhaps again reconverted into dextrose. It seems probable that phosphorus acts directly or indirectly to reduce the activity of the enzyme which normally breaks up the lactic acid derived from dextrose metabolism in the tissues.

1. Neucki and Sieber: Jour. f. prak. Chemie, 1882, vol. xxvi, p. 41.

It has recently been stated by a number of German writers (Jacoby, Waldvogel, Oswald) that phosphorus induces autolysis of the body's protoplasm. This is not true. If one administers phosphorus to a fasting dog, the proteid metabolism may be increased to 250 per cent. of that observed in starvation. If phlorizin diabetes be induced in a fasting dog this rise may extend to 500 per cent. This latter increase is due to the non-combustion of the carbohydrate derived from proteid. If now a phlorizinized dog be given phosphorus there may be absolutely no further rise in the nitrogen elimination in the urine. The mere administration of phosphorus, therefore, can not cause an uncontrolled activity of proteolytic enzymes in the organism. It is much easier to explain the rise in proteid metabolism in phosphorus poisoning as due to an incomplete combustion of lactic acid.

Another analogy in these two cases is the fatty infiltration found in the tissues both in phosphorus poisoning and in diabetes. The cause is similar in both cases. In diabetes, when the sugar does not burn in the cells, the "sugar-hungry" cells attract fat in greater quantity than they can burn it. The blood may become full of fat which is being transported. In phosphorus poisoning, there is a modified "sugar hunger" in that lactic acid, a primary cleavage product of dextrose, does not burn—hence the fatty infiltration. Whenever such conditions exist, fatty infiltration occurs. It has been found by Hoppe-Seyler and Araki that a diminished oxygen supply to the body results in the appearance of lactic acid, and in all such cases fatty changes occur. A local dimunition in the blood supply to a part of the heart, for example, will produce this condition with resultant fatty infiltration. In the lactic glands, where dextrose is probably converted into milk-sugar, which latter can not be burned in the organism, there are "sugar hungry" cells which attract fat from the blood. Even the fatty degeneration observed on autopsy in fever cases may be due only to dyspnea which precedes the fatal outcome. These views have been gradually developed in this laboratory, and are but an extension of Rosenfeld's discovery of a physiologic antagonism between glycogen and fat deposit in the liver.

CHRONIC CATARRHAL DEAFNESS.

NOTES ON SOME VERY SIMPLE EXPERIMENTS AS TO THE INFLUENCE OF SOUND WAVES ON OSSICULAR RIGIDITY.*

PHILIP D. KERRISON, M.D.
Clinical Lecturer on Diseases of the Ear, University-Bellevue Medical College; Aural Surgeon Willard-Parker Hospital; Assistant Aural Surgeon Manhattan Eye and Ear Hospital.
NEW YORK CITY.

That most cases of chronic catarrhal deafness are due largely to rigidity of the ossicles depending on morbid changes within the tympanum is an etiologic truism. The correction of this condition by some form of passive exercise—exercise that will move, not segments of the drum membrane, but the drum membrane and ossicles together—is not yet within our grasp. It is a fascinating possibility, a problem the solution of which would be of more value to humanity than could possibly result from the most brilliant development of otology along any other lines.

* Read in the Section on Laryngology and Otology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

METHODS USUALLY EMPLOYED.

I wish (1) to consider, briefly, the methods usually employed for exercising the drum membrane and ossicles, and (2) to speak of some very simple experiments as to the influence of sound waves on ossicular rigidity. Of the various measures employed, inflation and pneumatic massage are in most common use.

Inflation of the tympanum either by catheter or the Politzer method is of the greatest value in cases of tubal catarrh or obstruction as a means of replacing the drum membrane in its normal position and re-establishing the function of the tube. Beyond this, its value as a means of correcting ossicular rigidity is distinctly limited. I assume that this proposition will be accepted without argument.

Pneumatic massage is a term applied to passive movements of the drum membrane by means of any instrument producing alternate condensation and rarefaction of the air in the external auditory meatus. I have employed this measure in a considerable number of cases, using either Siegel's otoscope or a pneumatic pump connected with the electric motor. With either instrument I have invariably kept the drum membrane under direct inspection and endeavored in this way to guard against the employment of too great force. In some cases a considerable immediate gain in hearing has resulted from a first application of this procedure. This gain has rarely proved permanent, however, and progressive improvement has never resulted from repeated use of this form of massage. On the other hand, distinct loss has seemed to follow its routine practice in a considerable number of cases.

The unsatisfactory results of pneumatic massage are probably explained by two facts: 1. The movements of the membrana tympani are not those which Nature requires of it or which are necessary to the transmission of sound waves, and do not, therefore, exercise the drum membrane and ossicles in their normal function. 2. The undue strain to which the drum membrane is subjected tends to produce alterations in tension, reducing still further the patient's hearing power.

Pneumatic massage by the method under discussion seems to be based on the theory that whatever will move the ossicles will improve the hearing. Its practice does not seem to be governed by any rules based on scientific investigations, the method of its application to different cases being largely a matter of guess work. Should this statement be objected to, it may easily be disproved by any one who will throw light on the following questions: By what established rules is the relation between the degree of deafness and the number of vibrations employed to be determined? Should the length of the piston stroke vary in different cases? If so, by what method other than guess work are such variations to be regulated in accordance with the varying degrees of deafness or ossicular fixation? Recognizing the obvious fact that any loss of tension in the drum membrane will necessitate the employment of greater force, i. e., a longer piston stroke, in order to produce a given movement in the ossicular chain, how are such variations in tension to be determined and allowed for? Employing sufficient force to move the ossicles, how is undue relaxation of the drum membrane to be guarded against? These questions would seem idle except in so far as they may show weak points in a method of treatment from which much has been expected and which is still advocated by many distinguished aurists.

To be effective, I believe that exercise of the drum membrane should fulfill the following conditions, all of which are violated by the usual form of pneumatic massage: (*a*) The drum membrane should not be subjected to any strain likely to destroy its normal tension (i. e., to produce relaxation, stretching); (*b*) it should be made to execute movements similar to those excited in the healthy drum membrane by sound waves; (*c*) the number of vibrations per second should bear some relation to that note in the musical scale which marks the lower tone limit of the patient's hearing power.

With patients whose perception of musical tones reaches below C′ (256 double variations), there is strong clinical evidence that the ossicular chain may in some cases be thrown into more or less vigorous vibration down to, and below, their estimated lower tone limit by a system of tuning forks especially devised for this purpose. If impressions of sound reach the inner ear chiefly through vibrations of the conducting mechanism excited by sound waves from without, why may we not make use of selected sound waves to exercise the drum membrane and ossicles in just those movements (sounds) for which their mobility is shown to be impaired? In other words, if it be shown by careful testing with small tuning forks (e. g., the Hartmann set) that the hearing is impaired, but not lost, for a given note, e. g., C, 128 double vibrations, why is it not a rational procedure to exercise the drum membrane and ossicles for that particular note by means of a larger fork of the same pitch, whose greater amplitude of vibration is sufficient to throw the drum membrane into more vigorous motion? That this theory is not without practical bearing on the question of treatment in cases of deafness due to ossicular rigidity may in some cases be demonstrated by a very simple experiment. Supposing, for example, a patient who can but faintly hear the small Hartmann fork of 128 double vibrations (C), when set in maximum vibration, let the physician subject him to the following test: Taking a much larger unclamped fork of the same pitch, let him hold it while vibrating vigorously with the broad side of the prong as close as possible to the patient's ear without touching the auricle, keeping it there until its sound is no longer heard. Let him repeat this eight or ten times. Now let the ear rest a minute or two, and test again with the small Hartmann fork of 128 double vibrations, when it will be found in some cases that the sound is heard with greater distinctness and, therefore, during a longer period of time. While by no means invariable, this result occurred with sufficient frequency to induce me to make a series of experiments with forks of different pitch.

EXPERIMENTS AS TO THE INFLUENCE OF SOUND WAVES ON OSSICULAR RIGIDITY.

Tuning Forks.—The tuning forks employed in these experiments were especially designed for exercising the drum membrane and ossicles. For this purpose it was essential that each fork should be capable of the most vigorous vibration possible for its fundamental note. Roughly speaking, the amplitude of vibration increases with the length of the fork, or rather with the length of its prongs. And as a maximum amplitude of vibration was a chief desideratum, I ordered a set of unclamped forks, the prongs to be ¾ inch wide and as nearly as possible of uniform thickness; the variations in pitch to be regulated by gradations in the length of the prongs. After some failures, this order resulted in a set of forks with prongs of uniform width, producing all the notes of the musical scale from 32 double vibrations (C^{-2}) to 512 double vibrations (C^2), four octaves higher. They present a broad, flat surface which, when set in vigorous vibration, and held close to the external auditory meatus, can not fail to throw the drum membrane, even though thickened by disease, into more or less vigorous motion.

Routine of Experiments.—The hearing is first tested in much the usual way. The hearing distance for the acoumeter and for the conversational or whispered voice is ascertained. The lower tone limit is roughly estimated by means of the Hartmann set of tuning forks, and the upper tone limit by the Galton whistle. Increase or diminution of hearing by bone conduction is carefully noted. If the result of these tests points to a tympanic lesion, and the lower limit of the patient's hearing power is not above 256 double vibrations, a more exact estimate of the lower tone limit is made.

If, for example, the patient can hear the Hartmann C′ fork (256 double vibrations), but not the C fork (128 double vibrations), I next test the hearing with my forks representing the intermediate notes of this octave, i. e., 240, 213, 192, 170, 160 double vibrations, etc., until the correct lower tone limit is reached. In using these forks for testing purposes they should be struck with only moderate force and, overtones being carefully eliminated, held with the space between the prongs opposite the ear.

Supposing that the lower tone limit is by this test shown to be 160 double vibrations, this fork and four or five others immediately below it in the musical scale (i. e., 144, 128, 120, 107 double vibrations, etc.) may be employed for the purpose of throwing the drum membrane and ossicles into forcible vibrations. Using first the highest fork, 160 double vibrations, it is set in maximum variation and held with the flat surface of the prong close to the ear until its sound is no longer heard. This should be repeated 8 or 10 times. Then the next lower fork, 144 double vibrations, is employed in the same manner, and so on through the series of successively lower forks, 128, 120, 107 double vibrations, etc., until one is reached which can not be heard even in maximum vibration. Used in this way, tones four to six notes lower in the musical scale will be perceived. As each successively lower fork is heard during a shorter period of time, it is well to repeat the initial stroke somewhat oftener as we descend in the musical scale, the lowest fork being heard but a few seconds. Letting the ear now rest for one or two minutes, it will be found in some cases that an appreciable gain in hearing has resulted.

VALUE OF EXPERIMENTS.

I wish to avoid the error of exaggeration in speaking of the value of these experiments. The results have varied greatly in different cases, some cases of fairly marked deafness responding favorably, while others of slight impairment have shown little or no improvement. Such contradictory results have occurred in cases apparently equally favorable for this experiment. They apparently depend on differences in the character of the lesion, rather than its stage or duration. In those cases in which the experiment has resulted favorably, the improvement has been in the direction of improved audition for the lower musical tones and increased hearing distance for the watch or acoumeter. The improvement in certain cases has been marked, the hearing distance for the acoumeter being more than doubled and the range of tone perception being considerably extended.

The method is cumbersome, and its application neces-

sitates an expenditure of time rendering it unavailable as a routine measure by men in large practice. Nor have the results thus far demonstrated a sufficiently definite value in excess of what may be accomplished by other means to justify one in proclaiming this measure as a valuable addition to our therapeutic armamentarium.

All that I claim for these experiments is that they furnish additional proof that in certain cases of chronic deafness the mobility of the ossicles may be increased and the hearing thereby improved by sound waves rationally employed. They also suggest a field of experimental work through which in time we may arrive at a system of auditory massage which will yield more valuable and permanent results.

I believe that some form of effective auditory massage is a possibility; but that its development must be along rational lines, i. e., in accordance both with the physics of sound and the physiology of the sound-conducting mechanism. In this direction lies the greatest need in the development of practical otology.

58 West Fifty-sixth Street.

DISCUSSION.

DR. C. J. BLAKE, Boston, said that it is evident that the application of the grosser forms of massage, for the purpose of mobilization of the sound-transmitting apparatus of the ear, should be supplemented by a more delicately applicable method of mobilization. Dr. Blake assisted Professor Politzer in a series of experiments as to the effect on the hearing, in cases of chronic non-suppurative middle ear disease, of tuning forks of low pitch electrically actuated. These experiments showed apparently an improvement in hearing in cases of rigidity of the articulation of the ossicles. The fact that the tuning forks were electrically actuated and therefore presented a continuous tone led, he thinks, to their application for a longer period than would otherwise have been the case, that is to say, than if they had been actuated by striking and allowed gradually to come to rest. One of the results of these experiments was the development in many of the cases of auditory fatigue, and it was found that the exposure of the ear to the tone of a low pitch tuning fork continued for a period, say of three or four minutes, resulted in the appreciation on the part of the patient, when the tuning fork was brought to rest or removed from the ear, of another sound, a false sound, which was a complimentary tone, and many patients, after subjection of a few minutes to the tuning fork sound, heard, when that sound ceased, the third or fifth of the tone used for periods of from a few seconds to half a minute or more. Under these circumstances the experiments were not continued, the ground taken being that the ultimate expenditure of force, of these deep tones of considerable volume being in the labyrinth, there was a possibility of injury from the fatigue caused. In the experiments which Dr. Kerrison reported, however, there is a means of applying massage, phono-massage, for limited periods of time, and it is distinctly understandable that there is an efficient means for purposes of mobilization. When the limit of sound transmission of the sound-transmitting apparatus, ranging from the lowest sound appreciable, 60 vibrations in a second, up to about 40,000 vibrations in a second, is considered, it is evident that the use of tones of low pitch will be most serviceable in effecting mobilization of the articulation of the ossicles. Aside from the immediate therapeutic value of the treatment, it is sure to lead up to better information concerning the transmission, through the sound-transmitting apparatus, of tones of low pitch, and it is inevitable that the following out of a series of such investigations as are indicated in the paper, will help much in determining, more specifically than has yet been done, the value of tones of low pitch in the differential diagnosis of disturbance of sound transmission.

DR. LOUIS J. LAUTENBACH, Philadelphia, said that musical tones thrown into the ear can exercise little or no influence on the attachments or articulations of the ossicles but influence rather the nerve endings. Physics teaches this. Tuning forks give not massage, but stimulation, often an overstimulation of the nerve. Clinical work in this line carried out for any length of time will prove this. Dr. Lautenbach has found that primary stimulation by tones of high pitch produces the greatest effect on the hearing, but that if long continued it is followed by great and sometimes permanent depression. He has found that low tones do stimulate the hearing, but it takes a long time and is not followed by so great depression. He said that he can not recall any permanent bad effect resulting from low tone stimulation. He considers the condition resulting in these cases as due primarily to the effect on the nerve structures of the ears and not at all to any effect on the structures of the middle ear. If it be desired to affect the middle ear structures, they must be dealt with by ordinary mechanical means. The function of the ossicle is to transmit sound. In part, it is known how sound is transmitted, but in reality very little is known about it. The chain of bones can be thrown into any desired position and will carry the tone if the articulations are perfect. In most of Dr. Lautenbach's experiments he has used the syren; with it any number of vibrations can be obtained and kept up for as long as desired. Quick results can be obtained, and it can be readily determined how much can be gained by tones of varying pitch. He thinks that the use of electrically operated tuning forks is valuable. Anything too continuous in the way of sound is followed by bad effects on the ear. Pneumo-massage has a distinct and positive purpose and effect; by this means good effects can be produced and bad effects if it is overdone. Physicians as well as patients are prone to want to overdo it. To get the maximum effect in vibratory massage, vibrations are needed, varying from 250 a second to 5,000 or 10,000 a second, depending on the case. In pneumo-massage the best possible results are obtained by impulses varying from 50 to 400 a minute.

DR. CULLEN F. WELTY, San Francisco, said that tuning forks will differentiate the different forms of deafness almost to a certainty, but when the tuning fork is used as a treatment for otosclerosis (ossicular rigidity), he is almost confident that it will not yield practical results. It is questionable to him if otosclerosis (pure) should have mechanical treatment at all. He is confident that some forms should not. In adhesive processes (ossicular rigidity) practical results can not be obtained by the vibrations given the drum membrane by the tuning fork. More can be accomplished by the catheter. This, however, can be abused.

DR. PHILIP D. KERRISON, New York, said that it seemed evident that some of the speakers misunderstood him. He stated distinctly in advance, he said, that he did not propose the use of forks as a valuable therapeutic measure. He also stated in the course of the paper that whatever practical value these experiments might have would be in possibly suggesting certain methods of pneumatic massage, by which more valuable and permanent results might be obtained. He said that Dr. Lautenbach's statement regarding the number of vibrations was accompanied by no explanation of his reasons for this belief. If any definitely good results are to be obtained, reasons for the technic used should be given. One of the most obvious dangers of pneumatic massage, as usually employed, is readily appreciated, he said, if we remember that Helmholtz proved by experiments that the maximum movements of the umbo are 0.25 mm. By the usual method of auditory massage, the drum membrane or segments of it, are made to execute movements much greater than this; and it is difficult to conceive how such exaggerated excursions can fail to result either in lesions of the ossicular joints or in undue stretching or relaxation of the drum membrane.

Management of Diabetics.—Hershey, in the *Denver Medical Times*, states that no diabetic should be considered as being under proper treatment until his case has been thoroughly studied for at least a month, either under strict hospital supervision or at home under the care of an intelligent trained nurse. Thus we are able to study the effect of exercise during restricted diet, the effect of rest under the same régime, and the effect of the ingestion of carbohydrates during rest and during exercise.

OTOLOGY IN ITS RELATION TO RHINOLOGY AND LARYNGOLOGY.*

CLARENCE JOHN BLAKE, M. D.
Professor of Otology, Harvard University.
BOSTON.

The history of otology is that of the cumulatively accretive study of an organ of special sense having for its purpose the appreciation of two distinct modes of motion and, additionally, tactile functions in relation to the sensorium and reflexly in relation to other organs, which constitute it one of the most important watch towers of the human citadel.

Early in the investigations into the structure of the human body, the organ of hearing was a favorite resource of the anatomist. To it he turned as to a labyrinth of suggestions and the delicacy of adjustment of the mechanism of its sound transmitting apparatus was an interesting microcosm of the larger joints and more gross muscular adjustments of the trunk and limbs which he had already explored.

Judged by their printed records the human ear was a veritable attraction to the older anatomists and the accuracy with which its intricacies are described is equaled only by the vagueness of the conceptions as to the manner in which it performed its functions, and the attractiveness of its study would seem to have had its foundation both in the demonstrably consecutive arrangement of its delicately constructed parts, and in the mystery attending the question of their related uses. Much of this mystery still remains uncleared, new questions still arise as to the methods of intratympanic and cranial sound transmission, the physical question of the translation of sound waves, through fluids of different densities, in enclosed cavities, is still unsolved and the later demonstrations of the diffusion of the blood supply within the labyrinth are helping to explain the sequence of morbid conditions not heretofore understood.

SCOPE OF OTOLOGY.

Otology still presents a broad and alluring field for original research and clinical investigation. The slowly progressive changes in the middle ear, gradually inhibiting its function of sound transmission, the reflex relationships between the middle ear and labyrinth and other organs, the bearing which the general systemic condition has on the blood supply and the transmission and perceptive functions of this complex organ, the elucidative information which may be obtained from it in eliminative diagnosis, emphasizing the statement that the ear is a small window through which it is possible to get a broad view if one only gets close enough to it, all point to otology as a distinctive department of laboratory and clinical research sufficient in itself to command the study of a lifetime, and scientifically remunerative, both in itself and in its centralizing relationship to other branches of investigation.

OTOLOGY AND RHINOLOGY.

Viewed from the scientific standpoint alone the relationship of otology to rhinology is mainly that which concerns the middle ear and has to do with questions of blood supply, of variations in intratympanic atmospheric pressure and in the consideration of the nasopharynx as a reservoir of possibly, mechanically invasive microorganisms. In the early days of clinical otology the regions of the posterior nares and of the nasopharynx were practically unknown, or disregarded, fields. The part played by micro-organisms in the causation of diseases, surgically remediable, was yet to be discovered, the importance of the integrity of the nose and nasopharynx to the proper aëration of the tympanic cavity was unappreciated, and cases of persistent aural symptoms, dependent on the presence of obstructive growths in the naso-pharynx, sufficient to produce also the now well known facial symptoms, passed by on the streets and through the out-patient departments of the hospitals unnoticed.

Catlin, that intimate observer of the native American, whose gallery of portraits of Indian braves is one of the choice possessions of the Smithsonian Institution, marked the difference between the facial expressions of the Indians and the Caucasians and, in his trenchant book under the title "Keep Your Mouth Shut," not only limned the contrasts with his pencil but, with his pen, drew stringent inferential comparisons between the two races, the possessor and the invader of the native American soil, as to their inherent moral qualities, but with no thought of a physical cause. It was not until, almost simultaneously, Meyer in Copenhagen, Löwenberg in Paris, and Franklin Hooper and the writer, in this country, drew attention to the clinical bearing on respiration and aural function of the presence of the so-called adenoids, that an important practical binding step between otology and rhinology was established. This step led naturally to more intimate study and more reasonable regard of the boundaries within which these two departments could harmonize their efforts, a boundary line within which there is still large opportunity for both distinctive and collaborative research.

In following the history of any special branch of medical research and practice, it is necessary to recognize the fact that the story runs in two lines of distinct differentiation: the history of the specialty in the line of research shows it to be definite and consecutive, while the history of practice is marked by the variations incident to time and place and the limitations of fiduciary considerations. As a line of research otology has always had, and still presents, within itself, sufficient reason for its independent maintenance and for its representation as a department of education in our medical schools, but in the matter of practice its association with cognate specialties is influenced by considerations outside of the limits of true specialization.

A distinct line of research from its beginning, otology, bearing a definite relationship to general medicine but implying particular aptitude and entailing particular training and being, in its practical application, a limited field, fell into relationship first with another special branch of medicine and surgery requiring particular training for its study and tactile gifts for its application, and the practice of otology became linked with the practice of ophthalmology on a purely sumptuary basis without physiologic ground for the relationship.

OTOLOGY AND OPHTHALMOLOGY.

Ophthalmologic practice had already become well established when otology entered the practicing field and it was but natural that the younger of the two earliest specialties in medicine should come to be regarded as an addendum to the elder, especially as both require the same class of special training and much the same kind of individual aptitude in their practitioners.

Consequently, in the second stage of its special de-

* Read in the Section on Laryngology and Otology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

velopment we find ophthalmology and otology associated both in practice and in teaching and the dissociation is of so recent a date as to be still in progress. Up to thirty-five years ago the appointment of an ophthalmic surgeon to the Massachusetts Charitable Eye and Ear Infirmary carried with it the obligation to receive, and to treat, such cases of disease of the ear as might present themselves in the course of the service and it was not until 1870 that in the distinctive post of aural surgeon was established a step in advance, which was shortly coupled with another, the formal recognition, on the part of the board of managers, of medical teaching as one of the vital functions of an institution for the dispensation of medical charity, and it is only within a year that the joint chair of ophthalmology and otology in one of our larger schools, the University of Michigan, has been divided, and two separate professorships established.

CONCLUSION.

The relationship between otology and laryngology has as little a physiologic foundation as that above mentioned, but between otology and rhinology there is both a physiologic and a practical basis for collaboration, which is however especially concerned with that portion of the organ of hearing devoted to sound transmission and finds its own limitation of relationship in this respect. The service rendered to otology by the later advances in rhinology while computable as great, still remains to be definitely determined, because the end has not yet been reached, and is to be attained only by carefully compared coöperative observation, and it is the necessity for this which makes the true relationship of these specialties. To attain the best results it is important that the two should not be too much merged, since each offers a broad field for study, in its particular region, which it is advisable to conserve, and each has individual points of departure along lines of its own association. To study rhinology from the otologic standpoint alone is greatly to circumscribe rhinology, while to study otology from the rhinologic standpoint only is to leave out of consideration much that is of importance to an organ of special sense which has varied relationships with the functions of other organs and with the well being of the human economy as a whole.

The association of otology with ophthalmology was one of economic origin and without scientific reason, the association with laryngology has always been one of uncertain tenure, and it is the association with rhinology alone that has any substantial ground for persistence, and that to a limited extent, for, inevitably, as rhinology grows, and there could be no better evidence of growth than the number of valuable contributions, both in original research and in clinical observation which mark the program of this and of similar meetings, it will become more and more a distinctive field, capable of commanding the individual devotion of the scientific investigator and earnest practitioners, as otology has done from its beginning.

DISCUSSION.

Dr. R. G. Shambaugh, Chicago, said that the very intimate relations which exist between what have sometimes been considered two separate specialties—rhinology and otology—can not be too often or too forcibly emphasized. He thinks that otologists are willing to admit that the most important chapter in recent years, aside from aural surgery, has been added to our knowledge of otology through the study of rhinology.

He fears that some as yet have a very poor appreciation of just what this relationship between rhinology and otology means, and so long as the subject is still of a more or less indefinite nature, some perhaps are inclined to think that relationships are seen which do not exist. Every rhinologist has had the experience of examining patients who had previously consulted other physicians who had advised operations on the nose, perhaps on the throat, when there was no reason whatever for operative interference. It seems to be not an uncommon thing to advise a patient suffering from chronic catarrh of the middle ear to have any little anatomic variation in the nasal chamber such, for example, as a small crest on the septum, removed for the purpose of benefiting the ear. All sorts of impossible imaginary relations are believed by some to exist between nose and ear trouble. Important relations do exist between middle-ear disease and conditions in the nose and throat, but it does not follow that every case of chronic middle-ear catarrh requires an operation on the nose or throat. The most important relation between the nose and throat and ear trouble is that found when the pharyngeal tonsil is enlarged. Most of the patients in middle life who present themselves for treatment of chronic middle-ear catarrh could have been greatly benefited had the proper attention been given to the adenoids in early life. When these patients are seen in middle life, however, the period when the ear disease is being influenced by the condition in the nose or throat has usually long since passed, and the only interference in the nose or throat that is justifiable is such as may be indicated to relieve local trouble in these parts and no effect on the ear trouble from such treatment can be expected.

Dr. Otto T. Freer, Chicago, referred to Dr. Blake's statement concerning the number of specialties which may be associated by a man wishing to keep his work up to the highest standard of excellence and progress. He agreed with Dr. Blake that this number is diminishing and will in time be limited to one. Twenty years ago the eye, ear, nose and throat physician could keep up his knowledge, technic and instrumentarium, in all his fields. It is impossible for him to do so to-day, when each branch includes a literature so vast and manipulations so difficult that only constant diligence makes it possible to keep up with progress. Inevitably, therefore, the man who assumes so many specialties will slight one or more of them. In this way many eye, ear, nose and throat specialists are to-day making the noble sciences of laryngology and rhinology mere appendages to eye and ear work, timidly and ineffectively entering into the treatment of the diseases of the nose and throat. While in smaller towns it will always be necessary to practice several specialties, in a few years he who does so in the larger cities will be looked on as representing a commercial rather than a scientific class of workers.

MULTIPLE NEUROMATA OF THE SKIN.*

WILLIAM EDGAR DARNALL, A.M., M.D.
ATLANTIC CITY, N. J.

This subject is one that is noticed in very few textbooks of medicine and very scant attention is given to it in those that do refer to it. From the quotations given below it may be seen that the affection is not common, even in the broadest application of the term. I have collected three cases, reported herewith.

This form of tumor presents itself in the form of multiple hard spindle-shaped masses, varying in size from that of a small pea to that of a walnut, and distributed along the course of a single nerve, or of all the nerves of an extremity, or even the whole body. It originates from the connective tissue of the nerve sheaths and usually contains within its substance a certain number of nerve fibers included by the tumor in the course of its development.

"Painful neuroma of the skin is an exceedingly rare form of the affection, only two cases in which the skin was primarily

* Read in the Section on Diseases of Children of the American Medical Association at the Fifty-seventh Annual Sesstion, June, 1906.

affected being on record. Duhring's case[1] was the first noted and was followed by a report of a case by Kosinski.[2] Both cases occurred in men aged seventy and thirty, respectively. In Duhring's case the tumor had been developing for ten years and in Kosinski's for fourteen. The tumors, varying in size from a pin head to a filbert, confluent and disseminated, were thickly studded over the areas affected. In the first case they extended from the scapula over the shoulder, down the arm to the elbow, occupying principally the area of distribution of the circumflex nerve; and in the second case, over the buttocks and upper part of the thigh corresponding to the area supplied by the small sciatic nerve and the external cutaneous. The lesions were arranged irregularly, not corresponding exactly to the course of the nerves mentioned, and formed firm, flat or elastic nodules oval in shape, fixed in and extending below the skin, and movable only with it. The integument between the nodules was normal, the nodules being purplish or pink in color. In Duhring's case the skin over the nodule was slightly scaly. At the outset pain was variable but later it became excruciating and occurred in paroxysms lasting an hour or more. Since they are non-malignant these growths are best not interfered with unless great distress is caused by the pain. In both of the cases referred to above resort was had to the removal of a portion of the nerve supply with resulting quick relief from pain and a gradual subsidence of the nodules. The new growth is composed of firm connective tissue and non-medullated nerve fibers."[3]

"The multiple neuromata in some cases number thousands and vary in size from small peas to masses as large as the fist. They are located in three general ways: 1. They may appear along a single nerve, or along several nerve trunks at somewhat regular intervals like beads. 2. They may appear only on a single nerve or its branches. 3. They may invade nearly every nerve in the body, including the sympathetic. In the subcutaneous situations they appear like vascular cirsoid dilations, but present a different consistency and anatomic position, and are not modified by pressure on venous or arterial channels. They are most frequently acellular and devoid of myelin. While they may be sensitive and attended by neuralgic pains they are usually unmarked by any sensory disturbance. These cases are sometimes of an hereditary nature."[4]

"The tumor takes its origin either from the endoneurium of a peripheral nerve, pushing aside the nerve fibers until they become widely separated, and even perish from pressure or disappear; or from the perineurium or epineurium, growing laterally from the original nerve trunk, sometimes surrounding it without disrupting the natural arrangement of the nerve fibers. It is, therefore, clear why a histologic study of the neurofibromas, as found in the skin and along the course of peripheral nerves should show gradations relative to the nerve fibers, which are sometimes abundant, again isolated or even absent, and why the fibers vary from apparently normal medullated fibers to naked axis cylinders, or axis cylinders variously formed."[5]

"The term neuroma has been loosely applied to all new growths containing nerve fibers or nerve cells in a fibromatous matrix. Strictly speaking, a neuroma is a tumor composed of newly proliferated proper nerve elements, either neurons or neuraxons, or both. It now appears that certain recently studied neoplasms can be included under this head, e. g., the multiple dermal neuromas found by Knauss in children. They contain both branching ganglion cells resembling those of the sympathetic ganglia, and numerous medullated and non-medullated fibers showing no anatomic connection with the nerves in the neighborhood, and apparently only to be explained on the basis of a proliferation of original nervous elements."[6]

"Neuroma of the skin is an exceedingly rare disease and even in the broadest application of the term it is not common. According to Duhring the subcutaneous nodule of Wood, resembling neuroma closely, differs in being situated in the subcutaneous tissues, is always freely movable under the skin and is solitary. This and other cases of subcutaneous neuromas of the skin are not, strictly speaking, cutaneous growths, although they are usually so considered in the descriptions of the disease. Nor is Rump's case, sometimes quoted, a clear example of the malady. It consisted essentially of a fibroid tumor of the nerve, and was not accompanied by pain. Histologically, true neuroma of the skin is found seated in the corium extending into the deeper structures. On examination it is found to be made up of firm connective tissues containing non-medullated fibers running up as high as the papillary layer of the corium. They are in reality fibroneuromata."[7]

1. Am. Jour. Med. Sciences, October, 1873.
2. Centrbl. f. Chir., No. 16, 1874.
3. "Reference Handbook of the Medical Sciences," p. 259.
4. "Nervous and Mental Diseases," Church and Peterson, p. 279.
5. "American Text-Book of Pathology," p. 175.
6. Ibid., p. 194.

CASE REPORTS.

The following case occurred in my practice:

CASE 1.—H. B. M., aged 19.

History.—Patient works at clerical work in an office. He has always been a rather delicate boy and unable to do hard work or engage in rough play like other boys. He has no bad

habits and no venereal history, does not use tobacco or alcohol. Development is poor, as may be seen from the accompanying pictures and his general appearance would indicate a rachitic history. Although 19 years of age he shows no signs of puberty, penis is undeveloped and in size corresponds to the penis of the average ten or twelve-year-old boy. He has no pubic or axillary hair. Some eight years ago his mother noticed that his back was not straight and since then he has developed a pronounced curvature of the spine (scoliosis) in the mid-dorsal region. He is somewhat anemic.

Mentally he is bright and intelligent. He has had no previous illnesses.

About six years ago a tumor about the size of an egg was removed from over his left eye, the nature of which was not recognized at the time.

Three years ago or more he noticed the enlargements here shown but as they gave him no discomfort he paid no especial attention to them. Sometimes he feels a numbness in certain parts of his body affected by the tumors. Pressure on the tumors causes pain which radiates up and down the course of the nerve. He has full use of his arms and legs. He com-

7. "Diseases of the Skin," Stelwagon, pp. 663-664.

plains of pain in the precordial region and over the sternum, as well as a certain amount of dyspnea at times, all of which can be attributed to the deformity of his chest by reason of the curvature of the spine, and the consequent pressure thus exerted on his lungs and heart. His abdomen is protuberant. The functions of his bowels and bladder are normal and his appetite and digestion good.

Examination.—The movements of the facial muscles are normal. He closes the eyelids firmly, masseters contract firmly, tongue protruded straight and is not atrophied nor does it show fibrillary tremors; extraocular muscles are normal as are also his sensations of touch and pain in the face and over the trunk and extremities.

Movements of his limbs, upper and lower, are not impaired, there is no local atrophy, though he is generally thin and rather wasted. His hand grasp is normal, as are also the Argyll-Robertson reflex, the patellar reflex, and ankle clonus. Babinski reflex is present. His gait is the gait usually seen in sufferers from a curvature of the spine, but shows no other peculiarities. The distribution of the tumors is generally over the scalp, the shoulders and the back, the pectoral regions, and around the loins, as well as up and down the arms, in bead-like chains corresponding nearly to the course of the nerves supplying the various parts. They are elongated pea-like bodies freely movable under the skin rather than attached to it, and vary in size from the porcelain head of a shawl pin to the size of the end of one's thumb. There is no pain associated with them unless they are firmly grasped between the fingers.

Pathologic Examination.—Two of these tumors were excised under cocain anesthesia and submitted for a pathologic examination to Dr. Harry A. Duncan, pathologist to the Samaritan Hospital, Philadelphia. He reports:

"Macroscopically, the tumors are smoothly ovoid in shape, the size of a bean, uniformly firm, whitish gray in color and surface smooth. The smooth surface appears to be a white glistening capsule loosely adherent. To one side of the tumor examined is attached a bit of the external sheath of the nerve.

"Microscopically, the capsule consists of fibrous and loose areolar tissue, and in places is characterized by leucocytic invasion pointing to inflammatory changes. The epineurium or general nerve sheath shows a loose areolar tissue. Clumps of fat cells are numerous. Between the fat cells an infiltration suggests inflammatory changes. The tumor substance is made up of wavy fibrous tissue, although areas of it are undoubtedly myxomatous. Some nerve tissue is present. Cross sections show a separation of the nerve from the perineurium, probably due to inflammatory exudate. The perineurium has undergone a fibrous proliferation. Changes of a similar nature are progressing in the endoneurium and causing a separation or dissociation of the individual nerve fibers from one another. A transverse section of a nerve shows such decided fibrous change in the endoneurium that almost all signs of true nerve tissue are destroyed. The tumor is undoubtedly a neurofibroma, and is doubtless only the localized evidence of a diffused fibromatosis along the nerves."

I am also indebted to Dr. Duncan for the notes of the following case:

CASE 2.—H. C., aged 22, clothing cutter by trade, German by birth.

History.—Family history negative except that one sister suffered from similar growths. The patient had measles when a child, no other diseases, and no bad habits. No venereal history. The tumors are shown all over the body, following the course of the nerves, and were first noticed on his arm when he was 10 years old. For a time their growth was slow, but recently it has been very rapid. The tumors are hard and fusiform in shape, and freely movable under the skin.

Operations.—One tumor was opened at St. Joseph's Hospital before the patient came under observation by me, but was not removed on account of its size. Following this operation he was affected with foot drop. His pulse was 96 to 118, temperature 99 F. Respirations 20 to 24. Urine normal. Blood showed moderate anemia. Many of the tumors were removed. They varied in size from a peanut to a goose-egg. General health improved and he left the hospital. The growths continued to increase in size and I next learned of his presence in the Philadelphia Hospital. At this institution, because of a very large and painful sarcoma in the course of the sciatic nerve, a hip joint amputation was considered, but before any radical treatment was instituted he died from general exhaustion.

This patient also had a sister, aged 23 years, a tailoress, who had all over her body small elongated tumors of a similar nature, along the course of the nerves. They appeared when she was about 16 years old. Several of them had been removed. In both her case and her brother's microscopic examinations were made and the tumors were found to be neurofibromata. One tumor in the brother showed on examination a distinct tendency to sarcomatous change.

A case has been reported by Bland-Sutton, and Thompson,[8] of Edinburg, refers to some interesting complications in his monograph on the subject. In reporting Keen's case Spiller has searched the literature and sifted it well, and has written a good report, though it is not all pathologic. Every article lays stress on the hereditary tendency of the malady, the painlessness of the tumors, and the long period of development, except when associated with sarcoma. Thompson thinks surgical interference often causes sarcomatous changes to set in.

Through the courtesy of Dr. William G. Spiller of Philadelphia I add the following case, the notes of which he has kindly sent me:

CASE 3.—W. R., aged 33, was admitted to the University Hospital May 12, 1905.

Special History and Habits.—Patient is a farmer and lumberman. Work is very heavy and hard; has not been able to work for about six months; uses alcohol to moderation, never to excess; tobacco, rather freely. Denies venereal history.

Family History.—Father, mother, three brothers and four sisters living and well. Patient is the oldest of the family. One brother dead-born. Has wife and two children, one 3 years old, one 14 months old, and in good health.

History of Previous Illness.—Had ordinary diseases of childhood. Six years ago had one tumor the size of a hazelnut removed from inner surface of left elbow; one from right axilla, one from outer surface of left leg about midway between knee and ankle, one just below internal malleolus of left leg, one just below external malleolus of right foot. The one on the left elbow had appeared about five years before removal, the others two to three years before removal. They were increasing very slowly in size and were very tender to touch or to any unusual strain put on the part. There was usually some spontaneous pain after he had retired at night. Following the operation for removal of these tumors patient had a mild ether pneumonia from which he recovered without complication. He was otherwise in good health to about a year ago, when present trouble began.

History Present Illness.—About eleven months ago patient began to have a feeling of mild pain and numbness in his hands, especially in the morning. This usually improved after he had worked a little. There was no weakness in the hands at this time. The pain and numbness increased in severity and extended up the arm and seemed to affect especially the thumbs and middle line of the arms. The right hand and arm have been more affected than the left hand and arm from the first. In June, 1904, he consulted a physician and was treated for rheumatism, without relief. In September of the same year his hand had become so weak that he had to give up most of his work.

During all of this time, that is, from the beginning of his trouble, he has had a feeling of constriction about his body from the axilla to the crest of the pelvis, more marked on the right side, and seeming to come on in attacks. At times he would seem to be free from this feeling entirely. About five months ago, in December, 1904, he noticed that his legs were

8. "Neuroma and Neurofibroma," Alexis Thompson.

becoming weak and he began to have pain in his toes and from the knees to the hips. This pain he describes as a "dead" or "numb pain." This was more noticeable on the right side. About this time the right hand and arm had become so weak that he was unable to use them at all. For the past four months the weakness in all his limbs has increased and the pain has become more severe, being confined largely to the extremities and being worse at night. He has been losing weight, and for about the last six months has had some difficulty in starting his water.

Examination.—Movements of the facial muscles normal; closes eyelids firmly, wrinkles forehead; shows teeth well, masseters contract firmly, tongue protruded straight, not atrophied, no fibrillary tumors. Extra-ocular muscles normal. Sensations for touch and pain in the face normal.

Upper Limbs: Movements much impaired; resistance to passive movement weak; no local atrophy anywhere, though the man is generally wasted and probably more so in the forearms than in the upper arms. Grasp of each hand is very feeble. Biceps tendon reflex, triceps tendon reflex very prompt on each side. Sensations for touch and pain are preserved in each upper limb, even in the hands, but these sensations are not so sharp as in the face. A small tumor is found in front of the left elbow about the size of a hazelnut, and is painful to touch. Right upper limb is weaker than the left.

Lower Limbs: Voluntary movement and resistance to passive movements weak in lower limbs. Sensations for touch and pain are preserved in the lower limbs, but are probably more impaired in the right lower limb than they are in the face. Patellar reflex is much exaggerated on each side. Ankle clonus present on each side, more distinct on the right. Babinski reflex is distinct and typical on each side. Sensations to touch and pain may be a little more acute in the left limb.

There is no deformity of the vertebral column. No tenderness to pressure along the spinal column. Patient can not feed nor dress himself. Cremaster reflex is present, but feeble on each side. He sways a little with eyes closed. Gait is somewhat staggering and he drags the right toes on the floor like in a hemiplegia. In walking, the right upper limb is hanging slightly flexed at the elbow. A small tumor is seen between the first and second toe on the right foot, not painful to the touch. Later other small painful tumors were found in the limbs.

Diagnosis.—Neurofibromatosis, probably with pressure on the cord by tumor of the nerve roots.

TYPES OF CONGENITAL SYMBOL AMBLYOPIA.*

J. HERBERT CLAIBORNE, M.D.
NEW YORK.

W. Pringle Morgan,[1] of Seaford, Sussex, England, was the first to point out that, in addition to the word-blindness which is the result of acquired cerebral lesion, there is a word-blindness congenital in nature which he has suggested is due to defective development of the word memory centers of the cerebral cortex.

This communication was followed by those of Hinshelwood[2] and Nettleship,[3] Wernicke,[4] of Buenos Ayres, and others[5] the experience of all who have observed and studied these cases simply justifies the initial and simple conclusions of Morgan. The first American observer who has recorded any observations on this subject is A. Schapringer, of New York, who read a paper on the subject before the Section of Ophthalmology of the New York Academy of Medicine, Feb. 19, 1906. His paper on that occasion was followed by one by myself in which I referred to two cases. That paper is the basis of this one.

It was my purpose to present an extended study of two boys whom I have recently seen and who have shown themselves so backward in learning to read that at the first blush it excited in my mind a suspicion of congenital word-blindness, owing to the shyness of both of them, I have not been able to study their cases as carefully as I wish, and am compelled to present my views after a more or less imperfect investigation. I do not doubt, however, that in these two boys there is a congenital deficiency, or at least a tardy development of the word-memory centers; and the class of cases to which they belong is to be clearly and definitely differentiated from those cases of word-blindness which occur in cerebral degeneration, intracranial tumors or lesions and injuries. Congenital word-blindness appears to me to be a department of pediatrics and neurology which has not received the attention it deserves.

CASE 1.—A boy, aged 10, was sent by his teacher to my clinic at the New Amsterdam Eye and Ear Hospital on account of an injury to his left eye. In my opinion, the injury has no bearings on the symptoms which I have observed, and it is sufficient to say that he received a blow from a small shot that was thrown or fired at him by a comrade. He said the shot lodged under his upper lid and fell out on examination of it by his sister.

Examination.—He has a vitreous opacity, a ruptured iris, and greatly diminished vision in his injured eye. It was, however, fairly free from irritation.

While examining him I was struck by his slowness and peculiarity, and asked his mother what his status at school was. She said he had never yet been able to learn how to read, but could write a few simple words. I tested him on his alphabet. At times he named some letters correctly, and later on failed to name the same ones correctly. I then asked him to make several letters of the alphabet, when he made repeated errors. When asked to write capital K he wrote capital T; for capital T he wrote little t, and he could not write u at all. Although he had written a K for a T, when asked to write K he could not make it, but when asked to write his name he did so with readiness. His name is James Kennedy and he did not halt at the K. I believe his name was written automatically. The letter E seemed to have great difficulty for him. He called it S at times, at other times correctly, and finally returned to calling it S. He wrote his name James correctly but he could not call the letter E after he had written it. He kept calling it S, although it was pointed out to him and he himself pointed it out clearly. His refraction was about emmetropic but I could get no accurate test of vision since he was never certain about his letters. His field of vision was normal, and he was right-handed. In other respects he was fairly bright, seemed to understand words and commands, knew the meaning of ordinary words, recognized objects and their uses, and according to his mother was talkative, communicative, even garrulous at times, and played with other boys in the street in a normal manner.

I had a letter from his teacher, and she sent me a few tests which she made of his writing at dictation and at copying. He writes very well, particularly his name, and I repeat that this act appeared to me when I examined him to be done automatically. As stated, he was right-handed and evidently copied correctly.

I myself made some tests of his spontaneous writing, which I have unfortunately lost, and which exhibited the earmarks of classical motor aphasia, although it must be remembered that motor aphasics, as a rule,

---

* Read in the Section on Diseases of Children of the American Medical Association at the Fifty-seventh Annual Session, June, 1906.

1. Morgan, W. Pringle: Brit. Med. Jour., Nov. 1896.
2. Hinshelwood, James: Lancet, 1900, vol. i., p. 1506; also Ophthalmic Review, March, 1901.
3. Nettleship, E.: Ophthalmic Review, March, 1901.
4. Wernicke, Otto (Buenos Ayres: "Angeborene Wortblinheit," Centralbl. f. pr. August, 1903, p. 264).
5. Thomas (London) The Ophthalmoscope, August, 1905, (reports 8 cases); also Stephenson, Sidney: "Congenital Word-Blindness," Lancet, September 17, 1904, referred to in Centrbl. f. pr. Augenh., 1906, p. 59, in the abstract of Thomas' article; Lechner, C. S.: Weekblad voor Geneeskuunde, August 1, 1904.

write no better from dictation than they do spontaneously. His inability to learn his letters accurately, his consequent inability to remember and recognize words, smacks of just ordinary ignorance, and there is a strong temptation to dismiss the case by calling the boy a fool; but his obvious general intelligence about objects, his normal perceptions in recognizing the meaning of spoken words, and his obedience to commands that involve other things than writing save him from this criticism. He is normal in respect of reading written or printed words or letters. His word-blindness is not for other written symbols, for he can easily recognize and correctly call figures. This case is then distinctly anomalous and is not a pure case of word-blindness, for it bears some of the marks of motor aphasia, e. g., the meaningless scroll which he wrote for me spontaneously. He is obviously word-blind for written and printed letters, but not so for figures. I have described his condition as word-blindness, but this expression is incorrect. I would describe it rather a word-amblyopia for written and printed alphabetical signs or symbols. It appears just to me to coin this expression, 'word-amblyopic," to describe these cases in which the word-blindness is incomplete. The lesion is doubtless a congenital one, and it probably consists in imperfect development and tardy reaction of the word and letter memory-cells. I conceive the lesion to lie high in the cerebral cortex, probably in the region of the angular gyrus on the left side, seeing that the boy is right-handed.

Case 2.—A boy, aged 9, in higher walks of life than the first, was brought to me by his father to see if there was anything the matter with his eyes, since he has never been able to read.

Examination.—He is a bright, smart, alert boy, comprehends words and sentences perfectly when spoken and knows common objects and their uses, but the moment he is set to look at written or printed words or to write at dictation he becomes confused and shows all the signs of shyness and a lack of self-confidence. He recognized his letters without error, but when the letters were put together to form words the difficulty began.

He called the word "how," "you;" "are," he called "ray;" "made," "ham" and "man;" "get," he called "gee" and "give" and on a third trial "eat;" "ham," he called "eat;" (here we recognize a faint association of ideas); "monkey," he called "kind;" "sky," "kind;" "floor," "four;" "chair," "cy." When asked to write "wood," he wrote "dans;" "dog," "dad;" and "by," "bi." "Rat" and "cat" and "all" he spelled correctly; "horse," he spelled "hoise;" "there," "thit;" "mama," "mie;" "papa," "pipa;" and "eye" he could not spell at all. He wrote his name accurately and quickly, but apparently automatically, and called it correctly afterward, but "James," which he had written with a y, he called "this." My name "Herbert," he wrote from dictation letter by letter, "Herbdred," and called it "purram;" "Anna," he called "Ed."

When asked to make figures his whole demeanor changed and he approached the desk cheerfully and with apparent confidence. He made figures accurately, knew them all, and did several small sums in addition and subtraction as quickly as any child of his age could.

I do not believe there is any sign of motor aphasia in this case, because, although he wrote at dictation imperfectly, yet the letters of his writing were all correctly made, while they were improperly put together. They never degenerated into a meaningless and unrecognizable scrawl, as is common with motor aphasics when they write spontaneously or at dictation. His vision was normal; his fields, also; and he was right-handed. The significant and peculiar fact of this case is that the boy can recognize letters, the component parts of a word, and can pronounce each letter in each word; but when he has finished he can not, except with several well-known words, such as cat, rat, and dog, make the sound which the combination of letters really warrants; nor can he in many instances remember the pronunciation which has been fixed by authority.

ARBITRARY PRONUNCIATIONS.

To depart for a moment from the immediate consideration of the case in hand, I would like to know who says that c-a-t spells cat, except by admission and authority of custom and wont? C-a-t spells çate, but custom and authority have made it cat, and cat it remains by statute. But d-o-g spells dog, and can not be made to spell anything else. Those who learn to read English always have this difficulty before them, and it would be interesting to know what difference there is in the relative facility with which children learn English, which is filled with such arbitrary pronunciation, and some other language in which each vowel and consonant has a definite value and the same value always under the same circumstances, such as Italian, Spanish, and German. Compare the English words "tough," "though" and "slough," for example. No such difficulties, I believe, exist in the three other languages mentioned. I believe, and it is reasonable to assume, that word-amblyopia exists more frequently in English-speaking children than in those speaking other languages that have not the difficulties of the English.

METHOD OF PUBLIC SCHOOL INSTRUCTION UPHELD.

To return to our subject: This boy can recognize the constituent parts of a word, but not the entirety, except in the case of a few words which have been firmly impressed on the torpid cerebral cells by repetition. To my mind, this fact is the source of a good prognosis for this boy and for similar cases. It seems probable that if individual letters can be remembered, words which are composed of letters should be remembered under repetition, and this prognosis is all the more supported by the present method of instruction in vogue, in the public schools at least. I refer to the method by which children are taught to read by looking at words and recognizing them as a whole. Such a boy who can differentiate a "t" from a "z" could certainly learn to differentiate the word "lake" from the word "dog," and call them correctly, since they have no resemblance whatever to each other.

In short, the matter appears to reduce itself to a repetition of impressions on the cerebral cells. But there are twenty-six letters in the alphabet, and many thousands of words in the English language, and there's the rub. When we once eliminate the old method of analyzing and spelling a word to get its pronunciation, we assist these cases of word-amblyopia by eliminating in a measure the necessity of a perfect auditory memory. For example, in pronouncing and spelling the word "mutton," two acts at least of the auditory memory are necessary: First, that m-u-t spells mut, and, second, that t-o-n spells ton; then comes into play the constructive faculty to put the two together and pronounce the combination as "mutton." But when a child is taught that the word "mutton," with its visual marks and characteristics, stands for the sound "mutton," the fact is accomplished easier and is not so complex. A simple and single act of word memory alone is sufficient. Thus the constructive act is avoided. I conceive that the modern method of teaching reading is infinitely superior to the old in that it is simpler, easier, and less complex.

In the case before us I believe that the *auditif* is im-

perfectly developed; witness the pronunciation of my name, Herbert, spelt slowly, letter by letter, as "pur-ram." This is not unreasonable, since the visual speech-center and the auditory are in juxtaposition. I believe this case is one of word-amblyopia, associated with slight word-deafness; and I think it is reasonable to coin the expression "word-amblykusis" to parallel the expression "word-amblyopia." Since the boy is right-handed, the lesion probably lies on the left side and in the angular gyrus.

DIFFICULTY WITH MATHEMATICS.

In this connection I would like to call attention to the fact that throughout their lives many people are unable to learn mathematics, or at least are more backward in learning and comprehending it than would be reasonable to expect from their general intelligence. Some years ago I was discussing this point with Prof. William R. Echols, professor of mathematics at the University of Virginia, who is not only a profound mathematician, but also a philosopher. I cited my own case as that of one who could never learn mathematics, and asked him if he had any philosophic explanation of the fact. He replied that I had no memory for symbols. I believe he was correct. Mathematics has always been a bugbear to me from childhood. Every other department of learning which I have essayed has been fairly easy to me, but in the presence of figures I become as shy and shamefaced as the last boy whom I have described was in the presence of written words. The formulas of trigonometry and conic sections, along with the rest of the higher mathematics, are to me as unintelligible as the cuneiform inscriptions on the walls of ancient Babylon, or the hieroglyphics on the pyramids of Egypt; yet I believe I can think in a fairly straight line, form a syllogism, and draw a conclusion consistent with the necessary forms of thought. Mathematics that is not transcendental deals with cubic space, or the elements of it, and with the relationship of things to each other, and many a man has been able to achieve good results by the practical handling of things without being able to reduce his acts to the analysis of symbolic thinking. This is the illustration of the so-called practical man who, when he gets uniformly good results, must understand what he is doing, yet the symbolic figuring representing his acts would be totally unintelligible to him.

I believe figure-amblyopia is the explanation of the inability of some people who, although intelligent and logical in other respects, are incapable of understanding symbolic mathematics. Now letters and words are symbols of one kind and represent thought, even as figures are symbols of another kind and represent thought, and in the last case cited we have seen that word amblyopia may exist with good figure sight and memory; even so I believe that good letter and word sight and memory may co-exist with figure-amblyopia. I believe this form of amblyopia should be classed as a distinct thing and placed in the same category with letter and word amblyopia.

IMPERFECT APPRECIATION OF MUSIC.

In this connection, it is pertinent to refer to the fact that many people apparently have an imperfect appreciation of or memory for musical sounds. There are some whose musical appreciation is so defective that they can not recognize a tune unless it has become very familiar, perhaps not even then. There are others who can carry in their memories the sequence of musical notes and who can tell when there is so much as a demi-semi-quaver of flatting in rendition, but who can not sing or reproduce in any natural way the simplest tune with accuracy. The first class have highly defective musical memory; the second have a good memory, but can not regulate the sounds of their own voice or of an instrument in order to reproduce perfectly their auditory memory pictures. Those who have good memories and can reproduce by voice or instrument their auditory musical pictures are said to have talent for music. Savages seem to have no native faculty for making music. Their music is really noise. It is distinctly not "a concord of sweet sounds," yet they have some precedents in the singing of birds, the soughing of wind in the tree tops, the rhythmic fall of water. Music and civilization go hand in hand. Many without the so-called "good ear" play well and accurately by note. Such have poor auditory memory for sound symbols, and their art consists in good memory for written symbols and the constructive faculty of reproducing that which they know by another symbol.

The custom of singing in concert, common in some schools, particularly schools for very young children, should be cherished and extended. It would also be easy to teach the value of the written symbol by singing in concert from the text, so to cultivate the brain center for music symbols. As a boy or young man at school or college I knew none who could play an instrument unless it was some boy who learned the piano at the expense of the respect of his fellows. It is a cheerful and healthy sign nowadays to see many boys who can play one or more instruments, and no modern college is complete without a mandolin or glee club. Generations of musical habit beget musical inclinations and talent. Some nations appear to be more musical than others. That nation which has attained homogeneity and is ancient seems to be musical and in direct proportion to its homogeneity and antiquity. It seems that the Italian race has had the greatest homogeneity, antiquity and culture, and its musical talent and love of music is practically universal. Almost all Italians sing and play some instrument, many play several. The German appears next in order. If musical training were a part of the education in our schools, music would in several generations become an intellectual habit and we would establish a distinctly American school of music.

The condition of defective musical appreciation has been called *amusia,* obviously quite incorrect; the "a" privative is too sweeping. Complete loss of musical sense may be called *amusia,* but defective musical sense is amblymusia. In all probability there is a center for the appreciations and memory of musical notes, and it is obvious that many have imperfect memory for them. This should be classed with word and mathematical symbol amblyopia.

All these things are interesting and of importance in the training of children. When cases of this description are observed they should be carefully differentiated and similar cases should be grouped together. Methods of teaching should be instituted to waken the torpid cells into activity, and I believe the basis of the instruction should be repetition.

LEFT-HANDEDNESS.

I have, however, a suggestion to make in the matter of treatment which is more radical than the foregoing, but which may be intelligently combined with it. It appears universally admitted that in right-handed people the centers for speech and allied acts lie on the left side of the brain in the territory supplied by the middle menin-

geal artery and its branches. When symbol or auditory amblyopia exists in such children, it is a reasonable idea that they may be taught to be left-handed. It is improbable that the corresponding cells on the right side are similarly affected, and thus the speech center and the centers for symbols and sounds may be transferred entirely to that side, or the right side be so educated that it takes command. Experimentation should be made along these lines, and it is my purpose to put this idea into execution in one of the cases described.

At present no postmortem corroboration of the assumed congenital lesions is extant.

CONCLUSIONS.

1. There is an incomplete word-blindness which is congenital and which should be called word-amblyopia.
2. There is doubtless an incomplete congenital figure-blindness, which may be called figure-amblyopia. This may be the basis of the inability of some children to learn mathematics as easily as their general intelligence would lead one to expect.
3. These two forms of amblyopia may be called symbol-amblyopia.
4. There is an incomplete congenital word-deafness which should be called amblykusis to parallel the term amblyopia.
5. There is doubtless an incomplete congenital musical-note deafness which may be the basis of the inability of some people to remember and appreciate musical notes; this should be called music amblykusis, or amblymusia.
6. When cases of these kinds are met in the schools they should be carefully differentiated, properly grouped and instructed.
7. The basis of the instruction should be repetition, coupled with patience.
8. It is reasonable to teach such children to become left-handed, in order that the speech, symbol and sound centers on the right side of the brain may be cultivated to the exclusion of those on the left, or as supplemental to the defects on the left.

34 West Thirty-sixth Street.

DISCUSSION.

DR. T. W. KILMER, New York City, said that diagnosis is very difficult. It is a hard proposition to have a child brought into the clinic with the statement that it can not read. He has had several such cases and has not recognized them. When he was at college mathematics was his worst branch. He has always had special difficulty with the infant-feeding formulas because of the figures. Also, much money has been spent on his musical education. He plays by ear on several instruments, but does not know a note. Probably he has amblykusis, which Dr. Claiborne mentioned. He asked regarding prognosis and treatment, whether the prognosis is good, and whether Dr. Claiborne advocates removing the children from school. With reference to the ingenious plan of teaching a child to be left-handed, he asked whether Dr. Claiborne has carried it out or has just begun it.

DR. J. H. W. RHEIN, Philadelphia, said that in Dr. Claiborne's second case it would seem that the nature of the labor would have some bearing on the etiology of the condition which Dr. Claiborne described as congenital word blindness. If the child had had a hemorrhage which caused pressure in the region of the temporal convolutions on one side, it would readily explain some of the symptoms described. Whether the birth was easy or difficult, whether forceps were used, and whether there were symptoms immediately after birth indicating injury at the time of birth are important facts to be considered in explaining the nature of the interesting phenomena described.

DR. J. H. CLAIBORNE, New York City, said that, not being an authority on the subject, it was difficult for him to express a definite opinion of prognosis. Inasmuch as each patient could recognize simple words like cat and dog, which had been constantly repeated to them by their teachers, it was clear that by repetition something could be done for them. He believed that in proportion as an impression can be produced on their minds by repetition, in that proportion can a good prognosis be made. Dr. Claiborne said that Dr. Kilmer has good musical sense, but has what might be called symbol amblyopia. Dr. Rhein has suggested a new thought in speaking of the nature of the labor. Cases should be studied and the labor should be inquired about, so as to ascertain where the harm was done, and on which side. Dr. Claiborne does not think that children should be set down as deficient in the public schools with no specialization of their deficiency. While they are classed to some extent in the public schools, no one has yet pointed out exactly in what respect they are deficient. Obviously they can not be treated until it is known in what respect they are deficient. If they have symbol amblyopia for letters or reading, such children should be put together and by repeating words and sounds, he believes they could be taught to read. In the matter of musical sense, of course, if one does not wish to study music, one should not be compelled. One of the greatest professors of the universities told him that he not only could not understand music nor appreciate it, but that it was painful to him. Dr. Claiborne added that this is the first time the subject has been discussed in the United States. It has been brought forward in England, in Germany and in South America.

NEURASTHENIA AS MODIFIED BY MODERN CONDITIONS; AND THEIR PREVENTION.*

THOMAS C. ELY, A.M., M.D.
PHILADELPHIA.

Whether neurasthenia be a condition or a disease or whether the term itself be properly or improperly used, the fact of its existence, of its untold mystery and increasing frequency is as certain as is the fact of civilization itself.

In all the fields of nervous maladies none is more widespread in its distribution and perhaps none more preventable than neurasthenia; a disease of unknown character and localization, the exact nature and seat speculative only; partly a morbid psychical asthenia and partly physical asthenia and irritability; so closely allied to hysteria and hypochondriasis that such can only be differentiated by grouping symptoms, by the symptoms-complex; simulating often degenerative diseases as tabes and general paresis[1] or incipient tumors; closely allied, often a seemingly transition stage, to the most grave psychic diseases; of no known pathology, except it be the late imperfect pathology of fatigue cells; the only sure known phenomena being the assured results, the symptoms which are protean.

Whether the conditions be designated as nervous exhaustion, nervous weakness or irritability, encephalasthenia, the American disease, "a paresis of attention and will," psychic fatigue, a diminished power of resistance to nervous and emotional strains, an "abnormal mental condition," or "disturbed ideational life," or whether we limit the term neurasthenia to conditions of the nervous system of lowered vitality to which functional disorder of some bodily organ may be assigned as a cause; or whether we include, as is often the case, under neurasthenia "many varied types of psychic disorders as the fear neuroses, insanity of doubt, different obsessions, hypochondriases, vasomotor paralysis, the

---

* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

1. Osler: "Practice of Medicine."

prodromal stage of organic brain disease," in any and all cases, the fact is indisputable that in America there is an increasing army of neurasthenic cases and in all classes, from the highest to the lowest.

We will better understand neurasthenia when we learn better to observe mental functions with the same precision as we observe the functions of the heart or other organs, individualizing the normal intellectual faculties, observation and power of attention, memory, judgment, reason, emotions, volition, their force and rapidity; the normal facial expression and speech, temperament, character, and actions.

In considering the condition known as neurasthenia it can not be fully explained as a variation from the normal psychic life, if by such we mean mind or intellect, nor as a variation from the normal physical life, brain or other organs. The "something" that exists as an independent Spirit in the body and after the body must be a partial factor.

If we have decided that the body is the only real independent variable and that psychical functions are the result of an infinite and unknown variety of biochemical and protoplasmic changes of body and brain, we have yet to consider that "something" which the philosophy and theology of all ages and races have groped for, and to conclude that neurasthenia is not a condition of any one organ, brain or body, but a condition of the entire individual. In fact, in all diseases advanced medical thought is taking more cognizance of the individuality and the personality of patients. "I am a soul," said Epictetus, "dragging about a corpse," and if the sage had remarked, "A sickly soul dragging about a sickly body," he might have been regarded as an ancient illustration of neurasthenia. Though modified by the physical, the absolute condition of neurasthenia seems one of mind, body and soul, and by restoring the physical the psychical may regain its tone.

Nature prescribes a boundary line to life, to all organs and functions of life, and surely to the nerve force of every individual. When that physical and psychical line is passed, we get a morbid condition known as neurasthenia. The difficult problem is to know the boundary, and then keep the middle of the road, at moderate speed, and not cut into the ditches, or waste power in hurry. Worry and hurry seem the most controllable factors in neurasthenia.

In the "Phædrus," Plato describes man as having three natures, and compares him to a pair of winged horses and a charioteer. "Of the two horses one is noble and of noble origin, the other ignoble and of ignoble origin; and the driving, as might be expected, is no easy problem." The noble steed endeavors to raise the chariot, and the other to bring it down.

The case of a woman taking the rest cure with a telephone at her elbow suggested the theme of this paper. Though many causes must be the same now as centuries ago, yet Hippocrates knew no telephone. Though the same geologic forces, heat, air, water and electricity for all ages have transformed the earth's surface, so in the main, unchanging causal conditions, through all time, have effected neurasthenia. Just as geologic forces change some portions of the earth's surface easily, and sometimes grotesquely, as in sandstone, leaving the hardy granite quite unscathed, so the same underlying causal conditions affect the nervous system of individuals, as they prove to be earth, sandstone, or granite, to the great stress of what we term modern civilization and social conditions.

The main etiologic factors which, in a measure, may be prevented seem to be:

1. Faulty hygiene.
2. Trauma.
3. Toxins and the neurasthenia of organic and functional diseases and of removable reflex causes.
4. Overwork and worry.
5. Heredity.
6. Mental education at the expense of the physical.
7. False ideals and standards of life.

FAULTY HYGIENE.

Disregard of the first and simplest principles of hygiene is often a preventable cause of neurasthenia. Many forget that the body is a large per cent. water, and forget to drink their quota of six or eight glasses of pure water daily, not with meals; or are careless of skin activity; or get insufficient sleep with too little oxygen or not enough food or improperly selected food, or with an idolatry for work, have no time for exercise or play. Tea, coffee, alcohol and tobacco in excess, and the American faults of bolting rich food and drinking ice water, are surely preventable causes. A certain percentage of the dust, and whistling, noisy pandemonium, smoke and bad air of the city, is in some measure preventable. Strictly following the simplest rules of sanitary science and dietetics would prevent many cases of neurasthenia, just as such measures cure tuberculosis.

TRAUMATIC NEURASTHENIA.

A common cause of neurasthenia is injury, particularly by transportation in this age of rapid transit and consequently of accident. The hurry and worry alone of too rapid travel, aside from the injury which acts out of all proportion to its severity, racks many an otherwise strong nervous organization. The liability of neurasthenia from accident, to those having by predisposition enfeebled resisting powers of their nervous system, is apparent when we consider that the total summary of railroad accidents in the United States for 1888, which is a fair yearly average, represents 5,288 killed and 25,888 injured,[2] with no account of injury from other methods of transportation, by the many electric systems, gasoline motor vehicles, cable roads, surface vehicles of all descriptions, elevated and underground roads, underwater, as well as on its surface; bicycles, balloons, airships; and all seeking the highest rate of speed, combined worry and hurry and consequent neurasthenia.

LOCAL NEURASTHENIA.

Local neurasthenia, as spinal, cardiac, cerebral (illustrated by the postal clerk who could pigeonhole 8,000 letters one day and very few the next),[3] writer's cramp, etc., requires little comment except that their cure, which can be accomplished only by rest, suggests their prevention.

TOXIC NEURASTHENIA.

The familiar forms of neurasthenia accompanying the convalescent period of acute febrile diseases, such as scarlatina, typhoid, malaria, pnuemonia, influenza, syphilis, and all other debilitating diseases, suggest the theory that some toxin may be the basic cause of all neurasthenic conditions. The neurasthenia of phthisis; of lithemic, rheumatic, and gouty conditions; the neurasthenia accompanying the puerperal state, that of the period of the menopause; the neurasthenia of exophthalmia, all suggest such a toxic cause. The neurasthenia of metal-

2. Bailey: "Accident and Injury."
3. Wood, H. C.: "Nervous Diseases and Their Diagnosis."

lic poisoning and of carbon monoxid poisoning[4] is definitely toxic.

NEURASTHENIA OF ORGANIC DISEASE AND OF REMOVABLE REFLEX CAUSES.

Under the misleading term of neurasthenia many diseases are classified which are organic, particularly early and latent tuberculosis, atypical syphilis, the obscure lesions due to arteriosclerosis and autointoxication, particularly from the alimentary tract. When we consider the German exaggeration, *"Yeder man hat ein bissen tuberculosen;"* when we consult statistics of mortality that one-seventh of the population die of some form of tuberculosis;[5] when we consult reports of tuberculosis sanitaria, showing a large percentage of cases having little or no temperature, cough, sputa, no night sweats, no tubercle bacilli, how many early and latent cases are unrecognized and termed neurasthenia, which on earlier recognition might have been prevented and cured? An uremic convulsion or albuminuric retinitis, or retinal changes of arteriosclerosis too often reveal an apparent condition of neurasthenia with little or no albumin in the urine, with few or no casts, and with even a fair percentage of urea on repeated examinations.

I never examine a case of neurasthenia without bearing in mind the valuable instruction of my late friend and benefactor, Dr. J. William Pepper, who used to lay such stress on systemic poisoning of toxins from the alimentary tract as a potent cause of neurasthenia, and who had such marked success in the treatment of such cases. The general practitioner of years' experience sees more illustrative cases, perhaps, of neurasthenia than the nerve specialist.[6] Like the poor, they are always with him.

Gynecologists assign a uterine displacement as a reflex cause of neurasthenia. Surgeons declare a floating kidney or some movable organ is the cause. The practitioner insists that high living, liver disease, gout, lithemia, alcoholism, a toxin of some internal secretion, is the fault. Genitourinary specialists, particularly the French writers, have their view of the case; nasal specialists ascribe a spur or adenoids or hypertrophied turbinates as the reflex cause; the eye specialist attributes to eyestrain, with its well-known drain of nerve force, all the phenomena. Who is right? Are all partially right?

Have all men by heredity and training certain possibilities of nerve force, and if they go beyond the boundary line by reflex cause or other cause could all men become neurasthenic? "Man," says Shelley, "is an instrument over which a series of external and internal impressions are driven like the alterations of an ever-changing wind over an Eolian lyre." Surely it is incumbent to keep the harp well strung, and to remove every possible reflex drain of nerve force to prevent neurasthenia, and to assist in averting neurasthenic conditions.

OVERWORK AND WORRY.

Continuous mental strain, excessive overwork of mind and body, excess of all kinds, is agreed to be a chief cause of neurasthenia, and yet these conditions are not effective in the savage, tending to prove that in the vast majority of cases it is the worry and anxiety of civilization, and not the work, which creates the condition. In the hard-working farmer with no mental overstrain, unless it be worry, as well as the teacher or financier who is subject to the greatest mental tension, we find typical neurasthenia; in one of most complete leisure, with no apparent strain, mental or physical, we meet the same perfect clinical picture of neurasthenia. What is the keynote of explanation in each instance? In many there is an astonishing propensity and idiosyncrasy for worry. If we may be allowed the fancy, the imagination, there may be a "worry center" just as real a psychic center as the motor center which controls the movement of the arm or foot. Such a "worry center" may be a developmental anomaly and exist by heredity only in certain individuals, and it may require some mental injury or shock or reflex cause of some diseased organ to bring it into excessive action, but the worry center is surely part of psychic brain anatomy. Surrounding this fanciful "worry center," pressing and mechanically irritating, and poisoning like the toxin of cancer, are brain tumors, as real as tubercle or sarcoma: brain tumors of fear for the future, this world or the next, gloomy forebodings, domestic difficulties, etc. It requires the surgical operation of a strong will to enucleate them and to restore mental health. Physiologically, such a "worry center" must be connected with association centers by association tracts, the higher physical centers inhibiting, controlling the resultant idea or thought.

What connection has the "worry center" with the whole sympathetic system which controls normal functions of all organs of the body? Must the pathology of neurasthenia always be unknown, this great disturbance of the psychic phase of brain life which is just as apparent and as little understood as the disturbance of motor centers in the well-known diseases we call epilepsy, chorea, and excitable mania?

HEREDITY.

As a rule, the causes of neurasthenia are not one, but the combination of many causes: faulty hygiene, overwork, worry, the modern stress of social, political or business life, with often a basis of unrecognized or nonrecognizable organic disease, and yet heredity may be a chief cause, a morphologic fault of the original cell, an embryologic fault of the first tissue. It is according to this view endogenous, inside the cell from the beginning. External stimuli, the peripheral nerves and organs, have not so much to do with the production of neurasthenia as fatigue lesions of originally weak cortical centers (which ones we do not know), and of tracts (which ones we do not know) connecting them.

Such an embryologic condition, dependent on ancestry, is just as much a part of the man's mental make-up as his individual nose or his ear or his thumb are of his physical being. The fact that individuals vary so enormously in their capabilities for different kinds of mental and physical action and thought; that while some are endowed with scarcely enough nervous energy for eating and walking, others have a nervous organization capable of sustaining the greatest burdens of advanced civilization, bears out the theory that in certain instances individuals become neurasthenic because by nature and constitution, by structural and physiologic defects of their central nervous apparatus they have the predisposition to neurasthenia. Perhaps no better or older argument than heredity has ever been adduced. It stands a foundation cause as secure for all time as the Doric, Ionic and Corinthian columns stand in classic architecture. The thought having filled volumes of literature is as musty, old and ragged with age as an oriental rug, and, too, as valuable.

Granted, then, without discussion that heredity must

4. Marie: Bull. Med. Soc. Hop., Paris, 1888, v.
5. Strümpell: Text-Book of Medicine.
6. Weisenburg, T. H.: "Hysteria Simulating Brain Tumor," P. Med. Jour., May, 1906.

be reckoned as a cause, yet it is futile to harp on this plain, true, etiologic fact except as it leads by its recognition to the better care of a weak article and strict scrutiny of health in intermarriages. The future environment and surroundings of the child's life are the important factors because they only can be modified. What a useless, hopeless, pessimistic and impracticable view of neurasthenia in this practical age, to leave it to ancestry with the sage remarks that generations back treatment should have been instituted!

Prevention can not be too strongly urged in the marriage of neurotics who, unfortunately, are apt to seek with each other the marriage relation. The results attained in plant species, embryology, fertilization, and segmentation: the results attained in the breeding of high-class horses, dogs, and other animals, lead one to suggest that the most important part of the marriage license should have in view the prevention of neurasthenia and allied diseases, and should include a clean bill of health of the contracting parties.

A recognition of the factor of heredity is important in training the child. As has been often remarked, unfortunately those who have most directly the responsibility of training, i. e., the parents, are least fitted for the task of molding the child's psychic life, of leading out the functions of the child's mind to their best maturity and advantage. They may well know that "a spoiled child is never a happy one," and yet, being themselves victims of ancestry, they can not properly bring up their own defective offspring. Emerson wrote: "It matters little what your studies are; it all lies in who is your teacher."

EDUCATION.

Among the most common of remediable, or preventable, neurasthenic conditions are faulty systems of education, overcrowding the rapidly growing boy or girl in school work, weighing them down with home work when they should be engaged in relaxation of play and exercise. Even in college life, whether carefully rounded physical development, not over development as in some modern sports, is not of more importance than the high pressure of book knowledge. After all, education is orientation. It consists in original and individual power, not in the accumulation of facts; and such power must come largely from physical and practical training, and not from exercising the memory cells with book knowledge, however important in a lesser degree such mental gymnastics may be. A foundation of vigorous health and its accompanying high spirits is far more important than training the memory cells.

IDEALS AND STANDARDS OF LIFE.

Regarding ideals and standards of life, seeking short cuts to positions for which candidates are not fitted, false ambitions, and the inevitable disappointment and failure, the subject is too extensive even to touch on, for it includes the philosophy of all ages, all the philosophy of life and living. However, in the accumulation of material and immaterial wealth, in this age of knowing everything and studying everything, there is a reserve, a mental poise, a firm hold on common sense which can be cultivated and which tends to prevent neurasthenia.

SUMMARY.

The prevention of neurasthenia must be along the line of knowing causes and avoiding them.

1. Let every individual know his limitations and act accordingly. Let every individual know his own boundary line of nerve force and never cross it. Let every individual live less of the strenuous life of any ideal hero, unless there is the same muscle and nerve force and training and honesty of purpose and endeavor also, which characterize such hero. Let every individual recognize heredity, predisposition and individuality of nerve force.

2. Learn to hurry little and to worry not at all. An illustration consists in the fatigue from the hurry to catch a train which is out of all proportion to the physical effort expended. It is the worry, the psychical fatigue, which is chiefly injurious. Individuals are too much like the modern telephone sign, "Always on duty," for hurried and worried business or hurried and worried pleasure. Hurry alone or worry alone are poisonous to the normal functions of the nerve system, but the American combination of worried hurry is deadly. Each brings into full action the worst features of the other. They are incompatible and the resulting combination is fatal to nerve centers.

3. Discourage and prevent intermarriages of those of neurotic tendency and parentage, who are unfortunately apt to be fond of each other and to seek such unions.

4. Follow strictly the a, b, c, laws of hygienic life, thus avoiding, as far as it is possible, not only pure neurasthenia, but the neurasthenia incident on organic disease. Lead the simple life of plain food and regular occupations.

5. Be sure that ideals and aspirations of life are true. Study limitations and qualifications and work along the lines of least resistance. Work, which may seem to be a cause of neurasthenia, is often a prevention and cure, diverting the mind from those troubles and anxieties which do not exist in reality.

Hope for future progress must rest on increased knowledge of the phenomena which cause neurasthenia and increased common sense in avoiding the causes. Certain ultimate problems must remain unsolved, yet who can limit the possibilities of increased knowledge. The great New World of truth lies yet undiscovered. Surely what we do not know about neurasthenia would fill a larger book than what we do know.

EFFECTS OF APERIENTS ON THE PERISTALSIS OF THE STOMACH AND INTESTINES.*

F. PFAFF, M.D., AND L. NELSON, M.D.
BOSTON.

We wished to study the effects of different drugs on the movements of the gastrointestinal tract. Before studying these effects we had first to find out the best method of observing such peristaltic movements. For this purpose well fed cats and rabbits were used. The animals were first anesthetized, the abdomen opened in the median line, and the intestines, including the stomach, exposed to full view. To protect the intestines from the air the animal was placed in salt solution, as advised by former investigators, in such a manner that the head and thorax were kept above the salt solution and the breathing not interfered with. In our experiments 0.8 per cent. salt solution proved to be the best.

After the animal recovered from the ether and the shock following the operation, the picture observed, as a rule, was as follows: The stomach was full of food and the entire small intestine empty and collapsed, while the large intestine, especially the lower part, contained

* Read in the Section on Pharmacology and Therapeutics of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

nearly all the intestinal contents. There was no motion of the stomach or intestines. Presently the stomach began to expel food in the way described by former observers, and the intestines began to work. The peristalsis of the intestines as observed, consisted of circular contractions of different strength; some were so weak that they were barely visible to the untrained eye, others were so pronounced that they changed markedly the volume of the intestines, and lastly, circular constrictions were observed which practically occluded the volume of the intestines, pushing food backward and forward from the constricted part. Besides these different grades of circular constriction peristaltic waves of varying intensity were observed, some in which the undulations were so slight that they could be properly seen only when very carefully watched and under specially good light. Similar slight peristaltic waves were also observed in the stomach. Others again were pronounced, and in still other instances the peristalsis was so rapid that food passed in a few seconds through different loops of intestine. The circular contractions and peristaltic waves occurred either singly or combined on one or more parts of the intestines for shorter or longer periods; then they ceased, and the same movements were to be seen in other parts of the intestines. The intestinal peristalsis was not only confined to parts of the intestines containing food, but occurred also in parts of the intestines apparently empty, only here peristalsis and contractions were, as a rule, not so marked and not so frequent. Circular contraction and peristalsis in the large intestine were practically the same as in the small intestine, only to a less degree and slower, except for the marked circular constrictions. A regular anti-peristalsis in the large intestine, as recently described, could only be observed in a few instances.

The most striking feature in all our observations was the complete irregularity in the action of the intestines. Constrictions of different intensity or peristaltic waves of different length and depth occurred here and there for a shorter or longer period, or no activity whatever was present for shorter or longer periods, and without any apparent cause. The intestinal contents were propelled quickly or slowly, or not at all. Often peristaltic waves and constrictions were marked for many minutes yet different particles of food which had distinct relation to one another did not change their size or position. A so-called segmentation of intestinal contents which in the last eight years was described as a normal function of the intestinal peristalsis was not once observed by us.

As our experiments in the salt bath differed so completely from Cannon's observations, we repeated his experiments with the *x*-rays. With such a method of observation, only the moving of shadows, changes of configurations and variations in the depth of the shadows can be observed, if enough bismuth is present to produce a distinct picture. Movement of the intestine itself, of course, can not be seen.

In about 60 experiments with the *x*-rays, as far as this method allowed, we verified our observations made on animals in the salt bath. In these experiments cats gave the most satisfactory pictures, with the exception of one rabbit which had been fed on bread for several weeks. The weaker contractions and slight peristaltic waves of stomach and intestines could not, of course, be observed as they could not give a distinct difference on the fluoroscope, only the marked circular contractions and the strong peristaltic waves changed the bismuth shadow so that they could easily be observed. A rhythmic segmentation of food could never be observed. Food particles moving up and down in the lumen of the intestines could occasionally be seen. Movements of the intestines containing little or no food could not be seen. In fact, only the intensified or coarser movements of the gastrointestinal tract could be observed with the *x*-rays, and not the total work nor the finer working of the intestines.

As a rule the first particles of food reached the cecum in about six to seven hours after the animal was fed, as seen by the *x*-rays. The same amount of time elapsed for the filling of the small intestines in the animal kept in the salt bath.

EXPERIMENTS WITH DRUGS.

After this preliminary work was done we studied the action of different aperients on animals in the salt bath and with the *x*-rays. With different drugs we made control experiments with animals kept under normal conditions. The drugs experimented with were croton oil, aloes, podophyllin, gamboge, scammony, elaterium, euonymin, jalap, rhubarb, cascara, frangula, senna and purgatin. Of the salts, sodium sulphate, sodium phosphate and sodium chlorid were used. Strychnin and nux vomica were also tried.

The results of the experiments did not differ much in the animals, whether they were kept in the saline bath or observed under the *x*-rays, but some of the control experiments showed that both methods used changed the normal condition of the animal. The results in some of the control experiments showed that both methods used must act as stimulants to the gastrointestinal tract. In the salt bath the saline solution may act as a stimulant to peristalsis. What factor may produce the same results in the experiments with the *x*-rays can not be stated a *priori*. It is certain that some drugs used in both methods acted as aperients, whereas the same drugs proved without any effect in the control animals.

EFFECT ON PERISTALSIS.

Of the drugs used, croton oil, aloes and podophyllin increased markedly the peristalsis of the whole gastrointestinal tract. The peristalsis of the stomach was much intensified. With aloes the peristaltic waves began high up in the fundus of the stomach and made very deep constrictions, this organ practically trying to expel the contents with considerable force. It is true the number of peristaltic waves became decreased from 4 to 5 to 2 to 3 each minute. But in spite of this reduction, the organ emptied itself with great rapidity, thus showing that the expelling force was much increased.

Scammony, gamboge, elaterium, jalap, euonymin and frangula increased very slightly the peristalsis of the stomach, but markedly that of the small and large intestines, whether the animal was kept in the saline bath or observed with the *x*-rays. With scammony and gamboge the animals experimented on showed besides increased peristalsis, marked diarrheic defecation under the *x*-rays, somewhat less in the saline bath, but the control experiments gave absolutely negative results as to defecation.

Cascara increased the peristalsis of the intestines, but caused no defecation in saline bath, but some under the *x*-rays. Tincture of rhubarb gave negative results, whereas the infusion of rhubarb increased peristalsis, caused defecation, which, however, was not diarrheic. The pharmacopeial preparation of senna gave negative results, but by making the infusion twice as strong, peristalsis was increased and defecation observed under the *x*-rays and in the saline bath. Purgatin gave no

results. Peristalsis was not increased, and there was no defecation even when the dose was increased to cause acute nephritis.

Of the salts, sodium sulphate increased peristalsis and produced watery discharges in all the animals experimented on. The same results were obtained in the control experiments. Sodium phosphate acted similarly to sulphates, but it did not increase as markedly the peristalsis of the stomach. Sodium chlorid in small doses was negative as to increase of peristalsis; in larger doses it produced a toxic gastritis.

Nux vomica did not increase peristalsis either in rabbits or cats, whether observed under *x*-rays or kept in saline solution. Control animals also gave negative results with this drug as to defecation.

From these results we may hope that aloes and podophyllin like the salts may be useful in atonic conditions of the stomach.

DISCUSSION.

DR. H. C. WOOD, JR., Philadelphia, said that it is not at all certain that the intestines of the rabbit react as do the intestines of man. In fact, there is strong reason to believe that the intestines of the rabbit are not a criterion for those of the human being. It is known that, in general, purgatives act very differently on lower animals than they do on human beings. Especially is this so in the dog. It must also be so in the rabbit on account of the very different development of the intestinal tract. The rabbit's food is entirely herbivorous and contains a large amount of indigestible residue, and the intestine of the rabbit is made to accommodate this food; whereas man's food is much more concentrated and man's intestinal tract is made for a different purpose, and it is therefore only reasonable to suppose that the intestines of man react somewhat differently from those of a rabbit. Dr. Wood thinks, therefore, that any conclusions based on experiments on rabbits must be accepted with some caution as bearing on the human being.

There is one drug, he said, which might have been well studied with a great deal of benefit to the profession, that is physostigmine. It is the most powerful stimulant of nonstriated muscle. In gastric or intestinal atony this drug is of great use.

DR. F. PPAFF, Boston, stated that he used cats as well as rabbits. Cats gave the best results with the *x*-rays. Rabbits did not give good results with the *x*-rays, except when fed for weeks on bread. As to physostigmin, he mentioned a research published last year. In Schmiedeberg's laboratory Heubner made experiments on himself with physostigmin to see how it would influence the intestinal tract. He also enlisted the services of a few associates, who, as they were medically trained and knew what they were taking, promptly responded by free evacuation of the bowels. In the Strassburg medical clinic, Heubner's experiments were repeated on patients with only one positive result. In all the other cases the patients complained of nausea, giddiness, tension in the head, profuse sweating and even vomiting, but defecation did not take place. It seems, therefore, that physostigmin can not be used at all to stimulate peristaltic movements in human beings.

BROMISM: WITH A REPORT OF CASES.

A. L. SKOOG, M.D.

First Assistant Physician, Kansas State Hospital for Epileptics.
PARSONS, KAN.

This paper will deal largely with a problem of bromid therapy drawn from observation and the literature on epilepsy. Under the term bromism we include all the various toxic manifestations resulting from the continued use of any bromid or chemical with a large percentage of bromin.

Marked chronic bromid intoxication is a not infrequent occurrence and the very mild, often not recognized, forms exceed in frequency the more severe. To diagnosticate the mild types is of special importance.

For a number of years the bromids have occupied first place among the numerous drugs prescribed for the epileptic. Though given in a large number of maladies and pathologic conditions, no disease enjoys its use to such an extent as epilepsy. A large number of the nostrums, placed before the public by irregulars and professional pretenders, for convulsive and other nervous conditions, contain potassium bromid as one of their chief ingredients.

Spratling analyzed some thirty "patent medicine" preparations on the market, so-called cures for epilepsy, and potassium bromid was found to be the chief ingredient of each. To them can be ascribed a large amount of injury of which those afflicted with fits have received much the largest share, for their victims are peculiarly susceptible to the glowing promises for a trouble apparently so desperate and discouraging. The epileptic, carrying an extremely chronic burden, acquires sooner or later a more or less defective perception and judgment; he has inherited a weakened nervous system or acts on the advice of a parent or guardian whose judgment is not infrequently a little or much below normal; the result is he becomes an easy prey for medical grafters. Even the more conscientious licensed practitioner can and does make errors in the care of these patients, perhaps by careless or too infrequent visits. Often, too, the patient himself or those responsible may be indifferent.

Bromids have a place whose limitations are well defined in the treatment of epilepsy and other nervous disorders. Besides epilepsy, the drug has been used in nervous exhaustion following excessive mental or physical labors, neuralgia, migraine, hysteria, delirium tremens, pertussis, tetanus, spasms in children, pavor nocturnus in childhood, laryngismus stridulus, acute laryngitis, to alleviate spasms or pain in throat examinations, passing stomach tube, catheter or sound, vomiting of pregnancy or uterine diseases, dysmenorrhea, menorrhagia, nymphomania, satyriasis, masturbation, seminal emissions, gonorrhea, chronic alcoholism, morphiomania, nausea marina, cinchonism, strychnin poisoning, and other mental and physical disorders. In many of these disorders chronic bromid intoxication is improbable, since they are of short duration or only one or two doses are prescribed at a time.

BROMIN PREPARATIONS.

Only a few years after the discovery of bromin, in 1826, by Balard, was the chemical or its salts used as a therapeutic agent. Potassium bromid was primarily introduced as an alterative and resolvent to substitute the iodid salt. The class of cases for which it is recommended was completely changed after its sedative action became known. According to Binswanger, Lolock, in 1853, first brought the bromids into the foreground as a drug to be used especially in the treatment of epilepsy. There are now on the market over 40 bromid preparations supposed to have some therapeutic value. Of these, we seriously need consider only a few. From our standpoint of toxic action, a number of the bromates and compounds would not be placed in the same class as potassium bromid and similar salts.

Potassium Bromid.—Potassium bromid, used in much greater quantities than all the rest of the bromids com-

bined, contains 67.15 per cent. of bromin. Its basic element itself is much more toxic than those of most of the other salts. The depressant action of potassium on the circulatory organs must also be taken into consideration. It is not an easy problem to determine exactly how much damage the basic element of potassium bromid has done to the epileptic. For most of the *grand mal* seizures must of themselves throw a severe strain on the circulatory apparatus. In postmortems on a number of epileptics dying at the Kansas State Hospital for Epileptics a very large percentage presented hearts and blood vessels with marked pathologic alterations of a chronic type. Recently a report from the New York State Epileptic Colony appeared with a series of autopsies that gave a high percentage of chronic cardiac lesions.

Sodium Bromid.—Sodium bromid is a salt second in favor, containing 77.62 per cent. bromin. The 10.47 per cent. excess of its bromin over the potassium salt might indicate greater toxicity, but the reverse is true. Sodium salts, as a rule, are less toxic than potassium. Experience and experiments on dogs teach that it is better tolerated by the mucous lining of the stomach and intestines. On several occasions I have given large single doses of potassium bromid and sodium bromid to dogs and the former drug has proved to be more toxic. On one occasion two almost grown healthy pups of the same brood and of about the same weight were used. One received 15 gm. potassium bromid and the other 15 gm. sodium bromid. Both seemed about equally depressed. The dog given potassium bromid had his temperature reduced .6 F. and the other had a temperature reduction of .5 F. At a later time the same pups were given respectively 30 gm. potassium bromid and 30 gm. sodium bromid. The former salt very soon produced gastric distress and some vomiting, with a later reduction in temperature of 1.5 F., and the latter produced much less toxic gastric distress with a temperature reduction of .7 F.

Ammonium Bromid.—Ammonium bromid has 91.03 per cent. bromin. One therapeutist states that it has less toxic effect on the heart and other muscles; another that it ranks first as liable to produce toxic symptoms. This last conclusion might be attributed to the high percentage of bromin.

Lithium Bromid.—Lithium bromid has 91.92 per cent. bromin. If toxic, as well as therapeutic results, depended entirely on the percentage of bromin, then this salt should be given in smaller doses than the potassium or sodium. But with the same doses toxic action does not occur as readily. The diuretic value of lithium may prevent, to some extent, the untoward results.

Strontium Bromid.—Strontium bromid, having 64.6 per cent. bromin, has largely come into use during the last 7 years. Its adherents claim that its effect on the mucous surfaces is very mild.

Other Bromids.—The other metallic bromids are rarely used. I merely mention calcium bromid, having 79.96 per cent. bromin, gold bromid, trivalent salt, 54.87 per cent., zinc bromid, 70.97 per cent., bromid of nickel, 73.24 per cent., hydrobromic acid, 98.78 per cent., prescribed in the dilute solution but is irritating. The nickelous bromid is very irritating to the stomach. To bromoform ($CHBr_3$) have been accredited some cases of poisoning with a few directly chargeable deaths. Croker, in his third edition on "Diseases of the Skin," mentions a case of bromoform intoxication, having an eruption similar to that occurring from potassium bromid. The case was a child with pertussis developing papules, pustules, superficial and raised ulcers, and papillomatous tumors. Twenty-three minims had been given over a period of 25 days. An inadequate knowledge of the toxicity of bromotone (tribromtertiarybutylalcohol), bromocoll, bromipin and bromalin exists.

After reviewing the various preparations containing bromin, their toxic action can not be entirely ascribed to the halogen element. We are safe in largely attributing the toxicity of the metallic salt to the combination as such and not to any one of the individual elements separately. These salts seem to be absorbed as such, carried to all tissues and assimilated by the cells with some special predilection for certain groups. Doyon has reported a postmortem on an epileptic who had been taking potassium bromid for a number of years. The drug was found in all the organs, but chiefly deposited in the brain.

At the Kansas State Hospital for Epileptics when a bromid is indicated the sodium salt is now largely used. Potassium bromid has been used to a great extent at times. An extensive trial has been given the tribromid of potassium, sodium and ammonium, with no better results than from one salt. Strontium bromid, tried on some cases, has not proven its superiority to the few most largely used drugs. Bromotone has not been used on a sufficient number of cases to report results.

SYMPTOMS OF BROMISM.

There is more literature on extreme bromism than on the milder intoxications which have more practical value from the therapeutic standpoint. I have never observed some of the extreme types reported. In the better-grade institutions these do not occur, as the drug is used with precaution and the patient closely observed.

Care must be exercised in drawing conclusions regarding the mental symptoms of bromism in the epileptic. Many cerebral conditions occur from epilepsy itself. On the nervous system the bromid acts as a depressant, attacking the several divisions in the following order; (1) sensory portion of cord and reflex arcs, (2) afferent nerve fibers, (3) cerebrum, (4) motor tracts of cord, (5) efferent nerve fibers, (6) muscles. The action on the cerebral cortex in man is more marked than in the lower animals, due to the higher development entailing greater complexity and delicacy in brain organization. Dogs that were given bromids accepted large single doses of the drug with much less bad effect than was anticipated. Rosenbach found a reduced irritability of the cortical motor centers corresponding to the amount of bromid given to the dog, but no change in the irritability to the electric current in the subcortical white substance. Binswinger claims it is especially assimilated by the tissues rich in phosphorous, as in the brain containing lecithin and other nervous tissues. It may cause the person to become irritable, morose, depressed and even homicidal. Larger doses for some time may produce a mental state in which the patient is dull, expressionless, very drowsy and even stuporous. If aroused, he soon falls into the same state of sleep. Often an alteration in perception, memory, reason, and judgment can be noticed early. The special senses may be much disturbed, as some diminution in the acuteness of vision, marked impairment of hearing, taste and smell. Tactile and pain sensation is found much benumbed. Speech may become slow, retarded or confused. The defect could be attributed to the toxic effect on cerebration or on the more peripheral organs of speech.

Several cases of well-defined psychoses have been observed. The term bromomania has been used for a con-

dition with severe ideomotor and abnormal sensory activities. Binswanger describes a case with maniacal rage produced by 8 gm. of a bromid a day which disappeared after a reduction of dosage to 5 gm. daily.

CASE REPORTS.

Psychic Disturbances.—A group of 27 cases of bromism of various types has been carefully observed in the Kansas State Hospital for Epileptics, of which three patients gave evidence of psychic disturbances, one having a mania without any of the other toxic symptoms. Following is a short report of these three cases:

CASE 12.*—Male, aged 37, duration of epilepsy 5 years. Seizures had always been of the *grand mal* type, 1 to 5 a month being recorded. His physical condition had remained quite good. There was a little impairment of judgment and reason, but his mental facultics remained fairly active.

He was given .65 gm. potassium bromid two months, 1.25 gm. two months and 2 gm. two months, and tapered off on .65 gm. of a mixture of sodium, potassium, and ammonium bromid one month t.i.d. Toxic symptoms were observed during the fifth month of treatment and slowly increased in severity until the complete withdrawal of the drug. A few papules and pustules appeared on the face and neck. A mild gastritis with coated tongue and constipation became annoying. A marked irritability and mental depression developed which soon disappeared after the cessation of the bromid treatment.

CASE 389.—Female, aged 44, duration of epilepsy, 15 years. She had been having from 17 to 30 *grand mal* seizures a month. A mild chronic organic cardiac disease was present. She was placed on .65 gm. sodium bromid t. i. d. one month and increased to 1.25 gm. for a period of three months. After a time an increased mental irritability was very much in evidence. A finger infection with suppuration was followed by an indolent ulcer at the infective atrium which remained stationary for two weeks, but rapidly repaired soon after the patient was taken off the bromid. A slight acne did appear on the face and forehead.

CASE 262.—Female, aged 53, duration of epilepsy, 31 years, had been having from 2 to 12 *grand mal* seizures a month. There was a mild incomplete dementia, otherwise her mind was quite active. She was quiet, orderly, industrious and performed considerable labor. A few stigmata of degeneracy were present.

Patient was given .65 gm. potassium bromid t. i. d. which was discontinued at the end of the fourth week owing to the occurrence of an acute mania of two weeks' duration. The mania was characterized by numerous vivid hallucinations and delusions chiefly bearing on religious ideas. There was a pronounced insomnia. A marked motor agitation and destructive tendencies were present. The second attack of mania occurred seven months later after being on .65 gm. sodium bromid t. i. d. for six weeks. This was very similar to the first, both in character and duration.

Her mental organization having some defects may explain the unusual toxic effects in this case. She has been in the institution 19 months and has had no psychic alterations other than the two described. Great care must be exercised in attributing a cause for psychoses such as seen in the above case, as mental storms and manias of different severity and duration are often observed in the epileptic. In our opinion, this patient's psychic disturbances were attributable directly in each instance to very small doses of a bromid. No seizures occurred during these mental disturbances.

Bromid Acne.—We now come to the skin eruptions in which the well-known bromid acne is seen most frequently. A wide range of dosage will cause this toxic manifestation. An idiosyncrasy to very small doses is possible. The typical eruptive lesions appear firstly on the face and forehead, a few at a time in slow succession, distributed irregularly. The lesion is first noticed as an elevated, indurated papule having a diameter of 1 to 10 mm., with a base surrounded by a small reddened area. As a rule, itching is entirely absent. Ordinarily discrete, a severe case may present confluent areas. At or near the summit there soon develops in most of the papules one or more minute abscesses which, increasing in size, show externally as a yellow point. This may break down with small hemorrhages and crusting. In the large or confluent ones of the more severe type, ulceration may result. The pustulation is caused by several varieties of bacteria normally inhabiting the skin and its glandular ducts. The much reduced tissue vitality likewise admits of some of the more severe pathologic changes, among them a rarely reported secondary cellulitis. A fully developed bromid acne is located on the face, forehead, scalp, neck, shoulders, back, chest, proximal arm and rarely on other areas or the entire body. It must be borne in mind that an acne might possibly not appear until a few days and even weeks after the withdrawal of the drug. Other possible lesions given by dermatologists are erythema, urticaria, vesicles, papillomas, nodules, papulo-pustules, eczema and bullæ.

Twenty-four of our group of twenty-seven cases had a bromid acne and nine had this as the only symptom of intoxication. All these cases had a mild eruption observed early, thus allowing the prevention of more severe manifestations. Following are two unusual ones, the second case being an especially rare and interesting type of a skin eruption.

CASE 439.—Female, aged 28, duration of epilepsy, 1 year. From 0 to 3 *grand mal* seizures a month have been recorded. With the exception of a mild uterine disorder, her physical condition was good. Periodic mild manias with exalted ideas occur occasionally.

She was given .65 gm. sodium bromid t. i. d. six weeks. On the fifth week a bromid acne developed on the face and forehead, a few days later complicated with several small ulcers. Fowler's solution was used to combat the skin trouble with negative results. The ulcers and acne were slow to disappear.

This case has been cited to demonstrate a rapidly developing toxic effect from the use of a very small amount of a bromid over a short period.

CASE 170.—Male, aged 18, duration of epilepsy, 6 years.

Patient has had from 4 to 8 *petit mal* seizures a month. Physical condition was good. His mind remained active with a very little diminution in mental power.

He was placed on 1.25 gm. of a mixture of equal parts sodium, potassium and ammonium bromid t. i. d. one month, at the end of which period the dosage was reduced to .65 gm. t. i. d. for two weeks and then discontinued. During the third week of treatment a few small ulcers developed on the legs. These had the same appearance as the lesions observed at the time of the patient's admission and will presently be described. The ulcers healed shortly after withdrawing the bromid mixture. The treatment had no effect on the number or severity of his seizures.

At the time of his admission this patient presented a group of peculiar lesions of the integument of both legs; 22 distinct lesions were confined to the skin from the ankle to the middle thigh, chiefly over or near the lower two-thirds of the tibia. Each ulcer was from 1 to 6 cm. in diameter, with almost no inflammatory area surrounding it, and covered with a rough, dry crust of a dirty gray color whose thickness in several would have measured 7 or 8 mm. The patient stated that he had had the lesions for 6 months, during which time they had remained about the same. That two weeks before their appearance he had begun to take one tablespoonful of a

* The numbers are the filing case numbers of the patients in the hospital.

nostrum, "Dr. Grant's Cure for Epilepsy," which he discontinued at the end of the fourth week. The lesions healed in four weeks after coming under our care, leaving brown pigmented scars of low vitality. At the time of admission this boy's eruption was thought to be from the combined action of a bromid and other drugs in the nostrum. When we produced a beginning of the same skin trouble after a few weeks on a bromid, there was no doubt as to the cause.

Some work has been done on the histopathology of the bromid acne lesion. The process is especially active at or near the blood vessels, hair and sebaceous follicles and sweat glands. There is an active hyperemia of the corium, especially in the neighborhood of the papillæ, with an exudation of erythrocytes and leucocytes. Minute abscesses appear in the vicinity of the hair follicles and sebaceous glands. Bacterial zymotic liquefaction of the walls between the minute abscesses forms larger ones resulting in the pustules. The cause and *modus operandi* have not been fully or generally accepted. Among the theories advanced, the one most plausible and best supported is the neurotic. This well explains the wide difference of susceptibility to the bromids. The reflexes may be on the vasomotor centers or peripheral nerves.

Mucosa Affection.—A coated tongue with fetid breath is frequently present, usually with some gastrointestinal derangement. The mucosa of the mouth and pharynx may be reddened and swollen, possibly complicated with a follicular angina or acute parotitis. Most of the bromids are more or less irritating to the stomach mucosa; especially is this true of potassium bromid. The secretion of pepsin and hydrochloric acid is decreased, perhaps largely accounted for by the depressed reflex action. Gastric motility is decreased. The continued use of the bromid causes a diminution in the pancreatic, biliary and intestinal secretions. This, with the lessened motility, explains the increased tendency to obstipation which is so frequent a concomitant of epilepsy. The earliest symptoms of bromism are not infrequently referable to the stomach.

Ten of our group of 27 cases gave evidence of more or less stomach trouble with the other toxic symptoms. The following case illustrates one with no other symptoms of intoxication, except those referable to the stomach.

Case 265.—Female, aged 28, duration of epilepsy, 14 years. Patient had been having 2 to 3 *grand mal* seizures a week. A mild incomplete dementia was present with periodic short attacks of mania. Physical condition was good.

She was given 1.25 gm. potassium bromid t. i. d. 3 months and increased to 2 gm. for a period of 6 months, at the end of which period it was slowly withdrawn. Sodium phospate was now administered for a short time. After 8 months of this treatment an acute gastritis with indigestion and epigastric pains was noted. There was also a general ill feeling. At no time was there evidence of any trouble with the skin which is very fair and smooth. Nothing gave any relief until we ceased giving the drug. The bromids allowed this patient a period of 7 months without seizures and with a marked mental improvement so often observed in epileptic remissions.

Cardiac Trouble.—Cardiac or respiratory troubles may occur or be augmented. The literature gives some deaths from heart diseases and asphyxia due to excessive use of the drug. The potassium salt is one of the most depressant to the cardiac muscles.

The bromids have a well-marked cumulative action and their elimination is much slower than assimilation. Binswager reports an experiment by Laudenheimer giving 10 gm. sodium bromid daily for eight consecutive days, during which period only 35 gm. were eliminated. This shows an accumulation of more than one-half.

Subnormal Tissue Repair.—In many cases on continuous bromid treatment it will be noticed that tissue repair is below normal. Simple or contused wounds do not heal so rapidly when the patient is taking the drug. Chronic ulcers refusing to heal will do so in a short time after withdrawal of the bromid. These statements are substantiated by the following cases:

Case 272.—Female, aged 46, duration of epilepsy, 33 years. Patient had been having from 6 to 23 *grand mal* seizures a month. Her physical condition was quite good. A mild incomplete dementia was present.

She was given .65 gm. potassium bromid t. i. d. for 5 months A very mild acne appeared on the face during the fourth month of treatment. A pandactylitis followed a staphylococcus infection of the finger a short time after she had begun the bromid treatment. During a much protracted period of healing it was necessary to amputate the distal phalanx and the articular portion of the adjoining one. A low grade suppuration of the stump continued, but soon healed rapidly after she was taken off the bromid.

Case 326.—Male, aged 17, duration of epilepsy, 4 years. Physical condition was fairly good. He was a high grade imbecile.

He was given 1.25 gm. of sodium bromid t. i. d. for 5 months. This caused a reduction in the number of seizures. On the fifth month a mild bromid acne appeared on the face and upper trunk. About the same time a mild gastritis with a furred tongue and epigastric pains developed. Paresthesias and pains were described in both legs. A slight decrease in mental power was noted. An indolent ulcer followed a mild trauma to an old extensive cicatrix over the tibia. This had refused to heal but rapidly did so after the bromid was withdrawn. He was placed on a diuretic and a saline mineral water a short time before the bromid treatment was stopped.

Case 389, which has been narrated, shows another indolent ulcer rapidly repairing after we ceased giving the bromid.

The treatment of bromism consists of prophylaxis, withdrawal or reduction in the dosage of the drug, when the condition is established, and attention to the individual organs giving evidence of intoxication. In epilepsy the individual must be observed and treated according to indications. In a large number of epileptics the bromids are not to be used; in some with certain precautions. When there is a tendency to acne, frequent plain baths with soap and water are valuable. Fowler's solution may be given to reduce the possibility of acne though it often fails. It can be prescribed with a simple or aromatic elixir of bromid. For the constipation, cascara sagrada may be given in any bromid solution. When a gastritis or generally ill-defined symptoms occur the drug must be quickly withdrawn. Sodium phosphate and diuretics may then be given and an easily digested diet prescribed. Any developing psychosis is an indication for an immediate cessation of the drugging.

SUMMARY.

1. Often the bromids are given in excessive doses continuously over a long period in epilepsy and some other diseases. In many cases they are contraindicated or the patient is not carefully enough observed during the course of treatment.

2. After a few weeks cellular resistance is lowered, the degree depending on the individual susceptibility and amount of drugging.

3. The great importance of an early detection of the mild beginning state of bromism is apparent.

4. Though the skin often gives the first evidence, other organs may be simultaneously affected and some

few show the first isolated symptoms of bromism. For the future welfare of the individual, the gastrointestinal and mental derangements from the injudicious use of the bromids are of greater importance than skin lesions.

TYPES OF INSOMNIA AND TREATMENT WITHOUT DRUGS.

JAMES T. FISHER, M.D.
Professor of Nervous and Mental Diseases, College of Physicians and Surgeons.
LOS ANGELES, CAL.

Conspicuous among the disorders which play a prominent rôle in undermining our health and destroying our peace of mind are the various types of insomnia and pathologic sleep.

Physiologic sleep is simply a period of resting for all our organs, their functions being markedly lowered, central control diminished, and changes of reconstruction occurring in our nervous equilibrium. The nervous patient sleeps badly, but the nature of the insomnia varies in many ways. Some go to sleep the moment they lie down, only to awake an hour or two later, to toss throughout the night, and possibly to doze off at the hour when they should awake. Others sleep well till the first peep of day, rising ill-humored and cross, having lost two of their nine hours' sleep. Some patients apparently never sleep and remain calm and comfortable the entire night, get very restless and provoked, get up and walk around the room or take a bath or read a book, but all to no avail, till 2 or 3 o'clock in the morning, when they fall asleep from sheer exhaustion. Some go to bed good natured, but gradually take an extremely pessimistic view of life, and remain in this psychic discomfort for many hours. Others go to sleep, but are disturbed by dreams and nightmares and have a constantly agitated sleep the entire night.

PATHOGENESIS OF INSOMNIA.

What may we rationally consider the pathogenesis of insomnia and these varied mental states which give rise to the disturbing dreams?

Insomnia is a continuation of the molecular vibration which is normal during cerebral activity, the result of too vivid sensorial impressions. It may be a sign of disturbed nutrition and alterations in the cerebral circulation. It follows naturally that any intoxication may sufficiently irritate and excite our "sleeping centers" to the extent that sleep is impossible, and set in discordant vibration the delicate cells in our frontal lobes which preside over and control our acts and thoughts.

The occurrence of painful and disturbing dreams may certainly be considered an abnormal mental condition, and a symptom which should attract our attention and be of distinct value in estimating the nature of the nervous trouble from which the patient may be suffering. These distressing dreams are generally the result of fatigue and the continuance of unhappy mental states which are merged into the sleeping state. They do not depend on our mental condition at bedtime, but on some unpleasant feature or worry, which may have been in our mind days or weeks previous. Painful and distressing dreams accompanied by a restless and unhappy sleep constitute not infrequently one of the very early symptoms in neurasthenia of the cerebral type. Dreams, good or bad, are merely the manifestation of the working of the subconscious mind. Memory being an adjunct of this subconscious mind, dreams are not confined necessarily to events of recent date. These dream-like states may so frighten the patient that recourse to normal sleep is impossible.

TYPES OF INSOMNIA.

There are several varieties or types of insomnia:

1. The melancholy type of insomnia is often met in many different degrees. Here the patient is apprehensive of some calamity, is fearful of impending danger, and in a vague sort of way believes that he has been indiscreet in the past and is now just beginning to pay the penalty. He is possessed of preoccupying obsessions which revolve in his mind and cause wakeful visions of unpleasant scenes. It is observed more especially in persons having a neurasthenic mentality and who react quickly to their own autosuggestions.

2. Another and rarer type is made up of a class of individuals, usually literary in their tastes, who will quickly go to sleep and rest well for a few hours and often awaken with a start as from a dream and remain awake the remainder of the night, lying peaceful and quiet, often with closed eyes, endeavoring to settle problems of different kinds, or initiating ideas for some future event.

3. There is still another class, formed of people who have periods of from four to six weeks in which they never sleep, but simply lie awake during the entire night. They are not happy, nor can they tell what troubles them. It is an indefinable something which simply shuts out all sleep. This, in a measure, is analogous to periodic insanity and its cure is attended with more than ordinary difficulty. It is almost always seen in persons possessing a marked neuropathic personality and in individuals of more than ordinary mental training.

TREATMENT WITHOUT DRUGS.

In the treatment of these psychoses, for truly such they are, one must remember that drugs and physical measures are of very small utility when they are given with the idea that a permanent cure will follow. They may relieve temporarily, but their continued use has in many ways been most harmful and may leave the patient in the deplorable condition of chronic insomnia. Many of the acute psychoses are markedly relieved by hydrotherapy—the hot wet sheet in particular—and even the hydrobromate of hyoscin has its place; but to cure this chronic sleepless patient one must be cognizant of the underlying cause, and not only know what it is but be able to counteract and to annul the offending factor.

To be in close touch and to have the entire confidence of the patient, to have him feel that you are the master of the situation, is imperative. But this must not be undertaken in any careless or flippant way. Intelligent explanation of the nature and cause of his worry and fear, of the value of kind and noble thoughts and the complete relaxation of body and soul, must be made seriously and with conviction. If the physician does not believe this himself, it is useless merely to repeat the instructions. One can never convey conviction to a patient without its being deeply rooted in himself. On careful questioning we often find definite fears or phobias of different degrees and intensity. Of all the mental states, fear is the most pernicious. The patient dreads the night, he knows he can not sleep, he says so to himself a thousand times, naturally his oft-repeated suggestion is effective and he does not sleep. This autosuggestion is innocently and unconsciously maintained and is a prolific cause for inability to find refreshing sleep.

The treatment in such cases is most simple, is, indeed, so simple that most of us scorn to use it. The remedy is counter-suggestion, a convincing assurance that sleep will surely come. Teach the patient a wholesome philosophy, which consists in taking hold of things by the right end, and sleep will follow, as night the day.

In starting the treatment, to secure additional confidence one may suggest a warm foot bath on retiring, or a glass of hot milk, or some slight diversion, but if continued the patient forms a bad habit, and soon comes to require all these little extras which, in a measure, seem to lessen the effect of the direct suggestion.

The citation of cases illustrative of some different types of insomnia, together with their treatment, will be self-explanatory.

Case 1.—Dr. C., a retired army officer, was referred to me by Dr. Swift. This patient had a most obstinate case of insomnia, the sleeplessness being a symptom of the disease for which he had been retired three years previously, viz., neurasthenia. He had been treated for this by many physicians, and at the time I first saw him was taking dram doses of sulphonal, which sometimes gave him three hours sleep. His wife told me with tears in her eyes that he had taken "tons of hypnotics, and had tried everything, but was only getting worse and becoming a physical wreck."

Treatment.—I put him in a hospital away from his wife and children, gave him no drugs whatever, and within a period of less than five weeks he was sleeping eight hours each night, and studying many hours each day, preparing for his examination before a state board. For ten days his only treatment consisted in daily visits to my office, where he was assured that each night he would sleep better than the night before, and would soon be able to return to his home. My instructions were to go to bed at 9 o'clock, to shut the eyes, and to play he was asleep, and though he felt wideawake, to lie perfectly still by force of will power. Each day or two he admitted that he was getting control over his insomnia. He used no hypnotics.

Case 2.—W. H. W. was referred to me by Dr. Lobingier. He suffered from insomnia to the extent that he had to give up a large law practice in an eastern state and come to this climate, hoping he might improve. Mr. W. had certain phobias and fixed ideas regarding his mental state, which were exceedingly difficult to overcome. He would lie awake two-thirds of the night, endeavoring to go to sleep, but all the time he would say to himself, "It's no use; I can't go to sleep." In other words he could not go to sleep because he said he could not; a typical case of autosuggestion. He had at times a little palpitation. He had been in this condition for a period of about five years, and had recently had "a course" of christian science.

Treatment.—An improvement was noticed in his insomnia as soon as he felt convinced that he had no organic heart trouble, the fear of which had caused him no small amount of worry. I wrote out the following sentence on a slip of paper, with instructions to read it many times during the day and evening: "I'm feeling fine. I'm going to get well. I'm going to sleep sound all night long." No other treatment was used except at an occasional visit at my office I would assure him that he looked fine and would soon return to his work all well. He improved very slowly for the first four weeks. Three times I had to renew his prescriptions, which he considered a joke, when one day he told me he was much better, that his fears has disappeared and sleep was normal.

Case 3.—Mrs. M., aged 50, came to me from Long Beach for an unusual case of insomnia. She said that she never slept an hour in her life that she knew of since the age of 21, never suffered any discomfort therefrom, and merely came to me partly from curiosity to see how it would seem to sleep normally. I inquired of her husband (not in her presence), a very intelligent retired banker, regarding his wife's statement, and he surprised me by saying during the twenty-three years he had been married he had never seen his wife asleep.

Treatment.—In this case I had no obsessions or bad habits to correct, and had to rely on post-hypnotic suggestion. I placed her in a moderate degree of hypnosis, while sitting in a rocking-chair, and repeated over and over that at 9 o'clock that evening she would feel very sleepy; that she would go to bed and go to sleep, and sleep soundly all night, and the following night, and that in two days she would come to my office at 4 o'clock. At the appointed time the lady appeared, and on asking her why she came at 4 instead of 2, as she did the first time, she said she did not know, only that something told her to come at that hour. She further said that she went to bed and slept soundly six hours the first night, beginning at 9 o'clock, and the next night she slept eight hours. For five weeks she came once a week, as she said jokingly, for a little nap, and during this period, and since, she sleeps from six to nine hours each night.

The rational treatment of any mental disorder must, of necessity, be a mental or suggestive treatment, and that any treatment which entirely leaves out this important factor must assuredly be a failure. Whether intentionally or not, we all use a certain amount of suggestion, and it is this factor which gives us success, very often when we insist that this is due to the favorite drug.

The majority of insomnias are distinctly of mental origin, and their successful treatment must be through avenues directed to overcoming false ideas and replacing fear with healthful, quieting thought and the removal of irritants which directly or indirectly affect the minds of the patients.

THE NATIONAL FORMULARY.

ITS ATTITUDE TO PHARMACEUTICAL PROPRIETARIES.*

C. LEWIS DIEHL, Ph.M.

Professor of Pharmacy in the Louisville College of Pharmacy; Chairman of the Committee on National Formulary of the American Pharmaceutical Association; Member of Council on Pharmacy and Chemistry of the American Medical Association.

LOUISVILLE, KY.

In the address of a pharmacist to physicians it is unavoidable that his professional bias shall in a greater or less degree dictate the thoughts he designs to express. The subject of my address, however, is one on which we as pharmacists and you as physicians meet on common ground; it is a subject on which we are mutually and equally interested, and one which we must carefully consider and clearly understand if we wish, in some degree at least, to ameliorate conditions which have well-nigh succeeded in annihilating professional pharmacy, without a compensating benefit to the profession of medicine. The defenders of these untoward conditions tell us that these are the inevitable results of modern progress and invention; that the development of pharmacy has gone hand in hand with the advance in medicine; and they even go so far as to claim that only by this development of pharmacy the advance in modern therapy has become possible. I should be loth to admit that I have grown too old to appreciate the modern advances that have been made in both domains; but it is a debatable question in what direction we can concede that a true advance has been made in that of pharmacy. Surely not professionally; for, with all proper respect for the educational influence of colleges of pharmacy, the supervision of boards of pharmacy and the attempts by legal enactments to elevate the standard of pharmacy, the lamentable fact remains that pharmacy as a profession is degenerating.

It is not my purpose to discuss this question, however, in all its bearings, but to confine my observations in a

---

* Read in the Section on Pharmacology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

general way to the extent in which the modern exploitation of pharmaceutical proprietaries, meaning by these "pharmaceutical preparations offered to the medical profession under fanciful names," may be held responsible in creating existing conditions, and, particularly, to define the attitude of the National Formulary toward this class of preparations.

PLACE OF THE NATIONAL FORMULARY.

In the pursuit of his responsible calling, the well-equipped pharmacist is required to keep in stock, and to preserve in useful condition, an innumerable variety of simple drugs and chemicals, in order to meet the demand that may be legitimately made on the call of the physician. Many of these simples being in a crude state, or otherwise not suitable for direct use, are made available by converting them into preparations, be it a powder or pill, a solution or infusion, a syrup or a tincture, a liniment or an ointment; or they may be so bulky, or so loaded with inert matter, as to admit of concentration into extracts or fluid extracts; and these simple preparations, again, may be compounded with other drugs or chemicals, as may be dictated by experience, either for the purpose of modifying or increasing their potency, or to render them more acceptable or more palatable on administration. It is obvious that successful medication becomes possible only if these drugs, chemicals and preparations conform to an agreed standard; hence the adoption of a code, known as the Pharmacopeia. But a pharmacopeia is of necessity conservative and eclectic; it can only admit and define standards for well-tried remedies that are prescribed with sufficient frequency to merit a permanent place in the code; while untried remedies, though possessing more or less popularity, are properly excluded until experience shall justify a demand for admission. This has, under each revison of the Pharmacopeia, excluded an ever-increasing number of preparations, both simple and "poly-pharmacal," which have been persistently prescribed, notwithstanding the uncertainty of their composition and the apparent differences existing between some of those supplied under identical names.

While the necessity of these "poly-pharmacal" preparations is debatable, it is clearly desirable to establish uniformity in formulas for all medicinal preparations likely to be prescribed by physicians, so that they may arrive at a definite knowledge of composition and a reasonable interpretation of possible effect. Having on previous occasions discussed the character and objects of the National Formulary in papers read before this section in 1893 and 1898, it is scarcely necessary for me to repeat that this work was issued by the American Pharmaceutical Association with the primary object of establishing an authoritative standard for a large number of remedies "which are more or less frequently prescribed by physicians, but which are not recognized by the Pharmacopeia, either because they were not deemed by the revisers to be of sufficient importance to be included in the official work, or because they originated subsequently to the appearance of the work, or for other reasons." This definition did not contemplate the consideration of preparations of a merely ephemeral nature, and particularly not such of a proprietary character, but simply such that were made by pharmacists in all parts of our country under the same title, but often different formulas and in varying strengths. Under these conditions it had become the practice to designate in prescriptions particular brands of what was considered one and the same preparation, and the evils resulting from this practice were so evident and so far-reaching that there is now no necessity to say anything in vindication of the National Formulary. It suffices to mention that since the appearance of this work the untoward existing conditions were, to some extent at least, palliated. Many practitioners have adopted the designation "N. F." when prescribing preparations for which formulas are given in the National Formulary, and the habit is growing.

ATTITUDE TO PREPARATIONS WITH FANCIFUL NAMES.

It is very different, however, with another class of preparations, simple as well as "poly-pharmacal," which are exploited under coined names, and which, indeed, were apparently called into life by the inroads made by the National Formulary on their successful exploitation under more specific titles. Leaving out of consideration the modern synthetics, which are a host in themselves, and are taken care of by the Council on Pharmacy and Chemistry, there is a large number of preparations, exploited under brief fanciful titles, which consist of simple drugs or chemicals, such as are on the shelves of every pharmacy, and uniformly obtainable in a condition of acceptable purity, in the form of pills, capsules, tablets or powder; others that are simply solutions of one or more salts, for which exceptionable purity is claimed; and all of these claimed to be products resulting from the application of prolonged investigation, diligent study or unusual facilities and skill.

Then, again, under similarly coined titles, the attention of physicians is invited to pharmaceutical compounds of a more intricate nature, compounded from drugs of "rare quality" or representing the "essential principles" of this, that and the other drug—the quantities, if given, pertaining to the drug, but not to the "essential principle" involved—the development of which has required years of study, or which are the outcome of vast experience, not to speak of occult divination, and so on *ad nauseam*. All these claims are of course subservient to the pharmacologic import of the article exploited, which is rarely "just as good," but always superior, in one direction or the other, to other medicaments that have stood the test of time in similar cases; the literature accompanying these trade-named "pharmaceutical proprietaries" teeming with fulsome and extravagant claims, so preposterous, as to leave it doubtful what is the more amazing, the unparalleled effrontery of the exploiter, or his confidence in the gullibility of the average physician.

It would be passing strange if among the many trade-named "pharmaceutical proprietaries" there were not some of intrinsic value as remedial agents, and certainly there are others which, whatever may be the estimate of their worth, are prescribed with sufficient frequency to call for representation in the National Formulary, in a form in which such may be intelligently tested. While, therefore, the first edition of the Formulary was comparatively free from formulas representing trade-named preparations, a number of such have been admitted into the revised editions that have since been made, without, however, referring in any way to the trade-named title. In this respect the compilers of the work have the precept of the revisers of the Pharmacopeia, who, in the recent edition,[1] have included formulas for a number of preparations which have been heretofore, and still are being, exploited under fanciful names. Indeed, some of these have been appropriated either from the text of

1. United States Pharmacopeia, viii, 1900.

the National Formulary, or from the text of the reports in which they were proposed for admission into that work. The committee on National Formulary has been criticised in some quarters, probably by interested parties, for having constructed and included formulas for certain trade-named preparations. On the grounds indicated, this committee will doubtless not be discouraged from so appropriating or constructing formulas for any preparation, so long as the formula is not vested in private ownership by right of patent, if the frequency of its use shall justify such action.

Initially, I intimated that I can no longer count myself among the young in my profession. How I feel in that respect is entirely another thing. But whether old in years or young in mind, it is to me both a gratification and a consolation to think of a Squibb, of a Procter, as types of true unselfishness; of men whose trend and endeavor has been to disseminate the knowledge gained by experience and study in the domain of pharmacy, not in promotion of personal gain, or for the benefit of individuals, but for the elevation of pharmacy to a standard of excellence that shall creditably meet all demands that may justly be made by those engaged in the responsible profession of medicine. And to these I would say, it is not the man who presumes to do better than others, but rather the man who assumes to do as well as can be done by others, who merits your confidence.

Clinical Notes

TREATMENT OF GONORRHEA IN THE MALE.

W. FRANK GLENN, M.D.
NASHVILLE, TENN.

In the treatment of gonorrhea we must recognize two or three important facts and govern our treatment accordingly, otherwise we will find it well nigh impossible to complete a cure at all.

First.—Gonorrhea is caused by the presence of the gonococci, which set up a rather violent inflammation.

Second.—The inflammation begins just within the meatus urinarius and extends, if left without proper treatment, rapidly into the deep urethra.

Recognizing these two important factors, the rational treatment of gonorrhea is to begin treatment at the earliest possible moment, and to commence at once with local applications, by injection of a remedy that will kill, or at least inhibit the development of the gonococci, and at the same time heal and soothe the inflamed membrane. Many high in authority advise doing practically nothing until the acute symptoms have subsided, which usually takes from two to three weeks. They advise bland diet, alkalies internally, large draughts of water, gentle purgation, and rest until the disease has passed the acute stage and severer symptoms have subsided, then begin local treatment. This plan of treatment can not be too severely condemned. It is irrational and unscientific, for in every case when the acute stage has subsided the entire spongy and membranous urethra is usually involved and the task of curing the patient is far more formidable than if the disease had been grasped at the beginning of the attack and treated in the same rational and common-sense manner that we do other diseases.

AUTHOR'S METHOD OF TREATMENT.

After a considerable experience in the treatment of gonorrhea, my object has been to give an injection that will not irritate or pain the already inflamed mucous membrane, and, while no single prescription will do for every case, the solution of iodid and chlorid of zinc comes nearer meeting our desires than any other remedy. It should never be used in sufficient quantity to produce pain, but just strong enough to soothe the inflamed membrane, and it will at the same time stop the development of the gonococci.

Every physician knows, or at least should know, that the silver salts are gonococcocides. Nitrate of silver will thoroughly and completely destroy them, but the objections to its use are its irritating properties and the consequent pain it produces. Weak solutions kill gonococci and at the same time are only slightly irritating. The ideal treatment, and one which if it could be carried out would result in many more cures—and many of them would be complete in from two to three weeks—would be to keep the patient in bed, keep his bowels open, give him bland diet, plenty of alkaline water to drink and inject into the urethra silver nitrate or iodid and chlorid of zinc.

This plan of treatment, however, can only be carried out in the army or navy where the patient must obey his physician. It is useless to tell a business man to lie down for a gonorrhea, for he will not do it; consequently we must treat him, allowing him at the same time to attend to his business.

The idea that remedies given internally have a specific influence on this disease is simply a myth. Internal medication should only be given for the purpose of rendering the urine less acid and more copious, thereby less irritating. Alcoholics should be absolutely and positively forbidden, the diet should be almost, if not entirely, free from meat and highly seasoned food, and an injection should be begun at once, preferably iodid and chlorid of zinc, next permanganate of potassium or weak solutions of silver nitrate, 1 to 5000.

Often a failure is made by not instructing the patient how to inject properly and with the proper syringe. The syringe should hold at least three drams, its nozzle should be half an inch long and perfectly round at the end. The penis should be held upward—parallel with the abdomen. Drop the nozzle of the syringe into the urethra, up to the barrel, bring it gently against the upper wall of the urethra and hold the meatus underneath so as to close it tightly around the syringe nozzle; then pull the penis upward until it is sufficiently on the stretch to smooth the folds in the lining membrane; then push the piston with sufficient force and suddenness to throw the injection well within and slightly to distend the urethra. Then withdraw the syringe, closing meatus by compressing it between the forefinger and thumb, holding medicine in contact with membrane for at least five minutes, better ten.

My usual prescription is:

℞.	Iodidi zinci	gr. xv	1 |
	Chloridi zinci	gr. i	06
	Aquæ destillatæ	f℥vi	180 |
M.	Sig.: Use three times a day as injection.		

CONCLUSION.

In conclusion I would urge a few considerations which are absolutely necessary for the successful treatment of gonorrhea.

First.—Educate your patients to consult a competent physician as early as possible after suspecting this disease. Delay is hazardous.

Second.—The physician should at once proceed to remove the cause, namely, the gonococci, which can only

be done by applying a gonococcocide directly to the germ and retaining it there for a sufficient length of time to get its full effect.

Third.—Never wait until acute symptoms subside, for if you do you will generally have to treat a urethral stricture before the resultant gleet disappears.

SUCCESSFUL END-TO-END ANASTOMOSIS AFTER A PARTIAL DISEMBOWELMENT IN A RUNAWAY ACCIDENT.

MARK A. RODGERS, M.D.
Surgeon to St. Mary's Hospital.
TUCSON, ARIZ.

Cases like the one reported below are of sufficiently frequent occurrence to occasion no surprise, and one would hardly be justified in asking for space for their publication were it not for two reasons: That some use for the report may be had for statistical purposes, and that a recovery from so serious an accident under such circumstances should encourage the general practitioner, or the country doctor, who can not immediately summon to his assistance an experienced surgeon, to proceed himself with the operation without delay.

Common sense and the effect of wide reaching will stand any man in good stead in such grave emergencies, and if the practitioner has at his command a good emergency armamentarium, which he keeps properly stocked and in good condition, he can always remember that an ordinarily well kept country home is not apt to be infected with virulent micro-organisms. Indeed, if the operator does not bring infection with him, he will often be surprised at the beautiful results he will obtain. In grave emergency abdominal operations I have a number of times covered the intestines with clean towels wrung from hot water in the kitchen by women of the household, and had as gratifying results as any living man could wish for.

All this is not to say that I in any way desire to minimize the necessity for careful preparation and absolute asepsis when it is possible to have them; but to show that these conditions may obtain where clean living is the habit of the patient and the doctor does not carry infection with him from case to case.

History.—B., aged 28, a healthy, well-developed man, was driving through a busy street when his horse became frightened, and, running away, dashed into another horse coming from the opposite direction, the impact being sufficient to raise the latter animal and to deposit it with its forehoofs in the patient's vehicle; the shaft meanwhile plunging into his abdomen, in some way seizing the ileum and withdrawing it, together with several feet of the intestines, outside the abdominal cavity, and tearing away a complete section of the gut.

Although seriously injured and knowing, as he expressed it himself, "that his trousers were full of intestines," he walked unaided to a nearby store, from whence he was immediately removed to his home in a carriage. The attending physician, who arrived there with him, placed him in bed and began the application of towels wrung out from hot water.

Operation.—I arrived with an assistant about forty-five minutes after the accident and decided to operate without removing the patient to the hospital. Therefore, without taking him from the bed in which he lay, or changing his position, he was chloroformed and the extruded intestines were drenched with a hot saline solution. Examination revealed the fact that the shaft had penetrated the skin and fascia of the right thigh about two inches below Poupart's ligament, and somewhat toward the outer aspect thereof. Thence, ranging upward, it passed over Poupart's ligament, tearing loose a flap of skin and fascia about six inches wide, entering the abdominal cavity about the internal ring. The opening into the abdomen was fortunately not large, and was plugged snugly with the intestines, thus permitting the cleansing of the extruded portions with solution without soiling the peritoneal cavity.

After cleansing the intestines carefully, rubber covered clamps were attached to each of the severed ends about six inches from their openings, and the interior of each severed and wiped carefully with gauze and cleansed with saline solution. The severed ends were now carefully trimmed with scissors, the sections of a Murphy button inserted, fastened in the usual way, and snapped together. Thereafter, following the insertion of a number of Lembert silk sutures, a running suture of No. 1 sterilized catgut was passed entirely around the gut, further turning in the peritoneal surfaces. Rents in the mesentery were now repaired with interrupted gut sutures, the extruded intestines again douched with salt solution and returned to the abdominal cavity.

The patient did not vomit, either before or after the operation. Hemoglobin was 105 per cent. He did not suffer much pain, passed gas in forty-eight hours, and at the end of the third day complained because I would not allow him a beefsteak. The button passed on the twelfth day, after which, save for a little time required for granulation (the external wound having suppurated), the case presented no features of interest. He made a rapid recovery, and now, a year after the operation, is as active and as well as ever, riding horseback and doing much hard work on a ranch.

A CASE OF GENERAL ARGYRIA.

R. A. ALLEN, M.D.
LAUREL, NEB.

Argyria, once a very common form of intoxication, is now very rare. The first case was seen in 1791 by Schwediauer, and reported by Fourcroy. Early in the nineteenth century many cases were reported and the number increased toward the middle of the century on account of the extensive use of the metal in the treatment of epilepsy and tabes. The slaty pigmentation was frequently seen in the European hospitals and on postmortem tables. General argyria now is very rare, the only form of the pigmentation now seen being a local affection due to topical application to wounds, ulcers, etc., or to absorption of silver dust by workers in the metal. It is not so much the amount of the metal ingested that causes the pigmentation as it is the repeated taking of small doses over a long period of time. The only pathologic change found is the deposition of black granules in the rete mucosa layer of the skin. The chemical nature of this deposit is unknown. The pathogenesis seems to be a matter of dispute.

Patient.—A married woman, aged 69, residing on a farm, family history excellent.

Previous History.—For years the patient had been suffering from chronic stomach trouble. Five or six years ago, after consulting a specialist, she began taking some pills for the complaint and had had the prescription refilled often since then, as her stomach troubled her. She also gave an indefinite history of apparent attacks of paralysis (?), saying her legs would suddenly give out under her. No other illnesses of consequence were related.

Present Complaint.—About two and a half years ago members of the family began to notice that the skin of her face was changing color and was becoming a peculiar ashen hue. This kept growing in intensity up to the present time, spreading from the face to the neck and thorax below the breasts. She also complains of numbness and tingling, shooting, pricking pains in the fingers and toes, and some general weakness and malaise.

Examination.—The most striking feature of the woman's appearance was the deep slate-blue color of her face, which on closer examination proved to be in the skin itself, and hence could not be due to a cyanosis. The pigmentation was of irregular distribution; that is, it was more intense in some places, as for example, on the sides of the nose. It also in-

volved the conjunctivæ and the buccal mucous membranes. The slaty color extended all over the face, neck and thorax, fading out at the waist line, and involved the entire skin of the upper extremities. The patient's general nutrition was fairly good, although the family said she had lost some weight. The pupillary reflexes were normal; the knee jerks were somewhat exaggerated. There was some hyperesthesia of the extremities. The pulse was full, regular, and of rather increased tension. Respiration was normal, and lung findings were negative. The heart tones were pure.

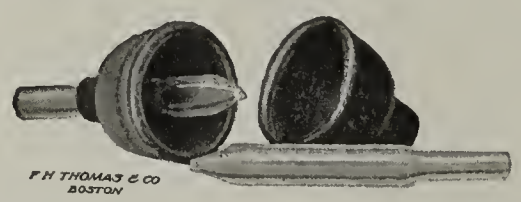
Treatment.—The nitrate of silver preparation was ordered stopped. The treatment was directed to the general condition and consisted of tonics, nutritious mixed diet, fresh air, exercise and eliminatives. The patient's general health is good. For the neuralgic pains I have given cannabis indica and sodium bromid with good results. Since the withdrawal of the silver the pigmentation has remained practically unchanged. I have given no treatment for the conditions, as I know of none.

Inquiry of the druggist from whom the pills had been procured showed that the prescription called for nitrate of silver, fifteen grains, divided into seventy doses, which would make about one-fifth of a grain to a dose. The prescription had been refilled many times, so that it is impossible to estimate how much of the metal had been ingested. This cleared up the diagnosis of the condition, making it an unmistakable case of argyria.

MODIFICATION OF THE REESE URETHRAL IRRIGATOR.

LUTHER G. PAUL, M.D.
Surgeon to Out-Patients Carney Hospital, Instructor in Surgery and Assistant in Anatomy, Tufts Medical School.
BOSTON.

The instrument shown in the cut is modeled after the Reese urethral irrigator. Having broken several glass irrigators, it occurred to me that as the glass cup was the part most often broken, a detachable, soft-rubber cup would in a great measure lessen the liability to breakage. The instrument consists of a glass urethral irrigator, and a soft-rubber, detachable cup. The accompanying cut requires no explanation.



The advantages claimed for this modification are that it is less easily broken, is less expensive than one made wholly of glass, and the thickened rim of the cup prevents any spattering from the irrigation fluid. The cost is about one-half that of the glass irrigator.

A PACKET OF ASEPTIC MATERIALS FOR THE CARE OF THE NAVEL AND THE EYES OF THE NEW-BORN CHILD.*

BENJAMIN S. PENN, M.D.
HUMBOLDT, TENN.

The eyes and the navel are the two principal infection atria in the new-born child and the conscientious obstetrician realizes his responsibility by attending to these parts personally, instead of leaving them to the care of a nurse. At least 10 per cent. of the blindness of the world is caused by ophthalmia neonatorum, which might be prevented by the use of Credé's method of disinfection of the eyes.

After the eyes have been attended to, the physician cleanses the abdomen and cord as thoroughly as possible and covers them with an aseptic dressing. In thus scrupulously discharging his duties, the physician has the satisfaction of knowing that he is improving statistics with regard to the occurrence of omphalitis, tetanus and ophthalmia neonatorum.

With the assistance of Messrs. Seabury & Johnson—whom I wish to thank for their faithful attention to the details furnished them—I have designed a packet of sterilized materials for the care of the infant's eyes and navel which I believe will not only be a convenience to those who already exercise proper care in this matter, but will also be in a sense an educative factor for those who do not conform in this respect to modern methods.

It seems appropriate to include the materials for the treatment of the eyes with the navel dressings since, as a rule, the eyes require attention before the cord, and to have all articles needed in the care of the child placed compactly in an airtight container. This is certainly better than to carry the several articles in the obstetric bag; and especially is it a more certain way of providing for the silver solution.

This packet is designed to be ordered by the physician, with other requisites, to be obtained by the patient before her confinement, and is small enough to be conveniently carried in the obstetric bag for use in unexpected cases.

So far as I know, no other packet provides the materials for Credé's method and the sterile powder, which are both desirable in a packet of this kind; especially the powder, as it is impossible to obtain such powder in many places, though it should be obtainable at every drug store.

A slip of directions is enclosed in each packet, chiefly for the use of the nurse when the physician is too busily engaged with the mother to look after the child himself, and instructions are printed on the cover that the seal is not to be broken until so ordered by the physician.

Every dressing in the packet is sealed separately, so that it need not be exposed to the air until required for use.

CONTENTS OF PACKET.

The packet contains the following articles:

1. Two pledgets of sterile gauze for cleansing the eyes with boiled water.
2. One glass tube containing enough silver nitrate to make 2 c.c. of a 2 per cent. solution, on the addition of boiled water up to a mark on the side of the tube.
3. One glass tube containing enough boric acid to make 10 c.c. of a 4 per cent. solution, on the addition of boiled water up to a mark on the side of the tube, this solution to be used repeatedly in all cases for several days to prevent the irritation and mild conjunctivitis which might occur in any infant's eyes.
4. One glass dropper for making and using these solutions.
5. Two bichlorid of mercury tablets for making solution for disinfecting the cord and abdomen when that is indicated.
6. Three braided silk ligatures, 12 inches long, sterilized and sealed separately.
7. Two small glass tubes of sterilized umbilical powder designed to be bland, deodorant and mildly antiseptic; the formula for which is as follows: Boric acid, one part; bismuth subnitrate, 50 parts, and talc to make 100 parts.
8. One perforated gauze compress for first dressing; the cord is drawn through the perforation after being washed and having umbilical powder dusted freely around its base.
9. Another gauze compress, not perforated, which is laid over cord and first compress after the cord including the cut end has been dusted over with the remaining powder from the first tube.
10. A white flannel binder with necessary safety pins, to hold the above dressing in place. This dressing to remain if no complication arises, until the cord separates, when it is to be removed, the umbilicus cleansed again if necessary, and dusted over freely with the umbilical powder contained in the second tube.
11. A compress for second dressing, about two inches square by one-third of an inch thick, applied over the umbilicus.
12. Another binder which is also supplied with safety pins, and which holds the second dressing in place.

Of course the dressings may be applied in a somewhat different manner if so desired.

No priority is claimed for the recommendation of the dressings contained in this packet, but merely for their presence and arrangement in the packet.

Every dressing in the packet is absolutely sterile.

* Read before the Humboldt (Tenn.) Medical Society, July 17, 1906.

New and Non-Official Remedies

THE FOLLOWING ARTICLES HAVE BEEN TENTATIVELY ACCEPTED BY THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR INCLUSION IN THE PROPOSED ANNUAL, "NEW AND NON-OFFICIAL REMEDIES." THEIR ACCEPTANCE HAS BEEN BASED LARGELY ON EVIDENCE SUPPLIED BY THE MANUFACTURER OR HIS AGENT, BUT TO SOME EXTENT ON INVESTIGATION MADE BY OR UNDER THE DIRECTION OF THE COUNCIL. CRITICISMS AND CORRECTIONS ARE ASKED FOR TO AID IN THE REVISION OF THE MATTER BEFORE FINAL ACCEPTANCE AND PUBLICATION IN BOOK FORM.

THE COUNCIL DESIRES PHYSICIANS TO UNDERSTAND THAT THE ACCEPTANCE OF AN ARTICLE DOES NOT NECESSARILY MEAN A RECOMMENDATION, BUT THAT SO FAR AS KNOWN IT COMPLIES WITH THE RULES ADOPTED BY THE COUNCIL.

W. A. PUCKNER, SECRETARY.

(*Continued from page 1741.*)

SODIUM ICHTHYOL.

SODIUM ICHTHYOLSULPHONATE.

A derivative of ichthyol containing sodium instead of ammonium.

It is prepared by neutralizing ichthyolsulphonic acid with solution of sodium hydroxide and evaporating the excess of water.

It is a dark brown mass, more solid in consistency than ammonium ichthyol, otherwise having identical physical properties. It contains 15 per cent. of sulphur.

It is distinguished from ichthyol by not giving off ammonia on the addition of sodium hydroxide.

Actions, Uses and Dosage.—These are the same as those of ichthyol. Its firmer consistence makes it more suitable for pills.

Manufactured by the Ichthyol Co., Hamburg (Merck & Co., New York). German patent No. 107,233.

STOVAINE.

BENZOYL-ETHYL-DIMETHYLAMINOPROPANOL HYDROCHLORIDE.

Stovaine, $CH_3.C(C_2H_5)(O.CO.C_6H_5)CH_2.N.(CH_3)_2.HCl = C_{14}H_{22}O_2NCl$, is the hydrochloride of 1-dimethylamino-2-ethyl-2-propanol benzoyl ester.

It is prepared by causing a reaction of benzoyl chlorid on the *a*-dimethyl-amino-pentonal-*b*, which is itself the product of reaction of ethylmagnesium chloride on methylaminoacetone.

It crystallizes in small, brilliant scales, which melt at 175° C. (347° F.). It is extremely soluble in water and easily in methyl alcohol and acetic ether but requires 5 parts of absolute alcohol for solution and is only slightly soluble in acetone. It is quite stable and its solutions may be sterilized at 115° C. (239° F.) without suffering decomposition.

The aqueous solution is slightly acid to litmus, neutral to methyl orange. It is precipitated by all the alkaloidal reagents and is decomposed by even very dilute alkalies.

It is incompatible with alkalies and all alkaloidal reagents.

Actions and Uses.—Stovaine acts as a local anesthetic of about the same power as cocaine, but dilates the blood vessels, whereas cocaine contracts them and exerts a tonic action on the heart. It is only 1/3 to ½ as toxic as cocaine.

It is used as a local anesthetic; while most reports are favorable, one case of gangrene has been reported following the use of a 10 per cent. solution.

Dosage.—Internally, 0.002 Gm. (1/30 grain) as pill. Locally it may be used in the eye in 4 per cent. solution and applied to other mucous membranes, as in laryngology, in from 5 to 10 per cent. solution. For hypodermic injections for local anesthesia it can be used in 0.75 to 1 per cent. solution.

Manufactured by the Poulenc Frères Company, Paris (Walter F. Sykes, New York).

STYPTICIN.

COTARNINE HYDROCHLORIDE.

Stypticin, $C_{12}H_{13}O_3N.HCl$, is the hydrochloride of cotarnine, an oxidation product of narcotine, similar to hydrastinine.

It is prepared by boiling narcotine for a long time with water or by heating it with dilute nitric acid and converting the basic product obtained into the hydrochloride.

It is a yellow, crystalline powder, soluble in water and in alcohol. Its melting point is indefinite.

If to a solution of stypticin tenth-normal iodine V.S., is added a brown precipitate of cotarnine periodide is produced, which if collected and dried over sulphuric acid melts at 140° C. (284° F.).

If to a solution of 0.1 Gm. stypticin in 2 Cc. of water 8 drops of a 15 per cent. sodium hydroxide solution are added, each drop will produce a milk white precipitate which dissolves on agitation. After a time the free base separates from the clear solution, leaving the supernatant liquid clear and but faintly yellow. The base after recrystallization from benzene, melts, with decomposition, at 130° to 132° C. (266° to 269.6° F.).

Actions and Uses.—Stypticin is a hemostatic, analgesic and uterine sedative. The mechanism of its action is obscure.

It has been recommended particularly in functional dysmenorrhea and menorrhagia of puberty and of the climacteric; in subinvolution of the uterus after parturition and abortion, as well as in all profuse uterine hemorrhages; in bleeding from the bladder, from the nose, after extraction of teeth, etc.

Dosage.—Internally 0.05 Gm. (¾ grain) four to five times daily, in sugar-coated tablets or gelatin capsules; or by hypodermic injection (in urgent cases) 2 Cc. of a 10 per cent. solution; externally, as a styptic, pure or in strong solution.

Manufactured by E. Merck, Darmstadt (Merck & Co., New York). U. S. trademark.

Because of the intensely bitter taste, stypticin is also marketed in the form of sugar coated tablets containing 0.05 Gm. (¾ grain) each.

STYPTOL.

COTARNINE PHTHALATE.

Styptol, $(C_{12}H_{13}O_3N)_2C_6H_4(COOH)_2$, is the normal phthalate of cotarnine, an oxidation product of narcotine, similar to hydrastinine.

The base cotarnine, obtained from narcotine by oxidation with dilute nitric acid, is combined with phthalic acid to form the neutral salt.

It is a yellow, microcrystalline powder, easily soluble in water. The base is recognized by the tests given under stypticin.

Actions and Uses.—Its action resembles that of stypticin. Compounds with phthalic acid are said to have especial hemostatic properties.

Styptol has been recommended in uterine hemorrhages.

Dosage.—0.065 Gm. (1 grain) in sugar-coated tablets, 3 to 5 times daily.

Manufactured by Knoll & Co., Ludwigshafen a. Rh. and New York. U. S. patent No. 742,423. U. S. trademark No. 40,633.

STYRACOL.

CINNAMYL GUAIACOL. GUAIACOL CINNAMATE.

Styracol, $C_6H_5.CH:CH.COO(C_6H_4.OCH_3) = C_{16}H_{14}O_3$, is the cinnamic acid ester of guaiacol.

It is prepared by allowing guaiacol and cinnamyl chloride in molecular proportions to react on each other for two hours at the ordinary temperature, then heating the mixture on the water bath for a short time and purifying the product of the reaction by several crystallizations from boiling alcohol.

It forms colorless, odorless and tasteless crystalline needles, melting at 130° C. (266° F.). It is insoluble in water, but easily soluble in alcohol, acetone, chloroform and benzene. It contains 55 per cent. of guaiacol, which is split off by the action of alkalies.

It is incompatible with alkalies.

Actions and Uses.—Styracol is an intestinal antiseptic and is claimed to combine the antituberculous actions of guaiacol and cinnamic acid. It is said to liberate in the intestinal canal a larger proportion of its guaiacol (up to 85 per cent.) than other synthetic preparations of that substance.

It is recommended for the initial stage of phthisis, chronic enteritis and intestinal disturbances in general, catarrh of the bladder, etc.

Dosage.—1 Gm. (15 grains) in powder or tablets.

Manufactured by Knoll & Co., Ludwigshafen a. Rh. and New York. German patent No. 62,176. U. S. trademark No. 42,487.

(*To be continued.*)

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

103 DEARBORN AVENUE . . . . CHICAGO, ILL.

Cable Address . . . "Medic, Chicago"

Subscription price.....Five dollars per annum in advance

[*For other information see second page following reading matter.*]

SATURDAY, DECEMBER 1, 1906.

DEVIATION OF COMPLEMENT BY SERUM PLUS ANTISERUM AS A TEST FOR BLOOD.

Gengou,[1] Moreschi[2] and others[3] have shown that immunization of animals with alien serum or albumins gives rise to antibodies which, on union with constituents (antigens) in the material used for immunization, possess the power to bind complement. This anticomplementary action of serum plus antiserum (antigen plus antibody) is easily demonstrable, because it manifests itself by preventing lysis of red corpuscles by hemolytic serum, normal or immune.

In its simplest form the reaction is carried out as follows: Certain quantities of normal serum, of the corresponding antiserum (both heated to 56 C. for 30 minutes to destroy the native complement) and of normal hemolytic serum are mixed; after one hour there is added the proper amount of 5 per cent. suspension of suitable washed corpuscle; the mixture, together with the necessary controls, are placed in the incubator and the degree of laking determined at the end of two hours. Neutralization or deviation of the complement is demonstrated also by the use, in place of normal serum, of a heated immune hemolytic serum, the complement being furnished by a fresh normal serum which in the quantities necessary is not in itself lytic for the corpuscles used.

That the absence of laking in these experiments is due to the failure of complement to act is shown by the fact that the corpuscles do absorb the amboceptor; for if the corpuscles be washed and new complement added then laking occurs promptly. So far as the amount of normal serum demonstrable in this way is concerned, the reaction is one of extraordinary sensitiveness. Indeed, Friedberger was able by this method to demonstrate the presence of a certain serum in dilutions of 1 to 1,000,000,000.

When serum and antiserum are brought together a precipitate forms, and Gay holds that the complement is removed by this precipitate. Muir and Martin find that if precipitate is formed the complement is removed, but that the phenomenon of deviation of the complement may occur without precipitation. Wassermann and Bruck, as well as Friedberger, also found that precipitation is not essential.

Neisser and Sachs have pointed out that the neutralization or deviation of the complement by serum plus antiserum constitutes a new test for blood and other albuminous substances of greater sensitiveness than the precipitation test and of at least equal specificness. They consequently recommend the new test for forensic purposes in order to corroborate and in certain special cases to supply the deficiencies of the precipitation test. While there is no question that the differentiation of albuminous substances by means of complementary deviation is a most important advance in the study of the reactions of immunity, its use for practical ends is beset with certain difficulties. Suspected blood stains and other materials submitted for examination for forensic purposes are seldom free from admixture with substances that may influence the outcome of this test. Such substances may be of two kinds, namely, (1) such as in themselves cause laking of blood corpuscles, and (2) such as in themselves suspend the action of complement. Thus the presence of certain bacteria with hemolytic power, or of their products, might cause laking in spite of suspension of the action of the complement. We know, further, that substances of various kinds can deprive a serum of its lytic power by the effect on the complement, e. g., suspensions of certain bacteria, powdered yeast, cells of various organs, Irish moss, broth, various extracts, and many chemicals, especially salts.[4] In small quantities of solutions isotonic with serum, numerous more or less common salts prevent lysis by their action on the complement, e. g., $CaCl_2$, $BaCl_2$, $SrCl_2$, $MgCl_2$, K_2SO_4, $MgSO_4$, $(NH_4)_2CO_3$, $NaHCO_3$, $Na_3C_6H_5O_7$, $Na_2C_2O_4$, $(NH_4)_2C_2O_4$, $K_4Fe(CN)_6$, $K_6Fe_2(CN)_{12}$. Salts like NaCl, KCl, LiCl, NaS, NaBr, etc., which are not antilytic in solutions isotonic with blood serum, suspend lysis in higher concentrations. Of great interest from the practical point is the demonstration by Uhlenhuth[5] that extracts of the following large variety of substances have the power to prevent hemolysis presumably by their action on the complement: jute, hay dust, paste-board, dirt, wood, wool, gravel, bread, leather, feathers, hair, linen, hats, etc. Furthermore, that urine, peptone, peptone-broth, tuberculin and certain normal sera are antilytic.

Practically all these non-specific antilytic substances retain their antilytic action after boiling, whereas the power of substances in serum to unite with the proper antibody is destroyed on boiling. It is also probable that none of the non-specific antilytic substances will be found to possess any antilytic effect in such high dilutions as do albumins of various kinds. Naturally the complicated nature of this interesting test limits its use

1. Ann. de l'Inst. Pasteur, 1902, xvi, 734.
2. Berl. klin. Wochenschr., 1905, xlii, 1183.
3. Gay: Ann. de l'Inst. Pasteur, 1905, xix, 593; Neisser and Sachs: Berl. klin. Wochnschr., 1905, xlii, 1388, and 1906, xliii, 67. Lieffmann: Berl. klin. Wochnschr., 1906, xliii, 448. Muir and Martin: Jour. of Hygiene, 1906, vi, 265. Friedberger: Deut. med. Wochenschr., 1906, xxx, 578.

4. The literature up to 1904 is cited by Hektoen and Ruediger, "The Antilytic Action of Salt Solutions and Other Substances," Jour. Infect. Dis., 1904, i, 399.
5. Deut. med. Wochenschr., 1906, xxxii, 1244.

to especially equipped laboratories. It can not be claimed that this test will supplant the precipitin test for forensic purposes; in investigative work it is proving to be of value and it shows us how highly complex the reactions of immunity are.

AFTER-CARE PROBLEMS.

No movement in modern preventive medicine is more interesting or more full of promise than the awakening of attention in recent years to the "after-care" of individuals who have suffered from more or less chronic ailments and who, after treatment for some time in institutions, have been discharged as cured. Tuberculosis and insanity in particular have deservedly been the subjects of this special attention and any auxiliary that will reduce the morbidity and mortality for either of them must be heartily welcomed. The decrease of both of these affections is dependent to a much larger extent on the after-care of those who have been under special treatment than was imagined until a few years ago when the crying need of post-sanitarium measures at last found responsive auditors among the medical profession and those charitably inclined.

With regard to tuberculosis, no phase of the crusade against the disease is more important than proper provision for the so-called cured patients in order to prevent relapse. If a person goes back to the work and the environment in which he originally contracted tuberculosis, relapse is almost inevitable. This might have been so concluded on theoretic grounds, but experience has demonstrated it beyond all doubt since the establishment of sanatoria for the disease. Cured patients must not, as a rule, return to live the strenuous life of the large city, lest the period of latency of their tuberculosis —for radical cure is almost out of the question—will be at best but short. A country life without too much work and with plentiful opportunities for outdoor air and abundant food are the ideals of the postsanitarium life of the tuberculous. Unfortunately, these can not always be obtained and, if a decided improvement in this matter is to be brought about, organization of the after-cure of the tuberculous is as important as corresponding organization for the erection and maintenance of sanatoria and for the education of the masses, with regard to the prophylaxis and proper management of the disease.

Fortunately, the after-care movement with regard to the other great series of affections which are just now rousing so much attention all over the world—those grouped under the name insanity—is already well under way and promises to advance rapidly. The first of these societies for the after-care of the insane was founded only a few years ago in England. Its methods are eminently practical. The secretary of the society visits the asylums, works in close coöperation with the medical superintendents and is notified by them when patients who are to be discharged cured are poor and without homes or friends. For such individuals boarding places —in the country for the women, in the city for the men—have previously been arranged by the society. These are not large institutions or buildings owned by the society, for, as the first report of the committee on After-Care of the Insane of the State Charities Aid Association of New York insists, the society does not wish them, but prefers small cottage homes—small boarding houses as we should call them—where a man and his wife are willing to board these after-care patients. Their board is paid by the society usually for from one to six weeks until health is fully reëstablished and the individuals are able to work. The women require much more looking after than the men. Employment is found for both sexes, so far as possible in a suitable environment, and then the society keeps in communication with them until they are absorbed into the community as ordinary self-supporting self-respecting men and women.

It is almost needless to say that such an organization accomplishes work of the greatest possible utility and by preventing relapses decreases greatly the expense incident to the support of patients in the insane asylums, for relapsed cases often prove obstinately intractable and further improvement to an extent that will allow them to leave the asylum can scarcely be expected. An organization of a similar kind to that in England has been established during the present year in America and it seems only proper that the medical profession should encourage the good work that it is doing in every possible way. If corresponding organizations for the after-care of tuberculosis patients were to be established they too would doubtless accomplish most satisfactory work. If the community owes it to itself and its citizens that it shall take care of persons ailing from such diseases it would seem to be even more important that after their cure it should make every effort to maintain them in that state of improved health which its paternal care has secured for them.

NOSTRUM ADVERTISEMENTS IN THE RELIGIOUS PRESS.

Now that many newspapers are refusing advertisements of questionable proprietary medicines, it may not be amiss to call attention to the shortcomings of another class of journals in which these advertisements are more or less prominent, namely, the religious and semi-religious publications. *A priori* it might be expected that publications of this character would exclude from even their advertising pages any statement which was obviously lacking in truth, so far as human experience is able to judge of truth. A glance over the advertising pages of the available religious and semi-religious journals shows that this is far from being the case. Discrimination must be made, however, between certain high-class theological publications and semi-religious

journals (as the *Outlook,* for example) on the one hand and the cheaper weekly semi-religious sheets on the other. The former are clean in their advertising, the latter are far from being so.

The class of medical advertisements contained in the ordinary religious weeklies does not differ greatly from that found in the daily papers. Aside from the legitimate medical advertisements, two classes are to be noted: first, those claiming to cure incurable diseases and, second, those whose claims are obviously exaggerated. It will hardly be credited that, after *Collier's* exposure of the vampires who fatten on the credulity of the unfortunate cancer sufferer, any decent paper, much less one of religious tendencies, would publish the advertisements of this shameless crew. Yet we find in the pages of the *Episcopal Recorder* of Philadelphia a statement in flaring type, "Cancer Cured by Soothing Balmy Oils." This emanates from the notorious "Dr." Bye of Kansas City, and, indeed, both this "Dr." Bye and the "Dr." D. M. Bye of Indianapolis are represented in this journal. A similar "oil cure" for cancer, by one "Dr." L. T. Leach of Indianapolis, is to be found among the advertisements of the *Advance,* a Congregationalist journal published in Chicago. Such advertisements are not only palpably false, but actually cruel, and, published in the pages of journals which are supposed to stand for the Christian principles of rectitude and truth, are doubly worthy of condemnation. Hardly less despicable are other advertisements heralding the sure cure of incurable or very intractable diseases, like heart disease, asthma, or baldness. What should be thought of a religious journal (the *Westminster*) which published the statement that "on the very first indication of heart disease you can stop all progress and effect a cure by the use of Dr. Miles' Heart Cure"; or of another (*Western Christian Advocate*) which states that "magic foot drafts possess the remarkable power to compel the system to yield down through the great foot pores the impurities which cause rheumatism, relieving where everything else has failed"? These are the most glaring examples, and the papers mentioned are the most flagrant offenders, but by no means the only ones. One journal cites on one page a reference to Isaiah, giving the prophet's remarks against the use of alcoholic drinks, while on another page it advertises a notorious sarsaparilla which contains 18 per cent. of alcohol. A journal which, with evidently human motives, advertises a fake cancer cure, decries on another page the fact that "the divine motive, once so great and effective an appeal, is set aside for the human motive," a fact of which any one who perused its advertising columns would be convinced. Another journal, the *Cumberland Presbyterian,* in one issue has an editorial on the evils of drink, and in the next issue an advertisement extolling the virtues of wine of cardui. This journal also carries an advertisement of Mrs. Winslow's soothing syrup.

Why does such a condition of affairs exist? Doubtless it is partly the fault of the medical profession who, until recently, have countenanced equally unveracious advertising in their own papers. Partly, perhaps, it is due to the optimism cultivated by religious training. We fear, however, that it is mainly the result of the application of the so-called business principles to the conduct of religious journals. While the application of true business principles to the affairs of religious journals is worthy of nothing but praise, we fear that the publication in their advertising columns of absolute falsehood or perverted truth can not be considered as coming under this head. Let us hope that when these matters are brought to the attention of the proprietors of the journals mentioned they will see them in their true light and will institute reform.

EXPOSURE OF QUACKERY DOING GOOD.

Mr. Samuel Hopkins Adams, who is now editor of *Ridgway's,* evidently has not lost his interest in the fight against "patent medicines" and quack doctors. Two weeks ago[1] we referred to the splendid work that the Cleveland *News* was doing in showing up the quack doctors of Cleveland, and Mr. Adams has written to the *News* congratulating that paper on its work of exposure. He says: "If newspapers in other cities would turn the fire of their guns on these rascals their activity would very soon end. As it is, you are doing a very great work for Cleveland, which is, of course, your object, but, perhaps, indirectly an ill service for other cities, for the flock of vampires whose roosts you have disturbed will hover for a time and then scatter and settle in various parts of the country. It is a pity that there is not in every one of our larger cities some paper courageous enough to undertake such a campaign as you have successfully carried on." There is plenty of evidence to show that the advertising quack doctors, whether they conduct this business as individuals or as "institutes," are "on the anxious seat," and there is also evidence to show that the work already done has checked the flow of gold into the coffers of these frauds.

EUGENIC LEGISLATION.

The Supreme Court of Connecticut, it is reported, has affirmed the power of the legislature to enact "eugenic legislation." The Connecticut act is upheld which forbids the marriage of epileptics, except when the woman is over 45, thus establishing an important principle. Other questions, however, will arise. Aside from the fact that Connecticut legislation will not prevent epileptics from marrying in other states, the question as to who is an epileptic is to be decided. Is it to be one who has frequent or occasional fits—in other words, a habitual epileptic—or any one who has ever suffered from the disease? Epilepsy implies a certain degree of brain instability that may be inherited in one form or another. There are epileptics who never have more than one convulsion; there are others who, with very infrequent attacks, give evidence of having exceptional brain

1. THE JOURNAL A. M. A., Nov. 10, 1906, pp. 1568 and 1579.

power and who may with equal likelihood transmit this to their posterity. There are still others who have had frequent attacks under conditions of special stress, altogether exceptional in the lives of normal individuals, and under no other conditions. Of course, in the great majority of epileptics there can be no question regarding the nature of the disorder and its chronicity. But what about the occasional curable cases? Are we to accept the rule, which seems to be admitted, "once an epileptic, always an epileptic"? The strict enforcement of the Connecticut law will undoubtedly work hardship in a few cases, but, on the whole, it is a rational one, and its enforcement will be to the advantage of future generations.

ASYLUM DYSENTERY.

The occurrence of outbreaks of dysentery in hospitals for the insane has been noted for years in this country, in Great Britain, and on the continent of Europe. The curious thing about many of the outbreaks has been that they have occurred in districts seemingly free from dysentery, and have usually spared the physician and nurses who looked after the sick. A recent epidemic reported from an asylum in central Germany by Liefmann and Nieter[1] shows that physicians and attendants may be attacked. The report of these observers also shows that the spread of the infection is slow, that it is usually confined to certain localities in the hospital, and that there is an appreciable gap between each case. It is certain from these facts that it spreads by contact, and is doubtless due to the well-known dirty habits of insane patients. It has been shown that this form of dysentery, like most epidemic outbreaks reported in recent years, is due to the *Bacillus dysenteriæ,* and usually to the strain common in the United States and temperate climates generally. Liefmann and Nieter lay stress on the fact that the bacilli occur in individuals with slight intestinal disturbances, or even in those who appear in good health. This corresponds to the experience in typhoid fever, in Asiatic cholera, and in diphtheria, and serves to emphasize the fact, not yet widely enough appreciated. that it is the mild cases of infectious disease which are often the greatest danger to the community. The contact infection in the epidemic above reported suggests the prevention of such outbreaks by early isolation of infected patients.

NURSES' SCHOOLS AND ILLEGAL PRACTICE OF MEDICINE.

Physicians have enough examples before them to emphasize the danger of putting the power to practice medicine into the hands of those who will use it wrongly. Some physicians, however, do not seem to learn this lesson. J. Noir[2] criticises certain methods of instruction and certain manuals for nurses as having a tendency to encourage the production of illegal practitioners. He quotes passages from an English manual which support his contention, and reproduces the following resolutions which were adopted unanimously in the Congress for the Suppression of Illegal Practice: "1. Every attempt at initiative on the part of nurses, attendants, orderlies, etc., should be reproved by the physicians and by the hospital administration. 2. The programs of nursing schools and the manuals employed should be limited strictly to the indispensable matters of instruction for those in their position, without going extensively into purely medical matters which might give them a false notion as to their duties and lead them to substitute themselves for the physician. 3. The professional instruction of orderlies and nurses should be intrusted exclusively to the physicians, who only can judge what is necessary for them to know. 4. The physicians charged with this instruction should never forget, in the course of their lectures, to insist on the possible dangers of the initiative on the part of orderly and nurse and on the serious responsibility that would be incurred in case of accident by the persons thus inconsiderately stepping out from their proper sphere." These maxims should certainly be borne in mind by the physician who has dealings with the nurse, as a matter of simple justice to her that she be not encouraged to take steps that are not in her province.

1. Münchener Med. Woch., 1906, lIII, 2097.
2. Progrès Méd., June 19, 1906.

THE ETIOLOGY OF ACUTE MENINGITIS.

Like acute inflammation elsewhere, acute meningitis (non-tuberculous) may be caused by a variety of microbes, the most important being the meningococcus and the pneumococcus. The disease caused by the meningococcus generally occurs in epidemic form, although sporadic cases are not infrequent, and the meningococcus is regarded as the specific cause of epidemic cerebrospinal meningitis. Streptococci and staphylococci also may cause meningeal inflammation, and of late it has been shown that anaërobic bacteria may play the same part. Ghon, Mucha and Müller[1] of Vienna describe with great detail the anaërobic bacteria they isolated from a small series of cases of meningitis following chronic infections of the ear. Rist and others have shown that anaërobic bacilli occur to a greater extent than surmised in ear infections so that it would be quite reasonable that such anaërobes should invade the meninges under favorable conditions. This is not the proper place to describe the individual species isolated by Ghon and his colleagues; it may be noted, however, that none of the organisms was highly pathogenic for animals. This, perhaps, is owing to the difficulty in isolating anaërobes, the original virulence being lost by the time pure cultures finally are obtained. The Vienna investigators are convinced that a small anaërobic bacillus, very much like the influenza bacillus in size and form, was the cause of the meningitis in two of their cases. In a third, the exudate emitted a fetid odor, and here they isolated an anaërobic, fetor-producing vibrio. The results here outlined seem to indicate that the use of anaërobic methods will show that anaërobic bacteria play a more important part in many inflammatory processes than hitherto understood. Eventually facts may accumulate from which it will be possible to draw lessons of practical importance.

1. Centrlbl. f. Bakt., 1906, vol. xxxi, p. 1.

Medical News

ARKANSAS.

Suit Compromised.—The suit of the City of Fayetteville against Dr. S. J. Brownson is reported to have been compromised, November 8, the defendant giving the city $50. Dr. Brownson was fined $300 in the police court last summer on the charge of the illegal sale of liquor.

Must Register Births.—At a meeting of the city council of Fayetteville, November 7, an ordinance was passed requiring registration of births in that city, under penalty of a fine of not less than $5 nor more than $20. An ordinance was also passed requiring physicians to report all cases of infectious or contagious diseases.

Personal.—Dr. Arthur B. Loving, Pine Bluff, has been appointed physician of Jefferson County.——Dr. William Illing, Little Rock, on his retirement from his position as physician and superintendent of the Pulaski County Hospital, was presented with a handsome chest of silver, November 5, by many friends.——Dr. William N. Yates has been elected a member of the Fayetteville Board of Health.

CALIFORNIA.

Smallpox.—The whaling schooner *Monterey*, which arrived at San Francisco from the North, November 3, reported 16 cases of smallpox, some of which terminated fatally.

Medical Fund Created.—By the will of the late Mrs. Fannie Letitia Keating, San Diego, Dr. Henry T. Woodward is bequeathed $10,000, and, after certain bequests are made, the will stipulates that all the remainder of her estate shall be invested and the proceeds applied to "the employment of one or more duly qualified medical and surgical practitioners, who shall devote all of his or their times and energies to the relief of the sick poor, either permanent residents or visitors to the city of San Diego, irrespective of sex, politics and creed."

Typhoid Fever.—The appearance of typhoid fever in many parts of Oakland has caused the city health officer, Dr. Edward N. Ewer, to announce officially that all drinking water should be boiled. In October 56 cases were reported to the health officer.——On November 6 the health officer of Berkeley reported 12 cases of typhoid fever in families supplied with milk from a single dairy, and advised that the sale of milk from that dairy be stopped until it complied with the health regulations.——Typhoid fever is reported to be epidemic at Camp A, Scotia.

Personal.—Dr. John R. Haynes, Los Angeles, has returned from abroad.——Dr. Alfred H. Voorhies, San Francisco, suffered a cerebral hemorrhage, October 20.——Dr. and Mrs. John J. Tully, Stockton, have returned after a trip abroad.——Dr. Robert T. Stratton has resigned as surgeon of the Oakland Receiving Hospital after a service of 15 years and has been succeeded by Dr. Oliver D. Hamlin. Dr. William H. Irwin has been appointed assistant physician at the hospital.——Dr. John R. Colburn, Los Angeles, has returned from a three months' trip in the Orient.——Dr. Adam Shirk, Oakland, is reported to be seriously ill with heart disease.——Dr. Edward M. Pallette has been appointed delegate from Los Angeles to the American Health Congress, to be held in the City of Mexico.

CONNECTICUT.

Typhoid Fever.—The typhoid fever epidemic at Wesleyan University, Middletown, is reported to be increasing. Professor Conn, state bacteriologist, says he is confident that the cases originated from oysters eaten at a recent fraternity banquet.

Colony for Epileptics.—At the annual meeting of the National Society for the Study of Epilepsy, held in New Haven, November 8, it was announced that the state commission appointed by the governor in 1905 will ask the legislature for an appropriation of $100,000 to establish a colony for the care of epileptics.

Personal.—Dr. John F. Barnett, West Haven, has recovered from his recent illness and resumed practice.——The Alumni Association of St. Francis Hospital, Hartford, has been organized, with the following officers: Honorary president, Dr. Daniel F. Sullivan, Hartford; president, Dr. Richard A. Outerson, Windsor Locks; vice-president, Dr. James F. Rooney, Plainville, and secretary-treasurer, Dr. Joseph P. Ryan, Hartford. ——Dr. Frank A. Benedict, Seymour, surgeon of troop "A," N. G. Conn., was thrown from his horse November 5 and sustained a fracture of the forearm.

GEORGIA.

Hospital Notes.—Sealed proposals are invited by the city of Columbus for the sale of about one acre of land in the city, suitable as a site for a hospital.——Plans are being considered for the erection of a sanitarium in Roseview Heights, a suburb of Eatonton.

Personal.—Dr. Roberts P. Izlar is reported to be seriously ill at his home in Waycross.——Dr. and Mrs. W. A. Turner, Jr., Newman, leave this month for Germany.——Dr. John J. Hill, Washington, is reported to be critically ill.——Dr. Theo. B. Davis, Newman, was painfully injured by a fall from his horse, November 2.

District Societies Meet.—The Sixth Councilor District Medical Society held its first annual convention in Macon, November 8, on the call of Dr. Mallie A. Clark, Macon, councilor of the district. The following officers were elected: President, Dr. John R. Shannon, Cabaniss; vice-president, Dr. J. A. Combs, Locust Grove, and secretary-treasurer, Dr. Eugene B. Elder, Macon. Dr. O. C. Webb, Jenkinsburg, opened the convention with a strong address on "The Importance of Organization." In the afternoon a banquet was tendered the society by the local members of the profession.——The Fifth District Medical Society met in Atlanta, October 16, and elected the following officers: President, Dr. John C. Olmsted, Atlanta; vice-president, Dr. E. Bates, Block, Atlanta, and secretary-treasurer, E. W. Ragsdale, Covington.

ILLINOIS.

Personal.—Dr. Harry H. Henning, Plano, has moved to Sugar Grove.——Dr. Miles D. Baker, for 10 years assistant superintendent of the Illinois Southern Hospital for the Insane, Anna, has tendered his resignation, to take effect December 1, on account of impaired health.

Society Meeting.—At the semi-annual meeting of the Fox River Valley Medical Association, held in Aurora, November 13, the following officers were elected: President, Dr. Albert A. Fitts, Batavia; vice-president, Dr. Ralph R. DeWitt, Hampshire; secretary-treasurer, Dr. George F. Allen, Aurora (re-elected); member of the executive committee, Dr. William A. Nason, Algonquin, and censors, Drs. J. A. Rutledge, Elgin; Raymond G. Scott, Geneva, and William J. Calhoun, St. Charles. The association will meet in Elgin in April, 1907.

Epidemic Diseases.—The John Deere school, Moline, which has been closed on account of an epidemic of scarlet fever, was reopened October 29.——An epidemic of smallpox is reported from Murdock, Douglas County. The disease was diagnosed as "Cuban itch."——Diphtheria and scarlet fever are reported to be epidemic in portions of Peoria County, and the Brimfield, Dunlap and Glasford schools have been closed.——Typhoid fever is reported to be epidemic in Waukegan, due, it is claimed, to a contaminated water supply.——The board of education of Averyville has decided to close the school of that village for a week on account of the prevalence of diphtheria. ——Scarlet fever in Glencoe has resulted in the closing of the Glencoe public school and public buildings.

Chicago.

Police Ambulances for Health Department.—The chief of police has recommended that the police ambulance service of the city be placed under the control of the city health department.

Personal.—Dr. Fernand Henrotin is critically ill with myocarditis at his home.——Dr. William P. Koons was severely cut by flying glass in a collision between his automobile and a street car, November 10.

Reception and Ball by Nurses.—The Chicago Polyclinic Nurses' Alumnæ Association held a reception and ball November 28 for the benefit of a fund to endow a bed for nurses at the new Polyclinic Hospital.

Health Report.—During the week ended November 24, 574 deaths from all causes were reported in Chicago, 7 fewer than for the previous week and 106 more than for the corresponding week of 1905. Pneumonia caused 90 deaths; consumption, 53; heart diseases, 51; nephritis, 45; violence (including suicide), 40; acute intestinal diseases, 31; cancer, 28; diphtheria and scarlet fever, each 13, and typhoid fever, 8.

INDIANA.

In Memory of Dr. Rosenthal.—The Allen County Medical Society at its regular meeting adopted resolutions expressing the bereavement of the society in the death of Dr. Isaac M. Rosenthal. Among the active pallbearers at the funeral were

Drs. Albert E. Bulson, Jr. and Miles F. Porter, and among the honorary pallbearers were Drs. George W. McCaskey and William P. Whery.

Communicable Diseases.—There have been reported 31 cases of smallpox in Madison, with 2 deaths. The board of health has established two isolation hospitals, and all patients have been removed to them.——In South Bend 17 houses are under quarantine on account of smallpox. All quarantine rules are being properly observed and all suspected cases are being treated as smallpox until diagnosis can be properly made.——Several cases of diphtheria have been reported in Laporte, with one death.——In Ladoga 9 cases of diphtheria have been reported.——During the first six days in November 15 cases of diphtheria had been reported in Indianapolis. The secretary of the State Board of Health reports that every county in the state has cases of diphtheria.——In Windfall 5 persons are critically ill with typhoid fever, due to the use of drinking water from shallow wells.——During the first ten days of the month 54 cases of typhoid fever were reported in Indianapolis.

MASSACHUSETTS.

Dispensary Meeting.—The one hundred and tenth annual meeting of the Boston Dispensary showed that the staff of about 100 physicians had cared for 104,405 patients in the 18 departments of the dispensary during this last year, besides 22,110 visits made on poor people at their homes. This last work is very greatly enlarged by the aid of the nurses of the Instruction District Nursing Association, one of whom accompanies each district physician on his visits. Urgent efforts are being made to increase the $21,630 already subscribed to the $100,000 needed to enlarge the buildings on the land already owned, in Bennett Street.

MICHIGAN.

Fined for Illegal Practice.—A. W. Van Bysteveld, Grand Rapids, who calls himself the "wonder doctor," paid a fine of $100 in the Superior Court, November 14, on the charge of practicing medicine without a license.

Medical Student Dies.—Joseph H. Stonehouse, a junior student in the medical department of the University of Chicago, of Escanaba, died in Chicago, November 17, from typhoid fever, after an illness of a few days.

Goldthwaite in Ann Arbor.—Dr. Joel E. Goldthwaite of Boston visited Ann Arbor and lectured to physicians and the senior class of the university, November 12. He was the guest of Dr. Reuben Peterson while in the city.

Epidemic Diseases.—During October 156 deaths were reported in the state from typhoid fever, the greatest number in that month for any year since 1901.——An epidemic of scarlet fever has broken out in Hartford, where about 150 cases are reported. The schools have temporarily been closed.

Personal.—Dr. Arthur J. Wilkinson, Hillman, has been elected coroner of Montmorency County.——Dr. Thomas M. Koon is reported to have tendered his resignation as health officer of Grand Rapids, to take effect Jan. 1, 1907.——Dr. Athanase E. Gourdeau, Ishpeming, has returned from Mexico.——Dr. D. E. Aiken, an aged practitioner of Grand Rapids, was struck by a street car November 9, and severely injured.

NEW YORK.

Hospital Name Changed.—The Niagara Hospital, Buffalo, has changed its name to the Lincoln Hospital.

Measles.—More than 150 cases of measles have developed in and around Sloatsburg, Rockman County.

Water Supply Bad.—The water supply of Buffalo still continues unsatisfactory and the Council is considering the establishment for its betterment of either a filtration or a sedimentation plant.

Scarlet Fever Epidemic.—Scarlet fever is reported to be epidemic in the schools of Buffalo, and the cause of the disease has been traced to the home of a barber, who is said to have boasted that he would not report the disease nor call a physician. He is to be prosecuted.

Census of the Blind.—The New York state commission to investigate the condition of the blind proposes to make a census of the blind persons in this state and to determine which are physically capable of engaging in some occupation, and also to make recommendations to the legislature in regard to the establishment of industrial schools for this class of unfortunates. The secondary object is to learn the causes of blindness and to establish preventative measures where possible.

Site for State Hospital.—An investigation is being made in regard to the establishment of a state hospital for the insane at Comstock for which a site has been purchased, it is claimed, for purely political reasons. The state lunacy commission is opposed to Comstock as a site because of its distance from the larger cities of the state, and its inaccessibility. The state has already made a payment of $42,500 on the site, but it is held that this amount would better be lost than that the proposed $1,000,000 should be expended on an institution so located.

Centennial Celebration.—The Broome County Medical Society celebrated its centennial October 24, at Binghamton. The opening address was delivered by the president, Dr. Frederick M. Miller; Drs. John G. Orton and Daniel S. Burr gave interesting reminiscences of the early days of the society, and Dr. Charles G. Stockton, Buffalo, delivered an address on "Comparison of Ourselves with Our Forebears," and Dr. Joseph L. Bryant, New York City, spoke on "Some Lessons of the Hour."

Personal.—Dr. Joel E. Goldthwait, Boston, read a paper before the Buffalo Academy of Medicine, November 13, on "A Consideration of the Pelvic Articulations."——Dr. Harvey R. Gaylord, Buffalo, who fractured his leg in an automobile accident, is making good progress toward recovery.——Dr. Bernard Cohen, Buffalo, is taking a trip to Bermuda.——Dr. John H. Pryor, Buffalo, has been reappointed a member of the board of trustees of the New York State Hospital for Incipient Tuberculosis.——Dr. William H. Beach, Catharine, who was recently operated on in the Bethesda Sanitarium for a tumor, is reported to be convalescent.——Dr. Christopher C. Reid, Rome, who is a patient in St. Luke's Hospital, Utica, on account of injuries received in a fall from a street car, is reported to be doing well.——Dr. Clara Swain, Castile, has started for India.

New York City.

Nurses' School for Bellevue.—Plans have been filed for a six-story fireproof training school for women at Bellevue, to have a frontage of 151 feet, a depth of 194 feet, and to cost $575,000.

New Home for Hospital.—The Washington Heights Hospital has bought two brownstone dwellings on West One Hundred and Sixty-fifth Street which it will occupy as soon as the necessary alterations are made.

Harvey Lectures.—The subject of the fourth lecture in the Harvey Society course by Prof. J. George Adami, Montreal, at the New York Academy of Medicine, December 1, is "Myelins and Potential Fluid Crystals of the Body."

Large Gifts to Charity.—The first anniversary of the death of L. G. Bloomingdale was commemorated, according to his wishes, by the distribution of a number of bequests, among which were $25,000 to the Montifiore Country Home for Consumptives, $5,000 to the Hebrew Orphan Asylum, and $5,000 to Mount Sinai Hospital.

The Jewish Hospital Society.—At the annual meeting of this body it was announced that $50,000 was required at once in order to equip and operate the new hospital which had been purchased at a cost of $335,000. This building was formerly the Memorial Hospital for Women and Children and will be opened by the purchasers on December 9. The hospital has 175 beds and will cost $100,000 a year for maintenance.

Contagious Diseases.—There were reported to the sanitary bureau for the week ended November 17, 373 cases of tuberculosis, with 176 deaths; 253 cases of diphtheria, with 36 deaths; 115 cases of scarlet fever, with 5 deaths; 108 cases of typhoid fever, with 14 deaths; 90 cases of whooping-cough, with 8 deaths; 72 cases of measles, with 3 deaths; 21 cases of cerebrospinal meningitis, with 8 deaths; 46 cases of varicella and one case of smallpox, a total of 1,079 cases, with 250 deaths.

Personal.—Dr. and Mrs. George T. Fox arrived from Hamburg on the *Patricia* November 23.——Dr. Frederick E. Beal had a severe hemorrhage from a gastric ulcer and is now slowly recovering at the Polyclinic Hospital.——Dr. Frederick Bierhoff was shot by a former female patient, supposed to be insane; his wounds, though painful, are not serious.——Dr. Louis W. Bremerman has been appointed professor of genito-urinary diseases in the New York School of Clinical Medicine, vice Dr. William K. Otis, deceased.

For Sydenham Hospital.—At the annual meeting of the board of directors of the Sydenham Hospital, Isaac Guggenheim announced that he would erect for the institution a $500,000 building if the board would guarantee him that it would obtain for the hospital an annual income of $50,000 or $60,000. In addition to making this offer, Mr. Guggenheim

gave $60,000 which he had collected during the past month to pay the expenses of the institution, $10,000 of which was his personal donation.

The Milk Conference.—The meeting held at the Academy of Medicine, November 20, under the auspices of the Society for Improving the Condition of the Poor, was attended by about 40 of the leading physicians and milk experts of this and other cities. Nathan Straus related his experience with pasteurized milk and was of the opinion that pasteurization was the panacea for all troubles with the milk supply, but many held different opinions. Dr. George W. Goler, Rochester, told of the system of milk stations in that city for the distribution of milk for infants. Since 1898 the mortality had been reduced from 33 to 20 per cent. Dr. L. Emmett Holt, New York City, thought that the good work of the Straus depots has been due to the fact that mothers have been taught how to feed their children, that is, the quantity of milk and time of feeding have been regulated. Dr. Walter Bensel thought that it is possible to secure a pure milk supply by inspection only if there were 80 inspectors instead of 14, as at present. The Maryland plan for a traveling dairy for the education of farmers was described. It was voted that a committee be appointed to coöperate with the board of health, the County Medical Society and the State Department of Health.

Tablet in Honor of Reed.—At its annual dinner, November 21, the Society of Ex-Internes of Kings County Hospital, Brooklyn, presented to the hospital association a bronze memorial tablet in memory of the late Walter Reed, who was an interne there in 1871, prior to his entrance into the medical department of the United States Army. The presentation address was made by Dr. A. T. Bristow, and that of acceptance by R. W. Hibberd, commissioner of public charities of New York City. Short addresses commendatory of Dr. Reed and his work were made by Dr. Howard Kelly of Johns Hopkins University, Dr. Joseph Bryant of New York City, the Rev. Lindsay Parker, and Colonel Philip F. Harvey, assistant surgeon general, United States Army. The tablet bears the following inscription:

ERECTED BY THE ASSOCIATION OF EX-INTERNES,
OF THE KINGS COUNTY HOSPITAL

To the Memory of

Walter Reed, M.D.

Interne in this Hospital, 1871.
MAJOR AND SURGEON, U. S. A.
CHAIRMAN, U. S. YELLOW FEVER COMMISSION, 1900-1901.

He robbed the pestilence of its terrors
and caused the cities of the southland
to sit in peace within their gates.

OHIO.

Resolutions of Respect.—Resolutions of respect and condolence regarding the late Dr. Evander J. Goodsell of Norwalk, were adopted at a special meeting of the physicians of Norwalk, September 20, and also by the Huron County Medical Society, at its regular meeting, October 11.

Hospital Notes.—With impressive and solemn ceremonies, the Good Samaritan Hospital, Zanesville, erected by the Franciscan Sisters at a cost of more than $100,000, was formally dedicated. The ceremonies were conducted by Bishop Harter of Columbus, and at the conclusion of the ceremonies an address was delivered by Dr. Joseph Price, Philadelphia.

Councilor District Meetings.—The third annual meeting of the Seventh Councilor District Medical Society was held November 1, in Uhrichsville. The meeting closed with a reception and banquet, at which Dr. James C. M. Floyd, Steubenville, acted as toastmaster. Dr. Emmet B. Shanley, New Philadelphia, was elected president, and Dr. William E. Morris, Lisbon, secretary.——At the annual meeting of the First Councilor District Medical Society, held in Cincinnati, November 8. Dr. Otho Evans, Franklin, was elected president; Dr. John Miller, Cincinnati, secretary and Dr. Albert H. Freiberg, Cincinnati, treasurer. In the evening a smoker was held at the Academy of Medicine, at which Drs. Edward H. Ochsner, Chicago, and G. Carl Huber, Ann Arbor, Mich., read papers.

PENNSYLVANIA.

Philadelphia.

Tribute to Dr. Crowder.—The faculty of the Woman's Medical College of Pennsylvania, at a recent meeting, passed resolutions recording its sense of personal sorrow in the death of Dr. Edith Cadwallader Crowder, a graduate of that institution in 1900, and afterwards an interne in the Woman's Hospital, Philadelphia.

Free Tuberculosis Clinic.—The Philadelphia Clinic for Home Treatment of Chest and Throat Diseases, 519 South Fifteenth Street, has recently opened evening clinics, in addition to the day clinics, which have been running since last March, for free treatment of consumptives. Dr. Frank Read is president of the board of managers, and Dr. Thomas J. Mays is medical director.

Hospital Report.—The report of the Stetson Hospital for the year ended November 1 shows that 22,276 patients were treated in the various departments of the institution, by far the greatest number in the clinics. Of the total number of patients treated 7,445 were surgical, 4,675 ear, nose and throat, 4,198 eye, 1,794 skin, and 3,151 medical cases. During October 1,707 patients were treated.

Civil-Service Examination.—Dr. Henry Sykes, temporary chief resident physician at the Philadelphia Hospital, passed the civil-service examination with a general average of 78.54; Dr. Henry H. Doan, with a general average of 76.94, stood second, and Dr. Charles M. Hosmer third, with an average of 75.10. As Dr. Sykes heads the list and is at present chief resident physician of the hospital, he will undoubtedly receive the permanent appointment.

Health Report.—The total number of deaths for the week ended November 24 aggregated 522, as compared with 473 for last week. The principal causes of death were: Typhoid fever, 21; measles, 6; scarlet fever, 4; diphtheria, 10; consumption, 47; cancer, 22; apoplexy, 22; heart disease, 59; acute respiratory disease, 74; enteritis, 19; appendicitis, 10; Bright's disease, 43; old age, 8; suicide, 5; accidents, 17, and marasmus, 4. There were 323 cases of contagious disease reported, with 37 deaths, as compared with 224 cases and 30 deaths reported the previous week.

Physicians Should Interview Their Councilmen.—The department of public health and charities of this city for the year 1907 will request an appropriation of $5,000 to be used in securing evidence against and in prosecuting the illegal practitioners of medicine. It is believed that this appropriation can be obtained if the medical men individually interest themselves in laying before members of councils with whom they are acquainted the facts with regard to abortion, fraudulent practice, faith cures, etc. Unless medical men take an active interest in supporting the director of public health and charities, he will be left without funds available for the purpose indicated. It is asserted that the county medical society will act in an official capacity in assisting Dr. Coplin in unearthing and bringing to justice the fraudulent practitioners.

TENNESSEE.

Personal.—Dr. John H. Kincaid, Knoxville, has returned from Europe.——Dr. Joseph Lea, Knoxville, was injured by a fall from his horse, October 26.——Dr. Marcus Haase, Memphis, has returned from abroad.

Cornerstone Laying.—The cornerstone of the new hospital of the University of West Tennessee, Jackson, was laid October 28. This hospital was founded for the free treatment of poor and needy colored people, and is the only one of its kind in western Tennessee.

Communicable Diseases.—The Fountain City Hotel, Knoxville, has been temporarily closed on account of the development of scarlet fever.——The primary school of Fountain City has been closed on account of diphtheria.——Two cases of diphtheria are reported at McEwen.

Commencement Exercises.—The exercises of the Medical Department of the University of the South, Sewanee, took place October 23. Dr. John S. Cain, Nashville, dean of the medical department, delivered a short address, which was followed by the conferring of degrees on a class of 30 by Vice-Chancellor B. L. Wiggins.

Hospital Staff Elected.—The legislative council of Memphis has accepted the resignations of Drs. George R. Livermore, William Battle Malone, Max Henning and Frank D. Smythe from the City Hospital medical staff and has made the following appointments on the staff: Physicians—Drs. William T. Black, Louis LeRoy, Oswald S. McCown and Charles S. Morrow. Surgeons—Drs. Maximilian Goltman, David M. Henning, E. Michel Holder and William B. Malone. Obstetricians—Drs. Alexander Erskine and William B. Sanford. Gynecologists—Drs. James L. McLean and Frank D. Smythe. Oculists—Drs. Edward C. Ellett and Alexander G. Sinclair. Pathologists—Drs. William Krauss and James B. McElroy. Neurologists—Drs. George G. Buford and B. Frank Turner. Laryngologists—Drs. Pope M. Farrington and Richmond McKinney, and dermatologists, Drs. Marcus Haase and Robert G. Henderson.

TEXAS.

Physician Fined.—Dr. H. G. Thomas, Handley, is reported to have been convicted of assault at Fort Worth, October 2, and sentenced to imprisonment for 60 days in jail and to pay a fine of $1,000.

Hospital Notes.—The new hospital, to be erected by the Santa Fe Railway Employés' Association, has been located at Temple. The building will cost $125,000, of which $60,000 is now available, for the erection of the main or central building.——Plans have been begun for the erection and maintenance of a sanitarium in Taylor. A stock company is to be formed, with a capital of $10,000, $4,000 of which has already been subscribed.

Personal.—Dr. Ira C. Chase, Fort Worth, was painfully injured in an automobile accident recently.——Dr. John F. Eaves, quarantine officer at Shreveport, has resigned and will practice in Bryan.——Dr. J. S. Turner, superintendent of the Northern Texas Hospital for the Insane, Terrell, has handed in his resignation, to take effect Jan. 1, 1907.——Dr. Turner's Arlington Heights Sanitarium, Fort Worth, has been incorporated with a capital stock of $40,000.

Tri-State Society Meeting.—At the annual meeting of the Tri-State Medical Association of Arkansas, Texas and Louisiana, held in Marshall, November 13 and 14, the following officers were elected: President, Dr. Holman Taylor, Marshall, Texas; vice-presidents, Drs. Arthur U. Williams, Hot Springs, Ark.; John L. Wilson, Alexandria, La., and Joseph D. Becton, Greenville, Texas; secretary, Dr. Robert H. T. Mann, Texarkana, Ark., and treasurer, Dr. Isaac M. Callaway, Shreveport, La. The association will meet in Shreveport next year.

UTAH.

Acquitted.—The case of Dr. George H. Herbert, Richfield, charged with the unlawful practice of medicine, is reported to have been decided by the jury in favor of the defendant, October 22.

Communicable Diseases.—Typhoid fever is reported to be epidemic throughout the entire southern portion of the state. In Spring City and Fountain Green the greatest number of cases was found.——Diphtheria is reported to be epidemic in Salt Lake City. During the week ended November 10, 9 cases were reported, and up to that time 17 patients were under quarantine.

Presents Library.—Dr. Charles G. Plummer, Salt Lake City, has presented to the University of Utah a collection of books on medicine and surgery, as a nucleus of a medical library. Arrangements are being made to have a room in the museum building fitted up for library purposes, which will be available not only for medical students, but for the profession of Salt Lake and its neighborhood.

Personal.—Drs. W. Brown Ewing, Edward V. Silver, Charles G. Plummer, Theodore B. Beatty and Roy R. Hampton, Salt Lake City, have been appointed probation officers in connection with the commission to investigate the mental condition of children in Salt Lake City brought before the Juvenile Court.——Dr. Samuel H. Allen, of the medical staff of the Latter Day Saints' Hospital, Salt Lake City, has gone to Europe.——Dr. and Mrs. Walter M. Stookey, Lehi, left for Europe November 22.

WASHINGTON.

Personal.—Dr. Frederick A. Cook, Brooklyn, on his return from the ascent of Mount McKinley, was tendered a reception in Seattle, November 9, at the Alaska Club.

Illegal Practice.—The Spokane County Medical Society, at its November meeting, discussed the advisability of calling the prosecuting attorney's attention to the practice of the so-called "healers" in eastern Washington. It was the consensus of opinion at the meeting that the illegal practice of medicine and medical advertising should be stopped.

Typhoid Fever.—The typhoid fever epidemic, from which Hoquaim has been suffering, is reported to be subsiding.——Typhoid fever is reported to be prevalent in Malaga. Three deaths have occurred and 11 patients are suffering from the disease.——Typhoid fever is reported to be prevalent in Harrington.——Thirty-nine cases of typhoid fever were reported in Walla Walla during October.

State Board Report.—Dr. Elmer E. Heg, Seattle, secretary of the State Board of Health, in his biennial report, recommends changes in the health laws which will authorize the health authorities to take charge of contagious diseases under the supervision of the board; asks for an act giving the board control of the water supply for domestic purposes; asks for the establishment of bacteriologic experimental stations; asks for the establishment of tuberculosis sanatoria, and suggests that the methods of collecting vital statistics be so changed that they conform to the methods and meet with the approval of the United States Census Bureau.

WISCONSIN.

Personal.—Dr. Adolph Gunderson, La Crosse, who was bitten by a dog thought to be rabid, has gone to the Pasteur Institute, Chicago, for treatment.——Dr. Henry Rhode, Green Bay, has had a successful operation performed for cataract.

Suit Against Physician Dismissed.—Judge Tarrant, on November 7, dismissed by stipulation the damage suit of Robert Koerber against Dr. Arthur J. Patek, Milwaukee, in which a new trial was ordered, after Koerber had been awarded a verdict of $813.45 against the physician.

Crusade Against Illegal Practitioners.—On initiative taken by the State Board of Health, the district attorney of Milwaukee has issued warrants for the arrest of five practitioners of Milwaukee who are said to have no license from the state board, no diplomas from reputable medical colleges and no diplomas or other recognized credentials on which to base their right to practice medicine.

Epidemic Diseases.—Lakewood, Oconto County, is reported to be suffering from a severe epidemic of typhoid fever.——Milwaukee reports 100 cases of typhoid fever and claims that the public water supply is not contaminated.——The report has been made to the health department of Milwaukee that there are six cases of smallpox in one family.——Eight cases of smallpox are reported at Warsaw and nine at Easton.——Several cases of smallpox are reported in Two Rivers.

GENERAL.

The Yellow Fever Condition in Cuba.—By telegram as we go to press we learn that there were eight new cases of yellow fever reported in Havana and three in the provinces during the week ended November 27.

Less Cholera in Manila.—Dr. V. Heiser, chief quarantine officer, reports that the cholera situation in Luzon and Manila is improved. During the week covered by his report in the provinces there were 121 cases with 87 deaths, as against 120 cases and 94 deaths for the preceding week. The presence of cholera in the province of Iloilo has been definitely confirmed by the examinations made by the bureau of science of cultures which were forwarded from Iloilo.

Prize Essay on Epilepsy.—Dr. W. P. Spratling announces a prize of $500 offered by the Association for the Study of Epilepsy for the best essay on the etiology of epilepsy. The money is provided by persons interested in the work of the association. All essays submitted must be in English, must not contain more than 15,000 words, and must be sent to Dr. W. P. Spratling, Sonyea, N. Y., by Sept. 1, 1907. The name of the person submitting the essay must not appear on it, but must be put in a sealed envelope on which is written a motto, which motto should also appear at the top of the first page of the essay.

Annual Meeting of the Porto Rico Medical Association.—The members of the Porto Rico Medical Association gathered at San Juan, October 7, for the third annual meeting, Dr. A. Stahl in the chair. The president referred to the great work that had been done by the profession in regard to uncinariasis, and the present study of a morbid entity new in the pathology of the island, owing to its atypical manifestations. A communication on this subject by Muñoz Diaz classified the disease in question as "spurious typhoid," the typical syndrome being conspicuously lacking and yet the microscopic diagnosis establishing the typhoid nature of the affection. He has also had occasion to observe various other atypical morbid entities traced finally to the malarial parasite by its discovery with the microscope. Among other speakers were Stokes, Lippit, de Quevedo, Figueroa and Lopez. The *Boletin de la Asociacion Medica de Pto.-Rico* for October contains some of the communications and also a diagram showing the increasing death rate in San Juan during the last two years owing to the progressive insanitary condition of the city. The mortality was 406 in 1904, 1,125 in 1905, and 608 during the first six months of 1906.

Report of the Surgeon General of the Army.—Surgeon-General O'Reilly, in his annual report for the year ending June 30, 1906, discusses the general health and sanitary conditions of the Army during that period. Venereal diseases were by far the most important in affecting the efficiency of the Army. Next in order was malaria, which showed a slightly increased admission rate as compared with the previous year. The class

of diseases showing a most decided improvement were the diarrheal affections. As a cause of death tuberculosis led, with a rate of 0.68, a slight increase compared with the previous year; pneumonia was second, with a rate of 0.32. As a cause of discharge for disability venereal diseases led with a rate of 3.41. The principal causes of discharge, with the number for each, were: Venereal diseases, 199; tuberculosis, 157; defective vision, 134; organic heart diseases, 107; insanity, 78, and hernia, 68. Sixty per cent. of the discharges were for disabilities not incurred in line of duty, and of these 72 per cent. were contracted before enlistment. With regard to special diseases, the rates of admission to hospital were better than in most other armies in the following instances: Bronchitis, pleurisy, pneumonia, tuberculosis, erysipelas, sunstroke, relapsing fever, scarlatina and trachoma. They were much higher than in any other army in the following: Alcoholism, dysentery, gonorrhea, syphilis (British army excepted). The only diseases in which the rates were better in the American than in the Prussian army were pleurisy, pneumonia, erysipelas, scarlatina and trachoma. While the admission rate for dysentery in the British army was less than half that of the American Army, the death rate was greater for the former. The death rates for malaria in the British, Dutch, Russian and Spanish armies were also greater than in the American Army, although the corresponding admission rates (except British) were much lower.

Professor von Rosthorn's Impressions of the Boston Session.—The October *Monatsschrift f. Geb. u. Gyn.* contains an article by Prof. A. von Rosthorn, one of its editors, and one of the foreign guests at the Boston session of the American Medical Association, describing his impressions of Boston and of the session. He says Boston "is of peculiar interest to obstetricians, as here in 1843, and thus before Semmelweis, the contagiousness of puerperal fever was first taught in the most decided manner. The communications and conclusions published by Oliver Wendell Holmes on the subject rank among the finest contributions to American medical literature both in content and style." He adds that notwithstanding Holmes' convincing arguments the new conception encountered as rabid opposition from prominent medical authorities here as did the same idea when conceived and announced by Semmelweis a few years later in Europe. Rosthorn refers to the American Medical Association (*Amerikanische ärerztliche Gesellschaft*), as the largest medical organization in the world. He gives a summary of the work in the Section on Obstetrics and Diseases of Women, emphasizing the restless energy with which American gynecologists are studying the various questions of the day and striving to perfect themselves in all directions. He followed the successful proceedings, he says, "with the greatest interest, the general impression—even on a very critical observer—being of the most favorable kind." He adds: "They suggested to the German guest the possibility that sooner or later the Americans will surpass German science, as the land has such inexhaustible riches, and the Americans show such a wealth of talents and gifts, and are working with truly intensive efforts to model their higher institutions of learning on the pattern of the German universities and thus utilize every possible factor in the training of youth and the cultivation of science." He continues: "The United States already possesses in the medical school at Baltimore (Johns Hopkins) an institution which is a model in every respect, and which has already attracted the attention of the entire world by what it has accomplished, ably competing with the best medical departments in the German universities. Theoretical research is here given due respect and prominence. Here blooms a school in the finest sense of the term. Numerous graduates from this school are, besides, already actively at work in the various universities of the land to promote its ideals elsewhere. If the view also cherished there that thorough training in the natural sciences is the best endowment for the further work of the newly fledged physician, if this view becomes more widely accepted and the medical schools of America develop and extend to correspond with it, who can foresee what grand results in this line may follow in this land which already leads the world in so many respects."

"Hier wird auch die theoretische Seite der Forschung entsprechend gepflegt und gewürdigt, und in den Dienst der praktischen Disziplinen gestellt. Hier erblüht eine Schule im schönsten Sinne des Wortes. Zahlreiche Jünger derselben sind übrigens schon an den verschiedensten Universitäten des Landes tätig, um in analog förderlicher Weise zu wirken. Gewinnt aber die auch dort vertretene Anschauung, dass eine sorgfältige, naturwissenschaftliche Ausbildung des jungen Mediziners die beste Mitgift für seine fernere Tätigkeit darstelle, eine allgemeinere breitere Basis und damit die Ausgestaltung des medizinischen Hochschulunterrichtes Amerikas in diesem Sinne eine weitere Ausdehnung, dann ist nicht abzusehen, was diesem in so vielem voranschreitenden Lande auch auf diesem Gebiete noch Weiteres, Grosses zu leisten vorbehalten ist."

CANADA.

Donation to Consumption Sanatorium.—Messrs. J. B. and J. J. Grafton of Dundas, Ontario (near Hamilton), have given $5,000 to the Hamilton Health Association to be expended on the consumption sanatorium.

University News.—The Medical Faculty of Toronto University has elected the following members of their staff to serve on the University Senate: Drs. D. J. Gibb Wishart, James F. W. Ross, George A. Bingham and Irving H. Cameron.

Unauthorized Use of Physician's Name.—Prof. J. George Adami of McGill University, Montreal, states that his name has been used without authority in connection with the meetings of the American International Tuberculosis Congress and the American Antituberculosis League.

Personal.—The Medical Council of British Columbia at its recent session refused to replace the name of Dr. Robert E. Telford of Vancouver, some time since removed for unprofessional conduct.——Dr. C. J. Fagan and Dr. J. C. Davie, Victoria, B. C., recently delivered addresses on tuberculosis before the board of trade of Victoria, B. C.——Dr. E. K. Purvis, Toronto, has gone to England to attend Moorfield's for a course in the eye, ear, nose and throat.——Dr. A. T. Bazin, Montreal, has gone to England for several months' study.——Dr. Edmund E. King, Toronto, has been unanimously elected a member of the Ontario Medical Council for East Toronto.

FOREIGN.

Variola in Argentine Republic.—According to late reports from Buenos Ayres, variola has assumed an epidemic form in that city and in the surrounding districts. All pasengers leaving Rio de Janeiro and Santos for Argentine ports are required to be vaccinated before entering that republic.

Scottish Association of Medical Women.—The annual meeting of this association was held in Faculty Hall, Glasgow, during the first week in November. According to its constitution, the association has been formed: 1, To form a bond of union between the registered medical women in Scotland; and 2, to have an organization which can deal with questions of importance to women physicians.

Lunacy Decreasing in London.—It is gathered from the annual report of the Asylums Committee of the London County Council, recently issued, that there has been a progressive lessening of the rate of increase in pauper lunatics through two consecutive years, although the totals, on the whole, have increased. In 1905 there were 24,632 lunatics in the pauper asylums of London, and in 1906 there were 24,957.

Improvements in Siam.—Dr. Paul G. Woolley, Phrapatoom, reports that Siam seems to be improving gradually. The opium, and especially the morphin trade, is causing some governmental stir, and the serum laboratory, he states, has put new life into the work of vaccinating against smallpox. A general meeting of the medical missionaries was held to consider the problem of wholesale vaccination. The laboratory hopes to attack plague and cholera in the same wholesale fashion in the future.

Pauperism in London.—According to the report of the London Local Government Board issued recently, the number of indoor and outdoor paupers chargeable to the rates of London on Jan. 1, 1906, was 129,284, yielding a rate of 31.7 per 1,000 of the population, compared with 27.1 for the rest of England. This is the heaviest pauperism rate known in London for 25 years. The cost of maintaining a pauper for a year in London works out at about $140, whereas in the rest of England, the cost *per capita* is only $70, or half that of London. During the past twenty-five years pauperism has declined in England as a whole, but has increased in London.

New Missionary Hospital in Syria.—It is reported that the Protestant college at Beirut is attempting to build a new hospital to be used in connection with its work, but is meeting with difficulty. Custom prevailing in the country requires that all plans for building be submitted to the palace authorities at Constantinople. This has been done, but so far permission to build has not been granted. The French have an arrangement with the government whereby they are permitted to build six months after date of notification to Constantinople. The Syrian Protestant College has claimed this privilege for an American undertaking and has begun construction of the new hospital though with the knowledge that the work may be stopped at any time. It is hoped that there will be no interference and that the building will be completed next fall. It is to be a plain stone edifice and will contain 40 beds.

Formaldehyd in Smoked Meat.—The present French law prohibits absolutely the slightest admixture of formaldehyd in any article of food or drink. The *Semaine Méd.*, however,

calls attention to recent research which has demonstrated the presence of formaldehyd in the air (Henriet) and in wood smoke (Trillat). The antiseptic properties of smoke are attributed in part by certain chemists to its formaldehyd content. A. Haller has been studying various smoked meats, ham, sausages, etc., and he found formaldehyd constantly present in amounts ranging from 0.0026 gm. to 0.0003 gm. in 100 gm. of the product. These figures probably are below the actual amounts, as it is difficult to recover the formaldehyd completely. Consequently the French law as it now stands prohibits the use of foods not intended when the law was passed, and its revision is urgently demanded. The regulation should state the maximal limit beyond which formaldehyd content is prohibited.

LONDON LETTER.

(From Our Regular Correspondent.)

LONDON, Nov. 14, 1906.

The Protection of Milk.

In view of the many sources of pollution to which milk is frequently exposed before it reaches the consumer and of the extent to which it may become a vehicle of disease, the Royal Institute of Public Health has appointed a committee composed of health officers, bacteriologists and representatives of the milk trade to consider what steps should be taken with the object of securing purity of the supply. The report of this committee has just been published. It points out that the chief means of legal control of the milk trade are now obtained under the clauses of the dairies, cow sheds and milk shop order of 1885 and the subsequent amending orders. While the powers contained in these orders are not nearly so stringent as those in operation in many of the British colonies, the committee is of the opinion that if they were carried out firmly and uniformly sufficient control of the trade would be obtained. In the course of the inquiry an endeavor was made to obtain information as to the enforcement of the existing orders in different parts of the kingdom. It was found that in a large majority of rural districts they are practically inoperative. In these circumstances the committee was of the opinion that when the local sanitary authority is in default the obligation to enforce the orders should devolve on the county council and that the power to make regulations should be compulsory and not permissive.

The Committee on Industrial Diseases.

A committee appointed by the government to inquire and report what diseases and injuries other than injuries by accident are due to industrial occupations and are not already included in the Workmen's Compensation bill of 1906, has begun its inquiry. The committee proposes to investigate the following diseases and injuries which have been suggested for its consideration: Gradual poisoning from the vapor of carbon bisulphid, dinitrobezol, dinitrotoluol and anilin; gradual poisoning from carbonic oxid, sulphuretted hydrogen and chlorin gas; alkaloidal poisoning from African box wood in shuttle making; illness set up by nitrous fumes, hydrochloric acid fumes, ammonium chlorid fumes and sulphur fumes; compressed air illness (caisson disease); chrome ulceration of the skin; various trade eczemas, fibrosis of the lungs from inhalation of silicious or metallic particles (potter's asthma and grinder's phthisis); pneumonia from inhalation of basic slag dust; miner's nystagmus and miner's "beat knee" and "beat hand;" neurosis due to vibration; cardiac dilatation in slate quarries, and glanders. Thus it will be seen that the object is to bring every possible injury or disease arising from an industrial occupation within the scope of the Workmen's Compensation bill.

Great Increase of Leprosy in Cape Colony.

The report of the health officer for Cape Colony contains statements as to the increasing prevalence of leprosy which are of a grave character. Dr. Gregory writes: "The Leprosy Repression act has now been in force for the last 15 years, but so far no sensible diminution in the stream of lepers annually coming to light has been made by its operations." The large leper establishments at Robben Island and Emjanyana are full. At present there can not be less than 1,000 lepers at large. The cause of this large number of unsegregated lepers is the total inadequacy of the present asylum accommodation. The increase has been steadily going on for many years and involves both the native territory and the colony proper. Although chiefly occurring in the colored races the disease is not confined to them. Of a total of 432 registered lepers known to be at large 13 are Europeans. The sufferers appear to be scattered over the various districts of the colony. Mr. Jonathan Hutchinson uses these facts to point the moral of his persistent teaching—the uselessness of segregation. He compares the health authorities of Cape Colony to "the wise men of Gotham" who built an enclosure in which to keep a cuckoo. The bird flew over the wall. "But," said they, "it only just got over; if we had built a yard higher it could not have got out." This is exactly what the health authorities have done and persevere in doing. Hemel-en-Aards was not big enough and Robben Island was inaugurated. The Emjanyana was constituted and to it was added an asylum at Pretoria.

VIENNA LETTER.

(From Our Regular Correspondent.)

VIENNA, Oct. 30, 1906.

The Antialcohol Movement Among Students and Practitioners.

The zeal and the example set by a few earnest workers in the movement for the restriction of the consumption of alcohol have been amply rewarded by the results, as was recently shown by the report of the president of the Vienna "Gesellschaft der Abstinenten," which includes members from all classes of society. The latest addition to the forces of antialcoholism is the club of abstaining students, which was founded a short time ago, and which has now upward of 225 members. When the fact is taken into consideration that among German students drinking is regarded as an indispensable part of a university education, the radical change of opinion can be estimated. These students will refrain from the use of alcohol in practicing their profession. Another club, which does not boast of a very large number of members, is the club of abstaining practitioners, among whom are several hospital medical officers. The present way of thinking has brought it about that in the routine treatment of internal diseases all alcoholic beverages are being slowly discarded. Thus in the clinics of Professors Monti and Kovacs the use of brandy or wine, which was frequently prescribed in pneumonia, has been dropped without any other effect than the saving of money. It seems that not so much the liquor itself as the knowledge of its presence and its supposed beneficial action tended to demoralize the patients. The admission of female doctors to the wards of our large hospitals may also be responsible for the decrease in the prescribing of alcohol, as all the medical women are members of the temperance society.

A Broken Thermometer in the Rectum of a Child.

Dr Friedjung recently showed to the clinical society a child, to whom he had been called for the purpose of extracting the fragments of a thermometer lost in its rectum. The mother of the child had instructions to take the temperature every evening, and while doing so one night, only the lower half of the instrument came away, the upper, longer portion, with very sharp, ragged edges, remaining in the rectum out of reach and of sight. Friedjung thought of extraction by means of a rectoscope or a nasal speculum, preferably under an anesthetic, but decided to wait for a while to see if it would not come out without resort to surgical interference. After about thirty-five minutes the fragment came out of the rectum, without any difficulty; not a single drop of blood was visible, and the child was kept under close observation for weeks, without any signs of injury to the rectum becoming apparent. The edges of the two fragments fitted into each other exactly, so that he was sure nothing had been left behind. There is no case on record of the breaking of a thermometer in the mouth or anus. The reason in the case mentioned seems to have been that the mother had dipped the instrument into hot water and the glass must have cracked then.

Correspondence

The Contract Problem and Its Solution.

DEPEW, N. Y., Nov. 19, 1906.

To the Editor:—The solution of the contract practice problem would result in more real good to the medical profession than that of any other problem that confronts us. As this contract problem concerns all, all should shoulder arms and come to the rescue before it is too late. If all those interested or who have some ideas on this contract question would furnish some practical advice through THE JOURNAL, it would not only benefit the local medical society referred to, but it might result in a practical solution of the contract problem, thus saving the dignity and honor of our profession.

Some ten years ago the physicians of Depew and Lancaster got together and organized themselves into a medical society,

known as the Central Medical Association. When this medical society was formed its constitution contained a clause forbidding any member from doing contract work or acting as a "lodge physician." Accordingly, every physician that was then acting as a "lodge physician" resigned, leaving the lodges without any physician, and all went well. All of the lodges gracefully submitted to the condition except the Foresters, who went to a neighboring town and secured the services of a physician.

After about five years of this professional freedom, dignity and courtesy, a new physician came to town and, knowing the condition of affairs, chose the lodges as a means of getting acquainted and building up a practice. This new "lodge doctor" shattered the dignity of our little medical society and took the contract nerve out of some of our members. Hence, when a new contract scheme reached our towns with its hook baited with the following tempting bait, it succeeded in catching all the fish desired. Here is the attractive contract scheme that attacked our professional integrity and successfully ruptured our ranks:

CASUALTY COMPANY OF AMERICA. HOME OFFICE: NEW YORK.

Policy No...... *Certificate No*.....

FULL MEDICAL AND SURGICAL CERTIFICATE.

In consideration of the issuance by the *Casualty Company of America* of Policy above referred to and of the payment at the rate of five cents per week, same to be made at the time, place and manner of payment of premium for aforesaid policy, this certificate is hereby issued to

John Doe, of No. .....Street, City.....

State ..... subject to the following benefits:

1. The services of the undersigned doctor whenever and as often as in his judgment same shall be required, on account of any illness or injury suffered by the person to whom this certificate is issued.

2. All medicines that the undersigned doctor shall deem necessary for the proper treatment of the illness or injury.

E. Z. Mark, M.D.

City..... State .....

No. .....Street, Telephone No.....

In Witness Whereof, the Company has caused these presents to be signed by its President and Secretary, but the same shall not be binding unless countersigned by a duly authorized agent.

..... Secretary. .....President.

Countersigned at ....

this....day of.....190.. Duly Authorized Agent.

At present there are about 2,000 men in Depew, Lancaster and vicinity that are professionally taken care of on this contract plan. About 600 men are treated by the lodge doctor and about 1,000 men employed in the New York Central railroad shop are looked after by the Y. M. C. A. Hospital and by an appointed physician. This leaves a few scattering "slop-overs" for the general practitioner, who has too much professional dignity to contract.

Now, I happen to be secretary of the Central Medical Association, and I have been informed by the lodge doctors and the contract doctors of our vicinity that they have enough of the contract work and would give it up, but the Central Medical Association and the contract doctors alike believe that if the contract work were thrown down immediately, at the present time, it would simply mean three or four more contract physicians in our midst. What we desire is to have those physicians who have had experience with this contract problem advise us what move to make next.

Last May the Central Medical Association had a meeting, and all the physicians of Depew and Lancaster were present, and all agreed to do no more contract work after July 8 (last July), but the medical society has not as yet required the contract members to cancel their contracts, as the medical society is waiting for "something to turn up." This article is written with the vague hope that it may assist in "turning something up." We believe that if the physicians should resign at present it would simply mean imported contract physicians to take their places. It is a bad tangle and it is time to take up arms and do something.

I suggest this: Owing to the fact that shops or corporations that employ large numbers of men wish and strive to have their men insured against accident, to protect themselves from damage suits arising from injury of their employés, let the medical fraternity, through the American Medical Association, organize an accident insurance and casualty company of their own, and furnish the shops and corporations with the desired protection, thus making the money that the insurance companies are now making. All insurance and casualty work depends on physicians, therefore why not have it controlled by physicians?

If physicians had an insurance company of their own, protecting the shops and corporations, the surgical services could be arranged for on the fee basis, thus doing away with the "contract doctor."

This is only a suggestion, made with the vague hope of piercing the heart of a monster that is sapping the life blood of our profession. As it concerns all, all should take up the cry before it is too late, and down the contract monster before it completely prostrates us. What assistance have you to offer?

GEORGE N. JACK.

The Migratory Needle Story.

WHEELING, W. VA., Nov. 17, 1906.

To the Editor:—The editorial with the above caption, in THE JOURNAL, November 17, prompts the relation of the following circumstance:

About 20 years ago a woman, aged 60, consulted me in regard to an obscure discomfort, amounting at times to pain, which she experienced in one of her legs. As there existed a moderate varicose condition of the veins, and as there did not appear to be any other probable cause for the trouble, I suggested that she try an elastic bandage. Instead of relief, this caused a considerable increase in the degree of discomfort. Having worn the bandage for a few days only, she took it off one day to take a bath. While in the bathtub, on passing her hand over the outer aspect of the upper third of the thigh, where she felt a little soreness, she was startled and alarmed by something sharp and pointed scratching her hand. I was hurriedly sent for, but before I could reach the house she had called in a physician who resided next door. When I arrived this physician had just extracted a needle from the thigh, with his fingers. The needle, which was point first, was entire, perfectly smooth and polished, with the point very sharp, and colored as if it had been "blued." The symptoms, needleless to say (Can you forgive this?) disappeared.

One night, when a girl of 12, she jumped barefoot from her bed to the floor, and felt a sharp pain in her heel, as if something had penetrated it. As the resulting pain and disability were extreme, physicians were called in, and an extended search by free incision and probing was made, but nothing was found. As a result of the injury and the exploratory operation, it was many weeks before she was able to walk, but she finally recovered, and the incident gradually faded from her memory, until vividly recalled, 48 years afterward, as here narrated. The pressure of the bandage no doubt occasioned, or at least hastened, the passage of the needle through the skin, and had it not been applied I might not have had this story to tell.

L. D. WILSON.

CHICAGO, Nov. 17, 1906.

To the Editor:—The editorial entitled "The Migratory Needle Story" implies a doubt as to the authenticity of most of them, and I wish to relate an experience I have had.

On the Fourth of July, 1898, while teasing a young girl who was visiting my house, she pointed her hatpin at me and I ran for the stairs, she following. She made a lunge at me, intending to prick me, but I put up my arm and the pin entered the flesh and broke. We found two pieces, but three inches of the pin and the pointed end were missing.

I removed my clothing immediately, but could find nothing but the hole in the skin where the pin had entered. The next day I went to St. Luke's Hospital, where Dr. Owens made a long and deep incision in the arm and looked in vain for the hatpin. My arm was sore for a few days afterward and then all pain disappeared and I concluded that the pin did not remain in my arm after all. I did not have an *x*-ray examination.

About five months later I noticed a peculiar pricking sensation in my back on the right side, at the lower margin of the scapula. This sensation remained for several days and gradually disapppeared, to return again the latter part of June, 1899.

When I awoke on the morning of July 1 I felt a sharp pricking in my back under the scapula and, placing my finger on the spot, felt a bulging outward of the skin. Pressing the skin backward with two fingers, one on either side of the swelling, I forced out a sharp pointed something. I called to my brother to come and bring my forceps. He came and pulled out of my back the lost piece of hatpin. It measured exactly three inches in length. It went into my right arm at the lower margin of the deltoid and came out of my back one year later. I never felt it except for the soreness of the first few days and the pricking sensation above referred to. It did not affect my health in any way. I have preserved the hatpin.

J. D. McGOWAN.

FORT DODGE, IOWA, Nov. 20, 1906.

To the Editor:—Noticing your editorial in THE JOURNAL, November 17, I am reminded of a few cases which have fallen under my observation bearing on the subject.

In 1885 I reported a case in a contemporary journal which was followed by reports of similar cases from other physicians. The phenomena of migration of sharp objects through the various tissues of the body are not rare, neither are these stories wholly the product of newspaper reporters' imagination, but are abundantly proved by scientific observation.

CASE 1.—A girl, aged 18, came into my office with the following history: Her mother, that morning, in taking hold of her arm for the purpose of waking her, noticed a hardened spot which caused some pain on pressure. The girl herself had never noticed it before. On examining the arm I found a small, hard nodule, slightly pointed, resisting to the touch and slightly painful. There were no signs of inflammation. The skin was not even flushed. I cut into it with a scalpel and extracted a needle with a pair of forceps. On questioning the girl and her mother I was told of a circumstance when the girl was 5 years of age, at which time it was thought she had swallowed a needle. The child had been given a needle with which to sew. After a time she came to her mother complaining that there was something in her throat. The mother at once asked for the needle, which could not be found, the child explaining that it had gone down her throat. As the child continued in her usual health the incident was soon forgotten. This may or it may not have been the explanation of its presence in the arm.

CASE 2.—A woman, aged 40, had been picking gooseberries and thought she must have pricked her abdomen with a thorn, although she had no recollection of having done so. Her attention had been attracted to the spot that morning while dressing. I found a small hard nodule about four inches from the right side of the umbilicus on the right side. I excised it and removed a rusty needle with the point broken off. The woman could give no explanation of its presence in her body.

CASE 3.—A woman had a badly swollen hand, between the third and fourth metacarpal bones of which a sharp point projected directly underneath the skin. With a slight incision and forceps I extracted a needle of ordinary size, covered with rust. She had noticed the first symptoms of inflammation about a week before consulting me. She had never had the hand injured and was greatly surprised and mystified at the presence of the needle.

SARA A. KIME, M.D.

FRIARS POINT, MISS., Nov. 22, 1906.

To the Editor:—I report a case that came under my observation which seems to prove the editorial partly in the wrong. In 1877 a druggist's wife sent for me to see her baby, aged three months. She told me the baby had something in his leg that felt like a needle. On the under or back side of the thigh just below the hip joint I found a substance imbedded in the tissues that felt like a needle. I grasped the leg in my left hand and cut down on what looked to be the end of a needle. In attempting to catch it with a small forceps it slipped from my grasp and I could not find it again. I told the mother it would make its appearance again and instructed her to watch for it and let me know when she found it. Six weeks later she sent for me, saying she had found the needle. I took from the tissues, just above Poupart's ligament, a whole needle. It had not crossed the body, however, as it was on the same side as when first discovered. If this was the same needle it had never given the little fellow any pain or inconvenience in its travels from the under side of the leg around the thigh and up into the lower abdominal wall. I am convinced that it was the same, as most thorough and repeated examinations have failed to show any indications of another needle.

H. C. BUCK, M.D.

Milk in Typhoid Fever.

BUFFALO, N. Y., Nov. 17, 1906.

To the Editor:—On page 1615 of THE JOURNAL, Nov. 17, 1906, Dr. W. F. Church says: "One author (Benedict) objects to milk on account of its constipating effects and at the same time complains of the excess of fat which tends to prevent constipation." I can not remember ever writing any such paragraph and, indeed, always try to avoid inconsistency in the same paragraph. Experience, not theory, teaches that milk usually is constipating unless it favors conditions of alimentary saprophytosis that cause diarrhea. Experience also teaches that the comparatively small proportion and minute emulsion of fat in milk does not have the opposite tendency in the practical sense. According to the indications of a case, one must necessarily be so inconsistent as to complain, now of the excess, now of the deficit, of any one ingredient of any single foodstuff. Dr. Church has missed the point of what I have said, at various times, regarding milk diet in typhoid. The fat is not, in and of itself excessive; indeed, rather the opposite, in regard to the proportion of water in milk. But when we have given enough milk to get an adequate fat ration we have also given a full or, perhaps (the word perhaps really indicates uncertainty) slightly excessive proteid ration but only a third or a quarter of the carbohydrate ration desired. To give a full carbohydrate ration in typhoid, on an exclusive milk diet, we should have to introduce nearly 10 liters. Supposing this to be feasible, we might say that the fat, and also the proteid, was excessive and, *a fortiori*, that the water was excessive. Even to get a sufficient number of calories we should have to administer 3 to 4 liters of milk, which is too large a bulk and, while the proteid may be considered as compensatory to the tissue waste, it is objectionable as favoring intestinal putrefaction and adding to the potential autointoxication from catabolic processes alone. Even ignoring this point, the normal ratio of fats to carbohydrates is about 1 to 8 or, at least, 1 to 4, and here we would have a ratio of approximately 1 to 1.

A. L. BENEDICT.

Miscellany

Italian Congress for Internal Medicine.—The sixteenth annual congress met at Rome, October 25-28, Guido Baccelli presiding. His address was devoted principally to the dangers of excessive specializing and the flood of pharmaceutic specialties, of which he said that they "seem to-day to be mainly an industrial speculation." He deplored the frequent tendency to specialize before acquiring the solid foundation necessary for specialization. "The branch can not isolate itself from the life of the trunk and the roots." All must coöperate, with frequent interchange of opinions and experiences. "Fusion between the scientific bases and clinical skill, coöperative action and mutuality, these are the essentials for progress. Harmony in the complexity of work and life lights the way to the conquest of new truths." He touched on recent achievements of internal medicine, such as the diagnosis of malignant neoplasm of the lymphatic glands in the posterior mediastinum from the inverted course of the intercostal veins from occlusion of the azygos veins, with persisting effusion in the right pleural sac. To internal medicine is due also the achievements in the care of the public health, and to an Italian, Magaldi, the proposal that the laws regulating indemnity and relief for wage-earners injured while at work should be extended to include those suffering from professional affections. Castellino of Naples opened the program with an address on "Arthritism." He applies this term to a general and

fundamental disturbance due to vague elements without much connection between them but which, combined, represent a predisposition which induces exaggerated morbidity in response to trivial causes. The predisposing cause is single and unique; the casual etiologic factor determines the variety of the morbid manifestations. De Giovanni calls arthritism a general neurosis, inducing a kind of inhibition of the metabolic processes, with secondary disturbances from intoxication of the nervous system in turn. He classifies mankind as the "microsplanchnics," with long, narrow growth, and insufficient development of the splanchnic organs—the tuberculous belong to this group; the "megalosplanchnics" short and broad, with over-development of the splanchnic organs—this includes the arthritics; normal individuals with harmonious development of all the parts. This morphologic conception of the heredity of arthritism was said by several speakers to offer the key to numerous problems. Uric acid is not the whole of arthritism. Many gouty individuals have no excess of uric acid. De Giovanni is inclined to ascribe the cause of arthritism to the white tissues, a feature in common between certain arthritics, fowls and serpents. In the discussion of arteriosclerosis Galli called attention to the diversity of the findings with the sphygmomanometer according as the size of the cuff varies. He urged the adoption of a standard width for the cuff, suggesting 15 cm. Queirolo remarked that in his experience cerebral hemorrhage was most frequent between 45 and 60, and rare after that age. In most of his cases, even the fatal ones, the arterial pressure had not been high, showing that hypertension is not an inseparable accompaniment of arteriosclerosis. Several speakers maintained that the arterial pressure is a subordinate factor in arteriosclerosis. Ferrannini of Naples called attention to the opposite conclusions reached at recent German and French congresses in discussing this theme. Riva and Maragliano ascribe the sclerous changes to a primary affection of the parenchyma of some organ from some toxic, infectious, physical or nervous agency, with arteriosclerosis of the adjoining vessels as a secondary process. Tedeschi protested against assuming that there was only one type of arteriosclerosis, maintaining that they are legion, and citing instances of arteriosclerosis of the superior mesenteric artery which produced a syndrome simulating ileus or appendicitis, and, when the stomach vessels were involved, simulating gastric ulcer. Colombo reported cases in which arteriosclerotic hemorrhage into the bronchi simulated tuberculous hemoptysis. The blood pressure was high and the hemorrhage resisted ergot but yielded to gelatin or iodin. The third question on the order of the day was "Diseases Suggesting Typhoid." Lucatello reviewed the various aids to diagnosis, concluding that strict clinical examination with severe criticism of the symptoms is still the best means to arrive at the diagnosis, there being no unfailing characteristics of typhoid or of diseases suggesting it. In cryptogenic puerperal infection, however, simulating typhoid, the pleura will be found frequently the seat of the first indications of metastasis. In differentiating pseudotyphoid influenza he recommends lecithin for the culture media and an aqueous emulsion of Pfeiffer bacilli. He believes that the paratyphoid affections are merely a mild atypical form of typhoid. Bernabei reported excellent results from injection of oxygen into the intestines in treatment of osteomalacia. In cases of osteolysis, he stated, the amount of phosphorus eliminated in the stools is three or four times the normal proportion, but after injection of oxygen the amount gradually subsides to normal proportions and the bones regain their normal consistency and cease to be tender, allowing the formerly bedridden patients to get up and walk. Signorelli called attention to the hypertrophy of the sterno-cleido-mastoid muscle which is liable to be an early sign of aneurism of the arch of the aorta. He found it constant in five cases, and ascribes it to ascending degeneration of the vagus. Massalongo announced that he has found deprivation of salt sufficient alone to banish the symptoms of asystolia. It has also been his experience that restriction of salt is very useful in preventing or retarding the development of symptoms of insufficiency on the part of the heart in case of cardiac disease; it seems to help in maintaining compensation. The *Semaine Méd.* published a good report of the congress in French in Nos. 44 and 45, but the Italian *Gazzetta degli Ospedali* is publishing a more detailed account.

Treatment of Sciatica with Perineural Saline Injections.—Grossmann reviews the history of this method of treating neuralgia, and then describes his experiences with it. He has treated 15 patients with severe and chronic sciatica, and all were relieved at once of the pain. This striking result is not always permanent. The pain returns sometimes in a milder form, but is then amenable to such measures as superheated air, mud baths, hot packs, leeches and the like. No by-effects were noted in any case. The prompt action in banishing the pain, he declares, certainly justifies the use of this simple and harmless measure. He used a 0.6 per cent. salt solution, injecting from 50 to 100 gm. The patient complains of pain in the limb and tingling as the needle approaches the nerve. In a few instances the injection was repeated. All but one of his patients were cured or materially improved.—*Wien. klin. Wochschr.* for October 18.

Mortality Among Children of Women Working in Tobacco.—Bourneville relates three instances of families with one imbecile child and only one healthy child out of from seven to ten pregnancies, the other children being born dead or dying of meningitis within a few days or months, or of convulsions before the age of 3. The mothers were employed in tobacco factories. Abortions occurred in some cases. Livon of Marseilles has also observed similar cases of numerous births and abortions among women working on tobacco, 10 abortions in one family in 10 pregnancies. Bourneville says in a recent issue of the *Progrès Méd.*, that the women working in tobacco factories tell him, "we are all like that; we have lots of children, but we lose them all or have only one live."

Diphtheric Ophthalmia.—During the last eight years 42 cases of diphtheric ophthalmia were treated at the Zurich eye infirmary in Switzerland, in charge of Haab. Nearly half of the patients were infants; 13 were under 2 years, and 9 from 2 to 7 years old. There was membrane formation in every case, but diphtheria bacilli were found in only 83 per cent. Antitoxin was injected in 25 cases, and 19 of the patients recovered without complications, but 6 had perforating ulcers of the cornea and 2 died of pneumonia. Of the remaining 17, who did not receive antitoxin, 3 succumbed to pneumonia, one to diphtheria of the throat and one to glioma of the brain. The report is cited in the *Lancet*, Nov. 3, 1906.

Anatomic Appearances in the Living.—Maurice H. Richardson, in the *Interstate Medical Journal*, directs attention to the difficulty of making a correct diagnosis from the anatomic appearances, and states that the method of procedure in surgical operations depends, of course, on the diagnosis. If the diagnosis is made before operation it is frequently wrong, as shown by the first incision; and this in spite of the greatest knowledge, skill and experience, with every aid that the laboratory affords.

Marriages

J. W. Speer, M.D., to Miss Clara Luecker, both of Bullion, Wis., November 14.

Frank J. Fara, M.D., to Miss Julia M. Tupy, both of Chicago, November 21.

Robert Ross, M.D., to Miss Nellie Read, both of Canton, China, September 29.

Arthur Newlin, M.D., to Miss Janet Cuyler Sims, both of Philadelphia, November 14.

Leon G. Beeley, M.D., to Miss Sarah L. Peckover, both of Lawrence, Mass., November 14.

Joseph T. Asbury, M.D., to Miss Anna Myrtle Almy, both of Waubasha, Minn., November 8.

George Morris Golden, M.D., to Miss Lovana Vanneman, both of Philadelphia, November 14.

J. Henry Ludwig, M.D., Boyertown, Pa., to Miss Edwina Herbine of Earlville, Pa., recently.

Stephen Golphard Brazeau, M.D., to Miss Anna C. Williams, both of Asotin, Wash., November 7.

LESLIE WILLIAM MORSMAN, M.D., to Miss La Rhea Adell Secord, both of Omaha, November 2.

JULIUS A. SCHMIDT, M.D., Alton, Ky., to Mrs. Ortha Nelson, at Moulton, Ala., November 14.

JOSEPH H. KENEALY, M.D., Denver, to Miss Edith Seiler of Boston, at Alston, Mass., November 13.

ROBERT C. RANDOLPH, M.D., Millwood, Va., to Miss Isabelle Harrison of Philadelphia, November 14.

VERNON ADAMS DODD, M.D., Columbus, Ohio, to Miss Nellie Jacobs of Georgetown, Ohio, October 16.

WILLIAM R. HOUSTON, M.D., Augusta, Ga., to Miss Katharine Baker, both of Chicago, November 27.

HAMILTON H. WILCOX, M.D., Albert Lea, Minn., to Miss Lura Hydorn, near Cream, Minn., November 14.

D. L. WHITAKER, M.D., Johnstown, Colo., to Miss Dorris Anderson of Berthoud, Colo., in Boulder, Colo., recently.

ALFRED R. ROWE, M.D., Poplar Bluff, Mo., to Miss Clara Louise Cole of Savannah, Ga., in St. Louis, November 15.

HOWARD OSBORN, M.D., Rippon, W. Va., to Miss Lily Singleton Thomas, at Charlestown, W. Va., November 10.

LINWOOD D. BATKINS, M.D., to Miss Nannie Evelyn Johnson, both of Richmond, Va., at Washington, D. C., November 15.

WILLIAM W. RICHARDSON, M.D., Norristown, Pa., to Miss Lila McDonald of Marysville, Ohio, at Columbus, Ohio, November 13.

CHARLES S. ALBERTSON, M.D., South Whitley, Ind., to Miss Edna Dimmick of Benton Harbor, Mich., at Columbia City, Ind., November 15.

Deaths

William Muir Angney, M.D. Jefferson Medical College, Philadelphia, 1878; chief police surgeon of Philadelphia; appointed a medical inspector in the bureau of health in 1898; organizer and director of the special corps of vaccine physicians during the smallpox outbreak of 1902; physician to the Episcopal City Mission; visiting physician to the Hospital for Diseases of the Lungs, Chestnut Hill, and the Hospital for Male Consumptives of the House of Mercy; at one time resident physician of the Philadelphia Hospital, and for four years physician of the guardians of the poor; a member of the American Medical Association, Medical Society of the State of Pennsylvania, College of Physicians, Philadelphia County Medical Society, National Association for the Study and Prevention of Tuberculosis and Association of Military Surgeons of the United States; lieutenant and assistant surgeon, First Infantry, N. G. Pa., died at the Pennsylvania Hospital, November 19, from cancer of the stomach, after a prolonged illness.

Isaac Edmondson Atkinson, M.D. University of Maryland School of Medicine, Baltimore, 1865; clinical professor of dermatology from 1879 to 1881; professor of pathology from 1881 to 1886; professor of materia medica from 1886 to 1890; professor emeritus of therapeutics and clinical medicine from 1900 to 1906, and dean of the University of Maryland School of Medicine from 1890 to 1903; president of the Clinical Society of Maryland, and president of the Medical and Chirurgical Faculty of Maryland, and president of the American Dermatological Society, 1887-1888; consulting physician to Johns Hopkins Hospital; member of the Maryland lunacy commission; one of the authors of "Pepper's System of Medicine;" vaccine physician of Baltimore in 1883; superintendent of vaccination in 1883, and attending physician to Baltimore General and Special Dispensary; the leading family physician of Baltimore, died at his home in Baltimore, November 24, from pneumonia, after an illness of 13 days, aged 60.

S. Edwin Solly, Royal College of Surgeons, London, 1867; Society of Apothecaries, London, 1869; M.D. Denver College of Medicine, 1888; a member of the American Medical Association, British Medical Association; formerly president of the American Climatological Association, American Laryngological, Rhinological and Otological Association, Colorado State Medical Society and El Paso County Medical Society; fellow of the Royal-Medico-Chirurgical Society; director of the National Association for the Study and Prevention of Tuberculosis; author of "A Handbook of Medical Climatology;" director of Cragmor Sanitarium, Colorado Springs, Colo.; one of the best-known authorities on tuberculosis, died from that disease, at Asheville, N. C., November 19.

Edward Tiffin Comegys, M.D. Miami Medical College, Cincinnati, 1872; who was commissioned assistant surgeon in the medical department of the Army, June 26, 1875; was made captain and assistant surgeon, June 26, 1880; major and surgeon, Oct. 26, 1893; lieutenant-colonel and deputy surgeon-general, Sept. 7, 1892, and was retired at his own request after more than 30 years of active service, July 1, 1905, died at the Angelus Hospital, Los Angeles, Cal., September 1, aged 56. He was given a military funeral at the Presidio of San Francisco.

James H. Buckner, M.D. Medical College of Ohio, Cincinnati, 1861; a member of the American Medical Association and Ohio State Medical Society, and in 1878 president of the Cincinnati Academy of Medicine; oculist and aurist to St. Mary's Hospital, Cincinnati, from 1870 to 1890, and to the Sisters of the Good Shepherd and School Brothers of St. Francis for more than 40 years; a specialist in diseases of the eye and ear in Cincinnati, died at his office in that city, November 15, after an illness of only two hours, aged 70.

Lorenzo M. Greene, M.D. University of Vermont, Medical Department, Burlington, 1876; for several years state supervisor of the insane; for 12 years a member of the school committee; in 1894 a member of the legislature and in 1902 state senator; a member of the American Medical Association and one of the most prominent practitioners of Windsor County, Vermont, died at his home in Bethel, November 12, from peritonitis, for which operation was performed without avail, after an illness of six days, aged 54.

James William Claiborne, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1848; who went to California in 1849 during the gold excitement; served throughout the Civil War as surgeon of the Twelfth Virginia Infantry and Mahone's Brigade, C.S.A., and thereafter practiced in Petersburg, Va.; said to have been the oldest practitioner of that city; a member of the Medical Faculty of Petersburg, died suddenly at his home, November 22, from acute gastritis, aged 81.

David Gilbert Hathaway, M.D. New York University, New York City, 1887; some-time interne in Bellevue Hospital, New York; health officer of Wauwautosa, Wis., and for several terms county physician of Milwaukee County; superintendent of the Northern Hospital for the Insane, Oshkosh, during Governor Peck's administration, died at Trinity Hospital, Milwaukee, November 14, from tuberculosis, after an illness of one year, aged 41.

Stephen D. Thruston, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1864; lecturer on practical life insurance in the Medical Department of Southwestern University, Dallas, Texas; a member of the Dallas Medical and Surgical Association, died at his home in Dallas, November 15. At a special meeting of the association, November 16, suitable resolutions were adopted.

Robert Bruce Tabb, M.D. Department of Medicine of the University of Pensylvania, Philadelphia, 1855; a surgeon in the Confederate service throughout the Civil War; a practitioner of Norfolk County, Indian Creek, Va.; a member of the house of delegates in 1883, died at the home of his son-in-law in Falls Church, Va., November 12, aged 73.

A. C. Keating, M.D. California Medical College, Oakland, 1884; a veteran of the Civil War; for some time president of the board of health of San Bernardino; coroner of San Bernardino County and local surgeon for the Southern Pacific System, died at the Soldiers' Home, Los Angeles, recently, and was buried November 9 with military honors.

William Marshall Barrett, M.D. Medical School of Maine at Bowdoin College, Brunswick, 1846; one of the oldest medical practitioners of Massachusetts; surgeon of the Fifty-third Massachusetts Voluntcer Infantry for three years during the Civil War, died at his home in Westboro, November 14, from cerebral hemorrhage, aged 84.

John A. Laros, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1862; a member of the first town council of Coopersburg, Pa.; formerly a member of the school board and of the board of health, died at his home in that city, November 15, from cerebral hemorrhage, after an illness of one hour, aged 68.

Robert H. Aldrich, M.D. Tulane University of Louisiana, Medical Department, New Orleans, 1894; of Baton Rouge, La.; a member of the American Medical Association, and one of the leading practitioners of Louisiana, was shot and instantly kiled by Congressman-elect George K. Favrot, in Baton Rouge, November 7.

Joseph C. Hance, M.D. College of Physicians and Surgeons in the City of New York, 1904; after graduation assistant surgeon at Roosevelt Hospital, New York City, died at the home of his parents in New Philadelphia, Ohio, from tuberculosis, November 3, after an illness of five months, aged 25.

Thomas W. Leeper, M.D. College of Physicians and Surgeons, Keokuk, Iowa, 1874; deputy postmaster of Oakland, Neb., and late editor of the Oakland *Independent;* the first physician permanently to locate in the Logan Valley, died at his home in Oakland, after a long illness, October 22.

Joseph P. O'Dwyer, M.D. College of Physicians and Surgeons in the City of New York, 1890; a member of the Michigan State and Wayne County medical societies, died at his home in Detroit, November 13, from tuberculosis, after an illness of one year, aged 37.

Ruth E. Swift Marvin, M.D. Hahnemann Medical College and Hospital, Chicago, 1892; a member of the Sioux City Homeopathic Medical Society, died at her home in Sioux City, Iowa, from heart disease, November 11, after an illness of several months, aged 37.

Otis Allen, M.D. Buffalo University Medical Department, 1880; a member of the Medical Society of New York, and the Allegany County Medical Society, died at his home in Cuba, N. Y., from Bright's disease, November 8, after an illness of several months, aged 70.

Ferdinand Beach, M.D. Medical Institution of Yale College, New Haven, 1864; for 40 years a practitioner of New York City; surgeon throughout the Civil War; a member of the New York County Medical Society, died at Santa Barbara, Cal., November 15, aged 69.

Franz George J. Specht, M.D. St. Louis Medical College, 1858; formerly dispensary physician of St. Louis; manager of *Anzieger des Westens,* died at his home in St. Louis, from Bright's disease, November 13, aged 75, after an illness of a year.

George B. Moore, M.D. Hamline University College of Medicine, Minneapolis, 1901; police surgeon af St. Paul, for three years, died at St. Joseph's Hospital in that city, November 14, from pneumonia, after an illness of three days, aged 35.

Thomas W. Greenley, M.D. University of Maryland School of Medicine, Baltimore, 1888; formerly a practitioner of Baltimore, died at Saranac Lake, N. Y., November 16, from tuberculosis. after an illness of ten years, aged 41.

Benjamin H. Fisher, M.D. Medical College of Ohio, Cincinnati, 1864; surgeon of the One Hundred and Fifty-seventh Ohio Volunteer Infantry in the Civil War, died at his home in Steubenville, Ohio, November 9, aged 68.

Edgar S. McDow, M.D. Memphis Hospital Medical College, 1893; of Lancaster, S. C., who was shot in a duel with his brother-in-law a few days before, died in Rockhill Hospital, Columbia, S. C., November 14, aged 35.

Edwin E. Beeman, M.D. Cleveland Medical College, Medical Department of Western Reserve College, 1875, died at his home in Cleveland, November 6, from cerebral hemorrhage, after an illness of four weeks, aged 67.

John James Hill, M.D. Bellevue Hospital Medical College, New York City, 1877; died at his home in Washington, Ga., November 12, after an illness of three weeks, from malarial fever, aged 53.

Craig Cameron, M.D. New York University, New York City, 1886; of Olneyville, Providence, R. I., died at the home of his brother in Olneyville, November 9, from nephritis, after a prolonged illness.

Joseph M. McLean, M.D. Medical Department of the University of Tennessee, Nashville, 1885; died at his home in Midland, Tenn., November 12, after a short illness, aged about 80.

Frank Magel, M.D. Physio-Medical College of Indiana, Indianapolis, 1898; died at his home in Indianapolis, November 14, from intestinal hemorrhage, after an illness of five weeks, aged 42.

Donald A. Frazer, M.D. Harvard University Medical School, Boston, 1891; died at his home in East Boston, Mass., November 12, from pneumonia, after an illness of one week, aged 50.

John P. Ermentraut, M.D. New York Homeopathic Medical College and Hospital, New York City, 1873; died at his home in Brooklyn, November 14, from meningitis, aged 68.

John R. Mansfield, M.D., Harvard University Medical School, Boston, 1859; for many years a resident of Wakefield, Mass., died in Chelmsford, Mass., November 11.

James L. McSherley, M.D. Ohio Medical College, Cincinnati, 1883; died at his home in Sulphur Springs, Ind., November 14, from nephritis, after a long illness, aged 48.

John Maurer (Years of Practice, Indiana), died at the home of his son in South Bend, Ind., November 8, from senile debility, after an illness of two years, aged 74.

Ernest J. Miller, M.D. College of Physicians and Surgeons of Chicago, 1888; died at his home in Sycamore, Ill., November 19, from embolism, aged 52.

Michael Grandfield, M.D. New York University, New York City, 1887; died at his home in Pawtucket, R. I., November 14, after a brief illness, aged 49.

Ormond E. Burdick, M.D. New York University, New York City, 1892; of Little Genesee, N. Y., died November 15, after a surgical operation, aged 56.

Eugene G. Watson, M.D. Memphis Hospital Medical College, 1893; died at his home in New Waverly, Texas, November 12, after a long illness.

J. A. Morris, M.D. Rush Medical College, Chicago, 1870; died at his home in Kent, Ohio, November 13, from locomotor ataxia, aged 58.

Arthur Ramser, M.D. Jenner Medical College, Chicago, 1903; died at his home in Chicago, November 15, from heart disease.

E. F. Everest, M.D. Medical College of Ohio, Cincinnati, 1872; died at his home in St. Mary's, Ohio, November 12.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish name or address will be faithfully observed.

THE SALIVA OF HYDROPHOBIC PATIENTS.

———, MASS, Nov. 8, 1906.

To the Editor:—What is the probable influence of a bite inflicted by a person having hydrophobia, and are such bites considered infectious or known to have been so? I can find nothing in any of the leading text-books of medicine referring to this except in Hare, who claims the disease is communicable in this manner. I had always supposed it to be so, but recently had my belief disputed. I am told that Pasteur Institute physicians claim that such bites are harmless. Kindly quote authority in your answer and greatly oblige. H. H. W.

ANSWER.—There are very scanty references to this subject in the literature. The saliva of hydrophobic patients was proved to be capable of conveying the disease to dogs in 1823 by Magendie, and to this fact is said by G. Fleming to have been confirmed by Eckel and Renault (G. Fleming, "Rabies and Hydrophobia," 1872, p. 140). According to Dolan: "It may be transferred from man to animals, but the evidence is incomplete of the communication of the disease from man to man." The "Twentieth Century Practice of Medicine" states that Pasteur made his first infection of a rabbit with the saliva of a hydrophobic child. The infectious character of the saliva of man as well as of animals affected with this disease should certainly be assumed until it is clearly proved that the opposite is true.

The Public Service

Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending Nov. 24, 1906.

Brechemin, Louis, dep. surg. gen., granted one month and twelve days' leave of absence on surgeon's certificate of disability.

Jean, George W., asst.-surgeon, retired from active service with rank of captain, November 7, on account of disability incident to the service.

Webb, W. D., asst.-surgeon, relieved from further duty at Fort Huachuca, Ariz., and from further duty with the Army of Cuban Pacification, and will proceed from this city to Fort Snelling, Minn., and report for duty.

Palmer, Fred W., asst.-surgeon, advanced to the rank of captain from November 14.

Little, Wm. L., asst.-surgeon, granted twenty days' leave of absence, effective on arrival in the United States.

Carpenter, Aiden, dental surg., left Vancouver Barracks, Wash., for Havana, Cuba.

Wheate, J. Marchal, contract surgeon, ordered from Boise, Idaho, to Fort Yellowstone, Wyo., for duty.

Branch, Frederick D., contract surgeon, left Fort Wood, N. Y., on leave of absence for two months, twenty-five days.

Merrick, John N., contract surgeon, returned to Fort Missoula, Mont., from leave of absence.

Wells, Francis M., contract surgeon, returned to Fort Robinson, Neb., from duty in the field.
Mills, Frederick H., contract surgeon, granted leave of absence for ten days.
Brown, Polk D., contract surgeon, relieved from duty in the Philippines Division, and ordered to the United States for station.
Mount, James R., contract surgeon, relieved from duty in the Philippines Division, and ordered to the United States for station.
Wing, Franklin F., dental surgeon, granted leave of absence for one month.
Whinnery, Jean C., dental surgeon, left Fort Stevens, Oregon, and arrived at Fort Lawton, Wash., for duty.

Navy Changes.

Changes in the Medical Corps, U. S. Navy, for the week ending Nov. 24, 1906:

Rennie, W. H., P. A. surgeon, detached duty at Naval Hospital, Pensacola, and to duty on the U. S. S. *Wasp*.
Mink, O. J., asst.-surgeon, when discharged from treatment at the Naval Hospital, Yokohama, Japan, to report to the Surgeon General, Navy Department.
Ryder, C. E., Jenness, B. F., and Shaw Harry, asst.-surgeons, and Plummer, R. W., P. A. surgeon, to report to the president, Naval Medical Examining Board, Naval Medical School, Washington, on Dec. 1, 1906, for examination preliminary to promotion, and when discharged by the board to resume duty at present stations.
Stitt, E. R., surgeon, to report on Dec. 1, 1906, to the president of the Naval Medical Examining Board, Naval Medical School, for duty as a member of that board.
Pugh, W. S., Jr., P. A. surgeon, detached from duty on the U. S. S. *Lancaster*, and to duty on the U. S. R. S. *Tacoma*.
Snyder, J. J., P. A. surgeon, detached from duty on the U. S. R. S. *Tacoma*, and to duty at the Naval Hospital, Philadelphia.
Langhorne, C. D., surgeon, to duty at the U. S. Naval Medical School Hospital, Washington, on November 30.

Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ended November 21, 1906:

Pettus, W. J., asst.-surgeon general, directed to proceed to Chicago, for special temporary duty, on completion of which to rejoin his station at Washington, D. C.
Carrington, P. M., surgeon, leave of absence granted for 15 days from October 29 amended to read for 10 days only.
Grubbs, S. B., P. A. surgeon, granted leave of absence for 5 days from November 28.
von Ezdorf, R. H., P. A. surgeon, granted leave of absence for 14 days from November 21.
Amesse, J. W., P. A. Surgeon, orders to report at Washington, D. C., temporarily revoked. Ordered to report to medical officer in command at Ellis Island for duty.
McLaughlin, A. J., P. A. surgeon, directed to proceed to Trieste and Fiume, Austria, for special temporary duty, on completion of which to rejoin station at Naples, Italy.
McCoy, G. W., P. A. surgeon, relieved from duty at Fort Stanton, N. M., on expiration of leave of absence, and directed to proceed to Washington, D. C., for temporary assignment in the Hygienic Laboratory.
Roberts, Norman, assistant surgeon, granted leave of absence for 6 days from November 19, under paragraph 191 of the Regulations.
de Valin, H., asst.-surgeon, granted leave of absence for 3 days from October 15, under paragraph 191 of the Regulations.
Guthrie, M. C., asst.-surgeon, relieved from duty at Havana, Cuba, and directed to proceed to Ellis Island, N. Y., reporting to medical officer in command for duty, November 17.
Stiles, Ch. W., chief Division of Zoology, Hygienic Laboratory, detailed to represent the service at the meeting of the Association for the Advancement of Science, in New York, Dec. 28-29.
Duke, B. F., acting asst.-surgeon, granted leave of absence for 25 days, from November 20.
Foster, S. B., acting asst.-surgeon, granted leave of absence for 13 days from November 17.
Gribble, B. G., acting asst.-surgeon, granted leave of absence for 3 days from November 15, under paragraph 210 of the Regulations.
Hallet, E. B., acting asst.-surgeon, granted leave of absence for 3 days from November 28.
McConnell, E. F., acting asst.-surgeon, relieved from temporary duty at Banes, Cuba, and directed to rejoin his station in Havana.
Onuf, B., acting asst.-surgeon, granted leave of absence for 20 days from November 23.
Safford, M. V., acting asst.-surgeon, granted extension of leave of absence for 7 days from November 21.
Thomas, E. M., pharmacist, granted leave of absence for 4 days from November 9, under paragraph 210 of the Regulations.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended Nov. 23, 1906:

SMALLPOX—UNITED STATES.

Illinois: Galesburg, Nov. 3-10, 15 cases.
Indiana: South Bend, Nov. 3-10, 9 cases.
Louisiana: New Orleans, Nov. 3-10, 5 cases.
Montana: In 3 counties, Oct. 1-31, 6 cases.
Wisconsin: In 26 counties, Sept. 1-30, 232 cases.

SMALLPOX—FOREIGN.

Argentina: Buenos Ayres, Oct. 6, 18 cases.
Austria: Galicia, Sept. 16-22, 2 cases.
Chile: Antofagasta, Oct. 6-20, 13 cases; Coquimbo, 64 cases, 2 deaths; Iquique, present; Taicahuana, present.
Colombia: Cartagena, Sept. 30-Oct., 20, present.
India: Calcutta, Oct. 6-13, 1 death.
Italy: General, Oct. 22-29, 2 cases.

YELLOW FEVER.

Cuba: Cruces, Nov. 15, 2 cases; Havana, Nov. 15-20, 7 cases; Santa Clara, Nov. 17, 1 case.

CHOLERA—INSULAR.

Philippine Islands: Manila, Sept. 15-29, 30 cases, 20 deaths; Provinces,, 450 cases, 362 deaths.

CHOLERA—FOREIGN.

India: Calcutta, Oct. 6-13, 28 deaths; Madras, Oct. 13-19, 12 deaths.

PLAGUE.

Egypt: Alexandria, Oct. 12-24, 4 cases. 3 deaths; Garbieh Province, Oct. 24, 1 case; Minieh, Oct. 14, 1 case; Port Said, Oct. 21-24, 2 cases, 1 death; Suez, Oct. 15-25, 6 cases, 4 deaths.
India: Calcutta, Oct. 6-13, 11 deaths.
Japan: Osaka, Sept. 17-Oct. 6, 21 cases, 14 deaths.
Mauritius: Aug. 30-Sept. 14, 24 cases, 20 deaths.
Peru: Lambyeque, Oct. 6-20, 2 cases; Lima, 4 cases; Paita, 1 case; Salaverry, 1 case; Trujillo, 7 cases.
Turkey: Adalia, Sept. 26-29, 3 cases, 1 death.

Medical Education and State Boards of Registration

COMING EXAMINATIONS.

NEW MEXICO State Board of Health, Santa Fe, December 3. Secretary, Dr. B. D. Black, Las Vegas.
PENNSYLVANIA State Medical Examining Board, Industrial Hall, Philadelphia, December 4-7. Secretary, Dr. Joseph E. Willetts, Pittsburg.
WYOMING Board of Medical Examiners, State Capitol, Cheyenne, December 5. Secretary, Dr. S. B. Miller, Laramie.
DELAWARE State Medical Society Examining Board, Dover, December 6, and by the Homeopathic Board at Wilmington on same date. Secretary of the Medical Council, Dr. P. W. Tomlinson, Wilmington.
OHIO State Board of Medical Registration and Examination, Columbus, December 11-13. Secretary, Dr. Geo. H. Matson, Columbus.
IOWA State Board of Medical Examiners, Office of State Board of Health, Des Moines, December 11-13. Secretary, Dr. J. F. Kennedy, Des Moines.
VIRGINIA Medical Examining Board, Richmond, December 11-14. Secretary, Dr. R. S. Martin, Stuart.
MARYLAND Board of Medical Examiners, 847 N. Eutaw St., Baltimore, December 12. Secretary, Dr. J. McP. Scott, Hagerstown.
CALIFORNIA State Board of Medical Examiners, San Francisco, December 18. Secretary, Dr. Chas. L. Tisdale, Alameda.
OKLAHOMA Board of Medical Examiners, Guthrie, December 26. Secretary, Dr. J. W. Baker, Enid.

Virginia June Report.—Dr. R. S. Martin, secretary of the Medical Examining Board of Virginia, reports the written and oral examination, held at Richmond, June 19-22, 1906. The number of subjects examined in was 19; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 118, of whom 93 passed and 25 failed, including one osteopath. Ten reciprocal licenses were granted. The following colleges were represented:

PASSED. College.	Year Grad.	Per Cent.
Howard University	(1902)*, (1904)	75
George Washington University	(1906) 76, 79,	79
Hahnemann Med. Coll., Chicago	(1906) 74†,	78
Kentucky University	(1904)*	80
University of Maryland	(1905) 76; (1906) 76,	81.5
College of P. and S., Baltimore	(1905)	82
Johns Hopkins Med. School.	(1906) 82,	84
Baltimore Med. Coll.	(1895)*, (1906)	84
Saginaw Valley Med. Coll.††	(1903)	77
Marion-Sims Med. Coll.	(1893)*	
Beaumont Hosp. Med. Coll.	(1887)*	
Bellevue Hosp. Med. Coll.	(1886)*	
College of P. and S., New York	(1894)*	
Leonard Med. Coll.....	(1904) 74†; (1906) 75, 78, 81, 81, 81,	81
Medical College of Ohio	(1900)*	
Jefferson Med. Coll.	(1906)	79
University of Pennsylvania..	(1897),* (1905) 87; (1906)	87
University of Tennessee	(1906)*	
University of Nashville	(1906)	87
Meharry Med. Coll.	(1905)	75
Medical College of Virginia (1905) 74†, 78, 83; (1906) the grades of 74† and 75 were reached by two each, 76 by one, 77 by five, 79 by two, 80 by four, 81 by five, 82 by three and 84 and 85 by one each.		
University of Virginia (2, 1881),* (1898) 81; (1899)* (1903) 81; (1904) 81; (1906) 76, 81, 81, 82, 84.		
University Coll. of Medicine, Richmond, (1901),* (1906) the grade of 75 was reached by three, 76 and 77 by one each, 78 by two, 80 and 81 by one each, 82 by three and 85 and 88 by one each.		
Queen's University, Ontario	(1906)	78

FAILED.		
Howard University	(1905)	72
National University, Washington**	(1901)	73
Kentucky University	(1904)	61

Hospital Coll. of Med., Louisville	(1905)	64
Southwestern Homeo. Med. Coll.	(1906)	48
Baltimore Med. Coll.	(1899) 62; (1905) 72; (1906)	69
Maryland Med. Coll.	(1904)	66
Medico-Chirurgical Dept. of Christ Institution, Baltimore,	(1904) 72.	
Leonard Med Coll.,	(1904) 73, 73; (1905) 63, 72; (1906) 63, 74, 70, 70, —‡.	
Meharry Med. Coll.	(1905)	68
University of the South	(1903)*	
University Coll. of Med., Richmond	(1906)	72
Medical Coll. of Virginia	(1906) 72, 73	

LICENSED THROUGH RECIPROCITY.

College.	Year Grad.	Reciprocity with.
Columbian University, Washington**	(1900)	Maryland
Tufts Coll. Med. School	(1898)	Illinois
University of Maryland	(1900), (1901), (1905)	Maryland
Maryland Med. Coll	(1901)	Maryland.
Maryland Med. Coll.	(1905)	Georgia
Woman's Med. Coll., Baltimore	(1901), (1905)	Maryland
College of P. and S., Baltimore	(1903)	Maryland

* Physicians who, because of 5 or more years of practice, or for other reasons, were given oral examinations.

† Applicants receiving 74+ were referred to the executive committee of the board, who directed that they be passed.

‡ No percentage given.

** Now the George Washington University, Washington, D. C.

†† Merged with Michigan College of Medicine and Surgery in 1904.

Arkansas July Report.—Dr. J. P. Runyan, secretary of the State Medical Board of the Arkansas Medical Society, reports the written examination held at Little Rock, July 10, 1906. The number of subjects examined in was 7; total number of questions asked, 59; percentage required to pass, 75. The total number of candidates examined was 54 ,of whom 35 passed, including 17 non-graduates, and 19 failed, including 13 non-graduates. The following colleges were represented:

PASSED.

College.	Year Grad.	Per Cent.
University of Arkansas	(1906)	76
Harvey Med. Coll.	(1905)	85
University of Louisville	(1905)	80
Louisville Med. Coll	(1889) 75 (1906)	79
Hospital Coll. of Med	(1891)	75
University of Kentucky	(1898)	75
Tulane University	(1904) 78; (1906)	79
St. Louis University (Marion Sims-Beaumont Med. Coll.)	(1906) 76, 81, 84, 86.	
College of P. & S., St. Louis	(1906)	92
University of Nashville	(1876) 75; (1905)	93
Vanderbilt University	(1884)	75
Bell Med. Coll., Dallas*	(1904)	89

FAILED.

Meharry Med. Coll	(1904) 48; (1906) 50, 61, 65, 71
Medical College of Indiana	(1905) 69

* This became the College of Physicians and Surgeons, Dallas, in 1905.

California August Report.—Dr. Charles L. Tisdale, secretary of the California Board of Medical Examiners, reports the examination held at San Francisco, Aug. 25, 1906. The total number of candidates examined was 132, of whom 101 passed and 31 failed. The following colleges were represented:

PASSED.

College.	Year Grad.	Number Exam'd.
Birmingham Medical College	(1903)	1
Cooper Med. Coll	(1, 1905) (21, 1906)	22
Oakland Coll. of Med. & Surg	(1906)	3
California Med. Coll	(1906)	1
College of P. & S., San Francisco	(2, 1905) (6, 1906)	8
University of Southern California	(1906)	16
College of P. & S., Los Angeles	(3, 1905) (1, 1906)	4
University of California	(1906)	8
Hahnemann Med. Coll., San Francisco	(1906)	4
College of P. & S., Chicago	(1895) (1898) (2, 1902)	4
Northwestern Univ. Med. School	(1900) (1903) (1905) (1906)	4
American Med. Miss. Coll	(1900)	2
Hahnemann Med. Coll., Chicago	(1905)	1
Rush Medical College	(1902) (1905)	2
American College of Med. & Surg	(1904)	1
University of Iowa	(1902)	1
Tulane University	(1895)	1
Johns Hopkins University Med. School	(1906)	1
University of Michigan	(1906)	1
Missouri Med. Coll	(1896)	1
Washington University	(1905)	1
Bellevue Hosp. Med. Coll	(1880) (1889)	2
New York University Med. School	(1882) (1893)	2
Pulte Med. College	(1900)	1
Miami Med. College	(1904)	1
Medical College of Ohio	(1906)	1
Medico-Chirurgical Coll., Philadelphia	(1905)	1
University of Pennsylvania	(1899) (1902)	2
Hahnemann Med. Coll., Philadelphia	(1900) (1905)	2
Jefferson Med. Coll	(1902)	1
University of Vermont	(1905)	1

FAILED.

California Med. Coll	(1905) (2, 1906)	3
College of P. & S., Los Angeles	(1905)	1
College of P. & S., San Francisco	(1904) (1906)	2
Cooper Med. Coll	(1903) (1906)	2
University of California	(1906)	1
University of Southern California	(1906)	6
Denver and Gross Coll. of Med	(1905)	1
Howard University	(1889)	1
Bennett Med. Coll., Eel., Chicago	(1906)	1
Chicago Homeopathic Med. Coll	(1886)	1
Hering Med. Coll	(1903)	1
Northwestern Univ. Woman's Med. School	(1881)	1
College of P. & S., Iowa*	(1885)	1
American Med. Coll., St. Louis	(1905)	1
Beaumont Hosp. Med. Coll	(1893)	1
Missouri Med. Coll	(1887)	1
University of Missouri	(1897)	1
Omaha Med. Coll	(1892)	1
Columbus Med. Coll.†	(1891)	1
Starling Med. Coll	(1888)	1
Jefferson Med. Coll	(1870)	1
Medico-Chirurgical College, Philadelphia	(1904)	1
University of Genoa, Italy	(1905)	1

* Became the Medical Department of Drake University in 1900.

† In 1892 merged with Starling Medical College.

Wyoming September Report.—Dr. S. B. Miller, secretary of the Wyoming State Board of Medical Examiners, reports the written examination held at Cheyenne, Sept. 5-7, 1906. The number of subjects examined in was 10; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 6, all of whom passed. The following colleges were represented:

PASSED.

College.	Year Grad.	Per Cent.
Drake University	(1897)	75.2
Missouri Med. Coll	(1899)	82
Creighton Med. Coll	(1905)	75.6
University & Bellevue Hosp. Med. Coll	(1906)	80.7
Medico-Chirurgical College, Philadelphia	(1906)	77.1
University of Pennsylvania	(1900)	82.6

North Dakota October Report.—Dr. H. M. Wheeler, secretary of the State Board of Medical Examiners of North Dakota, reports the written examination held at Grand Forks, Oct. 2-4, 1906. The number of subjects examined in was 14; percentage required to pass, 75. The total number of candidates examined was 13, all of whom passed. Eleven reciprocal licenses were granted at this examination. The following colleges were represented:

PASSED.

College.	Year Grad.	Per Cent.
Northwestern University	(1902)	77
Illinois Med. Coll.	(1904)	78
Tulane University	(1895)	85
Hamline University	(1905)	78, 82
University of Michigan	(1889)	80
Washington University, St. Louis	(1906)	78
University of Nebraska	(1903)	80
Ohio Medical University	(1902)	92
Milwaukee Med. Coll.	(1903)	77
University of Toronto	(1905)	92
McGill University, Montreal	(1904)	80
University of Christiania, Norway	(1902)	76

REGISTERED THROUGH RECIPROCITY.

College.	Year Grad.	Reciprocity with.
American Coll. of Med. and Surg., Chicago	(1905)	Illinois.
Bennett Med. Coll.	(2, 1906)	Illinois.
Northwestern University	(1906)	Illinois.
College of P. and S., Chicago	(1906)	Illinois.
Keokuk Med. Coll., Coll. of P. and S.	(1905) (3, 1906)	Iowa.
University of Iowa	(1906)	Iowa.
Wisconsin College of P. and S.	(1906)	Wisconsin.

Changes in the Arkansas Board.—Dr. J. P. Runyan has resigned the secretaryship of the Board of Medical Examiners of Arkansas, to become dean of the new College of Physicians and Surgeons of Little Rock. Dr. F. T. Murphy, Brinkley, has been elected to succeed him. The law of Arkansas prohibits any member of the Board of Medical Examiners from being connected with any medical school. Dr. L. E. Love, Dardanelle, was appointed to fill the vacancy thus created in the board.

Medico-Chirurgical Record in 1905.—Additional data received from the Medical Council of Pennsylvania and correction of some errors in THE JOURNAL, Aug. 25, 1906, show that the percentages of failures by graduates of the Medico-Chirurgical College of Philadelphia before state examining boards during the year 1905 are reduced as follows: Graduates of all years from 19.5 to 16.9 per cent.; graduates of 1905 from 15.7 to 13.7, and graduates of 1900 to 1905 inclusive from 18.2 to 15.4 per cent.

University of Utah Advances Requirements.—The Department of Medicine of the University of Utah has voted to require for admission to the medical course, in addition to a four-year high school education, a year in the university proper devoted to physics, chemistry, biology and languages. This requirement will begin with the college year 1908-9.

Reciprocity in Texas.—Dr. T. T. Jackson, secretary of the Board of Medical Examiners, reports that Texas now recognizes licenses from the following states: Minnesota, New Hampshire, New Jersey, New York, North Carolina, Pennsylvania, South Carolina, Vermont and Virginia.

Society Proceedings

COMING MEETINGS.

American Public Health Assn., Mexico City, Dec. 3-7.
Southern Surg. and Gyn. Assn., Baltimore, Dec. 11-13.

PHILADELPHIA SOCIETY FOR THE STUDY AND PREVENTION OF SOCIAL DISEASE.

Regular Meeting, held Oct. 18, 1906.

The President, HON. ABRAHAM M. BEITLER, in the Chair.

Syphilis and Gonorrhea in Internal Medicine.

DR. WILLIAM E. HUGHES and DR. ROBERT N. WILLSON, JR., stated the probability that if every case of syphilis were isolated and treated by judicious medication and overfeeding in the fresh air, after the manner of tuberculosis, the disease could be stamped out within a few generations. Prevention, however, seems to offer the only satisfactory measure in the elimination of the disease. Every case of tabes should be studied for syphilis. Syphilis predisposes to tuberculosis.

For gonorrhea, they stated, there should be a new teaching to the effect that it is not merely a local infection of the urethra, but a systemic infection of the blood and lymph glands. The only method of procedure which will avail is that the medical profession shall give to the laity the full facts in the case. Then on their coöperation will depend their own salvation.

Surgery of Syphilis and Gonorrhea.

DR. ERNEST LAPLACE said that the surgical aspects of syphilis arise invariably from a case where the initial sore has been overlooked, and where the disease has progressed in a typical way to its third stage without the knowledge of the patient; or else the patient has been insufficiently treated, and being discharged before complete destruction of the poison within the body, he becomes a prey to renewed deep-seated manifestations of the disease from a pullulation of what poison was left in the body when treatment was suspended. Surgical syphilis is also a frequent form in hereditary cases. Dr. Laplace believes that syphilis can be cured, but that it requires a three years' intelligent treatment under the care of a competent physician.

Gonorrhea, Dr. Laplace said, is serious, perhaps more so than syphilis, because while syphilis can be checked by proper treatment, there is no scientific remedy known to cure gonorrhea locally, or to prevent the general infection of the body. Starting from the stricture which may follow, and which may lead to the retention of urine, the gonococcus may infect the bladder and the kidneys. It may also infect the joints and the serous membranes, including the pericardium, the pleura and the brain. He laid emphasis on the importance of impressing on the people the full dangers of the infection; and the wisdom of intelligent, continued treatment that the poison may be speedily checked while in the urethra, preventing its dissemination throughout the system.

Prevention and Treatment of Venereal Diseases.

DR. HERMAN KNAPP, New York, said that as soon as the newborn child has filled its lungs with a cry announcing its individuality as an independent being, its eyes, in a certain number of cases, are threatened with blindness. The percentage of blind children in institutions has been reduced materially by the adoption of Credé's method. That cases of infective conjunctivitis are not found in maternity hospitals is suggestive of the advisability of a law to compel obstetricians and midwives to disinfect all babies' eyes as soon as they are born.

In Dr. Knapp's experience the greatest number of cases of tabes are due to syphilis. The percentage noted by him some years ago was over 75. The first symptoms occur many years after the infection.

DISCUSSION.

HON. ABRAHAM M. BEITLER said that the laity have the right to ask of the medical men that the public be guarded against the spread of venereal infection. He suggested that the department of health be asked to have printed in various languages a pamphlet teaching the infected person what the infection means to himself, and calling his attention to his duty to others. Further, that the hospital trustees be asked to coöperate with the department of health by making it a rule of the out-patient department that such pamphlets should be placed in the hands of every patient and the information be made clear to them, and that the latest health act be so amended that the department of health shall be given the power to place certain cases of syphilis under appropriate care. Mr. Beitler believes that public hospitals might equip a ward for such diseases, and that there should be in connection with the municipal hospital a department for the treatment of venereal disease. For emergency cases the municipal hospital would offer immediate custodial care and a place of seclusion not obtainable in other hospitals.

DR. B. ALEXANDER RANDALL was in accord with the suggestions of Judge Beitler and called attention to the difficulties in the individual case of giving so much as a pamphlet to some persons consulting the physician.

DR. JAY F. SCHAMBERG referred to a certain degree of apathy among physicians concerning the suppressing of venereal disease. He did not attribute this to lack of desire to accomplish the purpose, but to the feeling that the effort seemed to them futile. It has been his practice for four years to issue in a department of one of the hospitals printed instructions to patients suffering from syphilis. Physicians and other members of the community should do what is possible toward limiting the spread of the disease. While the problem is a difficult one, to say that nothing can be done he regards as mere sophistry.

On motion it was resolved that Dr. W. M. L. Coplin, director of the department of health, be asked to formulate rules in accordance with his previously expressed views on limiting the spread of syphilis and gonorrhea, to be presented at the next meeting of the society.

MISSISSIPPI VALLEY MEDICAL ASSOCIATION.

Thirty-second Annual Meeting, held at Hot Springs, Ark., Nov. 6-8, 1906.

(*Continued from page 1761.*)

Danger of Dust as a Cause of Tuberculosis.

This paper by DR. GEORGE HOMAN, St. Louis, Mo., is practically the same as that which appeared in the British Medical Journal, Sept. 15. See abstract in THE JOURNAL, Oct. 13, 1906, page 1230.

Retroversio-Flexions in Their Relation to Pregnancy.

DR. CHANNING W. BARRETT, Chicago, condemned the practice of producing abortion in the interests of the child in beginning incarceration, and likewise the method of puncturing through the posterior cul-de-sac in the interests of the mother, saying that the puncture may be so located as to be equivalent to a rupture of the uterus into the peritoneal cavity. Ventro-suspensio-fixation is condemned. To operate on these cases when most advantageous to the mother and child, the operation must offer the following safeguards and advantages: 1. It must be safe for the mother. 2. It must decrease the fetal mortality. 3. It must insure or promise a permanent cure for the retrodisplacement. If these condition are secured, instead of pregnancy being a bar to an operation, it may at times furnish an urgent argument for an operation.

The writer drew the following conclusions: 1. Retroversio-flexion is a pathologic condition worthy of appropriate treatment, operative or non-operative. 2. Pregnancy may be the means of cure of retroversio-flexion, but may seriously complicate the condition. 3. The retrodisplaced pregnant uterus should be replaced as soon as possible, and, if necessary, held in position by a pessary. 4. A retrodisplacement during the early weeks of pregnancy that can not immediately be replaced should be supervised and efforts made to assist its return to a normal position as growth advances. 5. An irreducible retrodisplaced pregnant uterus that shows beginning

signs of intolerance or incarceration should have a radical operation for the retrodisplacement rather than be emptied or punctured. 6. In cases of inevitable abortion, the uterus should be emptied and the retrodisplacement corrected, if possible, the radical operation following later, if necessary. 7. Cases of marked incarceration should have the benefit of abdominal section unless abortion is inevitable. 8. Cases operated on should have the radical operation for the retrodisplacement if the conditions are such as to warrant its performance. 9. Should a retrodisplacement correct itself, or be corrected during pregnancy without operation, it should be carefully supervised after confinement with a view of permanently correcting the malposition.

Toxemia of Pregnancy.

DR. D. M. HALL, Memphis, reported a case of toxemia of pregnancy in which there were several unusual features. There was a clear history of an attack of uremia with the usual symptoms of edema of the lower extremities, suppression of urine, albuminuria, headache blindness and convulsions. Several years later a similar attack occurred during the eighth month of pregnancy, but whether this was uremic or eclamptic is questionable. Later an attack came on suddenly during the second month of pregnancy, which was accompanied by nausea, vomiting, headache, intense aching and restlessness, suppression of urine, albuminuria, diminution of urea and acute splenitis, but no edema, blindness or convulsions. During the eighth month of this pregnancy there was a sudden attack of nausea, attended by vomiting, intense aching and restlessness, pain and tenderness over the liver, lessened quantity of urea and urine, but no splenitis, headache, blindness, albuminuria or convulsions.

Blunt Dissection in Plastic Gynecologic Operations.

DR. T. J. WATKINS, Chicago, said the advantages of blunt dissection with scissors over the method heretofore in use are, first, that very much time is saved; second, raw surfaces are made which will give firmer union; third, there is less hemorrhage.

Pubiotomy and Its Relative Indications.

DR. E. B. MONTGOMERY, Quincy, Ill., said that he was obliged to do this operation in 1903 to enable him to deliver a child which was impacted in the pelvis in a mento-posterior position. Examination of the literature of the subject showed that no such procedure has ever been resorted to in this country for such a condition, nor has a lateral section of the pubis for any condition before been made on this side of the Atlantic. Satisfied with the outcome in this case, he began a thorough investigation of the literature of the operation of Gigli. The results in 134 cases collected by him from 35 different operators were uniformly favorable, in that there were no deaths in cases not previously infected, and all patients recovered with perfect union of the bone and with perfect gait.

An indication other than contracted pelvis for the performance of pubiotomy is the occurrence of an impacted mento-posterior face presentation in which a change of position can not be effected by the Volland or other procedures. In the case reported by the essayist a lateral section of the os pubis was done, and labor terminated by the delivery of a living child with forceps. The mother made an excellent recovery.

Operative Work for Hypertrophied Prostate.

DRS. BRANSFORD LEWIS and C. E. BURFORD, St. Louis, Mo., cited illustrative cases and exhibited a number of pathologic prostates. Their conclusions are: 1. Prostatic cases, if correctly estimated and judiciously treated, are now among the most satisfactory that seek the aid of the surgeon. 2. Diagnosis, both accurate and comprehensive, is essential to the attainment of such success and satisfaction. 3. Not all cases of enlarged prostate produce obstruction. 4. Not all cases, even though producing obstruction, require operation. 5. Not all cases that are producing obstruction and do require operation demand the same operation. 6. Not all cases of prostatic obstruction are produced by enlargement or outgrowth. Some are produced by definite contraction of the vesical neck, no hypertrophy being present. It is impossible to determine such conditions by palpating per rectum only. 7. The retrograde cystoscope is the most serviceable aid attainable in determining these questions in respective cases, hence its value in this work is inestimable. 8. Experience proves that neither advanced age, depression of health nor disease of the heart or kidneys debars the patient from the hope of operative relief. Operation reclaims many, even after they have suffered uremic attacks. 9. The longer required operative measures are postponed, the greater the likelihood of establishing spreading infections and renal involvement, conditions much less amenable to surgical relief than simple obstruction at the vesical neck. 10. Three weeks should be sufficient to demonstrate how much may be expected from palliative treatment, after which any operative treatment necessary should be carried out as soon as possible. Delays are dangerous.

(*To be continued.*)

Therapeutics

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulæ and outlines of treatment are answered in these columns.]

Therapeutic Value of Ergot.

The best preparation of ergot, according to Osborne in a paper read before the American Therapeutic Society, is the purified extract which most correctly represents the combined activities of the drug. He states that many of the so-called purified preparations are useless for ergot activity. The fluid extract of the pharmacopeia is the only one of importance. The principal uses of ergot are as a sedative to the nervous system, as a circulatory tonic, as a smooth muscle stimulant and as a uterine contractor. Its principal physiologic actions are to contract the blood vessels, to slow the heart, to diminish the amount of blood in the central nervous system by contracting the blood vessels of the brain and spinal cord, to increase intestinal activity by stimulating the muscle fibers of the intestine, to strengthen the power of the bladder by stimulating its muscle and to contract a partially distended or dilated uterus.

If this preparation is given by the mouth, large doses, according to Osborne, will cause irritation of the gastrointestinal tract and will produce vomiting and purging, but if administered in physiologic doses the amount of urine is increased, by increasing the vasomotor tension, while in too large doses the amount of urine is diminished. Osborne states that it is not known how this drug is eliminated by the system.

Ergot is indicated, according to the author:

1. To contract blood vessels, to raise blood pressure, to stimulate the heart in conditions of shock, collapse and circulatory depression.

2. To contract the blood vessels of the brain and spinal cord, especially of the meninges when they are acutely inflamed or congested.

3. To promote activity from the bowels.

4. To contract the uterus in uterine hemorrhage.

5. To ameliorate attacks of asthma due to nervous irritability or reflexes.

6. To modify excessive secretion of the thyroid gland, which occurs in hysteria and Basedow's disease.

7. To quiet the nervous system and to aid in overcoming the morphin, opium, alcohol or other drug habits and to increase the potency for any dose of morphin that may be required for nerve pain.

8. To contract the blood vessels.

Osborne is of the opinion that there is no preparation, with the possible exception of suprarenal extract, that is so valuable. He recommends it, given hypodermically, in cardiac and circulatory failure occurring in typhoid fever, pneumonia, meningitis, operative shock or shock from injury. In cerebro-

spinal inflammations it is of great value, and he places it first among the therapeutic agents in the treatment of meningitis.

When ergot is administered less morphin is required to quiet the patient in any disease requiring morphin. In neurasthenic conditions or in general weakness accompanied by sleeplessness ergot will not infrequently serve as a good substitute for the powerful hypnotics. It is also of value in congestive headaches not accompanied by high blood tension.

In combating the tympanites after abdominal operations ergot corrects the trouble, as a rule, successfully.

In addition to the foregoing diseases in which it has been employed successfully, Osborne states that its use is warranted in the treatment of diabetes insipidus. He regards this trouble as a vasomotor disturbance, and thus acting on the blood vessels, ergot has reduced the amount of urine, relieved the headache and caused an increase in weight.

Mixtures.

Grünbaum, in his pharmacopeia for infants under three months of age and weighing 13 pounds or more, recommends the following combinations as of service, given in the form of mixtures:

Mistura acida cum strychnina:

℞.	Sol. strychninæ hydrochlor. (1 p.c.)	m.. 1/16	004
	Acidi nitrici dil	m. ss	03
	Infusi calumbæ q. s. ad	f3i	4

M. Sig.: To be given at one dose.

Mistura acidi hydrochlorici:

℞.	Acidi hydrochlorici dil	m. ss	03
	Syrupi simplicis	m. v	30
	Aquæ q. s. ad	f3i	4

M. Sig.: To be given at one dose.

Mistura acidi nitro-hydrochlorici:

℞.	Acidi nitro-hydrochlorici dil.		
	Spiritus chloroformi, āā	m. ss	03
	Tinct. aurantii corticis	m. i	06
	Aquæ	f3i	4

M. Sig.: To be given at one dose.

Mistura acidi sulphurici cum opio:

℞.	Acidi sulphurici arom	gr. 1/3	02
	Tincturæ opii	m. 1/6	01
	Glycerini	m. x	65
	Aquæ q. s. ad	f3i	4

Mistura etheris cum ammonia:

℞.	Spiritus etheris		
	Spiritus ammon. arom.		
	Tincturæ aurantii corticis, āā	m. i	06
	Aquæ camphoræ q. s. ad	f3i	4

M. Sig.: To be given at one dose.

Mistura alba:

℞.	Magnesii sulphatis	gr. ii	12
	Magnesii carb	gr. i	06
	Aquæ menth. pip. q. s. ad	f3i	4

M. Sig.: To be given at one dose.

Mistura aloes cum ferro:

℞.	Ferri tartratis	gr. 1/3	02
	Decoct. aloes co	m. v	30
	Aquæ q. s. ad	f3i	4

M. Sig.: To be given at one dose.

Mistura aluminis:

℞.	Alum	gr. i	06
	Aquæ	f3i	4

M. Sig.: To be given at one dose.

Mistura ammonii bromidi:

℞.	Ammonii chloridi	gr. i	06
	Syrupi aurantii	m. v	30
	Aquæ q. s. ad	f3i	4

M. Sig.: To be given at one dose.

Mistura ammonii citratis:

℞.	Sol. ammonii citratis	m. iv	25
	Aquæ	f3i	4

M. Sig.: To be given at one dose.

Mistura antiseptica:

℞.	Hydrarg. chloridi mitis	gr. 1/10	65
	Olei ricini		
	Mucil. acaciæ, āā	m. v	30
	Syrupi simplicis	m. x	65
	Aquæ q. s. ad	f3i	4

M. Sig.: To be given at one dose.

Mistura ammon. et ipecacuanhæ:

℞.	Ammon. carb	gr. ¼	015
	Vini ipecacuanhæ	m. i	06
	Syrupi simplicis	m. x	65
	Aquæ q. s. ad	f3i	4

M. Sig.: To be given at one dose.

Misturæ ammonii acetatis:

℞.	Sol. ammon. acetatis	m. v	30
	Potassii citratis	gr. iii	20
	Glycerini	m. v	30
	Aquæ dest. q. s. ad	f3i	4

M. Sig.: One teaspoonful at a dose.

Mistura aperiens:

℞.	Ext. jalapæ	gr. 1/16	004
	Syrupi sennæ	m. iii	20
	Spiritus chloroformi		
	Tinct, zingiberis, āā	m. i	06
	Syrupi simplicis	m. x	65
	Aquæ cari q. s. ad	f3i	4

M. Sig.: To be given at one dose.

Mistura aromatici:

℞.	Pulv. aromatici	gr. ii	12
	Mucil. acaciæ	m. xx	1 30
	Aquæ q. s. ad	f3i	4

M. Sig.: To be given at one dose.

Mistura aromatici cum rheo:

℞.	Magnesii carb	gr. i	06
	Pulv. aromat	gr. iii	20
	Tinct. rhei	m. i	06
	Aquæ menth. pip. q. s. ad	f3i	4

M. Sig.: To be given at one dose.

Mistura astringens:

℞.	Ext. hematoxyli	gr. i	06
	Vini ipecacuanhæ	m. i	06
	Tinct. opii	m. ss	03
	Misturæ chetæ q. s. ad	3i	4

M. Sig.: To be given at one dose.

Mistura belladonna composita:

℞.	Tinct. belladonnæ	m. i	06
	Sodii bicarbonatis	gr. i	06
	Syrupi simplicis	m. xv	1
	Aquæ q. s. ad	f3i	4

M. Sig.: To be given at one dose.

Mistura belladonna cum bromido:

℞.	Potassii bromidi	gr. i	06
	Tincturæ belladonnæ	m. i	06
	Glycerini	m. x	65
	Aquæ q. s. ad	f3i	4

M. Sig.: To be given at one dose.

Mistura bismuthi astringens:

℞.	Bismuthi subnit.		
	Pulv. cretæ, āā	gr. i	06
	Glyceriti acidi tannici	m. i	06
	Mucil. acaciæ q. s. ad	f3i	4

M. Sig.: To be given at one dose.

Mistura bismuthi composita:

℞.	Bismuthi subnitratis	gr. ii	12
	Sodium bicarb.		
	Pulv. tragacanthæ co, āā	gr. i	06
	Spiritus chloroformi	m. i	06
	Aquæ cari q. s. ad	f3i	4

M. Sig.: To be given at one dose.

Mistura bismuthi cum catechu:

℞.	Bismuthi subnit.		
	Solutio potassæ		
	Tinct. catechu, āā	m. i	06
	Tinct. cardamomi	m. iv	25
	Spiritus chloroformi	m. i	06
	Mucil. tragacanthæ (q. s. for emulsion)		
	Aquæ q. s. ad	f3i	4

M. Sig.: To be given at one dose.

Mistura bismuthi et sodii:

℞.	Bismuthi subcarb.		
	Sodii bicarb., āā	gr. ii	12
	Pulv. tragacanthæ co	gr. i	06
	Aquæ anethi q. s. ad	f3i	4

M. Sig.: To be given at one dose.

Medicolegal

Presumption of Sanity—Weakness of Expert Testimony.

The Supreme Court of California says, in re Dolbeer's estate, that the presumption always is that a person is sane. Proof of insanity carries back no presumption of its past existence. It exists only from the time when it is proved to exist. It might be conceded in this case that the death of Miss Dolbeer was self-inflicted and caused by simple melancholia, but this would show no more than that she was insane on that date, and could not have the effect of proving her insane several months before, when she made her will. Saving in the case of one born a maniac or insane, there must always be a time when a person is rational and of sound mind before the dread disease exhibits itself.

Again, the court says that three physicians were offered as witnesses in this case. It might be conceded that they were skilled alienists, but the evidence thus adduced of one who has never seen the person and who bases his opinion on the facts given in a hypothetieal question, is evidenee the weakest and most unsatisfactory. Such questions themselves are always framed with great particularity to meet the views of the side which presents the expert. They always eliminate from consideration the countervailing evidence, which may be of a thousandfold more strength than the evidenee on which the question is based. They are astutely drawn, and drawn for a purpose, and that purpose never is the presentation of all the evidence. It is never to present the fair and accurate view, but the purpose always is to frame a question such that the answer will announce a predetermined result. This kind of expert testimony, given under such eireumstances, even the testimony of able and disinterested witnesses, as no doubt these were, is in the eye of the law of steadily decreasing value. The remedy can only come when the state shall provide that the courts, and not the litigants, shall call a disinterested body or board of experts, who shall review the whole situation and then give their opinion, with their reasons therefor, to the court and jury, regardless of the consequences to either litigant. So, and so only, can it be hoped to remove the estimate of infirmity which attaches at the present time to this kind of evidence.

Authorizes City Hospitals.

Chapter 22 of the Laws of Iowa of 1906 provides that in cities having a population of over 12,500 the city council may submit to the electors propositions for the constructing and maintaining of a hospital, and that three hospital trustees may be elected, who shall organize as a hospital board, which shall be vested with authority to provide for the management of such hospital and shall provide all needed rules and regulations for the economic conduct thereof. But in the management of such hospital no discrimination shall be made against practitioners of any school of medicine recognized by the laws of the state of Iowa.

Dates of Meetings of Examiners.

Chapter 114 of the Laws of Iowa of 1906 amends the law as it appears in section 2576 of the supplement to the code of that state by substituting the word "January" for the word "May" in the third line thereof, and by substituting the word "July" for the word "November" in the fourth line thereof, as the dates of the meetings of the State Board of Medical Examiners.

Provides for Sanitarium for Treatment of Tuberculosis.

Chapter 120 of the Laws of Iowa of 1906 establishes a state sanitarium for the care and treatment of persons afflicted with incipient pulmonary tuberculosis, which shall be called the State Sanitarium for the Treatment of Tuberculosis. The superintendent shall be a well-educated physician with an experience of at least five years in the actual practice of medicine, shall be appointed for a term of four years and shall receive a salary of not to exceed $2,500 a year. Among other things, he shall oversee and secure the individual treatment and profesional care of each and every patient residing in the sanitarium. He shall also endeavor to stimulate the organization and assist in the establishment of hospital dispensaries in various counties or large centers of population for the treatment of patients with advanced tuberculosis. No patients shall be received except those afflicted with pulmonary tuberculosis in the incipient stage, and who show a reasonable probability of satisfactory improvement by treatment in the sanitarium. The board of control of state institutions shall, on the recommendation of the superintendent and on the approval of the said board, appoint physicians in such localities in the state as they may deem proper, whose duty shall be to examine all persons who apply to them, and who have previously made application to the superintendent to be admitted as patients in the sanitarium. Said examining physicians shall be graduates of a medical school in good standing under the laws of Iowa, and shall be selected, so far as it is practicable, because of their experience with and knowledge of pulmonary diseases. Said sanitarium shall be open for all patients, but all patients who are able to pay shall be charged such rate monthly as the board of control may fix, not exceeding the average actual per capita cost of care, treatment and maintenance.

Skimmed Milk to be Pasteurized.

Chapter 168 of the Laws of Iowa of 1906 provides, under penalty, that every owner, manager or operator of a creamery shall, before delivering to any person any skimmed milk, cause the same to be pasteurized at a temperature of at least 185 degrees Fahrenheit.

Commission to Investigate Adult Blind.

Chapter 290 of the Laws of Maryland of 1906 provides for the appointment by the governor of a commission of five persons to investigate the condition of the adult blind in the state of Maryland and to report on the expediency of the establishment by the state of institutions for them. It shall be the duty of this commission to secure a complete list of all blind persons in the state, and make a record of their names, ages and financial condition, together with the cause and extent of their blindness, their capacity for educational and industrial training, and such other facts as may seem of value, a full report of the findings and recommendations of the commission to be filed with the governor on or before Dec. 31, 1907. It is also provided that the commission may aid those of the adult blind whom they consider worthy in finding employment, and in furtherance thereof they may furnish material and tools to an amount not exceeding $50 to any one individual, and they may place in a home or homes such indigent blind women as appear to them worthy and to have no other means of support, the total expenditure on any such woman not to exceed $200 a year.

Maryland Tuberculosis Sanatorium.

Chapter 308 of the Laws of Maryland of 1906 provides for the establishment in that state, accessible by railroad or water transportation, of an institution to be called the Maryland Tuberculosis Sanatorium which shall be under the control of a board of managers consisting of the governor, state treasurer, comptroller of the treasurer, and six other persons who shall be appointed by the governor.

Manufactures from Cast-off Clothing Prohibited.

Chapter 358 of the Laws of Maryland of 1906 adds some new provisions to article 43 of the Code of Public General Laws, title "Health," under the new subtitle, "Manufacture of Infected Articles," to follow section 34. What is designated section 34A provides that no person, firm or corporation shall be permitted to manufacture in part or in whole, any mattress, bed, cot, lounge or sofa, wool, shoddies, or shoddies manufactured from cast-off clothing or other fabric which has previously been in the use of or worn by any other person or persons. And all such manufacturers or dealers in mattresses are prohibited from making or offering for sale any such mattress, bed, cot, lounge or sofa, where wool shoddies, or shoddies manufactured from cast-off clothing are used for filling or topping in stuffing said mattresses, beds, cots, lounges and sofas. Section 34B requires a label to be sewed on said articles of manufacture, describing by name each and every material used for filling or stuffing purposes, which, in case the purchaser can not read, the seller shall read to him, and which shall be a guarantee of the material used in the article sold.

Current Medical Literature

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

Medical Record, New York.

November 17.

1 *Hereditary Chorea. C. King, Machias, N. Y.
2 *Man's Natural Protective Agencies Against Tuberculosis. S. Von Ruck, Asheville, N. C.
3 A Plea for Early Surgical Interference in Pelvic Infections. J. C. Taylor, New York.
4 Results in Roentgen Therapy. C. L. Leonard, Philadelphia.
5 *Case of Cerebrospinal Fever. W. O. Wilkes, Waco, Texas.
6 *When to Use Medicines in Pneumonia. .D. Morgan, Washington, D. C.

1. **Hereditary Chorea.**—King calls attention to the rarity of hereditary chorea, and gives a detailed description of the movements characteristic of this affection. The general health of the patient seems to be but little interfered with for years. The sexual function seems to be but little disturbed. The duration of hereditary chorea is generally about 20 or 25 years. Nothing as yet has been found of permanent benefit in the treatment.

2. **Natural Protective Agencies Against Tuberculosis.**—Von Ruck concludes that under ordinary conditions of vigorous adult health and vitality the natural and uninjured protective agencies may probably be considered as effectual unless the elements of infection gain entrance in extraordinary numbers.

5. **Cerebrospinal Fever.**—Wilkes thinks that it is folly to quarantine meninigitis while disregarding pneumonia and a number of other infectious diseases which are known to be communicable.

6. **When To Use Medicines In Pneumonia.**—Morgan declares that there are some cases of pneumonia which require only intelligent and systematic guidance and nursing. Others need little medicine, but when it is indicated it should be given promptly and energetically. Even in the most trying cases he says that there is little else needed than digitalis, stychnin, and ice. In nearly all cases of pneumonia it is a good plan to start with quiet and rest, unloading of the bowels when necessary, a variety of nourishing liquid food, and an ice bag on the chest in the region of the pain and congestion, and also over the precordia, if necessary. Very trying cases are those in which the patient is a steady or hard drinker. In pneumonia digitalis should be used to strengthen and nourish the heart and to reduce a rapid pulse.

Boston Medical and Surgical Journal.

November 15.

7 Classical Symptoms of Hysteria. P. Janet.
8 *New Classification of Benign Tumors of the Breast. J. C. Warren, Boston.
9 *Compound Fracture of the Patella, Tabulation of all Fractures in the Boston City Hospital in Forty-two Years. D. D. Scannell, Boston.
10 *Use and Abuse of Injections in Acute Gonorrheal Urethritis. M. R. Dinkelspiel, Philadelphia.

8. **Tumors of the Breast.**—Warren reports a case of tumor of the breast, in which a microscopic examination showed the tumor to be a multiple periductal fibroma, a papillary cystadenoma, showing abnormal involution with marked epithelial hyperplasia. The classification referred to is the same as that published in THE JOURNAL, July, 15, 1905, page 149, contained in the oration on surgery delivered by Warren at the 1905 Session of the American Medical Association.

9. **Compound Fracture of Patella.**—Scannel reports a case which illustrates the value of emphasizing the reparative power of the knee joint even under the most unfavorable circumstances. The upper three-fourths of the patella were a unit, the lower one-fourth was extensively comminuted, many of the fragments having already been lost, and others being so loose as to make removal necessary. Wherever it was impossible to remove the latter by simple curettment, excision was done. In this way the whole synovial cavity was gone over. The joint was flushed out with from ten to twelve quarts of salt solution; thoroughly sponged out with 70 per cent. alcohol; flushed out again with salt solution, and then gone over as a semi-final step with Harrington's solution. A final irrigation of ten quarts of salt solution was the end of the cleaning process. Because of the loss of bony substance in the power portion of the patella an entirely satisfactory apposition could not be secured. A purse-string suture of chromicized catgut (No. 3) was passed round the patella, through the ligamentum patellæ and the tendon of the quadriceps femoris. This suture when tightened brought into contact one fairly large solid piece of the patella with many bone chips. The capsule was sutured carefully with chromicized catgut (No. 1); the edges of the original wound were excised to make fresh surfaces. The skin wound was closed by interrupted silkworm-gut sutures; a plaster from toe to groin was placed over a sterile dressing, the leg being held in slight overextension. With daily massage and passive motion a most satisfactory result was obtained. Equally good results were obtained in seven other similar cases operated on in the Boston City Hospital. This paper also embodies a study of 38,627 fractures of all kinds treated in the hospital during the past 42 years.

10. **Injections in Acute Gonorrheal Urethritis.**—Dinkelspiel is opposed to the so-called abortive methods of treating gonorrhea by means of powerful astringent substances. It has been his custom to withhold injections on the part of the patient until the acute inflammation has subsided and the character of the discharge has changed from purulent to mucopurulent.

New York Medical Journal.

November 17.

11 Aids to Accuracy and Efficiency in Radiotherapy. H. G. Piffard, New York.
12 *Tuberculosis Problem in Prisons and Reformatories. S. A. Knopf, New York.
13 Technics of Lumbar Puncture in Children; with particular Reference to the Pressure of the Cerebrospinal Fluid. H. Heiman, New York.
14 *Fracture of the Anterior Superior Spine of Ilium by Muscular Action. E. L. Beebee, Buffalo.
15 *Tuberculosis Among the Indians of Arizona and New Mexico. I. W. Brewer, Ft. Huachuca, Ariz.
16 Membrane and Complications of Diphtheria. W. S. Cornell, Philadelphia.
17 Early Course and Diagnosis of Scarlet Fever. W. L. Somerset, New York.
18 Diagnosis of Typhoid Fever. R. Stein, New York.

12. **The Tuberculosis Problem in Prisons.**—In this paper, read before the physicians of the National Prison Association, Knopf discusses this question thoroughly. He says that the first step toward the prevention of tuberculosis in penal institutions should be a most careful examination of all individuals, and the weeding out and isolation of all tuberculous prisoners detained in jails. The tuberculous patient should remain isolated in the detention prison as well as in the penal institution, and he should be given the benefit of hygienic and dietetic treatment from the first moment he becomes a ward of the state or city. When the time for his transfer comes, the history card of his disease and the recommendation of the physician should be transmitted with the other papers of the prisoner to the penal institution. After his arrival at the prison in which he is to stay for some length of time the physician will decide whether he is able to work or not, and what kind of work might be most conducive to his recovery.

14. **Fracture of Anterior Superior Spine of Ilium.**—Bebee's patient, a very muscular youth of 19, was making a spurt in a race when he heard a snap and had a sudden sharp pain in his right hip and a sensation of something giving way. Forty-eight hours later the patient walked with a slight limp. The anterior superior spine of the ilium on the right side was blunted and vague in outline; while that on the left was sharp and prominent. The blunted part presented a clearly defined area of tenderness to pressure. Beneath the skin, about one inch below, was a hard angular mass, movable without crepitus. A perpendicular line from the most prominent part of the spine to the bed was farther from the top of the trochanter than on the sound side. Active flexion of the thigh against gravity was difficult and painful. Passive flexion was less than on the sound side, being limited by the interposition of the hard object. Five days later there was

more swelling about the right anterior superior iliac spine, which involved the angular mass below, making its outline less distinct. A radiograph taken at that time showed a triangular shadow corresponding to the position of the mass. Two weeks later the patient walked without perceptible limp. On examination there was still more vagueness in the outline of the injured spine. Palpation showed distinct thickening of the bone. Extending downward from it was an elongated mass of firm consistence and indistinct outlines, the provisional callus. The hard body felt before could be indistinctly made out in the lower part of the mass. Six weeks after the accident the patient could use his leg as well as ever. On examination the left anterior superior iliac spine was still blunted and thickened. Below was a slight prominence formed by a rounded mass of bony hardness, immovably joined to the bone above by a less prominent bony part. Flexion of the thigh on the pelvis was limited by the interposition of this mass. There was no treatment, no application of bandages or appliances to keep the fragment in place. Only four such cases are recorded in the literature.

15. **Tuberculosis Among Indians.**—A study of the incidence of tuberculosis among the Indians gathered together on the reservations in Arizona and New Mexico shows that these people are badly infected with this disease, although they are living in the most favorable climate. Brewer believes that this demonstrates that climate is not a specific, and that the climate of Arizona and New Mexico, although undoubtedly of benefit to persons in the early stages of tuberculosis, is of little value when the patients are underfed and surrounded by filth and live in poorly ventilated houses.

Lancet Clinic, Cincinnati.

November 17.

19 An Agreement of Reciprocity in Medical Licensure Between the States of New York and Ohio. A. Ravogli, Cincinnati.

The American Journal of Medical Sciences, Philadelphia.

November.

20 Diagnosis of Renal and Ureteral Calculi. J. W. Bovée, Washington, D. C.
21 *Environment in Therapeutics from the Standpoint of Physiology. W. B. James, New York.
22 *Physiologic Limitations of Rectal Feeding. D. L. Edsall, Philadelphia.
23 *Results of the Use of Refined Diphtheria Antitoxin, Gibson's Globulin Preparation in the Treatment of Diphtheria. W. H. Park and B. Throne, New York City.
24 *Relation of Hodgkin's Disease to Lymphosarcoma. H. W. Gibbons, San Francisco, Cal.
25 *Coagulability of the Blood in Yellow Fever. L. H. Marks, New Orleans.
26 Unilateral Paralytic Chorea. J. Grinker, Chicago.
27 Postural Treatment of Otitis Media and Mastoiditis. A. E. Schmidt, New York.
28 Paralysis of the Facial Nerve Due to the Eustachian Electro-Bougie. J. B. Solley, New York.
29 Clinical and Experimental Experience with Colloidal Silver and a Virulent Streptococcus. F. P. Vale, Washington, D. C.
30 *Production of Vascular Lesions in the Rabbit by Single Injections of Adrenalin. R. M. Pearce and L. K. Baldauf, Albany, N. Y.
31 *Bacillus Pyogenes (Nov. Spec.?) Associated with a Febrile Disease. L. K. Hirshberg, Baltimore, Md.
32 Remote Consequences of Infections of the Biliary Tract. A. O. J. Kelly, Philadelphia.

21. **Environment in Therapeutics from the Standpoint of Physiology.**—James reviews a few of the elements of environment in their relation to the treatment of disease and points out some of the ways in which modern therapeutic practice, especially in hospitals, sometimes fails to realize all that it might. He says that few hospitals are so arranged that those who are dying shall not be seen or heard by patients in neighboring beds, or so that the psychical side of the environment of the individual shall have any consideration whatever. In most institutions recovery from anesthesia takes place in the wards. James speaks particularly of the physical side of environment; that is, temperature, ventilation, barometric pressure, humidity, light, quiet, noise, etc. He makes a plea for the more general and systematic use of hospital roofs, and suggests that the architectural definition of roof be changed, as far as it applies to hospitals, and that this structure be defined as the floor of the top story.

22. **Physiologic Limitations of Rectal Feeding.**—In furnishing mental satisfaction rectal alimentation, especially water and salts, according to Edsall, is always very useful when indicated, but in a great majority of cases the actual status of rectal alimentation as a method of nourishing patients is that it is a modified and partial starvation. It does furnish some food, and is, therefore, decidedly better than simple starvation, but there is nearly always a marked degree of starvation, and should be recognized and rectal feeding not be given a higher plane than it deserves.

23. **Antitoxin in Diphtheria.**—The results obtained by Park and Throne in a series of 100 cases are so definite that they think it safe to conclude that the removal of a considerable portion of the non-antitoxic globulins, as well as the albumins from the serum by the Gibson method, has eliminated much of the deleterious matter from the serum, so that severe rashes, joint complications, fever and other constitutional disturbances are less likely to occur from the antitoxic globulins than from the antitoxic serum from which it was obtained. The globulin preparation when tested by animal experiments appears to retain all the antitoxic properties of the whole serum. The portion of the globules still accompanying the antitoxin in the Gibson preparation is shown to be capable of exciting rashes and occasionally constitutional disturbances, although, as stated above, to a less extent than the serum. The authors believe that it is almost certain that methods will be devised to refine antitoxin still further, and so possibly to eliminate all appreciable deleterious effects of the antitoxic serum. Whether this globulin solution will be much less likely than the serum to cause collapse in the less rare cases of peculiar susceptibility, such as in a certain percentage of those suffering from status lymphaticus, is still undetermined. It has now been used in several thousand cases of diphtheria without accident. The concentration of antitoxin made possible by the elimination of non-antitoxic substances is not only a convenience, but of distinct clinical importance, as it tends to encourage large doses. The antitoxic globulin solution, like the serum, tends to become slightly cloudy when kept at moderate or high temperature, and substances such as solutions of carbolic acid and trikresol are especially likely to cause a precipitate to develop. The antitoxin in the globulin preparation retains its potency about as long as that in the whole serum.

24. **Hodgkin's Disease.**—Gibbons agrees with Reed, Longcope and Simmons as to the histologic picture presented by the tissues in Hodgkin's disease, but does not agree that it is necessarily due to an inflammatory process. He asserts that, in most cases, infiltration of the capsule of the diseased glands can be observed; in many cases an extension beyond the capsule occurs, and in some cases very evident infiltration of adjacent structures. He believes that Hodgkin's disease is a process to be classified with malignant tumors.

25. **Coagulability of Blood in Yellow Fever.**—A careful study of eight cases has convinced Marks that the coagulability of the blood in yellow fever is normal. The minimum time of positive coagulation was two minutes and forty-five seconds, maximum, four minutes and twenty seconds; average, three minutes and fifty-two seconds.

30. **Infections of Adrenalin.**—Pearce and Baldauf refer to lesions in the aorta caused by single injections of adrenalin in a series of experiments made by them. Of 10 animals, four died within a few minutes after injection; of the remaining six, one of which died at the end of seven days, and five of which were killed after from 65 to 70 days, all showed very definite vascular lesions. These results, while they offer no explanation of the mode of action of adrenalin in producing vascular lesions, simplify the mode of investigation, in that the problem is limited to the study of the effect of single injections, and comparisons may be drawn sharply between lesions so produced and similar lesions caused by the prolonged administration of other substances, such as nicotin, digalen and barium chlorid. It is evident, however, that in view of these results the theory of direct toxic action is hardly tenable, while that which recognizes a combination of vasovasorum disturbance, local anemia and vascular strain is greatly strengthened.

31. **Bacillus Pyrogenes.**—Hirshberg records the case of a male patient, aged 36 years, with a pyrexia lasting eight weeks, which never rose above 102 F., who exhibited meningeal

symptoms, photophobia, tremors, irritability, subsultus tendinum, and joint involvement. The Widal reaction was constantly absent. There was a leucocytosis of 14,000. Cultures taken from the blood revealed a lemon-yellow diplobacillus pathogenic for guinea-pigs and rabbits, negative to Gram's stain, actively motile, producing no indol, but liquefying gelatin until the seventh day, and producing no gas in lactose, saccharose or glucose media. Milk, mannite and litmus agar were acidified. The organism was killed at an exposure of 60 C. for 10 minutes. It has been named *Bacillus pyrogenes.*

Journal of Experimental Medicine, New York.
October 12.

33 *Clinical and Experimental Observations on Cheyne-Stokes Respiration. J. A. E. Eyster, Baltimore.
34 *Therapeutic Experiments with Anticrotalus and Antimoccasin Sera. H. Noguchi, New York.
35 *Experimental Anemias in the Rabbit. C. H. Bunting, Charlottesville, Va.
36 An Improved Syringe for Injecting Precise Amounts. A. P. Hitchens, Glenolden, Pa.

33—See THE JOURNAL, Oct. 27, 1906, page 1383.

34. **Therapeutic Experiments with Anticrotalus and Antimoccasin Sera.**—Noguchi's experiments show that the action of different antivenins is highly, although not absolutely, specific for the venoms for which they are prepared. The antivenomous effect is demonstrable by experiments on toxicity (*in vivo*) and on hemolysis (*in vitro*). Anticrotalus and antimoccasin sera possess therapeutic properties of high degree. By their employment before the stage of extreme prostration has been reached, poisoned guinea-pigs can be saved. The standardization of antivenins must be made separately for the antitoxic and antihemolytic actions, since these do not bear a constant and invariable relation to each other.

35. **Experimental Anemias in Rabbit.**—Bunting conceives from previous work that the red marrow of rabbits normally consists essentially of cells arranged in groups; certain groups being composed of indifferent myeloblasts at the center, surrounded by myelocytes, and in the periphery close to the capillaries are the mature polymorphonuclear cells; others are composed of immature red cells or even indifferent myeloblasts at the center and surrounding layers of megaloblasts, intermediate red cells, and normoblasts and peripheral layers of mature red cells; while others show lymphoid cells forming the peripheral layers. Now in the rabbit Bunting finds that a fatal dose of ricin leads to a diminution in the number of leucocytes for a few hours, followed by an increase. The count of red cells is little changed, but nucleated reds appear early in the circulation. Saponin administered intravenously causes a destruction of red blood cells and to a less extent of the leucocytes in the circulation and also a destruction of cells in the marrow with injury to the capillary walls. There is a reduction of the red count and sharp nucleated red-cell crises and later pathologic changes in the erythrocytes.

Bunting holds that nucleated red-cell crises in the circulating blood are the expression of injury to the bone marrow, which reacts in this manner only when the mature erythrocytes at the periphery of the erythrogenetic center in it are destroyed by the action of a circulating toxin, or are depleted by excessive hemorrhage. In the first case the reaction is the more marked. Following toxic injury of the marrow with destruction of the peripheral cells of the erythrogenetic group, there is established an atypical formation of erythrocytes, resulting in pathologic forms, the most characteristic of which are the macrocytes. These appear to be derived directly from the megaloblasts without the ordinary transition through the intermediate and normoblastic stages. This condition may represent an attempt at compensatory repair. Following extensive injury to the marrow one may find the groups of blood-forming cells almost completely replaced by scar tissue. The spleen may then take on the hemopoietic function, the new cells being formed in the splenic sinuses. With subcutaneous injections of leucocytic toxins the absorption is so slow that the toxin is apparently saturated by cells in the circulation and does not reach the marrow in sufficient quantity to injure it. Under these conditions there is blood destruction but no nucleated red-cell crises in the circulation, and the marrow picture is one of hyperplasia such as is seen after hemorrhage, i. e., the marrow of a secondary anemia.

Surgery, Gynecology and Obstetrics, Chicago.
October.

37 Lateral Aberrant Thyroids. V. L. Schrager, Chicago.
38 *Pathologic Anatomy of Exophthalmic Goiter. D. D. Lewis, Chicago.
39 *A Rare Case of Hermaphroditism. J. C. Webster, Chicago.
40 A Specimen of Fetus Amorphous Anideus. J. C. Webster, Chicago.
41 *Affections of the Eye in Relation to Pelvic Disorders. J. C. Webster, Chicago.
42 *Case of Abortion in a Myomatous Uterus. J. C. Webster, Chicago.
43 Appendicitis Larvata. A. D. Kohn, Chicago.
44 *Primary Malignant Tumors of the Infant Uterus. P. Findley, Omaha, Neb.
45 *Healing of Suppurative Appendicitis with Calcification. C. J. Rowan and H. G. Wells, Chicago.
46 Injuries to the Urethra—Traumatic Strictures, and their Rational Treatment. J. M. Neff and V. L. Schrager, Chicago.
47 Clinical Significance of Cervical Ribs. J. B. Murphy, Chicago.
48 Congenital Hypertrophic Pyloric Stenosis of Infants. G. F. Thompson, Chicago.
49 Case of Ischuria in a Patient with Retroflexio-Version of the Gravid Uterus. E. N. Reed, Chicago.
50 Case of Torsion of the Greater Omentum, Intra-abdominal, with Remarks. F. D. Smythe, Memphis, Tenn.
51 High Operation for Varicocele, D. D. Lewis, Chicago.
52 Management of Breech Presentations. H. F. Lewis, Chicago.
53 *A New Hydrodynamic Bag Cervical Dilator. R. H. Pomeroy, Brooklyn, N. Y.
54 Elimination of Cavities in Operative Wounds. R. von Mosetig-Moorhoff, Vienna.

38. **Pathologic Anatomy of Exophthalmic Goiter.**—Lewis found that histologically, primary exophthalmic goiter is characterized by an excessive epithelial proliferation with the formation of large, irregular follicles, which are filled with papillary ingrowths. The epithelial cells become cylindrical, and histologically the processes of secretion do not differ from those described by Anderson in the normal gland, stimulated to increased secretion by injections of pilocarpin. The same histologic changes have been described in the gland when undergoing compensatory hypertrophy (Halsted, Hurthle). The colloid, when present, is finely granular and stains faintly, although in some sections a dense, heavily staining colloid may be found. The colloid is formed both as a secretion and as a product of degeneration. The goiter in the secondary cases does not differ histologically from the simple colloid or parenchymatous goiter on which the symptoms were grafted. The evidences of increased secretion described by Farner in these cases are inconstant. The clinical course of the secondary cases is less severe, and the prognosis is better in these cases, both as regards immediate recovery from operation and later recovery from disease. While it is impossible to judge of the secretion of the gland from histologic studies, it may be that the primary cases are associated with dysthyroidism, and the secondary with hyperthyroidism.

39. **Rare Case of Hermaphroditism.**—Webster records the case of a man, aged 33, married four years, the father of twin children, who was kicked in the abdomen by a horse. Twenty-three hours afterward the abdomen was distended and very painful, and there was constant vomiting. As he had had for four years a large left irreducible inguinal hernia, a diagnosis of strangulation of the latter was made, and operation was carried out. The inguinal canal and scrotum on the left side were found to contain no intestine, but, instead, a mass which resembled an adult uterus, Fallopian tubes, ovaries and broad ligament. The cervix was adherent to the internal ring and was divided, the entire mass being removed. The abdomen was then opened in the middle line, extensive septic peritonitis being found. Extending from the left inguinal ring a ligament resembling the female broad ligament stretched to the right side of the pelvis. To this was attached a structure exactly resembling an ovary. This was not removed, as the man was much collapsed. Death occurred two hours after the operation, and no autopsy could be obtained.

The specimen as presented to Webster bore a marked resemblance to the internal genitals of an adult female as removed by supravaginal hysterectomy. The portion of uterus removed from the prostate corresponds to the body of the adult female multiparous uterus. The Fallopian tubes resemble those of the adult female, the right tube being 9 cm. in length and the left 8 cm. The outer end of each is marked by a number of short fimbriæ, the longest of which is in-

ferior, extending toward the testicle, resemhling the ovarian fimhria of the adult female. The orifice of the tube is smaller than that in the female. The testicles occupy the position of the ovaries in the adult female, and only differ from them in heing smoother. For a complete report of the findings the reader is referred to the original article.

41. **Affections of Eye in Relation to Pelvic Disorder.**—Webster reports two interesting cases. In one instance the patient suffered from sore eyes for eight years. She had her eyes treated regularly, hut without any marked henefit. Because of pathologic conditions in the pelvis, Webster performed a vaginal panhysterectomy. Within 10 days of the operation the eyes became quite normal, and there has been no return of the trouble. The other patient complained of sore eyes, bleeding from eyes and nose, irregular menstruation, headaches and nervousness. Treatment of the eyes was of no avail. Conditions in the pelvis demanded an abdominal section, one ovary heing removed. Within a few days of the operation the eyes hecame normal. Shortly afterward, ahout three months, the patient returned, again complaining of her eyes. Removal of the remaining ovary was demanded and the request was acceded to. The eyes improved at once and there has heen no return of the trouble.

42. **Abortion in a Myomatous Uterus.**—Webster reports a case of this kind in which myomectomy and removal of the uterine contents were carried out by abdominal section.

44. **Primary Malignant Tumors of Infant Uterus.**—Findley reviews eight cases previously recorded in the literature and adds one personal case.

45. **Healing of Suppurative Appendicitis with Calcification.**—Two cases are reported by Rowan and Wells. In the case of the first patient, who died of peritonitis and chronic nephritis, the condition was discovered at the autopsy. Apparently at some previous time this individual had suffered from an appendicitis, with formation of an abscess. This ahscess had ruptured into the ileum and discharged the greater part of its contents into the howel; the wall of the abscess, or at least the lower part of it, had then undergone calcification. Because of its location, and the fact that there were no adhesions to the surrounding surfaces, no trouble had resulted from either the calcified mass or the adhesions. The second patient was operated on for intestinal obstruction probahly due to a band of adhesions resulting from a previous attack of appendicitis. At the place of adhesion could be felt a stony hard disk which seemed to be incorporated in the wall of the bowel. On attempting to cut through the hard disk which formed the adhesion of the bowel, it was found to be calcified. The disk was left in the wall of the proximal end of the loop, as its removal would have left a large defect in the wall of an already contracted intestine, the repair of which would have left a serious degree of stenosis. The patient died 26 hours after the operation.

53. **New Hydrodynamic Bag Cervical Dilator.**—Pomeroy presents a new form of hydrodynamic hag that provides a uniform dilating force applied at the actual zone of resistance, and states that it is at least equivalent in safety and efficiency to manual dilatation, without the fatiguing effects of that procedure on the operator. The apparatus may be described as consisting of two bags, or compartments, combined. The upper or anchor compartment is inflatable by a tube which passes through the lower. The upper compartment, when distended, lies above the point of constriction of the cervix, anchors the apparatus and measures the degree of dilatation at which the apparatus will slip out. The direct dilating effect is produced by gradual inflation of the lower compartment. The smaller or preliminary apparatus can he introduced through a cervix admitting one finger. The larger can be introduced as soon as the small size has done its work and is expelled. The small apparatus is straight, the large one has a pelvic curve, and is conformed in dimensions to the size and shape of the normally distended birth canal.

These double-compartment dilators have heen used hy Pomeroy with encouraging results in eight cases of eclampsia and in one of placenta prævia centralis. Only one accident has occurred. This was with a large size bag used in a seven months' primipara, an eclampsia case. At this time the small-size dilator had not yet arrived from the manufacturer and the curved lower apartment had not yet been devised.

Brooklyn Medical Journal.

November.

55 Physiologic Action of the Roentgen Ray. C. Eastmond, Brooklyn.
56 Epithelioma of the Ear. W. C. Braislin, Brooklyn.
57 *Descensus Ovariorum. F. J. Shoop, Brooklyn.
58 Hemorrhagic Disease of the New-Born. C. H. Goodrich, Brooklyn.
59 *Case of Typhoid Fever. J. R. Stivers, Brooklyn.
60 An Obstetrical Incident. W. C. Schoenijahn, Brooklyn.

57. **Descensus Ovariorum.**—Shoop sums up his paper as follows: 1. The non-adherent ovary merely displaced with the uterus is usually cured hy correcting the uterine deviation. 2. The adherent ovary should be released from its adhesions hy manipulation or by operation. 3. The slightly displaced ovary, non-adherent, not tender and causing no trouble, should he left alone, hut the patient should be warned that it may give trouble later. 4. A moderately displaced ovary, tender but not enlarged, may be cured hy non-surgical means, but in many instances, perhaps in the majority, relapse occurs after so-called cures and later an operation is required. 5. A badly prolapsed ovary, more or less painful and enlarged, is a diseased ovary and is never cured except by resection or extirpation.

59. **Typhoid Fever.**—Stovers, reports a case of typhoid in which convalescence was complicated by a phlebitis of the left internal saphenous vein. The swelling of the leg disappeared in a few days by the aid of elevation and hot applications, and convalescence seemed again established when the patient developed sudden severe pain in the right iliac region, accompanied by vomiting, and an increase in the temperature and pulse. An ice coil was placed over the region of the appendix, small doses of calomel were given and morphia hypodermically in sufficient quantity to relieve the intense pain. Within 48 hours the pain had left the region of the appendix and had gone down to the right testicle, which hegan to show signs of inflammation. Two weeks later fluctuation was detected and an incision was made which was followed by a copious discharge of pus.

Albany Medical Annals.

November.

61 Address Delivered Before Albany Medical College, Sept. 25, 1906. S. B. Ward, Albany.
62 Case of Hypernephroma of the Kidney. J. M. Berry, Troy, N. Y.
63 Acne Vulgaris. J. W. Wiltse, Albany.
64 *Hysteropexy Followed by Repeated Pregnancies. J. D. Montmarquet, Cohoes, N. Y.

64. **Hysteropexy Followed by Repeated Pregnancies.**—Montmarquet reports three cases in which hysteropexy was performed for retroversion; and in which pregnancy occurred repeatedly and went on to full term without interruption. In all these cases miscarriage occurred before the suspension was performed; and after the operation, pregnancies, two in one case, three in the other, and one in the last, went on to happy terminations, and lahor was as easy in all cases as it ever was before the operations.

Vermont Medical Monthly, Burlington.

October 15.

65 Preventive Medicine. B. H. Stone, Burlington.
66 *Erythema Nodosum. W. L. Wasson, Waterbury, Vt.
67 *Eclampsia. R. M. McSweeney, St. Johnsbury.
68 The Value of Blood Examination in Diagnosis. W. G. Ricker, Wells River.
69 Vibration Massage, Its Application to Disease. C. K. Johnson, Bristol.

66. **Erythema Nodosum.**—Wasson reports four typical cases of erythema nodosum which occurred in a locality where the condition was unknown previously.

67. **Eclampsia.**—If the amount of urinary secretion or the amount of urea is abnormally small, McSweeney prescribes:

℞. Potassii acetatis
Potassii bitartratis
Potassii citratis, āā.....3ii 8
Decocti tritici q. s. ad.....℥viii 240

M. Sig.: Shake well. A teaspoonful four times a day.

This acts as a diuretic and a laxative.

American Journal of Surgery, New York.

November.

70 Does Syphilis in Some Cases Spontaneously Abort in the Primary Stage? R. W. Taylor, New York.
71 Subcutaneous Rupture of Abdominal Viscera, with Especial Reference to the Intestine and Kidney. E. Eliot, Jr., New York.
72 Gonorrheal Arthritis in Children. V. P. Gibney, New York.
73 Gonorrheal Ophthalmia in Children. C. H. May, New York.
74 Absence of Vagina; Double Uterus. J. E. Walker, Hornell, N. Y.
75 Abdominal Tumors in Children. L. Fischer, New York City.
76 Tuberculous Lymphadenitis and Its Surgical Aspect. H. Wilkinson, Kansas City.

Journal of Medical Society of New Jersey, Orange.

November.

77 Surgical Treatment of Gastroptosis. H. D. Beyea, Philadelphia.
78 Etiology, Pathology and Treatment of Fibroid Tumors of the Uterus. G. H. Balleray, Paterson.
79 Prevention of Scarlatinal Nephritis. F. McEwen, Newark.
80 Some Interesting Cases of Extrauterine Pregnancy. J. S. Baer, Camden.

Mississippi Medical Monthly, Vicksburg.

November.

81 Organization. D. W. Jones, Fernwood.
82 Three Cases of Acute Intestinal Obstruction. H. L. Sutherland, Rosedale.
83 Two Recent Obstetrical Cases. B. F. McNeal, Leota.
84 Hematuria. J. W. Bennett, Brookhaven.
85 Abortive Form of Lobar Pneumonia. W. T. Mathews, Greenwood.

Journal of the Association of Military Surgeons of the United States, Carlisle, Pa.

November.

86 Sanitary Condition of the Imperial Japanese Army During the Late Russo-Japanese War. S. Suzuki, I. J. Navy.
87 Elisha Kent Kane—A Sketch. J. C. Wise, U. S. Navy.
88 United States Marine-Hospital, at San Francisco, and the Great Earthquake and Fire of 1906. H. W. Sawtelle, U. S. P. H. and M.-H. S.
89 Anatomic Characteristics of Opisthorchis Sinensis, and the Statistics of Its Occurrence in the United States. M. J. White, P. H. and M.-H. S.
90 The Oregon National Guard at the San Francisco Earthquake Disaster. W. E. Carll.
91 Wheeled Kitchen for Troops in the Field. H. Mareschal.
92 Tuberculosis in the Military Service. G. E. Bushnell, U. S. Army.

New Orleans Medical and Surgical Journal.

November.

93 The Menstrual Cycle; Its Normal and Morbid Psychology. D. E. M. Hummel, Jackson, La.
94 A Peep into Foreign Surgical Clinics. J. D. Bloom, New Orleans.
95 Difficult Diagnosis of Yellow Fever Cases. L. Sexton, New Orleans.
96 Requirements of the Mosquito Doctrine. S. L. Theard, New Orleans.
97 New Orleans Yellow Fever in 1905. S. L. Theard, New Orleans.
98 Case of Mutism in Typhoid. L. G. LeBeuf, New Orleans.
99 Faulty Metabolism in Young Children. T. S. Dabney, New Orleans.
100 Case of Suppurating Sub-urethral Cyst. C. J. Miller, New Orleans.

Archives of Ophthalmology, New Rochelle, N. Y.

September.

101 Refraction at a Toric Surface. H. C. Lomb, Rochester, N. Y.
102 Quinin Amaurosis. F. J. Parker, New York.
103 Case of Microphthalmus with Upper-Lid Cyst. C. H. May and W. A. Holden.
104 A Time-Saving Addition to Test-Type Cards. H. Lowell, Boston, Mass.

Annals of Gynecology and Pediatry, Boston, Mass.

October.

105 Ectopic Gestation. H. F. Quackenbos, New York City.
106 What is Meant by Knowing a Child's Constitution. L. F. Bishop, New York.
107 Ophthalmia Neonatorum. F. J. C. Fitzgerald, New York City.

Virginia Medical Semi-Monthly, Richmond.

October 26.

108 Address of President, Medical Society of Virginia. L. Gwathmey, Norfolk, Va.
109 Treatment of Some Eye Diseases by the General Practitioner. O. Wilkinson, Washington, D. C.
110 Infant Feeding. R. W. Garrett, Viewtown, Va.
111 Present State of Our Knowledge in Regard to Proteid Constituents of the Animal Body. J. W. Mallet, Charlottesville, Va.
112 Value of the Reflex Arc in Diagnosis. M. R. Hughes, St. Louis.
113 Case of Extrauterine Pregnancy. K. Ruffin, Norfolk.
114 Diseases of the Pharynx and Tonsils Due to Faulty Metabolism. C. P. Jones, Newport News, Va.

The Post-Graduate, New York.

November.

115 Case of Hematemesis Complicating Malaria. J. G. Hunt, New York.
116 Presentation of Specimens of Ectopic Gestation, Cancer of Breast and Immense Fibroid of Uterus. S. Lloyd, New York.
117 Preventive and Abortive Treatment of Mastoiditis. W. S. Bryant, New York.
118 Local Treatment of Women. S. S. Graber, New York.
119 Pericarditis. W. H. Porter and J. G. Hunt, New York.
120 Trachelo-Hysterotomy; Its Scope and Technic. A. Brothers, New York.

Louisville Monthly Journal of Medicine and Surgery.

November.

121 Conical Cornea. W. Cheatham, Louisville.
122 Consumption. T. H. Baker, Louisville.
123 Diagnosis and Treatment of Incipient Tuberculosis. W. F. Boggess, Louisville.
124 Some Common Errors in the Diagnosis of Syphilis. I. N. Bloom, Louisville.

Maryland Medical Journal, Baltimore.

November.

125 Tuberculosis of Cattle—How It May Be Repressed, and Its Relation to the Public Health. L. Pearson, Philadelphia.
126 Some of the Many Uses and the Method of Administering Normal Salt Solution. A. A. Matthews, Spokane, Wash.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal.

November 3.

1 Influence of Rainy Winds on Phthisis in Twenty-three Parishes of North Devon. W. Gordon and J. R. Harper.
2 *Causes, Sequelæ and Treatment of Pericolic Inflammation. D. Power.
3 *A Case of Appendicitis. O. W. Andrews.
4 *Concealed Accidental Hemorrhage. A. H. Wright.
5 *Chronic Metritis and Arteriosclerotic Uterus. W. Gardner and J. R. Goodall.
6 *A Study of 146 Consecutive Cases of Ventrofixation of the Uterus. A. E. Giles.
7 *Changes in Uterine Fibroids After the Menopause Considered with Reference to Operations. C. A. L. Reed.
8 *Indications for Cesarean Section Other than Pelvic Deformities or Tumors. H. L. Reddy.
9 Uterine Abscess; Metritis Desiccans. J. W. Wallace.
10 Treatment of Eclampsia. D. J. Evans.
11 *Surgical and Serum Treatment of Puerperal Sepsis. L. S. McMurtry.
12 A Study of Seventy Cases of Ectopic Gestation. J. F. W. Ross.
13 Ectopic Pregnancy. (To be continued). M. Cameron.

2. **Pericolic Inflammation.**—Power says that pericolitis is not very rare, although it is one of the less common forms of local peritonitis. It occurs in connection with the ascending as well as with the descending colon, but he has seen no case in which it arose in the neighborhood of the transverse colon. The cause of pericolitis may be found within the colon as a result of chronic constipation, in the walls of the colon from ulceration of the mucous membrane or from the perforation of foreign bodies, outside the colon as a result of injury. Pericolitis ends in resolution, in chronic inflammation, sometimes with extensive thickening of the colon, or in suppuration, which is usually retroperitoneal. The treatment consists in an attempt to prevent the inflammation becoming chronic, and in the early opening of any abscess which may be formed.

3. **Appendicitis.**—The special points of interest in Andrews' case were the following: (a) Presence of stercolith; (b) colitis and discharge of pus and slimy mucus from rectum; (c) passage of an *Ascaris lumbricoides* fourteen days after the operation.

4. **Concealed Accidental Hemorrhage.**—Wright believes that death is not generally due to the long-continued hemorrhage, but that in a certain, and probably large, proportion of cases of concealed accidental hemorrhage the symptoms are due to shock only, and not at all to loss of blood.

5. **Chronic Metritis.**—Gardner and Goodall report nine cases and summarize their conclusion as follows:

1. Clinically we recognize simple and complicated metritis. By simple we mean a disease of the uterus without participation of the other pelvic organs in the disease process. By complicated we mean one of obviously inflammatory or congestive origin with participation of other parts in the pathologic processes. The uterus here is simply involved in a change which affects the whole or most of the genital system.

2. Pathologically cases of simple metritis divide themselves into two distinct groups:

(*a*) Those which, arising from infection, subinvolution, or from one of many other causes, show a degeneration more of the nature of an inflammatory deposit, or a deposit of passive congestion, which deposit is characterized by being granular, or hyaline, frequently fragmented, poor in nuclei, and affecting both muscle and fibrous tissue, but chiefly the latter. The deposit is most marked where the tissue is of loose texture. In these cases the adventitia

is most affected, and the media moderately, but it is very seldom that changes are found in the intima.

(b) Those of true arteriosclerotic origin, characterized by true fibrosis of the uterine wall and arteriosclerotic changes in the vessels, all three coats of which are usually involved.

3. Cases of arteriosclerotic origin are not due to infection, and those of the other group may or may not be due to infection depending on the cause.

4. Subinvolution, from whatever cause, is the most frequent source of chronic metritis.

5. In all cases of chronic metritis not arising from arteriosclerosis there is hypertrophy of the muscle, as well as of the non-contractile element and the muscle hypertrophy is either due to incomplete involution or it is a result of congestion.

6. In cases of arteriosclerotic origin there may or may not be muscular hypertrophy associated with the fibrosis. This will depend on associated conditions.

7. Changes in the endometrium, in the nature of endometritis will be found in cases of Group *a* of septic origin, but in group *b* the cause is primarily arterial, and endometritis may be secondary, but can not be primary except by association of two diseases.

8. The hemorrhages are not due to endometritic changes, but endometrial involvement may accentuate the flow.

9. The menorrhagia and metrorrhagia are due in some cases to muscular insufficiency, not only of the uterine muscle but of the muscle of the arteries also.

10. The muscular insufficiency is due to the restraining influence of the increased non-contractile tissue.

11. The hemorrhage in arteriosclerotic uteri is due to pelvic congestion and high arterial tension, with lack of contractility of the vessels in response to vasomotor stimuli, combined with muscular atrophy of the uterine wall.

12. The lumina of the vessels do not suffer to any great extent from the proliferation of the intima, and the change is one of compensation.

13. Many vessels must be examined in serial section in order properly to appreciate how much they are involved.

14. The general changes throughout the uterine wall in cases of fibroids or fibromyomata of the uterus, are similar to those in Group *a*, and that the hemorrhages arise from the same cause as those cases which fall in Group *a*.

6. **Ventrofixation of Uterus.**—The operation, according to Giles is of value: 1. In cases of movable retroversion of the uterus when pessaries have been tried without success; when the uterus retains its position as long as pessaries are worn, but falls back as soon as they are removed; and in cases in which the patient prefers a radical procedure to pessary treatment and the consequent repeated examinations. 2. In cases in which the uterus is held down by adhesions in a position of retroversion. 3. In cases in which a retroversion is complicated by disease of the appendages. 4. In cases of prolapse and of total procidentia.

Coexistent abnormal conditions, he says, should be treated at the same time whenever possible. Thus, when there has been menorrhagia or endometritis the uterus should be curetted; a torn cervix should be repaired; a hyperplastic cervix should be amputated; small and solitary fibroids should be removed; prolapse of the vaginal walls should be treated by colporrhaphy or perineorrhaphy, or both; and diseased appendages should be treated by conservative procedures, or by removal, according to the nature of the case.

As to the results of ventrofixation, Giles claims that in the event of pregnancy following operation there is a slightly increased risk of abortion, but about 80 per cent. of patients have an undisturbed pregnancy and a normal confinement, and the operation does not entail any added risk at the time of labor. Pregnancy has a slight disturbing influence on the position of the uterus, but in over 80 per cent. of cases the uterus maintains its position, in spite of pregnancy. In cases not followed by pregnancy the operation is permanently successful in 95 per cent. The abdominal scar gives trouble in only 2 or 3 per cent. of cases. The operation leads to marked improvement in the patient's general condition in about 90 per cent. of cases.

7. **Changes in Uterine Fibroids After Menopause.**—In view of the natural history of fibroids of the uterus, the natural history of the menopause, the degenerative changes and consequent complications to which such growths are liable, particularly following the menopause, and of clinical facts and statistical records, Reed says: 1. The only safe place for a fibroid of the uterus, however small or large, however soft or hard, however recent or old, is outside of the patient's body. 2. The menopause is a poor surgeon. 3. There are certain fibroids of the uterus that ought to be relegated to operation without reference to either the nearness or the remoteness of the menopause. Thus, tumors that cause recurrent hemorrhages of increasing severity that not only debilitate but threaten practically to exsanguinate the patient; tumors of progressive and rapid growth, whether they induce hemorrhage or pressure or not; tumors whether large or small, active or indolent, so situated that they by pressure interfere seriously with either the circulation of the blood, the excretion of the urine, the activity of the bowels, or the functional integrity of the nervous system; tumors that become the seat of either suppuration or malignant degeneration. 4. It follows, therefore, that the only cases concerning which any question as to the expediency of operation may arise are those in which the tumor does not cause hemorrhage or exert pressure or present evidences of either infection or malignancy, or that has ceased to grow and in which some condition, not connected with the tumor itself, makes operative interference the more dangerous policy. 5. Patients who choose to adopt a waiting policy should be apprised of all the danger incident to such a course and should be admonished to place themselves under professional observations at frequent intervals.

8. **Indications for Cesarean Section.**—Reddy believes that Cesarean section is to be considered when the os is dilated for one hour and the head does not engage at the brim. In cases of hypertrophic elongation of the cervix, or with a hard and undilated and undilatable os due to cicatricial tissue, a narrow vagina, and varices about the vulva and in the vagina—and labor present—no other operation will give such good results as section. Cases of valvular lesion of the heart, failing compensation with congestion of the base of the lungs, can be best treated by section.

11. **Serum Treatment of Puerperal Sepsis.**—McMurtry believes that antistreptococcic serum is without value in the treatment of this disease.

The Lancet, London.

November 3.

14 *Gastrostaxis or Oozing of Blood from the Mucous Membrane of the Stomach. W. H. White.
15 *Acute Duodenal Perforation. D. Power.
16 *Saccular Theory of Hernia and the Radical Operation. R. H. Russell.
17 *So-called Virulent Syphilis and Its Treatment. F. J. Lambkin.
18 Interstitial Nephritis and Cirrhosis of the Suprarenal Capsules in an Infant Five Weeks Old. G. Carpenter.
19 *Diagnosis and Localization of Tumors of the Frontal Regions of the Brain. T. G. Stewart.
20 *Infantile Mortality and Goat's Milk. W. Wright.
21 *Actinomycosis of the Cheek Cured by Iodid of Potassium. R. Knox.
22 Spa Treatment of Cardiac Dilatation. W. B. Jones.

14. **Gastrostaxis.**—In a series of 2,246 postmortem examinations White found this condition to have existed 16 times. In 6 of these 16 cases it may have been due, he says, to backward pressure from disease of the heart, for a serious valvular disease was present; in 6 there was serious organic disease in the abdomen, the condition in each being gangrene of the bowel, and gastrostomy had been performed for malignant disease of the esophagus, carcinoma of the gall bladder, intra-abdominal abscess, general peritonitis following disease of the appendix, and carcinoma of the pylorus. Of the remaining four cases, two ended fatally from lobar pneumonia, one from general tubercle, and in one there was general arterial atheroma. There were 7 females and 9 males. The ages varied from 16 to 69, over half of the cases occurring in patients over 40 years of age. White does not offer any theory as to the cause of gastrostaxis. He reports 29 cases culled from the literature.

15. **Acute Duodenal Perforation.**—Power discusses the clinical history of this condition and repeats his well-known views as to treatment.

16. **Saccular Theory of Hernia.**—This theory rejects the view that hernia can ever be acquired in the pathologic sense, and maintains that the presence of a developmental peritoneal diverticulum or sac is a necessary antecedent condition in every case of ordinary abdominal hernia. Russell says that this theory bids us to abandon all recent devices; it demonstrates the reason why all operations that have hitherto been devised have yielded imperfect results. It places the finger not merely on the defects of all operations for hernia: it denies that any formal operation such as could be associated with the name of a particular surgeon can be of real and comprehensive utility. It answers the obvious comment that will be made on this last statement to the effect that excellent results are obtained by various operations, by pointing

out that the excellent results occur only in the cases in which the sac happens to be perfectly removed. It presents us incidentally with a curious seeming paradox; for while on the one hand it shows that there can be no such thing as an operation for hernia, it assures us, on the other, that there can be no such thing as a hernia that is not curable by operation. It promises practically perfect results in the future, far more perfect, at any rate, than have ever yet been attained by any operator or operation; but it imposes the three following conditions: First, the surgeon shall concern himself with the peritoneo fascial layer of the abdominal wall alone. Second, he shall be prepared for the recognition of any and every variety of hernial sac, and ready with the appropriate measures for dealing with each. Finally (and this will follow naturally from the former two), he shall fully recognize that in the event of recurrence the explanation is not to be found in the weakness of the patient's muscle, but must be sought a little nearer home.

17. **Treatment of Virulent Syphilis.**—Lambkin reports ten cases of so-called virulent syphilis and endorses the efficacy of the intramuscular injection of calomel in the treatment of such cases. He injects one grain, twice a week, until its physiologic effects are apparent, when he substitutes mercurial cream for it. It is his custom, if all goes well, to give an injection once a week for a month at a time.

19. **Diagnosis of Tumors of Frontal Region.**—Stewart states that in diagnosing a tumor of the frontal region we have to rely on (a) the presence of the general symptoms of intracranial growth; (b) the presence of mental symptoms; and (c) the absence of focal signs pertaining to other regions of the brain. For localization we must study the nature of any fits which may occur and be guided by the following signs: 1. Those homolateral to the tumor: (a) the earlier development and greater intensity of the optic neuritis; (b) the presence of a fine vibratory tremor in the extended limbs; (c) the presence of focal cranial nerve symptoms; and (d) the presence of local external signs. 2. Those contralateral to the tumor: (a) diminution or loss of the superficial abdominal or epigastric reflexes; (b) the presence of an extensor or indefinite plantar response with increase of the deep reflexes; and (c) hemiparesis. Though one or more of these signs may be absent it will be found that the majority of cases of tumor of the frontal lobe can be accurately diagnosed and localized, and this is the more important as there is no other region of the brain, with perhaps the exception of the cerebellum, in which surgical interference can be advised with a greater prospect of success and with so little danger to the subsequent physical and mental condition of the patient.

20. **Infantile Mortality and Goat's Milk.**—Wright recommends the use of goat's milk in place of cow's milk in the artificial feeding of infants.

21. **Actinomycosis of Cheek.**—In the case reported by Knox, that of a girl, 7½ years of age, the infection is believed to have occurred through faulty teeth. The defective teeth were removed, the mouth was kept clean with an antiseptic mouth wash and the patient was given iodid of potassium in increasing doses until a maximum of 45 grains *per diem* was reached. Ten months after the commencement of treatment the patient was in good health and the swelling had disappeared, leaving a firm cicatrix with very slight disfiguring.

The Practitioner, London.

October.

23 Abdominal Pain in Diseases of the Pelvic Organs. A. Donald and J. D. Lickley.
24 *Acute Abdominal Pain. C. M. H. Howell.
25 Anuria. W. H. C. Greene.
26 Demonstrations on Diseases of the Nervous System. H. C. Thomson.
27 Recurrent Swelling of the Dorsum of the Hand Associated with the Appearance of Bruising Following a Blow. T. Fisher.
28 Serumtherapy. W. D. Emery.
29 *Some Clinical Features of Colica Mucosa. D. M. Macdonald.
30 Dyspepsia Due to Gallstones. H. B. Day.
31 Review of Tropical Diseases. R. T. Hewlett.
32 Review of Recent Work in Venereal Diseases. J. E. Lane.

24. **Acute Abdominal Pain.**—In all cases in which the onset has been very severe, Howell says that the patient should be kept under close observation, and the following points relied on for making a diagnosis and at the same time indicating immediate operative treatment: (1) Increasing rapidity with diminution of volume of the pulse, especially if associated with a falling temperature. (2) Any indication of free gas or fluid in the abdomen. (3) Diminishing movements of the abdomen during respiration. (4) Gradual concentration of pain and tenderness at one particular spot in the abdomen, corresponding to the site of the lesion and gradual diffusion again from this spot as general peritonitis sets in. Cases, however, will occur, he says, in which, after the most careful consideration, it is impossible to make a certain diagnosis. In these, should the collective evidence point to the probability of rupture, an exploratory operation should be performed at once, lest delay, which hourly lessens the patient's chance of recovery, should cost him his life.

29. **Colica Mucosa.**—MacDonald has found lavage of the bowel and rectal injection of olive oil, periodically, beneficial. He favors daily injections of half an ounce of sulphate of magnesia, with two drams of glycerin in a pint of tepid water, given preferably in the morning and during the acute stage of the disease. After some time, a pill containing iron, nux vomica and belladonna is gradually substituted for the injection. Massage of the bowel, he says, through the abdominal wall, is of distinct benefit, and the use of a ball, weighing about 4 pounds, can be taught the patient, so that he can daily practice massage in this way. A complete dietary, containing indigestible residual material in a large proportion, will not apply in every case, but each one must be taken and treated separately, after consideration of all the elements of the case and tentative trial of various dietetic measures.

The Indian Medical Gazette, Calcutta.

October.

33 Bilious-Typhus Relapsing Fever. W. T. McCowen.
34 Surgical Shock—Postoperative. H. Smith.
35 The Anchylostomes of Burma and Assam. J. W. W. Stephens.
36 An Account of Plague in Bengal. W. W. Clemesha.
37 Pneumococcic Infection of Joints. K. K. Chatterji.
38 A Case of Osteomalacia. W. H. Cazely.
39 Distomum Crassum. H. Lyngdoh.
40 Poisoning by Myrobalans. F. N. Windsor.

Presse Médicale, Paris.

41 (XIV, No. 81.) Grossesse gémellaire monoamniotique (twin pregnancy). C. Jeannin.
42 *Should We Sleep After Eating?—Doit-on dormir après les repas? A. Martinet.
43 (No. 82.) Spécificité des anticorps sensibilisatrice et alexine. L. Hallion.
44 *Origine intestinale de l'anthracose pulmonaire. G. Petit.
45 (No. 83.) Diagnostic de la trypanosomiase dans la race blanche (in whites). L. Nattan-Larrier.
46 (No. 84.) *Les corpuscules de Négri et le parasite de la rage (of rabies). V. Babes (Bucharest).
47 Campaign Against Plague in Japan.—La lutte contre la peste au Japon. P. Desfosses.

42. **Need for Repose After Meals.**—Martinet summarizes his conclusions in the statement that in vigorous health there is enough blood to attend to both digestion and exercise of other organs. On the other hand, if the organism is debilitated from any cause, the blood attending to the task of digestion leaves the other organs with such a scanty supply that they should not be called on for any work at this time. Nature announces this by lassitude and somnolency. Whether rest is needed after eating is thus an individual matter, although it is well to advise against a nap after dinner in case of heart disease, arteriosclerosis, obesity and a tendency to apoplexy. Persons in this category should rest before eating.

44. **Intestinal Origin of Anthracosis.**—Petit writes from Lille to announce that clinical experience is confirming the intestinal origin of anthracosis as proclaimed by Calmette. He introduced into the stomach of six infants less than a year old from 15 to 20 c.c. of water holding in suspension a teaspoonful of a mixture of equal parts of wood and animal charcoal. The children were all tuberculous or in an advanced stage of athrepsia. The mixture was easily introduced through an urethral sound, without the slightest inconvenience, the injection being repeated two or three times at intervals of several days. Most of the charcoal was voided in the stools, but when the infants succumbed to the progress of their disease considerable deposits of the black particles

were found in the lungs and pleura of the tuberculous children while none was found anywhere in the two infants with athrepsia. In one child with pulmonary tuberculosis the black particles were found in the intestine, mesenteric glands, lungs and pleura. In one infant with tuberculosis and diarrhea they were found in the mesenteric glands, lungs and pleura, and in another in the tracheobronchial glands, as well as in the lungs and pleura. Macroscopic localizations in the lungs in two tuberculous children were exactly the same as in Calmette's experimental work. The absorption of insoluble particles thus leads readily to deposits in the lungs in tuberculous children whose mesenteric gland barriers are already broken down. Physiologic anthracosis becomes established and increases in proportion as human beings swallow anthracogenic dust and their glands become more and more permeable. It proved impossible to induce anthracosis of the lungs in young guinea-pigs by way of the digestive tract. The condition of the mesenteric glands is the deciding factor.

46. **Negri Bodies in Rabies.**—Babes has been conducting extensive research on this subject and his interpretation of the findings differs in some respects from those of others. He confirms the almost constant presence of the Negri bodies in rabies, but regards them as the expression of a powerful local reaction on the part of the cell to the invasion of the actual parasite, terminating in the encapsulation and sequestration of the parasite by the cell. This reaction is probably the expression of a greater resistance on the part of these cells, showing that they are more or less refractory to the action of the rabic virus, and it is due to this greater resistance on their part that they are able to encapsulate and sequestrate the parasite of rabies. He accepts as the actual parasite certain fine granules, round, black or blue (with the Cajal-Giemsa stain), found exclusively in the protoplasm of the degenerated nerve cells in the most severely affected parts of the nervous system. These granules represent the parasites in their full activity, while the Negri bodies, which are found only in cells little if at all modified, and not intimately connected with the principal symptoms of the disease, represent encapsulated forms of the parasites, in a phase of involution or transformation.

Semaine Médicale, Paris.

48 (XXVI, Nos. 40-41.) *Le rachitisme congénital. A. B. Marfan.
49 (No. 43.) Chirurgiens et appendice vermiforme. H. Vuilliet.

48. **Congenital Rickets.**—Marfan believes that any toxic or infectious cause acting on the bones at a certain stage of their development during the last months of intrauterine life or the first or second year of infancy may create rachitis, provided that its action in this line is rendered possible by some native predisposition, the nature of which is still a mystery, but which is sometimes revealed by the multiplicity of cases of rachitis in the same family. He accepts four forms of rachitis: The latent congenital; the pronounced form in which the children are born dead or non-viable; the form in which the deformities in the bones are extensive and characteristic but do not continue a progressive course after birth, and gradually subside toward the end of the second year, and a fourth variety, in which the only sign of the condition at birth is the softening of the bones of the skull, especially the occipital bone. This true craniotabes may be isolated or accompanied by a slight protrusion of the anterior end of the ribs. In this form the rachitis continues a progressive course, as a rule, and characteristic deformities of the skull, thorax and limbs develop later. However, if the child escapes serious infections and is well cared for, the rachitis may remain insignificant and disappear finally without leaving definite deformity. In the two last mentioned forms the children are generally born before term, with a weight inferior to normal, and with more or less pronounced anemia during their first two years of life. In almost every instance of congenital rachitis the mother has had infections, intoxications or has been overworked during her pregnancy. Inherited syphilis has also been incriminated.

Jahrbuch f. Kinderheilkunde, Berlin.

Last indexed, page 1063.

50 (LXIV, No. 2.) *Ueber die Rhinitiden der Säuglinge (of infants). F. von Torday (Budapest).
51 *Zur Physiologie und Pathologie der Thymus. K. Basch (Prague).
52 *Beeinflussung von Infections-Krankheiten durch Vaccination P. V. Jezierski.
53 Nahrungsmengen eines gesunden Brustkindes und Energieverbrauch des gleichen Säuglings nach der Entwöhnung. F. Feer (Basle).
54 Zur Frage der intestinalen Eiweiss-Resorption (absorption of albumin). A. Uffenheimer. Id. P. H. Römer and H. Much.
55 (No. 3.) *Zur Dauer der Immunität nach Injektion von Diphtherie-Heil-Serum. P. Sittler.
56 Kinder-Tetanie (Spasmophilie) und Epithelkörperchen. W. Stoeltzner.

50. **Rhinitis in Infants.**—The importance of curing rhinitis in infants is emphasized by von Torday's experience in 18 cases. In some cases death followed the purulent rhinitis without any complications; in some others pyemia with purulent peritonitis was the outcome. The obstruction to breathing and nursing is only a small part of the disturbances due to rhinitis in young infants. As the infant is compelled to breathe through its mouth, while throat and tonsils are still undeveloped, the danger of infection becomes much greater. Vaginal infection during birth, he states, is probably responsible for a number of cases of rhinitis. Since the introduction of the suprarenal preparations the infants' condition can be much improved, especially if the secretions are aspirated from the nose beforehand. A few drops of a 1 per cent. silver nitrate solution or of 3 per cent. peroxid of hydrogen afterward will be found useful. On suspicion of diphtheria, antitoxin should be injected without waiting for bacteriologic confirmation. Six of Torday's 18 cases terminated fatally. Streptococci and staphylococci were found in these cases.

51. **Physiology and Pathology of the Thymus.**—Basch gives the findings in 64 illustrations on a dozen plates showing the effects of removal of the thymus on the growth of animals, also on the healing of fractures and other injuries of the bones. The results all indicate a connection between normal growth of the bones and the functioning of the thymus. When the growth is defective, at an age when the thymus is still progressively developing, the deficiency in growth may be due to some disturbance in the functioning of the thymus, and the development of the thymus should be studied with greater care.

52. **Influencing of Infectious Diseases by Vaccination.**—The experiences related demonstrate that vaccination has an injurious influence on an already established or incubating infection, especially scarlet fever, when the individuals have not been vaccinated before. The course of tuberculosis, typhoid fever and leprosy did not seem to be affected by the vaccination. In two or three cases the vaccination in the course of scarlet fever was followed by the development a few days later of varicella, the three infections running their course together, and not a very stormy one.

55. **Duration of Immunization After Injection of Diphtheria Antitoxin.**—Sittler states that the protection conferred lasts for three or five weeks or more when the immunized children are not in frequent contact with diphtheria patients or convalescents. When they are with them constantly the immunization can not be relied on for more than from 10 to 14 days. Catarrhal affections of any kind and injuries of the mucosæ afford a strong predisposition for diphtheria, even in immunized children, which is able at times to shorten materially the period of protection conferred by the injection of antitoxin. After diphtheria plus injection of antitoxin, the child is liable to contract the disease again if opportunity offers as soon as after injection of antitoxin alone. General exanthemata resembling scarlet fever, even when they run an afebrile course and the throat is not much affected, must be regarded as genuine scarlet fever in the majority of cases. It is wiser to take proper measures for isolation rather than to submit the child to repeated injections of diphtheria antitoxin, for fear of developing the phenomenon of "anaphylaxis" or oversusceptibility. The communication issues from Koht's pediatric clinic at Strasburg.

Münchener medizinische Wochenschrift.

57 (LIII, No. 37.) Relations Between Sexual Life and Origin of Mental Affections.—Die Beziehungen des sexuellen Lebens zur Entstehung von Nerven- und Geisteskrankheiten. G. Aschaffenburg.
58 *Ueber eine Massen-Vergiftungs-Epidemie mit Bohnengemüse (Intoxication from canned beans). Rolly.

59 Geburten mit Skopolamin-Morphium (childbirths). Hocheisen.
60 Reflex Inhibition of Kidney Secretion During Cystoscopy.—Ueber reflektorische Hemmung der Nierenssekretion während der Zystoskopie. G. Grund.
61 *Günstige Beeinflussung der chronischen Bronchitis und des Bronchialasthmas durch Röntgen-Strahlen (favorable influence of *x*-ray treatment). T. Schilling.
62 Prostatitis Chronica cystoparetica. B. Goldberg.
63 *Die Unterbindung der Beckenvenen bei der pyämischen Form des Kindbettfiebers (ligature of pelvic veins in puerperal fever). G. Friedemann.
64 *Epileptiker als Autofahrer (as automobilists). F. Thalwitzer.
65 (No. 38.) Erfahrungen mit der Bierschen Stauung (artificially induced hyperemia). Lindenstein.
66 Formation of Cholesterin in the Gall Bladder.—Zur Frage der Cholesterinbildung in der Gallenblase. L. Aschoff.
67 *Artificial Delivery in Practice.—Die künstliche Frühgeburt in der Praxis. O. Polano.
68 Ueber vaginalen Bauchschnitt (celiotomy). Dührssen.
69 *Combination of Scopolamin-Morphin and Spinal Anesthesia.—Ueber die Verbindung von Morph.-Scop.-Injektionen mit Rückenmarksanästhesie bei gynäkologischen Operationen. W. Busse.
70 *Roentgen-Strahlen und Stoffwechsel (*x*-rays and metabolism). E. Benjamin and A. V. Reuss.
71 Die Präzipitat-Reaktion. W. Fornet.
72 Improved Culture Medium for Typhoid Bacilli. — Ueber Typhusanreicherung. W. Meyerstein.
73 *Influence of Great Physical Exertion on Circulatory Apparatus, Kidneys and Nervous System.—Einfluss grosser Körperanstrengungen auf Zirkulations-Apparat, Nieren und Nerven-System. Baides. Heicheiheim and Metzger.
74 Embolische Nekrose der Glutaeal-Muskulatur. H. Heineke.
75 *Geburten mit Skopolamin-Morphium (in obstetrics). Hocheisen. (Concluded.)
76 Brucheinklemmung der Appendices epiploicæ und ihre Folgen (hernial incarceration). G. Muscatello.
77 Incubator.—Ein neues Couveusen-Modell für die Behandlung frühgeborener und debiler Kinder. O. Rommel.
78 Hilfsmassnahmen bei der Zerstörung von San Francisco. C. Beck (New York).

58. **Poisoning from Canned Beans.**—Rolly found the colon bacillus and also the paratyphoid bacillus in some canned green beans which had been eaten freely at dinner by the men in a warehouse at Leipsic. In about 20 hours they began to come to the hospital for relief from symptoms of severe enteritis, chills, nausea, vomiting, headache, vertigo, diarrhea, etc. The first symptoms were noticed in some cases as early as four hours after eating the beans. The disturbances lasted for two, three or four days, and all the persons affected—a total of 250 —gradually recovered. The beans had been heated, but not to boiling point. The intoxication was probably the result of the metabolic products of these bacteria. The prevalence of the gastric symptoms indicated that the trouble was due to ingested toxins rather than to the direct action of bacteria.

61. **Favorable Influence of X-Rays on Chronic Bronchial Affections.**—Schilling had occasion to examine a patient with severe bronchial asthma and used the *x*-rays to determine the exact status of the air passages. The patient found that his asthma was favorably influenced by the fluoroscopy, and Schilling thereafter applied the *x*-rays systematically in a large number of cases of chronic bronchitis and bronchial asthma. He tabulates the results as determined by the amount of sputum. In one case it dropped from 150 c.c. to 80 c.c. in three days after the *x*-ray exposure. Another patient, a man of 62, had been coughing and expectorating for months. The day before the *x*-ray exposure the amount of sputum was 170 c.c., the day following 140, then 110, 50, and decreased to 40 c.c. by the sixteenth day, and expectoration had entirely ceased by the end of the fifth week. In every instance the amount of sputum dropped nearly one-half the day after the exposure, and progressively declined thereafter. Every patient was favorably influenced, and the improvement or the complete cessation of the expectoration and asthma persisted for months. He suggests as explanation of the unmistakable and prompt benefit derived that possibly the proliferating cells of the microscopic glands in the bronchi react to the rays, similarly to the effect observed in *x*-ray treatment of hypertrophied prostate, lymphoma, goiter, etc. The extreme permeability of the lungs for the *x*-rays aids in the process. He used a 30 cm. inductor, the patients were seated, and the exposure was made from two, four or more directions, at the points where the rattling was most pronounced, avoiding those where the muscles were especially thick. The unexposed parts were protected against the rays, and the exposure lasted from 10 to 15 or 20 minutes, the distance from the tube being about 15 cm. The total of the exposures was kept within the range of the maximal dose and only a single sitting was given. Notwithstanding the unmistakable relief from excessive bronchial secretion and from the tormenting asthma, Schilling reserves his opinion in regard to the actual therapeutic value of *x*-ray treatment of bronchial affections until he can speak from a larger experience.

63. **Ligation of Pelvic Veins in Pyemic Form of Puerperal Fever.**—Friedemann reports a case of exceptionally severe pyemic puerperal fever in which recovery followed promptly after both the veins in the connective tissue of the pelvis had been ligated on the right, and the ovarian vein on the left. They were reached by a laparotomy, and thrombi were evident in the veins. The vessels were tied with catgut, not excised. There were no chills after the operation, and little fever, the highest being on a day when thrombosis of the right femoral vein was observed. The leg was elevated and the symptoms subsided, as also those resulting from embolism in the lung observed several days before the laparotomy. By the end of the third month the patient was quite restored except that the decubitus had not quite healed.

64. **Epileptics as Automobilists.**—Thalwitzer reports two cases in which an automobile or motorcycle was proceeding along a smooth road at a moderate speed when the drivers suddenly ran them into the ditch with more or less damage to themselves and others. Each driver was found to be subject to epileptic seizures and had been affected with one at the time of the accident. He asks the authorities whether there should not be some regulation prohibiting automobiling to epileptics as a public danger.

67. **Artificial Delivery.**—Polano reviews 18 cases in which artificial delivery was induced at the Würzburg gynecologic clinic, the only ones out of a total of 1,952 maternity cases, including 119 contracted pelves, in the last three years. The particulars of the 18 cases are tabulated. They demonstrate that artificially induced premature delivery is far from being a simple operation, but one that makes great demands on the time and on the technical skill of the physician. The lessons learned from this material are: 1, In order to induce a pregnant uterus to contract well and effectively, in a comparatively short time, before natural term, decided stimuli are necessary, applied to the interior of the uterus, and alternating; 2, after the sensitiveness of the uterus has been dulled by the action of these coarse stimuli, it frequently fails to react afterward to more delicate stimuli, such as rupture of the membranes, hot vaginal douches, etc., so that after expulsion of the balloon no further uterine contractions may be observed for days; 3, the completely dilated os may later contract after expulsion of the balloon, so that the extraction of the fetus later may be attended with the greatest difficulty, and 4, the variations in pressure, after expulsion of the balloon, are liable to endanger the life of the child, a fact manifested clinically in the variations in the fetal heart sounds to complete intrauterine cessation. To escape all these eventualities it is necessary to terminate the delivery as soon as the balloon has enlarged the os sufficiently. The patient is prepared the day beforehand with hot vaginal antiseptic douches and full baths. This almost always starts slight uterine contractions, sufficient to allow the introduction of a metreurynter, inserted through a speculum, with the vaginal portion of the cervix drawn down with a retractor. If the cervix is too narrow, it is dilated to a finger's breadth with a metal dilator. The metreurynter is boiled and scrubbed with soap, alcohol and bichlorid, or is kept in a mixture of one part of a 1 per 1,000 bichlorid solution to 2 parts glycerin. It is previously tested with a graduated syringe; its circumference, filled, should not exceed 35 cm. It is twisted into a roll and inserted through the internal os and then filled at once to its full capacity. The irritation from the balloon can be varied by allowing 100 c.c. of fluid to escape and then refilling the balloon, or by alternating traction on the tube. When the os is sufficiently enlarged, whether the metreurynter has been expelled or not, it is removed at once and after rupture of the membranes the child is delivered under chloroform. Long tamponing and the prolonged use of tents offer so many chances for infection that they should be discarded. Polano refers casually to a case in which a physician felt constrained to interrupt the pregnancy of a tuberculous woman. He used laminaria tents for several weeks

and accomplished his purpose, but the woman died of septic infection during the puerperium, and the case came into the courts.

69. **Combination of Scopolamin-Morphin and Spinal Anesthesia in 150 Gynecologic Operations.**—Busse advocates this combination for gynecologic operations in all cases of cardiac defects with good pulse, in case of pulmonary affections, of arteriosclerosis, and for the aged. It enables the surgeon to perform several needed operations at one time. The consequences of this combined form of anesthesia seem to be less annoying than under other conditions. The only contraindications which he recognizes are extreme obesity, rendering the spinal injection difficult, weak pulse, extreme nervousness and excitement.

70. **Roentgen Rays and Metabolism.**—This communication proceeds from Escherich's clinic and Holzknecht's Roentgen laboratory at Vienna. The writers have been able to demonstrate that the phenomenon of the splitting of lecithin, as in the yolk of an egg, under the influence of the Roentgen rays, occurs likewise in the living body. They detected the product of the splitting of the lecithin—the cholin—in large proportions in the blood and organs of rabbits long submitted to the action of the *x*-rays. Further experiments with a dog and comparison of the results published from various clinics seem to show that the lecithin and allied substances are principally affected by exposure to the Roentgen rays. This is evidenced by the parallelism between the changes in the blood (the rapidly transient hyperleucocytosis), the anatomic changes ("the explosive destruction of the lymphoid tissue which reaches its height and declines again within from 24 to 36 hours"), the appearance and rapid vanishing of cholin in the blood, and the great increase in phosphates in the urine. The normal organism seems to react to extensive exposures to the *x*-rays with a moderate increase in the amount of nitrogen eliminated, lasting for several days, and principally affecting the basic N, and with a rapidly appearing but very transient increase in the elimination of phosphates followed by prolonged underelimination.

73. **Effect of Great Physical Exertion on Kidneys, Nervous System, Etc.**—See editorial in THE JOURNAL on page 1380.

75. **Scopolamin-Morphin in Obstetrics.**—Hocheisen used this method of anesthesia in 100 uncomplicated deliveries, and his impressions were not favorable. By-effects were observed in 70 per cent. of the cases, and in 50 per cent. the course of delivery was unmistakably prolonged by the anesthesia.

Zeitschrift f. klinische Medizin, Berlin.

Last indexed, page 1775.

79 (LX, Nos. 3-4.) Influence of Diseases on the Economy of Energy During Repose.—Einfluss von Krankheiten auf den Energiehaushalt im Ruhezustand. A. Magnus-Levy.
80 *Changes in Concentration of Blood Serum After Intake of Water.—Die Conzentrationsveränderung des Blutserums nach Wasseraufnahme. K. Engel and P. Scharl.
81 *Limitations of Perception of Speech.—Grenzen der sprachlichen Perzeptionen. H. Gutzmann.
82 *Zur Diagnosis der Halsrippen (cervical ribs). W. von Rutkowski.
83 Ueber Nachweis und Auftreten gelösten Eiweisses in den Fäzes Erwachsener (dissolved albumin in feces of adults). H. Schloessmann.
84 *Diagnostic Importance of Resonance of Spine on Percussion.—Ueber den Perkussionsschall der Wirbelsäule und dessen diagnostische Verwertung. F. von Koranyi (Budapest).
85 Sarcoma in Dura with Calcified Metastases in Heart.—Hirnhautsarkom mit zahlreichen Kalkmetastasen im Herzen. P. Lazarus and C. Davidsohn.
86 Der Alkohol in der Ernährung der Zuckerkranken (in nourishment of diabetics). H. Benedict and B. Torök (Budapest).
87 Cancer in Sacrum.—Fall von Krebsgeschwulst des Kreuzbeins. E. von Leyden and L. Bassenge.

80. **Concentration of Blood Serum After Taking Much Water.**—Engel and Scharl were unable to discover that the blood serum became less concentrated after ingestion of large amounts of water followed by copious voiding of urine. No hydremia to speak of is observed under such conditions either in the healthy or in those with kidney affections. On the contrary, an actual increase in the concentration of the blood serum may be noticed sometimes at the time of the greatest diuresis.

81. **Limitations of Perception of Speech.**—Gutzmann believes that the limits of speech perception might be considerably enlarged by the use of the eye and other means to take advantage of various objective factors in spoken speech beside the movements of the lips. His tests were made mostly over the telephone or in the same room with averted eyes, using arbitrary, meaningless syllables, and with the same syllables repeated under the eyes of the listener.

82. **Diagnosis of Cervical Ribs.**—A case of bilateral cervicobrachial neuralgia in a man of 60 was shown by the Roentgen rays to be due to compression from cervical ribs. The patient had always been robust until the bilateral neuralgia developed at 59. The pain starts at the back of the neck and radiates into the arms, and the slightest movement or touch is agony. Outside of the attacks passive movements of the head to right or left are possible without pain, but bending forward causes pain localized in the cervical ribs and shoulders. The pains appear at once on reclining, and the patient sleeps in a chair. Large doses of morphin have scarcely any influence. The Roentgen rays showed a cervical rib on each side, corresponding to the seventh cervical vertebra. The patient has always stooped a little and shows signs of senile kyphosis, which has increased during the last few months. This kyphosis is probably responsible for the development of the neuralgia. Extension treatment, restoring the vertebræ to their natural position, has done good service in this case and rendered operative measures superfluous.

84. **Percussion of Spine.**—For 15 years Koranyi has been studying the percussion findings in the spine. He asserts that they are valuable from the standpoint of both diagnosis and prognosis. The spine has a resonance independent of that of the interspaces and abdominal cavity. The degree of resonance is determined by the anatomic conditions of the adjacent organs; any variation in these organs is revealed by a change in the percussion findings of the corresponding vertebræ. In some cases these percussion findings over the spine are the only physical signs of the affection in question. The above applies only to vertebræ that are sound. If they are pathologically altered the regular percussion findings become modified. With regard to the resonance the spine can be divided into five segments or zones. The findings are constant in normal conditions and also with certain changes in internal affections. He gives 18 illustrations to show the laws regulating the percussion findings, citing a number of cases as examples. Among them are two cases of vesicular emphysema in which the area of dulness that in the healthy individual reaches from the seventh cervical to the fourth or fifth dorsal spinal process, in these cases did not extend so low down and was much shorter in extent. In case of a mediastinal tumor the area of dulness is more extensive than under normal conditions, and the changes in its extent show whether the tumor is stationary or progressing. In one case an aneurism of the aorta was revealed by the usual physical signs and *x*-rays, but the spine also showed an area of dulness corresponding to the mediastinal tumor. Autopsy revealed two aneurisms on the aorta; the anterior one was on the ascending and the other on the descending aorta. The importance of these findings is best shown in cases suggesting aneurism of the aorta without physical signs in the anterior thorax. Percussion of the spine in the knee-elbow posture frequently reveals a greater movability on the part of the liver and spleen, even in the healthy, than would be supposed possible from ordinary percussion findings. In a case of wandering spleen and wandering liver there was no trace of either spleen or liver dulness on percussion of the spine and its vicinity. In another case the area of spinal dulness reached from the ninth dorsal vertebra without interruption to the fifth lumbar vertebra, as the patient stood. In changing to the knee-elbow position the area of dulness dropped down to the twelfth dorsal spinal process, extending thence to the fourth lumbar vertebra. The diagnosis of cyst of the pancreas was confirmed by the operation. In differentiation of hydrops of cardiac and of portal origin he states that in the former, the patient erect, the dulness reaches from the twelfth dorsal to the third lumbar spinal process, while there is resonance from the third lumbar spinal process to the sacrum. In portal hydrops the dulness reaches from the eleventh dorsal to the fourth lumbar spinal process, and there is resonance only at the fourth lumbar spinal proc-

ess. With the patient in the horizontal posture the area of dulness in cardiac hydrops is only at the eleventh dorsal spinal process, while the resonance extends from the twelfth dorsal to the fourth lumbar spinal process; in portal hydrops the dulness reaches from the eleventh dorsal to the second lumbar spinal process, and the resonance from the second to the fifth lumbar spinal process. In case of free ascites the upper limit of the dulness is horizontal, while in case of a cyst it varies with the shape and displacement of the organs. Illustrations of the findings, with the patient erect and reclining, accompany the nine cases cited.

Gazzetta degli Ospedali, Milan.

Last indexed, page 902.

88 (XXVII, No. 96.) Action of Radium on Virus of Rabies.—Azione del radio sul virus rabido. G. Tizzoni and A. Bongiovanni.
89 Superiority of Petteruti Test for Hydrochloric Acid.—Intorno ai metodi par l'analisi quantitativa dell' acido chloridrico del succo gastrico. M. Landolfi.
90 *Lime in Central Nervous System.—Il calcio contenute nel sistema centrale in rapporto all' eclampsia, tetania ed equivalenti. T. Silvestri.
91 Influence of Temperature and of Cold Baths on Production of Agglutinating Substance in Animals Immunized Against Typhoid.—Influenza della temperatura ambiente, etc. A. Graziani.
92 (No. 99.) *Le solanacee ed il glucosio nella cura della ipercloridria. R. Rebizzi.
93 Sobre il potere hematogeno del manganese (blood producing property of manganese). G. Piccinini.
94 (No. 102.) Sindrome della coda equina. E. Tedeschi.
95 Istologia del testicolo nei casi di discesa incompleta del medesimo (histology of undescended testicle). U. Basso.
96 Sulle adenopatie veneree nel R. Esercito (in the Italian army). S. Puglisi.
97 (No. 105.) Sui rapporti fra le lesioni flogistiche del pericardio e quelle delle valvole aortiche. S. Livierato.
98 L'influenza della fatica nei cani parzialmente sparatiroidati (influence of fatigue on dogs after partial removal of the parathyroids). A. Mossaglia.
99 Symptomatic Importance of Hemorrhagic Discharge from the Ear.—Sul valore semiologico delle otorragie spontanee nelle otopatie e nelle afezzioni generali. L. Chierici.

90. **Lack of Lime in Central Nervous System Cause of Eclampsia, Tetany and Spasmophilia.**—Silvestri advances a number of arguments to sustain his assertion that a lack of lime in the central nervous system is responsible for the convulsions of children, for eclampsia, etc. Stefani has shown that in various mental affections the elimination of lime far surpasses the normal proportions. Sabbatani has found that small doses of lime in contact with the cortex of the brain arrest at once experimental epileptic seizures induced by drugs. Quest has also shown that in the new-born the proportion of lime in the brain is comparatively high and gradually declines to a minimum, lasting from the sixth month to the third year, which is the special age for convulsions in children. Quest also noticed that the proportion of lime in the brains of children with tetany was much below normal. Convulsions are frequently observed in the course of rachitis, in which the lime metabolism is much deranged. For these and other reasons Silvestri assumes that the maternal organism loses an undue proportion of lime to the fetus during the last weeks and days of pregnancy, and this deficiency of lime is liable to be felt by the central nervous system and to induce serious consequences. He has observed also in two eclamptics that the elimination of lime much exceeded the intake. Still another argument is the presence of lime in the milk.

92. **Treatment of Hyperchlorhydria.**—Rebizzi describes his experiences with eight patients with hyperchlorhydria taking a test breakfast or test meal nearly every day with examination of the stomach content. They were treated with glucose, atropin or a mixture of equal parts of tincture of stramonium, belladonna and hyoscyamus, the dose of the latter being 20 drops morning and night. The effect of the last two was most excellent in the cases of primary hyperchlorhydria, not quite so good in the hyperchlorhydria associated with gastric ulcer, and dubious in hyperchlorhydria associated with neurasthenia. The glucose did not seem to produce much effect.

Riforma Medica, Naples.

Last indexed, page 1519.

100 (XXII, No. 36.) *Physiopathology of the Lymph and Blood Circulation.—Fisiopatologia delle circolazioni linfatica e sanguigna, etc. G. Boeri.
101 *Defect in Interventricular Septum.—Intorno ad un caso di malattia del Roger. P. Fabris.
102 The 2 Echinococcus Scoleces.—I due scolici echinococcici. G. Rocchi.
103 (No. 37.) Il solfuro di carbonio nella cura della polmonite fibrinosa (carbon bisulphid). L. Masciangioli.
104 *Sulla conservazione del virus rabbico in glicerina. T. Mazzei.
105 (No. 38.) *Recurrent or Supplementary Sensibility.—Sulla cosi detta sensibilita ricorrente o suppletiva. S. Pansini. (Commenced in No. 37.)
106 Sulla resistenza del virus rabbico alla putrefazione. T. Mazzei.
107 (No. 39.) *Caso interessante di neurofibromatosi diffusa. C. Pastine. (Commenced in No. 37.)
108 (No. 40.) *I riflessi viscerali delle pupille e l'anisocoria splenica (pupil reflexes originating in the viscera). A. Signorelli (Baccelli's clinic Rome).
109 *Contributo alla chirurgia cerebrale (lobi frontali). F. Sorrentino.

100. **Defensive Action of Lymph and Blood in Regard to Bacteria and Toxins.**—Boeri announces the results of three years of experimental research on the lymph and blood systems in regard to their behavior toward bacteria and soluble toxins introduced into the organism. He found that bacteria do not pass into the blood vessels, but are taken up by the lymphatics and traverse a long and varied route before they reach the blood. Soluble toxins, on the other hand, pass readily through the walls of the blood vessels. This difference is due exclusively to physical properties. In the lymph system the bacteria are filtered, arrested to some extent, and attenuated, and there is also an immunizing action against them, but the lymph has no bactericidal and antitoxic action like the blood.

101. **Defect in the Septum of the Ventricles.**—Fabris describes a case of congenital defect in the upper part of the septum of the ventricles. The patient was a girl of 11 and she suffered no appreciable inconvenience from the defect. There was no cyanosis, but an intense systolic fremitus and a rough, protracted murmur were audible, loudest at the upper third of the precordial region. He studies the condition from various points of view, showing that the defect becomes compensated by ectasia of the pulmonary artery. The arterial system shows hypoplasia throughout, but the condition does not cause much disturbance unless associated with tuberculous lesions to which it affords a predisposition. This special form of defect in the septum is known as Roger's disease.

104. **Preservation of Virus of Rabies in Glycerin.**—Mazzei says that material from rabid animals can be preserved in glycerin, without affecting the Negri bodies, for as long as 80 days.

105. **Recurrent or Supplementary Sensibility.**—Pansini's monograph on this subject is based on two cases of stab wounds severing the radial or the brachial nerves. After the stumps were sutured sensibility returned in the anesthetic region, from the periphery toward the center, advancing concentrically. This also occurred in two other cases observed. He calls attention to a peculiar zone of hyperesthesia which surrounds the patch of anesthesia in many instances. These and other facts which he cites have convinced him that anastomosis is liable to occur between the peripheral terminals of the nerves just as it occurs in the circulation of the blood. He adds the bibliography of the subject.

107. **Diffuse Neurofibromatosis.**—Pastine gives the details of an interesting case of this kind and reviews recent contributions on the subject of true and false neuroma, myxoma, malignant sarcoma and Recklinghausen's disease. In his case the physical and functional disturbances were all on the left side of the body. There were no signs of degeneracy, no traumatism, no infections nor intoxications except possibly abuse of coffee. The first symptoms were observed at 67, and the course of the affection has been comparatively mild during the two years since. The patient complains of neuralgia in the left cervico-brachial and cervico-occipital plexuses. The pains are not continuous and there is no paralysis, atrophy, anesthesia or degeneration of the nerves, but there is trigeminal neuralgia, involving all three branches of the nerves, with total facial paralysis, probably from some lesion in the intracranial portion of the facialis. The auditory nerve is also affected. He assumes a neurofibroma developing on the latter and involving the other nerves, or one on each nerve. A certain incoordination of the movements of the left forearm is also noticeable.

108. **The Visceral Pupil Reflexes.**—Signorelli has been studying the pupil reflexes elicited by irritation from the viscera or cavities of the body. The changes in the pupils from excitation from some viscus, without the intermediation of the central nervous system, allow the diagnosis of the seat of the given morbid process on one side or other of the body, as the pupil on that side is the one that responds. The pupil reflex is observed transiently in acute and chronic tonsillitis, in glandular tumors, affections of the thyroid, of the lungs, mediastinum, heart and large vessels and of the spleen. In malaria, typhoid and other affections accompanied by enlargement of the spleen disturbances in the pupils are noted almost constantly, the left pupil being dilated more than the other. This reflex dilatation of the left pupil may be regarded as a generic symptom of trouble in the spleen.

109. **Surgery of the Frontal Lobes.**—Sorrentino's case confirms anew the ease and efficacy of operations on the frontal lobes, even with severe traumatism. The results are generally good if no septic process interferes with the healing of the primary lesion or that of the operative wound. The case also demonstrates that Jacksonian epilepsy may develop from lesions far from the motor centers. The effusion of blood and the softening of the brain substance in the case described, being in the frontal lobe, certainly could inflict no direct injury on the motor centers. The assumption that the frontal lobe is the seat of the memory is sustained by this case, as the patient had no recollection of the events following the injury up to the time of the operation. The case further shows that the hernia of the brain can be effectually controlled by gradual compression.

Nordiskt Medicinskt Arkiv, Stockholm.

Last indexed, XLVI, pages 1245 and 2034.

110 (XXXVIII, Surgery, Nos. 3-4.) *Zur Kenntnis der Tuben-Gravidität. A. R. Limnell.
111 Behandlung der Luxatio coxæ congenita. V. Bülow-Hansen.
112 *Ueber Blasenbrüche (hernia of bladder). P. N. Hansen.
113 3 Fälle von Nierenstein, mittels Roentgen-Photographie diagnostiziert. G. Naumann and K. A. Wallin.
114 *Experimentelle Erhöhung der molekulären Konzentration des Blutes (of blood). G. Ekehorn.
115 *Study of Earliest Development of Digestive Tract and of Atresia of Intestine or Esophagus.—Om de kongenitala tarm- och esophagusatresiernas patologiska anatomi och aetiologi. H. Forssner.

110. **Tubal Pregnancy.**—Limnell reviews the experience at Helsingfors with 90 cases of tubal pregnancy in which an operation was performed.

112. **Hernia of the Bladder.**—Hansen summarizes the details in seven cases of hernia involving the bladder. The patients were between the ages of 41 and 67, and all but one were males. In only one case was the diagnosis made before the operation. Hermes has reported that in only three out of 53 cases of cystocele on record was the diagnosis made before surgical intervention. If the cystocele is small, or if it is an operative cystocele, it will be found growing thicker upward, enveloped in fat, and this thicker extension will be discovered to be the bladder. When the prevesical fat is detached the bladder appears. In case of doubt the bladder can be filled with fluid and the effect watched on the cystocele. In presence of a diverticulum or a stone in the hernia, the bladder must be opened and resected; otherwise the bladder is reduced unopened. In case of injury, the bladder must be sutured, a permanent catheter inserted and the herniotomy wound drained.

114. **Experimental Increase in Concentration of Blood.**—Ekehorn describes five cases of various kidney affections in which restriction of the intake of fluids sent the freezing point of the blood from —0.59 to —0.63 or thereabouts. In health, restriction of fluids to 600 c.c. a day for two or three days does not affect the freezing point of the blood, but the urine becomes more concentrated. The same is observed in cases of acute hemorrhagic nephritis, acute infectious nephritis and acute nephritis, as he shows by concrete examples. On the other hand, in a case of bilateral tuberculosis of the kidneys the freezing point of the blood was —0.57 at first, and it became —0.63 by the end of the third day of restriction of fluids, as also in a case of left pyonephrosis and right kidney stone. In a case of chronic parenchymatous nephritis, with commencing contraction, the freezing point of the blood changed from —0.59 to —0.63. In a case of hypertrophied prostate with retention and chronic cystitis and contracted kidney the change was from —0.55 to —0.62. In another case of right infected hydronephrosis, treated by nephrectomy, accompanied by left pyelonephritis (nephrolithiasis), the change was from —0.57 to —0.61 when the test was made, about seven weeks after the operation. All the cases in which the freezing point of the blood was thus altered had the common feature that the output of urine was large and its specific gravity low. During restriction of fluids the amount of urine diminished, in some cases considerably, but the specific gravity did not rise to correspond. The specific gravity of the urine was only slightly increased as the kidneys in these cases are incapable of secreting a concentrated urine. A functionally capable of kidney secretes urine in which the specific gravity increases as the quantity of urine declines.

115. **Research on Atresia of Intestine and Esophagus.**—Forssner's comprehensive monograph fills about 140 pages and is profusely illustrated. He studies the development of the digestive tract from its beginnings, his research including comparative embryology and wide clinical experience.

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

Genito-Urinary Diseases and Syphilis. By H. H. Morton, M.D., Clinical Professor of Genito-Urinary Diseases in the Long Island College Hospital, Genito-Urinary Surgeon to the Long Island and Kings County Hospitals and the Polhemus Memorial Clinic. Illustrated with 158 half-tones and photo-engravings, and 7 full-page color-plates. Second edition, revised and enlarged. Cloth. Pp. 500. Price, $4.00 net. Philadelphia: F. A. Davis Company, 1906.

Text-book on Diseases of the Heart. By G. Steell, M.D., F.R.C.P., Lecturer on Diseases of the Heart in the University of Manchester; Senior Physician to the Manchester Royal Infirmary, with an appendix on the Volume of Blood in Relation to Heart Disease. By J. L. Smith, M.A., M.D., Professor of Pathology in the University of Manchester. Cloth. Pp. 389. Price, $2.00 net. Philadelphia: P. Blakiston's Son & Co., 1906.

A History of Chemistry. From Earliest Times to the Present Day. Being also an Introduction to the Study of the Science. By E. von Meyer, Ph.D., Professor of Chemistry in the Technical High School, Dresden, Translated with the Author's Sanction by G. McGowan, Ph.D. Third English Edition, etc. Cloth. Pp. 691. Price, $4.25 net. New York: The MacMillan Company, 1906.

Surgery, Its Principles and Practice. By Various Authors. Edited by W. W. Keen, M.D., LL.D., Professor of Principles of Surgery and of Chemical Surgery, Jefferson Medical College, Philadelphia. Vol. I. With 261 Illustrations and 117 Colored Plates. Cloth. Pp. 983. Price, $7.00 net. Philadelphia: W. B. Saunders Company, 1906.

Diseases of Children, Medical and Surgical. By H. Ashby, M.D., F.R.C.P., Physician to the Manchester Children's Hospital, etc., and G. A. Wright, B.A., M.B., F.R.C.S., Surgeon to the Manchester Royal Infirmary, etc. Fifth edition, thoroughly revised. Cloth. Pp. 920. Price, $5.50 net. New York: Longmans, Green & Co., 1905.

Indications for Operation, in Disease of the Internal Organs. By Prof. H. Schlesinger, M.D., Extraordinary Professor of Medicine in the University of Vienna. Authorized Translation by K. W. Monsarrat, M.B., F.R.C.S., Surgeon to the Northern Hospital, Liverpool. Cloth. Pp. 498. Price, $3.00. New York: E. B. Treat & Co., 1906.

A Compend of Genito-Urinary Diseases and Syphilis, Including their Surgery and Treatment. By C. S. Hirsch, M.D., assistant in the Genito-Urinary Surgical Department Jefferson Medical College Hospital. Illustrated. Cloth. Pp. 351. Price, $1.00. Philadelphia: P. Blakiston's Son & Co., 1906.

Report of the Veterinary Director General. J. G. Rutherford, V.S., Department of Agriculture, Canada. 1905. Printed by Order of Parliament. Paper. Pp. 232. Ottawa: Printed by S. E. Dawson, Printer to the King's Most Excellent Majesty, 1906.

Experiments in Practical Culicidal Fumigation. By A. I. Kendall, Ph.D., Acting Chief of Laboratory. Bulletin No. 2. Laboratory of the Board of Health, Isthmian Canal Commission. Paper. Pp. 22. Washington: Government Printing Office, 1906.

Limitations of Formaldehyd Gas as a Disinfectant, With Special Reference to Car Sanitation. By T. B. McClintic. Hygienic Laboratory—Bulletin, No. 27. April 9, 1906. Paper. Pp. 112. Washington: Government Printing Office, 1906.

Medizinische Anwendungen der Elektrizität von M. U. Dr. S. Jellinek. Mit 149 Abbildungen im Text. Paper. Pp. 453. Munich: Druck und Verlag von R. Oldenbourg, 1906.

Report of the Surgeon-General of the Army to the Secretary of War for the Fiscal Year Ending June 30, 1906. Paper. Pp. 179. Washington: Government Printing Office, 1906.

The Journal of the American Medical Association

Published under the Auspices of the Board of Trustees.

VOL. XLVII. CHICAGO, ILLINOIS, DECEMBER 8, 1906. No. 23.

Original Articles

SYMPTOMS OF CANCER OF THE UTERUS.*

JOHN G. CLARK, M.D.
PHILADELPHIA.

Notwithstanding the almost innumerable articles which have recently been published on cancer of the uterus, there has not been one pathognomonic sign or symptom discovered which will point unerringly or even with approximate certainty to the onset of this disease. The established fact that more than 65 per cent. of cases of cancer are turned away from our hospitals as inoperable, and that of those presumably operable only a very small percentage are ultimately cured, is a very serious reflection on our ability to make an early diagnosis in these cases.

EVIL OF PROCRASTINATION.

As the matter stands the blame largely, but not wholly, rests on our profession, for our women patients too often pursue such a procrastinating policy that nothing can be done by the time they consult a physician. While we usually attribute our bad results to this source, we can not support it by the past history of medicine, for it is a well-known fact that medical knowledge of one generation becomes a lay possession of the next. The root of this evil, therefore, comes directly home to us, for even to-day many physicians are all too much inclined to attribute every nervous and physical deviation of women after 35 years of age to the ills of the menopause, and consequently assume that time will slowly but surely correct them.

In approaching the question of symptomatology, we must, therefore, clear the ground of all this rubbish before we can hope to make progress. The surgical world is at present pursuing the most radical operative policy against cancer, and, with certain limitations, I am in full accord with this policy. This line of action has been pursued to its furthest limit, and yet our results under present conditions are notoriously bad. The limit to further progress, so far as devising more radical operations, has been reached, and the chief aim in the future must be to educate our consciences up to the point of feeling that we are the most malicious of malpractitioners if we pass over lightly the slightest deviation of the menstrual function in women of the cancerous age, or of treating locally, as an ulcer, a condition of the cervix which may be cancer. Still more our energies must be turned toward our patients in impressing on them the serious dangers of delay in consulting a physician after any of these minor symptoms appear.

Fortunately, the professional lethargy which has so retarded this advancement is disappearing, and while the fact is well established that there are no characteristic symptoms of cancer of the uterus there are, nevertheless, symptoms which occur sufficiently early to suggest the danger and require a prompt investigation. If the profession generally assumes this position we will soon find the same gratifying rise in the operability of these cases that has already been noted in Germany under the educational policy inaugurated by Winter and pushed so vigorously as a national medical policy by German gynecologists. The mass of literature on the various operations on cancer points unerringly to the curability of cancer in its early stage.

While it is to be regretted that there are no early pathognomonic signs, this very deficiency should put every physician on his guard and cause him to investigate the comparatively meager symptoms present in many cases. While the alarmist's viewpoint is usually to be decried in medicine, for in the end it will work more harm than good, in cases of cancer of the uterus there is little danger from this attitude, for if a suspicion of the disease has been aroused by atypical symptoms it may readily be set aside or confirmed by an examination. If the suspicion is confirmed a precipitate operation should be urged; if, on the other hand, no cancer is found, the patient is all the happier and all the safer for this knowledge. Under these conditions she will not become introspective if she is once assured there is no cancer. Now that the more intelligent, as well as the more ignorant women, are coming to learn that an operation is the only hope held out for their cure, the very fact that this course is not insisted on, after the examination is made, will at once allay their fears as to the presence of the disease.

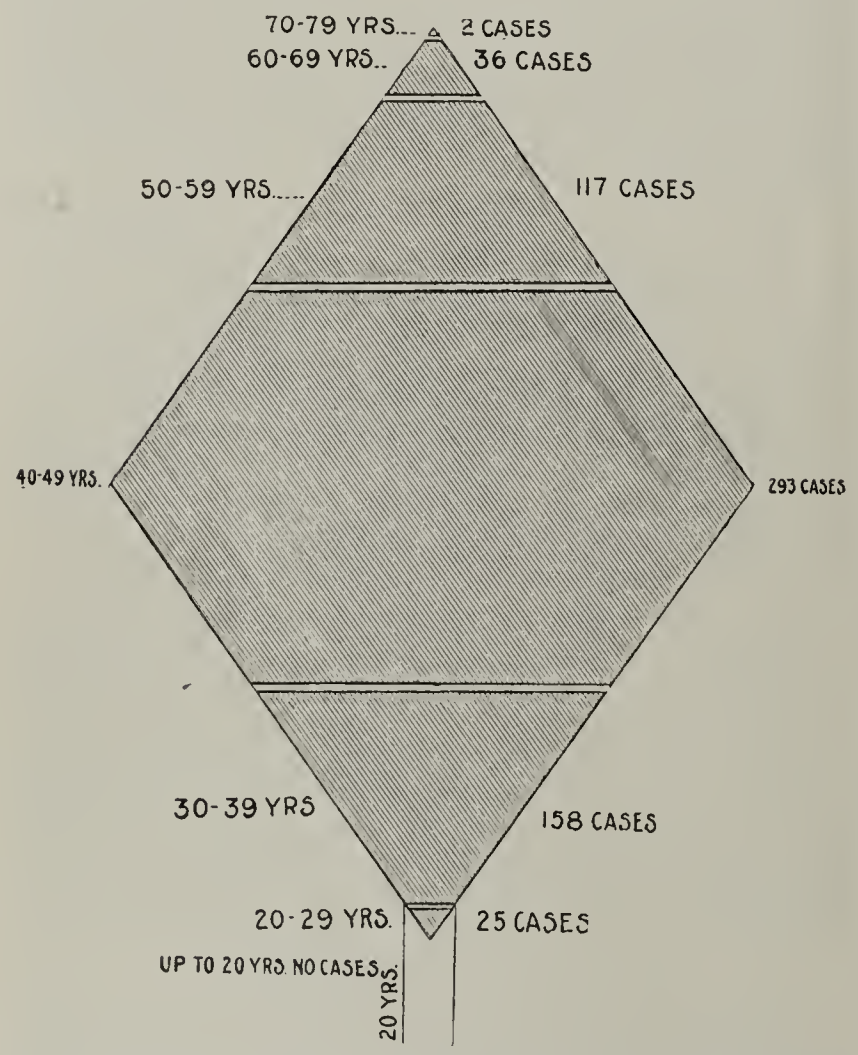
REVISED SYMPTOMATOLOGY.

The first of the older precepts which must be utterly cast out in teaching, and in consultation with patients, is that the irregular discharges of the menopause are in any sense typical of a normal condition. This period in a woman's life should come about as a natural diminution with cessation, or as an abrupt cessation, and never with irregular floodings or leucorrheal discharge. Both of the latter are evidences of a pathologic state; and, while in many cases this may be self-limiting and may terminate without serious effects on the patient, no more unfortunate error can be made than to proceed contentedly on this assumption, and when it finally ceases to cheerily tell the patient that your prediction is now confirmed. This viewpoint, which may be correct in one case, will possibly condemn others, for all women naturally shrink from examination, and if Dr. A., in his foolhardy optimism, has thus assured Mrs. B. she will advertise this fact to her neighbors, who under similar circumstances either defer seeing a physician until an incurable stage of cancer is reached, or even more fool-

* Read in the Section on Obstetrics and Diseases of Women of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

ishly consult Dr. A., who ignorantly passes over the symptoms with the same criminal optimism, and in this false security the patient is professionally guided to her horrible fate. Let us, therefore, throw aside once and for all this fetish of the harmlessness of the atypical discharges of the menopause. Also the terminal symptoms of cancer, such as pain, profuse, foul smelling discharge, cachexia, and excessive hemorrhage should only be considered of prognostic rather than of diagnostic worth, for, unhappily, they usually indicate an inoperable stage of the growth. It is the slight symptoms that are of value and the physician, therefore, who allows a patient under his care with a simple leucorrhea or an irregular menstrual discharge to drift on to the more pronounced symptoms is criminally culpable.

Another fallacy in cancer is the hereditary theory. Many a physician in the past, even in the face of well-defined symptoms, has attributed them to the menopause, solely because he is assured that there is no



Analysis of 631 cases, indicating the ages at which the disease most frequently occurs. From this chart it will be seen that between 40 and 49 years a much larger number of cases occur than during an equal number of years in any other period in a woman's life. (Adapted from Kroemer's statistics.)

hereditary tendency. To clear up the question of symptomatology, we should at once discard heredity as a factor, for I am certain that of all the diseases which are usually attributed to this origin this has the least foundation in statistical facts.

While heredity practically plays very little part in the diagnostic consideration of cancer, the importance of recognizing the fact that cancer is a disease of midlife can not be too strongly emphasized. The accompanying chart shows that at least 90 per cent. of the cases occur between 40 and 50 years of age. After 60 years have passed the danger is not greater than that of a woman less than 23 years of age. Another fact on which stress has constantly been laid as a causative factor in the production of cancer is the injuries of childbirth. Sampson has shown that in 412 cases only 3 per cent. had not been pregnant.

As will be seen from my foregoing remarks, our chief object must be to revise the symptomatic structure of the past, for of all diseases this is the flimsiest. To reiterate my opening sentence, there are no pathognomonic signs or symptoms, and the quicker the physician recognizes this fact the more frequently will he detect this disease. The suggestive signs which should be investigated by an exhaustive examination in any woman between 22 years of age and the climacteric period are:

1. Any deviation of the menstrual period in the way of an excess or an intermenstrual discharge, especially in women beyond 30 years of age. The most suspicious of these are: (*a*) a mere show after slight exertion, defecation or coitus; (*b*) increasing length of the period, even if only one day more than has been her established habit. Every woman is a law to herself in this respect.

2. An exacerbation in amount or change in character of the discharge in a woman who may have had a simple leucorrhea for months or years. Of these changes a free aqueous, acrid, or blood-tinged discharge is especially portentous.

3. A leucorrheal discharge in a patient who has never had it before.

4. Every atypical discharge in a woman after the menopause. These cases are especially liable to cancer and should, if possible, be even more exhaustively examined.

5. Pelvic pain of more than a few days' duration should always be an urgent reason for examination, although it is very seldom an early symptom of cancer.

EXAMINATION NECESSARY.

From these statements it is very evident that the chief stress in symptomatology points not to a diagnosis, but to the urgent necessity for an examination, for on this almost exclusively the diagnosis must rest. As these cases have presented themselves at our clinics and those of Europe, the gross pathologic appearances are so characteristic that the mere novice, if he has seen but one case, or has read carefully the description of these lesions, will almost unerringly make the diagnosis.

In this connection I would also protest against the use of the word "ulcer of the womb," for many a poor woman has paid her professional fee thrice weekly to some ignorant or wilful practitioner for treatment of an ulcer which, from its very beginning, was a cancer. Dr. Emmet pointed out many years ago that there are very or erosions of a lacerated cervix. If it is a true necrotic process, which is actually causing a well-marked solution of continuity in structure, in 95 cases in 100 it is cancer.

Cancer of the cervix, therefore, as we almost invariably see it at present, is usually easily distinguished by the ordinary clinical examination, but if the educational side of this question is taken vigorously in hand, the borderline cases will be much more frequently seen, and then the microscopic confirmation of suspicious pathologic appearances will become more and more important. I can imagine no more dangerous fallacy than to assume that as clinicians we can make the diagnosis without this aid in the early stages of the growth. Before every other consideration these early suggestive signs should be minutely investigated by the usual digital and specular examination. and then, if in doubt, the microscopic investigation should be invoked.

While, as stated, the usual clinical investigation will,

as a rule, conclusively settle the question of suspicious symptoms referable to lesions of the cervix, it utterly fails in cancer of the fundus. Many a case has been passed through the operator's hand as endometritis, polypi, etc., which ultimately proved to be cancer. Many other cases have been subjected to hysterectomy for cancer when it was not present. These mistakes will not occur if the microscopic examination is conducted by a skilled observer. When, therefore, the elinieal evidence is deficient the microscopic examination becomes the eourt of final resort. As a routine, uterine scrapings from all cases should be submitted for microseopic examination.

EARLY DIAGNOSIS.

That a diagnosis should be made in the majority of cases before the disease extends beyond the operative limit has been shown conclusively by Sampson, for in about 76 per cent. of 162 operable cases at the Johns Hopkins Hospital and about 81 per cent. of 250 inoperable cases there had been a history of bleeding for over three months before the patients came to the hospital, and bleeding had been present for over six months before their admission in about 51 per cent. of the operable eases and in about 60 per cent. of the inoperable cases.

In the gynecologic department of the University of Pennsylvania Hospital, cancer of the cervix has been discovered through the aid of the microscope in but one case when it was not suspected. In cancer of the fundus, however, several cases have been diagnosticated in this way, and the patients permanently cured by early operations. In the first the clinical evidences are sufficient in possibly 95 cases in 100; in the second the percentage is so greatly diminished as to make the microscope the chief diagnostic means.

As a concluding statement, one may say that cancer of the cervix can almost invariably be diagnosticated by the usual clinical examination; in cancer of the fundus it can at best be only surmised. If, as we anticipate, these cases come to us earlier for consultation as the result of popular education, more and more valuable will become the services of the expert pathologist.

REPORT OF COMMITTEE* ON CANCER OF THE UTERUS.

SUBMITTED TO THE SECTION ON OBSTETRICS AND DISEASES OF WOMEN AT THE BOSTON SESSION.
JUNE, 1906.

READ BY THE CHAIRMAN* JOHN G. CLARK, M.D.
PHILADELPHIA.

In the consideration of cancer of the uterus your committee has been impressed by the urgent need of a general plan of public education on many medical subjects. While this section is naturally interested in promoting some effective means of reducing the frightful mortality in cancer of the uterus, each section of the American Medical Association is as intensely intersted in similar work pertaining to matters of public health falling within its province. For this reason your committee has felt the necessity for widening the scope of its duties, and will present to the House of Delegates a plan for the organization of a board of general public instruction. Should this suggestion be adopted, the report on cancer of the uterus, which we present for your consideration, is so framed that it may become an integral part of a general educational plan. Until this question, however, is settled by the House of Delegates we feel that the Section on Obstetrics and Diseases of Women should distribute, for the benefit of the entire medical profession, facts concerning the frequency, prognosis, course, early diagnosis and treatment of cancer of the uterus. Our communication, therefore, takes the following form:

FOREWORD.

At the meeting of the International Congress of Arts and Science, held at St. Louis, Sept. 24, 1904, the gynecologic section passed a resolution requesting the American Medical Association to develop means of increasing the percentage of cures in uterine cancer.

The committee, consisting of Dr. John A. Sampson, Albany, N. Y.; Dr. Fred J. Taussig, St. Louis, and Dr. John G. Clark, Philadelphia, submitted a report to the House of Delegates at the Portland session of the American Medical Association. This report was adopted and the matter was referred to the present committee for further elaboration and presentation to this section at this session.

It is apparent that cancer in general, and cancer of the uterus in particular, is a subject of vital importance because of the character of the victims, the frequency of the disease, its insidious onset, the rapid progress to an inoperable stage, the suffering entailed and the frightful mortality. To those who know that the disease is local at its inception and hence capable of complete eradication at a very early stage it is appalling to contemplate the practical fact that in from 95 to 97 per cent. of all cases radical cure is not attempted until long after the possibility of success has passed.

One can not but feel that ignorance of plain facts leads the victims of this disease to sereen its existence until suffering forces them to apply for relief. How striking the contrast between cancer and appendicitis! As the result of general publicity even the kindergarten child now knows something about appendicitis and the adult recognizes the importance of an early diagnosis and prompt operative intervention.

In every other sphere of medical endeavor matters of equal moment are constantly arising concerning which the general public should have greater knowledge. The pediatrist finds urgent need for the dissemination of directions regarding infant-feeding; the alienist has no dearth of problems concerning the humane treatment of the insane. In the province of the sanitarian and internist the control of tuberculosis and other infectious diseases, the sanitation of large communities and other important subjects are matters of general concern. The needs are too apparent for further comment. In order that the subject of cancer of the uterus shall be brought before the medical profession at large, your committee suggests the following plan:

To the individual member of each county medical society in America the following commuieation under separate cover shall be sent:

Dear Doctor:—The Section on Obstetrics and Diseases of Women of the American Medical Association has appointed a committee to investigate some of the practical facts regarding cancer of the uterus. The committee has done so and I submit herewith a copy of their report.

The subject is of such great importance to the entire community that I trust you will give the report your painstaking consideration.

Very sincerely yours,
Secretary of Section.

* The members of the committee are: Dr. F. F. Simpson, Pittsburg, Pa.; Dr. Thos. S. Cullen, Baltimore; Dr. John A. Sampson, Albany, N. Y.; Dr. J. Clarence Webster, Chicago; Dr. John G. Clark, Philadelphia, chairman.

REPORT OF COMMITTEE.

1. Cancer is a Frequent Disease.—Apparently 5 per cent. of all deaths after the age of 30 are from cancer somewhere in the body.

2. At Its Inception It Is Capable of Complete Eradication.

3. It Is Rarely Cured To-day.—It probably kills more than 90 per cent. of those afflicted.

4. It Is Evident, Therefore, That the Methods of the Past are Wholly Inadequate to the Needs of the Future.

We believe that popular ignorance of facts, indeed very patent facts, accounts for this deplorable mortality in a curable disease. The time has come for us to revise our views and for the public at large to be taken more closely into our confidence regarding cancer. We would, therefore, ask your earnest coöperation in the fight against this disease.

To the best of our knowledge the following is a brief, but true and accurate recital of facts regarding cancer in general, and cancer of the uterus in particular.

A. Cancer in General.

1. Cancer is primarily a local disease.

2. In its primary stage it is so localized that every particle can be removed; it is, therefore, capable of complete eradication with a resulting permanent cure.

3. While still local it causes, as a rule, little or no discomfort, and no loss of weight. The deviations from normal seem slight, indeed, and yet they are very definite, easily recognizable, and demand immediate investigation. Upon its first recognition, immediate removal by a competent operator is the requisite for a cure.

4. The disease, if not at once eradicated, progresses with great rapidity to other parts of the body by continuous growth and by metastasis.

5. When it has passed beyond the bounds of the original organ, however slight the involvement may be, the prospects of relief grow rapidly less with the days and with the extent of the involvement.

6. Serious symptoms of cancer rarely appear until an inoperable stage of the disease has been reached.

7. The classical description that has so long stood as a picture of cancer (pain, hemorrhage, offensive discharge, emaciation, profound anemia, and an ashen hue) is really a picture of impending death, due to advanced cancer, and irrevocably indicates the impossibility of a cure at this stage.

8. The *time* of operation (measured by the progress of the disease) is much more important than the *type* of operation, for a simple operation, if performed very early may effect a cure, while the most radical at a later stage is of no avail.

B. Cancer of the Uterus.

1. Cancer of the uterus is the most frequent form of primary cancer.

2. Cancer of the uterine cervix is much more frequent than cancer of the body of the uterus, and is much more malignant because it spreads beyond the limits of the uterus much more quickly. For the above reasons, cancer of the uterine cervix will be considered first.

CANCER OF THE CERVIX.

A critical study of the subject leaves little room to doubt that removal by operation, while the disease is still very limited in extent, offers the best and practically the only chance of cure. The main hope, therefore, lies in operating before the disease has passed beyond the limits of the uterus (either by metastasis or by direct extension), because it has been demonstrated over and over again that even microscopic particles of cancer which are not removed, continue to grow. It is this continued growth which gives the so-called recurrence in the great majority of cases.

An early diagnosis is possible in a large percentage of cases. Probably over 50 per cent. of the operable cases, and a much higher percentage of the inoperable ones, have been bleeding for six months before any treatment is considered. As the course of the disease is usually rapid, six months or even less of neglected uterine bleeding permits the disease to extend so far that only a small percentage of the cases can be cured. Even in the face of this statement, it must be still remembered that many apparently advanced cases have been cured permanently by the more recent radical operations.

Because of the frequency of the disease, the narrow limit of time which separates success from failure, and the overwhelming proportion of women (94 to 97 per cent.) who absolutely neglect themselves until it is too late for them to receive benefit, it is apparent that ignorance of facts is a chief factor in the deplorable failures of the past. It is evident that to accomplish better results, the disease must be detected earlier, very much earlier, in 95 per cent. of all cases.

For the purpose of improving the possibility of a greater number of cures, we would ask that you instruct your circle of acquaintances regarding these facts. Especially would we suggest that you impress mothers regarding the wisdom of a careful physical examination at the first appearance of the unaccountable uterine bleeding or discharge, and the necessity in case of doubt, of employing the services of an expert in pelvic diagnosis. In Prussia, where the education of women along these lines has been attempted on a large scale, results already show a striking increase in the percentage of cases discovered early in the course of the disease.

Permit us to call attention to some of the suggestive symptoms of early cancer of the uterus—symptoms which are not in themselves conclusive, but are always sufficiently suggestive to make a careful and exhaustive physical examination advisable, and in most instances imperative.

Symptomatology of Cancer of the Uterine Cervix.

(a) A disease of midlife—occurring especially between the ages of 30 and 50.

(b) It rarely occurs in women who have not borne children.

(c) While there is no characteristic early sign of cancer, bleeding or a blood-stained discharge is usually, but not always, present. It may be:

1. Slight, "only a show," appearing at irregular intervals, as on exertion, after sexual intercourse, using a douche or straining at stool; or it may be slight but constant, the patient noticing that her clothes are slightly stained on taking them off at night.
2. In other cases the bleeding may be more profuse, simulating a prolonged or irregular menstruation, or a return of the menses after the menopause.
3. In still other cases, severe hemorrhage may occur, appearing either as the result of some unusual exertion or during menstruation, or the cause may not be apparent.

(d) In a small percentage of the cases bleeding may be absent, but usually some other sign, such as an unusual leucorrheal discharge, calls attention to the growth. In a small percentage of cases all symptoms referable to the growth may be absent for a long time.

(e) Pain caused by the growth usually occurs later in the course of the disease, and must be differentiated sharply from pain arising from pelvic trouble independent of the cancer, such as inflammatory conditions of the tubes, ovaries, etc.

3. It is evident that all women suffering from uterine bleeding or other symptoms referable to the uterus should be examined as soon as possible, and if the diagnosis is not clear the uterus should be curetted or a small piece of the cervix excised and not thrown away, but presented in 10 per cent. formalin or ordinary alcohol and sent to a competent pathologist.

4. All symptomatic aberrations referable to the generative organs of women about the menopause should be looked on as the possible beginning of malignant disease, and an immediate examination should be urged. If no pathologic change is detected, this fact alone would be of great value to the physician as well as to the patient. If a suspicious area is found, prompt measures for its certain diagnosis by the microscope may be instituted.

(*a*) *Course.*—Its course is rapid. It passes beyond the limits of the uterus proper (and hence becomes practicably incapable of complete eradication) in a period which usually varies between 30 days and 6 months from the outset of the earliest symptom. When it runs its course undisturbed patients rarely live more than three years. About three-fourths of them die within two years; about one-third within one year after the first manifestation of the disease

(*b*) *Results Under Existing and Past Conditions.*—Probably from 75 to 80 per cent. of these patients in this country do not apply for treatment until the disease has progressed too far for anything but palliative measures (i. e., until the disease is no longer limited to the uterus). In only about 20 to 25 per cent of the total number of cases of cancer of the cervix is radical operation attempted. In the vast majority of these cases, a careful study of the gross specimen and microscopic sections from the outer margin, will show that the surgeon has failed to remove all of the diseased tissues. The so-called rapid recurrences are really, therefore, continued growths. In these cases medical attendants have made an effort to save the patient's life, but the disease had, unfortunately, progressed too far for that result to be possible. Unfortunately, in from only 3 to 6 per cent. of the total number of cases of cancer of the cervix is an operation instituted early enough for the surgeon to circumvent the disease. It is only in this class, of course, that the disease is completely eradicated.

(*c*) *Results Which Appear Easily Possible.*—Authentic cases of complete eradication of undoubted cancer of the cervix are so numerous as to leave no doubt that, if the diseased tissues are completely excised and if the implantation at the time of the operation is avoided, a permanent cure is not only possible but also probable.

CANCER OF THE BODY OF THE UTERUS.

Cancer of the body of the uterus is much less frequent than cancer of the cervix, grows much more slowly, and remains restricted to the uterus for a long time; and for these reasons the diagnosis is usually made earlier in the course of the disease and its operative treatment is attended with a lower primary mortality and a much higher percentage of cures. Cancer of the body of the uterus usually occurs at a more advanced age than cancer of the cervix, and is more frequent in women who have not had children.

THE OPERATIVE TREATMENT OF CANCER OF THE CERVIX UTERI.*

EMIL RIES, M.D.
CHICAGO.

Rational operative treatment of any cancer is the outcome of our conceptions of the pathology of cancer. Pathology teaches us that every cancer in its beginning is a limited local disease, and that cancer can be cured if the entire area involved is removed. Clinical experience accords with this theory, because observation proves that undoubted cancers have been cured for good in a number of cases after operative removal of the diseased area; while data concerning this fact are indisputable, if not very numerous, it must be emphasized that no other known method of treatment has so far satisfied the double test which we require in the critical investigation of operative results. This double test consists, first, in confirmation of the diagnosis by the microscope, and, secondly, in the observation of the patient for many years (at least five) after the operation. No reports which do not satisfy these two tests are of any scientific value.

The application of our pathologic theories to the treatment of carcinoma of the uterus is connected with the names of Freund, Czerny and Schroeder. Their methods achieved the removal of the primarily diseased organ. They could be deemed logical and could be expected to be crowned with success if the primarily diseased organ was the sole and only seat of the disease. Hence, the indications for these operations demanded that the uterus should be movable, and that the surrounding organs should be free from cancer. The selection of the abdominal hysterectomy after Freund or the vaginal hysterectomy after Czerny-Schroeder depended on technical questions (size of uterus, adhesions, width of vagina, complicating uterine or ovarian tumors). For many years, then, the vaginal operation has been the routine method for cancer of the cervix, while the abdominal route was reserved for exceptional cases. Both, however, originally intended the removal of the uterus principally as the seat of the disease.

We have now the experience of decades for a basis of a critical investigation of the results of such operations, and I am not saying too much when I make the statement that vaginal or abdominal removal of the uterus alone, while successful in a very limited number of cases, is a sad failure in an overwhelming majority if the above-mentioned double test is rigorously applied.

The disappointment of the operators spurred them on to careful and valuable investigations of the various locations of the recurring disease, and it was found that in the large majority of cases the recurrence took place in or near the scar. This fact was explained as due to two causes:

First, insufficient extent of the operation; in other words, leaving behind cancerous tissue which would continue to grow. In this case the recurrence was only a continuation of the original growth.

Second, contamination of the wound with cancer in the course of the operation; in other words, grafting cancer into healthy tissue.

These two sources of recurrence might occur singly or together.

A number of technical changes in the operations was the result of the study of the recurrences. To prevent contamination of the wound, the cancerous cervix was to be prepared in certain ways by curetting or cauterizing, and the operation itself was to be performed with the cautery, or at least with instruments which had not come in contact with the cancer. In order not to leave behind cancerous tissue, the operation was extended so as to include removal of parts of the vagina, of the broad ligaments to as great an extent as possible, of the appendages, or even of parts of the bladder. Auxiliary incisions were employed so as to give better access. The results improved somewhat, and pathologic examination of the specimens removed seemed to confirm the wisdom of these steps. It was found occasionally that the broad ligaments or the appendages showed involvement, that the cervix had been penetrated by the cancer, and gynecologists began to make the prognosis from the pathologic investigation of the uteri removed. Still the attention was riveted on the uterus itself and its immediate neighborhood. Promise of improvement seemed to depend on the fulfilment of three demands:

First and foremost, the cases must come early; hence the attempts at popular instruction and improved medical education.

Second, the cases must be submitted to more extensive operations; hence the Schuchardt incision, removal of tissues adjacent to the uterus.

Third, though with less emphasis, contamination must be prevented; hence special technical methods.

While all these endeavors were correct and most praiseworthy, it seemed to me that our pathologic investigations of cancers in general were not sufficiently applied in the treatment of cancer of the cervix. A number of pathologic data had been taken into account,

---

* Read in the Section on Obstetrics and Diseases of Women of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

but had not some been overlooked or others been denied a search and a hearing?

The investigation of cancer in general, and in the cervix uteri especially, had demonstrated that cancer is not sharply circumscribed by the diseased area recognized by inspection and palpation, but has outposts at a greater or lesser distance from the point of origin. These outposts were so far recognized in general surgery that it was deemed necessary to extirpate an inch of tissue all around the evidently cancerous area in order to be at a safe distance from the cancer. That distance had never been kept in any vaginal or abdominal operation for cancer of the cervix, and in consequence of the anatomic arrangement of the pelvic organs will never be observed, because it means an extensive resection of the bladder in every case, a step of the operation which few gynecologists will be found willing to make a routine practice on account of its great danger. Pathology had shown, furthermore, that under an apparently normal mucosa of the vagina cancerous outposts could be found at a considerable distance from the cervix, but it was not known to what extent this invasion of the pelvic connective tissue could accompany a small cervical cancer. The dreaded invasion of the broad ligaments could not be paid the due respect as long as the operations had to shrink anxiously from the proximity of the ureters. All these points were duly considered and were the topics of many discussions. They explained why vaginal operation was not and in many cases could not be a radical operation.

THE AUTHOR'S METHOD.

While these difficulties were duly appreciated, it seemed to me that the advance in the operative treatment of cancer, which had been made by surgeons in other regions of the body, had not been utilized sufficiently either in the pathologic investigation of or in the operative interference for cancer of the cervix uteri. In 1895 I ventured to formulate a plan for the extension of the operations for cancer of the cervix uteri in directions which until then had not been attempted by any one.

I started from the knowledge obtained from the investigations from Gussenbauer to Heidenhain that cancer, though originally a circumscribed disease, very rarely reaches the surgeon at that stage of its development. It had been shown particularly in cancer of the breast that in its advance cancer follows certain preformed paths, the lymphatics, with more or less regularity, and that the size and condition of the original growth is no criterion as to the extent of this advance. It seemed to me that this pathologic law should apply to cancer of the cervix uteri as much as to any other cancer. Literature on this subject there was none at the time, because postmortem investigation of patients dead from cancer of the cervix could prove nothing as to the conditions obtaining in early operable cases.

I proposed in 1895:

First, that the operative treatment of cancer of the cervix in its early stage should extend to the lymphatics and the surrounding connective tissue.

Second, that one of the obstacles which had been found insurmountable for the older operations could be overcome by dissecting out the ureters to their full length in the true pelvis.

I also added that the improvement to be hoped from this new departure was in the direction of greater security from returns in early cases, not in the direction of increase of the number of cases amenable to operative treatment. It was recognized that recurrence depended not only on contamination with carcinoma in the operation or on the possible extent in the immediate neighborhood of the uterus, but on the possible invasion of more or less distant organs physiologically related to the original seat of the disease.

The demands on what a radical operation should be were raised thereby, and a further possible cause of the failures exposed.

If it was true that the lymphatics could be involved early, then an operation taking into account this fact and removing these lymphatics gave an additional chance of complete cure. If it was true that the broad ligaments carried these lymphatics, then an operation removing them to an extent hitherto impossible and undreamed of gave an additional chance of complete cure. If contamination of the field of operation with cancer was a possible cause for recurrence, and if an operation could be performed so that all operating on the surrounding tissues was done without the cancer itself being handled, then such an operation gave an additional chance of complete cure. And all these points are embodied in the operation which I proposed, and no one had ever proposed such an operation before.

The operation has since been performed with many variations and modifications. It is a matter of great satisfaction to know that the application of the pathology of cancer in general to that of cancer of the cervix has proven correct. The examination of lymphatics removed by operation proves the involvement of the lymphatics in the cancerous process the more conclusively the more thoroughly the operation has been performed, and the more thoroughly the investigation of the lymphatics has been conducted. It would take many hours to go into all the details of this question of the lymphatics. Suffice it to say that careful operators and investigators have proved that over 50 per cent. of the patients operated on present involvement of the lymphatics. Percentages alone, however, are scarcely so important as some other results of these investigations, and here six points deserve our special attention:

First.—Examination before the abdomen is opened is utterly unable to reveal the condition of the glands.

Second.—The size or hardness of the glands proves nothing as to their invasion by the cancer one way or the other.

Third.—Glands can be invaded whether the broad ligaments are cancerous or not.

Fourth.—Glands of one side can be invaded while the broad ligament of the same side is free and the broad ligament of the other side is cancerous.

Fifth.—The size of the primary growth in the uterus is without any correlation to the glandular involvement.

Sixth.—Cancerous glands can remain quiescent for a long time and then give rise to recurrence.

The objections to the removal of the lymphatic glands have been numerous and severe, and I can answer a few of them very briefly. It has been stated that cancer in the glands may undergo spontaneous cure, and as evidence of this the microscopic appearance of degeneration in cancer in the glands has been described. I beg to remind you that processes of degeneration are common in every cancer and occur everywhere in cancer, though associated with the most aggressive growth of the tumor.

It has been objected that it is never possible to remove all the lymphatics and that such an undertaking is chimerical. Allow me to remind you that the same

holds true in carcinoma of the breast. Are not mediastinal glands sometimes the seat of cancer in cases of cancer of the breast, and has any one ever claimed that because mediastinal glands can not be removed it is no use to remove those above and below the clavicle? Is it not correct to remove at least all you can?

This question of the removal of the lymphatics has been treated very unscientifically here and there. Some operators, for instance, say that it is not necessary to remove all glands. They remove only a few which seem enlarged or happen to come out easily. They have these examined and maybe find no carcinoma. Therefore, they conclude that it is not necessary to remove glands at all, because the few which they did remove do not show any cancer. That is reasoning from insufficient data, and, as a matter of fact, the more thoroughly an operator removes glands the more frequently his pathologist finds cancer in some of them.

The most severe objection which has been raised against my method was that the mortality from such an operation must be frightful. One operator who followed my method closely in his first thirty cases had a high mortality and has, therefore, changed his method so that now it is little else but an abdominal operation after Freund, with the addition of the dissection of the ureters. He removes a few glands here and there or none at all. His primary mortality has become a matter of pride in his second and third series of thirty cases. A considerable number of operators follow in his footsteps and are devotees of a conservative radicalism, which inevitably leads back to high percentages of recurrence and throws a remarkable light on the statement of one of these operators that all his cases in which cancer has been found in the glands have become recurrent.

I must insist, however, that the removal of lymphatic glands is only a part, even though an important part, of the new operative treatment of cancer of the cervix which I have tried to inaugurate. My method of operating differs from all former operations for cancer of the cervix in that technically the removal of the uterus is really incidental to the removal of a large mass of pelvic connective tissue which surrounds the uterus. The operation is carried out like the radical removal of a cancerous breast. This method blocks out an area which with greater or less probability includes the outposts of the cancer as well as the original growth. It is impossible to carry out such an operation with the customary gynecologic methods of tying pedicles and ligating *en masse*. A clean anatomic dissection, with ligation of the vessels themselves, without formation of stumps, is the characteristic feature of the technic of this operation, as I have described it in the report of my very first cases.[1]

I have long been silent on this topic, and would probably continue to remain so if it were not for the fact that the present tendency in this work appears to me a step backward. I fear that those moderated radical operations of which we hear that they can be performed in an hour, and the mortality of which is no more than that of an ordinary abdominal hysterectomy, and which I have witnessed in some European clinics, will discredit the movement which I have tried to start. The permanent results achieved by such half-way measures can be expected to be only slightly better than those of the old hysterectomies, and I wish to present the claims of my radical operation, not because I may call it mine, but because I wish to save our patients from cruel disappointments.

In operating on a case of cancer of the cervix uteri, or, for the matter of that, any other cancer, it seems to me that a few points should help us in deciding on the type of operation to be selected.

1. Every cancer which is not removed completely kills its bearer sooner or later.

2. The more we follow up cancer along its irregular and incalculable course the greater the chance of removing it all.

3. An incomplete operation does not save from death from cancer.

4. It is worth while to risk a severe operation where the alternative is a lingering, often horribly painful and disgusting disease, the best side of which is the semi-idiocy of the morphin-numbed bearer of the cancer.

REPORT OF CASES.

Bearing these points in mind, I have operated on my patients with cancer of the cervix of the uterus, and I am glad to report most hopeful results. I report here only the cases on which I operated more than five years ago. Their clinical and pathologic features will help to refute a number of statements made in the recent literature of this question, to which for want of space I have not been able to pay special attention in the preceding general remarks.

CASE 1.—Mrs. A. H., aged 32, of Michigan, since November, 1896, has had a foul-smelling discharge, coitus hemorrhages, no pain. She has lost little flesh.

Examination.—Inside the cervix was an irregular, ragged growth, which bled easily; the entire cervix was enlarged; the body of the uterus was of normal size, movable and easily drawn down. The right sacrouterine ligament was thickened close to the uterus. The right appendages were enlarged; the left were of normal size.

Operation.—March 30, 1897, the cervix was prepared by curettement and cauterizing. On March 31 the abdominal radical operation, as described in the *Zeitschrift für Geb.*, vol. xxxvii. The operation lasted three hours.

Postoperative History.—The patient was discharged from the hospital twenty days after the operation. Microscopic examination of the uterus showed squamous cell carcinoma of the cervix. Carcinoma was found in the glands. This is the first case in which those ducts lined with columnar epithelium have ever been observed in the lymphatic glands, which have since been observed and described repeatedly by other observers as well as myself. The patient improved in health and gained 45 pounds in weight.

Subsequent History.—In November, 1905, I saw her again in good general health, but complaining of edema of the left leg and enlargement of the inguinal glands. There was no recurrence in the vagina or pelvis. I operated on the enlarged inguinal glands about two months ago, and removed the glands from the left and from the right groin. The glands appeared cheesy and on microscopic examination proved to contain carcinoma. The patient has again recovered from the operation.

As there is no new carcinoma to be found in her pelvis, it must be assumed that this carcinoma of the inguinal glands has been lying dormant for over nine years. This is worthy of the consideration of those authors who believe that glands can be neglected in the operation, or that glands are well able to take care of some cancerous invasion.

CASE 2.—Mrs. F., aged 34, of Texas; in October, 1898, she had her first and only severe hemorrhage. For nine months she had had a yellow discharge.

Examination.—Patient looks cachectic. The vaginal portion of the cervix showed a ragged, bleeding ulcer, which involved the anterior vaginal wall for three centimeters; the posterior lip

1. Ztft. f. Geb., vol. xxxvii.

was not involved. The uterus was freely movable; the left adnexa were enlarged to the size of a hen's egg; the right adnexa were adherent.

Operation.—Nov. 4, 1898, an abdominal radical operation was performed after cauterization November 3. The patient was discharged from hospital twenty-five days after operation. Microscopic examination of the uterus showed carcinoma of the vaginal portion, with cancerous invasion of some glands.

February, 1906, the patient was still well.

CASE 3.—Miss T., aged 35, of Chicago. In May, 1897, had a criminal abortion. Since then she has had irregular hemorrhages and copious discharge. For two months she has had pain in the left side, radiating to the leg. She has lost 25 pounds. She has been addicted to morphin for twelve years. She looked cachectic. The vaginal portion of the cervix presented a small nodular tumor, which was ulcerated and bled easily. Uterus was freely movable.

Operation.—Jan. 10, 1898, an abdominal radical operation was performed after preparation by curetting and cauterizing on January 9. The involvement of the glands in this case was enormous, and extended from the bifurcation of the aorta down to the femoral ring. Some of the glands were larger than the original tumor. In dissecting out the glands of the left side a tear of the external iliac vein occurred with severe hemorrhage. The hemorrhage was stopped with difficulty. The patient succumbed two hours after the operation had been completed.

Microscopic examination proved enormous cancerous involvement of the lymphatic glands.

CASE 4.—Mrs. H., aged 55, of Illinois, had had bloody discharge for a year. Her physicians removed a piece of the vaginal portion of the cervix for microscopic examination. Their examination failed to determine definitely the nature of the disease.

Examination.—There was a cauliflower growth of the anterior lip of the cervix, reaching out on to the vagina. The posterior lip was normal. The uterus was small, retroverted, and freely movable.

Operation.—May 19, 1899, operation was performed after curetting and cauterizing on May 17. The patient was discharged from hospital 19 days after operation. No cancer was found in the glands.

Subsequent History.—The patient enjoyed perfect health until early this year, when she returned on account of a small nodule in her left breast. I operated on this nodule in March of this year.

Examination of this nodule proved it to be carcinoma of an entirely different type from the former carcinoma of the uterus. The vagina and the pelvis were found entirely free.

CASE 5.—Mrs. T., aged 54, of Iowa, recently had a first hemorrhage. Since then she had had hemorrhages and discharge.

Examination.—There was a large cauliflower growth of the vaginal portion of the cervix.

Operation.—Jan. 6, 1900, an abdominal radical operation was performed after curreting and cauterizing Jan. 5. The patient was discharged 19 days after operation.

Microscopic examination of the glands was negative. The patient is in perfect health to-day.

CASE 6.—Mrs. B., aged 55, of Illinois, had had a greenish discharge for a year, with hemorrhages since February, 1901.

Examination.—There was carcinomatous ulceration of the posterior lip and posterior wall of the cervix, invading, slightly, the anterior wall of the cervix. The patient was very obese.

Operation.—On May 13, 1901, abdominal radical operation was performed after preparation by cauterizing and curetting on May 12. The operation was made extremely difficult by the vast amount of fat in the abdominal walls. The patient collapsed at the end of the operation, and died on the table.

Microscopic examination of the glands showed carcinomatous involvement.

CASE 7.—Mrs. T., aged 43, of Iowa, had hemorrhages for six months, and bloody discharge.

Examination.—The vagina was filled by an enormous cauliflower growth. The uterus was freely movable.

Operation.—Sept. 2, 1901, an abdominal radical operation was performed after preparation of the patient on August 30, by extirpation of the large cauliflower with difficult hemostasis.

The patient was discharged 17 days after operation in excellent condition. Microscopic examination of the glands shows carcinomatous involvement and the above-mentioned columnar epithelium ducts. The patient is in perfect health to-day.

CASE 8.—Mrs. L., aged 52, of Illinois had had irregular hemorrhages for six months with a watery discharge. There was small ulceration of the posterior lip of the cervix. Everything else was free.

Operation.—Sept. 17, 1906, an abdominal radical operation was performed. The patient was discharged 19 days after operation. Present condition of patient is perfect. Microscopic examination of some of the glands failed to show cancer, but showed again columnar epithelium ducts.

SUMMARY.

I present, therefore, reports of eight cases. Two of the patients died practically on the table, six are alive to-day; all over five years after the operation, all with carcinoma demonstrated by the microscope in the uterus. The two patients who died on the table presented cancerous involvement of the lymphatics, so that at least for these patients it can not be said that they succumbed to an extension of the operation which could in any way be called unnecessary. Four of the survivors are free from all cancerous changes. One patient has since developed a carcinoma of the breast of a type different from the carcinoma of the uterus, for which she had been operated on seven years before. The believers in a carcinomatous diathesis will be inclined to count this case in favor of their hypotheses. In view of the fact that the histologic structure of the two cancers was different, I am of the opinion that the woman developed a new cancer in her breast, which had nothing to do with the original cancer in the uterus.

The first patient who was ever operated on presented, over nine years after the operation for cancer of the uterus, a recurrence in the inguinal glands. I consider this case a most important one in the consideration of the pathologic dignity of the lymphatics in cancer of the cervix.

The microscopic investigation of glands removed in these radical operations showed carcinoma present in six patients, four of whom are alive to-day.

I conclude with the question: How long would they have lived if these cancerous glands had not been removed?

100 State Street.

THE RADICAL OPERATION IN UTERINE CANCER.*

PROF. ALFONS VON ROSTHORN.
HEIDELBERG.

When you did me the honor of inviting me to speak to you here it was no easy task for me to choose a subject which might prove of sufficient interest. The fact of my being invited to speak in a country in which some of the most fundamental facts of modern gynecology have been established, a country which by its tireless seeking for knowledge and by its many important discoveries in our particular branch has carved for itself such a gloriously high place in the scroll of nations, certainly increases the difficulty of my choice of a theme about which to address you. It seems to me that the best way in which I can respond to your kind invitation

* Read in the Section on Obstetrics and Diseases of Women of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

is to give you a short résumé of the progress in a subject which in Germany has been followed with intense zeal, and whose importance is acknowledged to be most prominent. I refer to the most effective method in the treatment of cancer of the uterus.

No address of to-day dealing with this subject should pass by, unheeded, the latest attainments in the pathology and etiology of the disease,[1] for a perfect cure can be expected only where the actual nature of the malady is thoroughly understood. Yet I do not consider myself qualified to discourse on these two branches. In addition to this, notwithstanding the innumerable combined investigations conducted over the widest areas, with the object of discovering the supposed cancer parasite, and the statistics as yet furnished us, still the data afforded concerning the etiology are at present so scanty that, in view of the limited time at my disposal, I shall doubtless do better to restrict myself to the discussion of that with which we are more closely connected, and with which we are, therefore, more familiar, the clinical side of the question. Yet I can not proceed further without touching on the therapeutic prospect given us quite recently by Professor Ehrlich in one of his superb lectures, in which, as a result of his thoroughly successful experiments with mice, he conclusively demonstrated the possibility of transferring a cancer-like neoplasm from one animal to another. The success of these experiments opens before us a new vista, especially the possibility of immunizing animals; as Ehrlich has the fullest confidence in his deductions, we have, analogically at least, good reason to hope that we may at some time be able to move on more definite lines with the best results to mankind. As this, however, must of necessity be a matter for future development, there remains for us for the moment but to work according to the hitherto recognized pathologic principles concerning the peculiarities of cancer cells, and to be content to fight the fight honestly against what has been believed by many to be an incurable disease. In consequence of the results of operations for cancer not having been, generally speaking, of permanent effect, physicians are liable to a great extent to take a pessimistic view of the possibility of eradicating the disease by operation, an attitude which does not redound to the welfare of their patients.

1. Literature on the general subject will be found referred to in the following important and recent works:

BAISCH: "Der Wert der Drüsenausräumung bei der Operation des Uteruscarcinoms," Arch. f. Gynaek., vol. lxxv, No. 2.

KRÖMER: "Ueber die Lymphorgane der weiblichen Genitalien und über Veränderungen bei Carcinom uteri," Monatschr. f. Geb. u. Gynaek., vol. xviii, No. 5.

KUNDRAT: Ueber die Ausbreitung des Carcinoms im perimetritischen Gewebe bei Krebs des Colium uteri," Arch. f. Gynaek., vol. lxix, No. 2.

PANKOW: "Vergleich der klinischen u. pathologisch-anatomischen Untersuchungsbefund bei Carcinome uteri und ihre Bedeutung für die Therapie," Arch. f. Gynaek., vol. lxxvi, No. 2.

MACKENRODT: "Ergebnisse der abdominalen Radikaloperation des Gebärmutterscheidenkrebses mittels Laparotomia hypogastrica," Zeitschr. f. Geb. u. Gynaek., vols. liv and lvi.

SCHINDLER: "Statistische und anatomische Ergebnisse bei der Freund-Wertheim'schen Radikaloperation des Uteruskarzinoms," Monatschr. f. Geb. u. Gynaek., vol. xxiii, No. 1.

SCHAUTA: "Die Berechtigung der vaginalen Totalexstirpation bei Gebärmutterkrebs," Monatschr. f. Geb. u. Gynaek., vol. xix, No. 4.

KERMAUNER: Hegar's Beiträge z. Geb. u. Gynaek., vol. v, No. 1.

TIBURTIUS: "Collumcarcinom von kurzer Dauer und geringer Ausbreitung bei hochgradiger Lymphdrüsenmetastasen," Hegar's Beiträge z. Geb. u. Gynaek., vol. vii, No. 1.

See also the discussion of the subject in the transactions of the German Gynecologic Society at Giessen, 1901, at Würzburg, 1903, and at Kiel, 1905.

IMPORTANCE OF EARLY OPERATION.

It may be the fault of the patients themselves that cancer in its earlier stages is not examined with the necessary thoroughness, that the minuter signs are not sufficiently noted, and that, therefore, surgical aid is not sought until it is too late. As a consequence we all complain that in the large majority of cases—and this is no exaggeration—the chance of an operation being attended with lasting results is a very small one, indeed. As long as we are obliged to depend only on surgical treatment it is of the highest importance that we shall strive for a diagnosis in the earliest stages of the disease as our first desideratum. It is, therefore, necessary in the highest degree that all physicians should act on this principle, and that all teachers should endeavor to impress the same idea on their pupils by every possible means, with the object of enlightening the public, who are dense in their ignorance, and indifferent in their conduct. The idea that symptoms such as irregular, atypical discharges at the menopause are of no importance should be emphatically discouraged. Winter's endeavors in this respect are, therefore, to be warmly praised and furthered in every way. I open to-day's discussion with the following dicta:

1. Cancer of the womb begins, as cancer in other organs, with a growth which is absolutely local; in some forms of the disease cancer remains a local malady for a long time and shows no inclination to spread, or is prevented from doing so by the increased resistance offered by the surrounding tissues.

2. In such cases which are still sharply localized the cancer can undoubtedly be totally eradicated and thus permanently cured. Records of such cases in sufficient numbers have been noted, after carefully established microscopic diagnosis. One of the best known instances is that of the patient operated on by W. A. Freund (abdominal operation in 1878), who was exhibited at the Conference of Physicians in Breslau in 1904 as having been permanently cured after a period of 26 years. Every surgeon knows that this is by no means an isolated instance.

3. Absolute cure by the operation of removing the affected organ can only be assured when the disease is confined to the organ in question. Under certain fortunate conditions a permanent cure may even be effected by amputation of the cervix (Schroeder, Hofmeier, Byrnes).

4. As soon as the disease, even only as microscopically demonstrated, spreads beyond the compass of the organ originally affected, a recurrence is inevitable; from which we may argue that residual cancer cells remain active.

5. As these extensions can not be recognized by clinical examination unless they have already become palpable, it was the natural tendency of surgeons to remove as much as possible of the adjacent tissue. After having found by systematic examinations that the radiations of the cancer tended to follow the same direction as that followed by the lymph, the operation of removing the lymphatics was found to be necessary. In this way the modern radical operation for cancer has been developed, for which the operation for cancer of the breast is the type (Gussenbauer, v. Heidenhain). No modern surgeon would content himself by attempting to exterminate a cancer of the breast by merely removing the part only apparently affected; we are now convinced that such a proceeding would be totally inadequate. It is not only necessary to remove the whole breast, but

also to endeavor to remove the axillary glands whether they are enlarged or affected in any way or not, and even the fascia beneath.

It is, therefore, astonishing that gynecologists did not long before employ these methods in their own particular work. We only find occasional attempts at such operations made some years ago, for instance, Pawlik's attempt to remove through the vagina more of the adjacent connective pelvic tissue. Schuchardt's attempt to extend the vaginal method by using the paravaginal incision (analogous to the parasacral incision of Woelfler and E. Zuckerkandl) in cases of cancer of the rectum, so that it would be possible to have an increased accessibility to the parts, and also that a larger portion of the parametrial tissue might, if necessary, be removed.

By the expansion of Freund's old operation, which, on account of its first failures, had nearly fallen into oblivion, the removal of the regional pelvic glands was made possible and a method of operation on the uterus was devised, corresponding with the surgical principle just cited. Already Freund had himself repeatedly expanded his operation by purposely removing enlarged glands. This systematic development of such operations has only obtained during the last ten years or so. Attempts of this nature have been made simultaneously by many different operators, which was only a natural consequence. And thus we see that Clark, in America, was one of the first to adopt this new method, and with the greatest success; while, in Germany, Ries and Rumpf may be cited as the men who first deliberately and with design carried these principles into actual practice and reported on their experiences; then followed Wertheim, who since the year 1899 has worked untiringly, not only at the technical aspects of the question, but who also developed its scientific phases.

My own first operation of this character, without my being cognizant at that time of the work of my contemporaries, was in 1900 at Graz, after having attempted several times previously at Prague in difficult cases to perform total extirpation by the abdominal route. Of the followers of the up-to-date method of abdominal operation, who in the course of time by means of their publications have endeavored to propagate their ideas, the following names may be mentioned: Jacobs (Brussels), Mackenrodt (Berlin), Zweifel (Leipzig), Franz (Jena), Jonesku (Bukarest), Amann (Munich), Cullen (Baltimore), Doederlein (Tuebingen), Kroenig (Freiburg), Kleinhans (Prague), Morisani (Naples), v. Franqué (Prague), Polloson (Lyon), and others, while among other prominent gynecologists who uphold the vaginal method are Olshausen (Berlin), Chrobak (Vienna), Schauta (Vienna), Pinard (Paris), Pozzi (Paris), Delbet (Paris), Treub (Amsterdam), etc.[1]

STATUS OF THE ABDOMINAL OPERATION.

A very wide experience has proved to all who have interested themselves in this method of operation that the abdominal process must be looked on as the most rational, since it corresponds most nearly with the recognized surgical principles of the present day; and even its opponents have finally been obliged to admit that without doubt, in technical respects, more can be accomplished by this means than in any other way. The opponents have justly contended that this method, as was proved by the first series of these operations, is essentially more dangerous to the individual, the primary success being far inferior to that obtained by the vaginal operation; moreover, the justification of such an extensive and, therefore, dangerous remedy has been questioned.

The immediate mortality in the early stages of these operative attempts was very high, indeed; it has, however, improved materially, especially in the hands of certain operators, and a further improvement can certainly be anticipated. This improvement may be ascribed partially to improved operative technic due to increased experience as well as, I believe, to the fact that some operators have given up the extreme radical measures, such as the removal of all accessible glands, and have restricted themselves to a more or less extensive extirpation of the parametric tissue.

This reduction was most striking with Wertheim, who registered his series of cases in a most systematic manner, and who gave up this original radical method, recognizing that when the lymphatic glands were affected recurrence almost invariably took place, notwithstanding their removal. His example seems to have been followed by the majority of German operators, with the exception of Mackenrodt. What I have seen done by others in operative work in this direction was very different from what I had expected this operation to be. This explains the fact that the more recently published series of cases show no fatal results (Doederlein). My experience shows the reverse. Venturing on increasingly complicated cases, and striving to do the utmost in operating very radically, I found my mortality increasing as compared with my former results.

The most important phase of the question, namely, whether the permanent results obtainable by the abdominal method justify its greater primary danger compared with that of the vaginal method, has not yet been settled. At present we have only two reports in our literature covering a period of more than five years (Wertheim, Schindler); the latter comprises also a part of my own material. These reports differ greatly, the first being very favorable, and showing successes superior to any hitherto obtained by the vaginal method, and the latter being unfavorable. In the face of such diverse observations, it remains only to wait for further reports, and only when we have more comprehensive statistics at our disposal shall we be able to come to a definite conclusion on the subject.

As might have been expected, one fact has been proved already. There are certain limits even to the abdominal method, and, although we have extended the boundaries of operative work in this direction to the utmost, we must be prepared for disappointments. This is due to the fact that all of us are still obliged to operate on cases much too far advanced, cases in 50 per cent. of which the cancer has passed beyond the limits of the uterus (Brunet). Let us not overestimate the value of this method, therefore, but, on the other hand, let us not undervalue it, as we are still in the early stages of its development.

SIGNIFICANCE OF LYMPHATIC GLANDS.

In connection with the tendency to improve our operative methods, very active researches are being pursued as to the way in which cancer spreads, especially as to the frequency with which the adjacent parts of the pelvic connective tissue and the regional lymph glands are affected. We have now obtained by means of these investigations quite a different insight into these conditions from that which we hitherto had. As to the number, situation and variability of the visible glands and the distribution of the lymphatic system, the researches

of gynecologists have widened and enriched our knowledge hitherto gathered by the anatomists (Mascagni, Cruveilhier, Henle, Sappey, Poirier). Topographical plates have been published with which we all are now thoroughly familiar, but which were unknown to former generations of gynecologists (according to the researches of Peiser, Bruhns and Kroemer).

Recent microscopic investigations of the parametria (Kermauner, Kundrat, Kroemer, Pankow, Brunet) have shown that the very small lymphatic nodules, specially described by Lucas Championière, five or ten in number (Bruhns) actually exist. As a possible starting point for a recurrence they are of special interest. If they are swollen they may even be observed during the course of the operation. One of them is situated at the crossing point of the ureter and the uterine vessels. The large iliac vessels are entirely surrounded by a network of lymphatics. Numerous anastomoses make a clear survey difficult and render the tracing of the lymphatic circulation very complex. These numerous connections make it possible for a retrograde transportation to take place, if some of the glands are filled with cancerous material, and thus the disease may be spread to glands which are situated outside of the normal efferent lymph channels (for example, the inguinal glands). Especially worthy of remark is a peculiar swelling in certain cases, a hypertrophy of the glands (precancerous adenopathy) which has long been known, but whose existence has recently been confirmed. In other cases we have found very small glands which were already the seat of cancerous infiltration.

The mode of invasion of the cancer cells into the glands, as shown by the microscope, I assume to be known to you; the usual findings being a cancerous infiltration of the convex surface of the gland. It is comparatively rare to meet in the neighborhood of the glands vasa afferentia dilated by cancerous material. A not very rare occurrence is the appearance of peculiar tubular formations, lined with cylindrical epithelium, described by Ries, Kermauner and Wertheim, whose origin has nothing to do with cancer, as was erroneously supposed by certain other writers. Robert Meyer has proved that the same structures are to be met with in cadavers totally free from cancer. I have to add that in certain cases these cancerous bodies look so strikingly similar to the so-called germ centers that they have frequently been mistaken for them by inexperienced observers.

The most important clinical question, however, is doubtless the frequency with which the glands are affected in the progress of cancer. For this reason this question has been most ardently discussed, and has furnished the most powerful arguments in favor of the abdominal route. The subject has been worked at most assiduously. Investigations in German institutions by many thousands of serial sections indicate a frequency of 20 to 42 4/10 per cent. It would seem, therefore, that in one-third of the cases which were operated on the involvement of the glands has been demonstrated (Baisch, Brunet). Practically considered another equally important question is whether the glands are also affected when the parametria are still free from cancer. Baisch's latest statistics answer this question in the affirmative (for one-fifth to one-tenth of the cases). It would also seem to be a fact that cancer in its earliest stages may appear in the glands (Tiburtius, our own experience). This is contrary to our former doctrines.

Finally, it would be desirable to obtain by means of further investigations more certainty as to the order in which the different groups of glands are attacked and whether there exists an extension of the disease *per saltum* (Schauta).

Unfortunately our methods of clinical examination, by which the participation of the glands and parametria are to be determined, frequently leave us in the lurch. Clinically, free parametria have proved under the microscope to be affected by cancer, and *vice versa;* rigid parametria showed only inflammatory infiltration. Cases which, according to the condition found on bimanual examination appeared inoperable by the vaginal method, were successfully operated on abdominally. Accordingly, our conception as to the inoperability must be essentially altered (Pankow). The notion that we are able to distinguish by touch the changes in the pelvic glands, as has been claimed by various authors, must be dismissed. We are able to feel only decidedly enlarged groups of glands, especially those which lie close to the side of the iliac vessels. The size and hardness of the pelvic glands, however, are no longer, as we know, a decisive factor in the diagnosis. We were repeatedly able to prove that small glands of normal aspect which could not be felt even in the opened abdominal cavity after the peritoneum had been slit were filled with cancerous material and *vice versa.* Enlarged glands frequently showed, however, inflammatory or tubercular changes.

We have considered now, very briefly I admit, what has been accomplished up to the present day.

OUR WORK OF THE FUTURE.

In my opinion, aside from the great importance of an early diagnosis, which was mentioned in my introduction, future progress must be along two lines.

1. We must direct our efforts toward lessening the danger of the operation by resorting to it somewhat more often only in those cases which from the very beginning give promise of a favorable result, instead of continually attempting to extend the limits within which an operation is possible; for surgery will always be of no avail when the disease has extended beyond certain limits. Moreover, we may cherish the hope of reaching the desired goal in a number of different ways. Experience has sufficiently enlightened us as far as the causes of death are concerned; it has been occasioned either by the extended duration of the operation (shock, necrosis) or through infection (peritoneal cavity, connective tissue). Secondary affections, especially those brought about by complications through the urinary tract (injury of the bladder, the ureter and necrosis of the latter) have also in many instances been responsible for the unfavorable result. It can be justly assumed that to a certain extent the damaging factors mentioned can be considered lessened. On the other hand, the whole organism should be systematically and carefully prepared for as long a time as possible before the operation (improvement of the general condition, strengthening the heart function, correcting severe cases of anemia, proper diet, heart stimulants, administration of large quantities of liquids, salt infusions, avoidance of weakening the patient beforehand by intense purging). We should also strive to shorten as much as possible the duration of the narcosis (performance of all matters pertaining to preparation, disinfection, shaving and preliminary curetting under scopolamin and morphin, making use as much as possible of mixed narcosis).

The danger from infection should be eliminated up to a certain point by taking a corresponding amount of care in preparing the field of operation (cleansing by repeated douches, prolonged use of disinfectants, thoroughly curretting and cauterizing just before the operation, especially in those cases where a high state of decomposition has already set in). Whether the prophylactic administration of nucleic acid (Mikulicz) and serum injections (J. Veit) have any value, are matters which can only be established in the future.

We can minimize the loss of blood by using systematically, preliminary ligature of the supplying vessels. The bladder should also be dissected away as carefully as possible in order to obviate too extensive injury to the numerous veins located at the base of the bladder.

In late years we have learned in many instances how to overcome these obstacles arising during the operation from complications with the ureter, and resulting from injury to this organ, especially when the ureter becomes necrotic through being deprived of its supplying vessels during its dissection from cancerous infiltration. We have made it a principle to allow the ureter to remain in connection with the posterior layer of the broad ligament, and to denude it as little as possible from its enveloping cell tissue. Whereas, when the ureter passes directly through the cancerous mass it is better to resect it entirely and to implant it in the bladder. The recent advances made in surgery of the ureter permit us to undertake more easily such procedures.

Complications with the bladder itself are especially troublesome, especially in those cases in which the dissection deprives the bladder wall of its muscular layer and in that way seriously impairs its function. This makes it impossible for the patient to pass the urine voluntarily, necessitates long catheterization and thus brings about unavoidably the development of a persistent cystitis. This is dangerous to this extent, as we have often seen that ascending infective processes have followed, and finally proved fatal. All suggestions, such as reefing the bladder, covering it with the peritoneum, etc., have not proved successful in every case. Great care in the dissection, careful suturing of the incision, covering with peritoneum and careful drainage, possibly even more extensive resection, are the means employed to make the complication as harmless as possible.

In addition to the avoidance of contact infection during the operation, the complete closure of the operative area from the peritoneal cavity by a suture of the serosa, and a well-prepared drainage into the vagina contribute to an easy recovery. As a usual thing we do not have at our command an area of serosa sufficiently movable on the posterior wall of the pelvis; we then lay the sigmoid flexure, as far as possible in its normal relations, over the region of the wound and fix it to the posterior wall of the bladder. We now use strips of iodoform gauze, as formerly, for drainage. The spaces in the parametrium arising from the wound are tamponed with this and the ends are conducted into the vagina. We regard this as a provisional dressing which, moreover in the beginning, absorbs the blood that oozes out, and the secretions from the wound.

I will not in this place go into further details regarding the technic of the operative procedure itself. Whether the peritoneal cavity should be incised longitudinally or transversely seems to me irrelevant in the discussion. I also regard the provisional closure of the operative field by peritoneal flaps during the operation as unessential.

To get results that are permanent I myself adhere closely to as radical a procedure as possible, so long as the question of the glands is not definitely settled. Besides we must strive especially to remove as extensive a part as possible of the upper portion of the vagina. The connective tissue of the pelvis should be removed, especially in those parts which correspond to the zones of thickening described by me and in which are located the vessels leading to and from the uterus, up to a point beyond the crossing-point of the ureter. In cases in which it can be done these are to be dissected out along with the uterus. It is here that we usually meet with greater difficulties when there is fixation and extension of the malady. Even the sacro-uterine ligaments should be removed as completely as possible. As formerly, I now excise as much of the gland tissue as I can reach, regardless of whether I find it involved or not, especially that situated at the point where the iliac vessels divide. Moreover, I excise those located on the outer part of these vessels and finally those which are designated as sacral, because I am not thoroughly convinced that these measures are of no value in spite of my failure to get permanent results in my first cases (Schindler). The extirpation of the glands is difficult and dangerous when there are numerous adhesions to the outer coating of the large vessels occasioned by inflammatory changes, or as is also the case in cancer. Moreover, injury of the iliac vein is not necessarily fatal. If the lateral ligature is not successful, we are forced to ligate the vessel completely. We have never seen any dangerous sequel arising from ligating an artery or vein when the ligature had been placed below the dividing point of the common iliac vessels.

Other things which it appears to me are to be expected of the future are the following:

Cases of cancer must be examined more carefully as regards their morphologic characteristics and they must be classified according to their clinical values. By this we understand not only the value as to point of origin and histologic structure, but also as to intensity of proliferation and character of the extension. In our investigations undertaken with a view to improving our knowledge by studying the histology of sections through the entire organ and bringing these results into relation with the involvements found in the parametrium and glands, we think a beginning has been made that is not without promise. The results thus far of these investigations in 22 cases of carcinoma of the cervix are not completed.

They show us, however, a great variation in form and manner of extension; they teach us already how difficult it is to decide even by means of the microscope on the real point of origin even in incipient cases. Thus we found it possible by adhering strictly to the postulates for the separation of carcinoma of the vaginal portion and of the cervix, to carry out such a separation exactly only in three of the 22 cases. The same applies also to the central nodes described by Ruge and Veit. A transverse section may often lead us to think erroneously that such a node exists. At the present time it is necessary to make serial section to prove exactly the central origin and the complete isolation of these structures. We need not be surprised, therefore, when authors differ in opinion on this subject. On the one hand, Leopold recognizes only cancer of the vaginal portion, while Amann,

for example, designates the mucosa of the cervix as a very frequent point of origin. In this connection we must also take into consideration those changes frequently met with, which we call ectropion and erosion and from which the neoplasm often arises. Theoretically, a cancer originating from the ectropion must, strictly speaking, be regarded as one of the cervix. If, in the microscopic examination, there is difficulty in classifying the primary site, we may the more certainly expect false classification if we depend on macroscopic descripton alone, as has been customary. For this reason, those authors who do not insist on this sharp differentiation take up to the present date the best course.

From a histologic point of view the designation squamous celled carcinoma and cylindrical celled carcinoma is not sufficient, but we must further add the round-celled carcinoma and distinguish in all these cases between uniform and polymorphous varieties. Cancer can arise from surface epithelium (vaginal portion, cervix—superficial cell layer, basal cells) and from the glands (cervix, body, erosion glands), also from Gaertner's duct (Robert Meyer). But even cancers that arise from surface epithelium can assume a glandular character (Krompecher). It is not necessary that typical cancer of the cervix appear always as cylindrical-celled carcinoma (glandular, small alveolar, medullary), but it may appear after preceding metaplasia of the epithelium, which plays a prominent part, even as genuine epithelial cancer. As such they have been found even in the corpus; here especially the adenocarcinoma is prominent.

Winter's classification of everting and inverting forms is very useful. The former should be divided into polypoid proliferations of the cervix and into genuine everting tumors of the surface of the vaginal portion (cauliflower); the latter, the inverting type (cervical-carcinoma and nodes) should be divided into those which proliferate from below upward and those which proliferate from above downward. These usually soon break down and form the well-known crater-like cavities or ulcerating forms. According to the size of the processes of the cancer, we can differentiate large and small alveoli and, according to their form, those which have round, irregular, finger-like alveoli, and those in which the alveoli are distinctly branched. The latter we may designate as plexiform. These have great similarity to lymphangio-endothelioma. Further, we can recommend a separation into glandular (carcinoma adenoides) and simple (carcinoma simplex), according to the arrangement of the alveoli.

The investigations which we have made thus far do not permit us as yet to establish a true connection between cell-form and point of origin, between size of alveoli and form. We have found, however, that in nearly 25 per cent. of the cases collum-carcinoma did not stop at the internal os. It is not always possible to distinguish this extension upward microscopically. Frequently the limiting zone is sharp and characterized by an infiltration of round cells (eosinophile leucocytes, giant cells); in other cases the carcinoma penetrates the healthy corpus tissue with blunt finger-like processes or again these may be very narrow and contain only single cells. Usually in cases of this kind the mucous membrane remains quite intact and shows only inflammatory changes. Consequently, as we see, the morphology of uterine carcinoma is still by no means so completely settled as we have believed it to be, and there yet remains much to be done in this direction. At all events what we require in the future is a far more exact examination of the specimen than we have had in the past. For statistical purposes we must eliminate corpus-carcinoma, sarcoma, endothelioma and malignant adenoma. For my part I have not yet settled the question as to the unicentric or multicentric origin.

Our knowledge as to the common occurrence of different forms in one specimen is not well enough established at present for us to make a definite clinical prognosis from the specimen excised for diagnosis, and come to a conclusion regarding the mode of extension.

I do not wish here to take up the difficulties which arise when a diagnosis is made from a test excision and in the early stages of the disease, as that would lead us too far.

All investigations which have thus far been undertaken with a view to distinguish the clinical value of uterine carcinoma by histologic structure have led to no result; but I would not yet abandon such investigations, for we have, as I believe, only started in that direction.

As to the malignancy of the growths which have been mentioned here we are accustomed to group together things which are essentially quite different. There are certain factors which determine the malignancy: energy of growth of the carcinoma cells themselves, structure and resistance of the matrix and of the adjacent tissues, abundance of preformed tissue-spaces, extent of the lymph spaces, activity of the lymph stream and the like. Spongy and succulent tissue and vascularity favor extension. The rapid progress in the cases of young and pregnant women is sufficiently well known. All slowly growing, scirrhus forms appear relatively favorable. Again, others are like the most malignant sarcomata, and the earliest operation is speedily followed by recurrence (abundance of cells, infiltrating growth).

I consider our knowledge of the mode of extension into the connective tissue adjacent to the uterus as not yet settled. A further histologic investigation of the parametrium in cases of carcinoma is to be desired. Our idea as to the forms which show a special tendency to extend into the neighboring connective tissue should be quite clear. Does the carcinoma develop regularly *en masse;* when does it choose principally the lymph channels; why do we so rarely meet lymph vessels filled with carcinoma? We have been astonished in our studies to find that the superficial muscular layers of the uterus can resist the invasion of the neoplasm so long. In the case of isolated nodes in the parametrium we must differentiate between a metastasis or a continuous growth by means of serial sections. Does not the minuteness of the carcinoma cells, like those of endothelioma, render their transportation especially easy?

FURTHER STUDY OF RECURRENCE.

In general we have now come to definite conclusions regarding kinds and causes of recurrence, since Thiersch has shown us the way. We must as a general rule take into consideration a local and regional recurrence. Recurrence as a result of implantation is at present no longer considered to have the importance formerly attached to it. It is an important fact that encapsulated cancer nests can remain latent for a long time, only to develop after the expiration of many years (10 to 12 years) and again become active as a result of irritation. We also possess very good records in regard to the time which elapses before there is a recurrence of uterine carcinoma. We need only, as it seems to me, a further investigation of glandular recurrence.

Studies on the cadavers of those who have died from

carcinoma have thrown light on the frequency and the location of the metastasis in other organs as well as in the glands (Wagner, Williams, Schauta). We need to study still further the frequency with which the glands participate in the recurrence. On the one hand this can be carried on in the cases of those who have just died after operation for carcinoma, and on the other hand in secondary operations. The knowledge gained by the latter especially, as has been suggested by me, I believe to be of the utmost value in deciding whether the glands should be extirpated or not. We certainly should, as I have said at Kiel, possess accurate data as to the site, mode of extension, condition of the parametrium and the glands at the primary operation if our knowledge based on further observations made in operations for recurrence is to be further enlarged. I myself described 7 cases at that time which showed what we may learn in these operations and what can be done therapeutically. The technic was certainly difficult, owing to the immobility of the recurring tumor. We have learned, moreover, that recurrences in the glands are far more unfavorable than those in the scar tissue, which latter are also more easily dealt with.

During protracted operations after extensive resection of the ureters, we have repeatedly made a simple ligature of them and have thus rendered the kidney atrophic without any disadvantage to the patient. (For particulars see *Verhandlung der Deutschen Gesellschaft f. Gynækologie,* Bd. 11). Permit me, on the strength of my own experience, to suggest that you do as I have done and again resort to operative measures in every case of recurrence which has not gone too far. I hope this will be fruitful of good results in many ways.

Finally we must learn more of the fate of transported carcinoma cells. Recent pathologic investigations show that transportation to certain organs (lungs) frequently is brought about by the blood circulation. These microscopic foci, however, are regularly destroyed (capillary emboli of the lungs, see M. B. Schmidt, Strassburg). It seems to me that special conditions are necessary before they become persistent and develop into a metastatic tumor. We may inquire, therefore, whether small microscopic foci which have been transported to the glands do not become extinct when they are not followed by others. We have no reliable proofs of this hypothesis as yet. We have very rarely observed carcinomatous thrombi in the blood vessels in our sections through the parametrium. As a general rule, penetration into the latter takes place only in very advanced stages of uterine carcinoma, as has been shown particularly by the investigations of Recklinghausen and Goldmann.

In conclusion, I would like to add to my initial remarks, which are doubtless accepted by you all, the following suggestions of my own as topics for discussion:

1. The abdominal operation is the most rational for the treatment of carcinoma of the cervix, since by its employment the most extensive removal of the parametric tissue is made possible.

2. The view that the glands are involved only in the later stages of the disease must be dismissed, and the fact that we sometimes find participation of the glands in the very early stages of uterine cancer has convinced me of the necessity of removing the glands in all cases, as I have always done.

3. Based on my own experience, I urgently advise it as our duty to operate on cases of recurrence which have not advanced too far for such procedures. On this account alone it is important to re-examine at frequent intervals (every eight weeks) after the primary operation.

You see, gentlemen, there is no end of work ahead of us, no end of questions to be solved by the practicing surgeon as well as by the pathologist.

Our distinguished above cited, Professor Ehrlich, speaking of the assault against cancer, has likened it to the siege of Port Arthur. Through his endeavors he feels that, the outer breastworks having been taken, the central fort is certain to be captured in the course of time. Yet, in spite of Ehrlich's prophecy, we medical men can not sit idly by and wait until by other means the victory is ours. I suggest that it will take a somewhat longer time than the capture of Port Arthur.

Therefore, let us, surgeons of all nations, unite in making strenuous efforts in combating this most dreaded foe of mankind.

DISCUSSION

ON PAPERS OF DRS. CULLEN, CLARK, RIES AND VON ROSTHORN.

[DR. THOMAS S. CULLEN, Baltimore, when called on to read his paper on "The Pathology of Uterine Cancer," said that it had been his good fortune to cross the ocean with Geheimrath von Rosthorn, the guest of the Section, the week preceding; and that Professor von Rosthorn had given him his address to peruse. He declared that the admirable paper which they were to hear was such a thorough survey of the subject that little additional remained to be said. Dr. Cullen accordingly confined his remarks to a brief description of the normal histology of the uterus, to the various varieties of cancer that may develop in the uterus, and to the different modes of extension of uterine cancer.]

DR. J. F. W. ROSS, Toronto, Canada, regretted that the retrospect of his own individual work for the mitigation of the sufferings caused by cancer of the uterus is not satisfactory. Though the surgeon is able to diagnose the condition easily, and to remove the disease early, yet in the most favorable cases a return of the disease is very liable to occur, and very frequently does occur. Unfortunately it is not as yet known exactly what cancer is, except that it is a tendency for normal cell development to burst its bounds for some unaccountable reason and become an abnormal cell development, at first local, then becoming disseminated. In many cases the disease affects every organ of the body, becoming as widespread as a miliary tuberculosis. In many cases it seems to occur in those whose relatives have suffered from the same disease, but in very many cases no such hereditary tendency can be traced. Until we have a better understanding of the exact cause of the disease, medical and surgical efforts to cure it will be of little effect. If discovered early the whole organ should be removed, but such early removal does not by any means cure the disease. Dr. Ross has removed the uterus for adenocarcinoma of the body of the organ when the disease was apparently in its earliest infancy, when the small growth was no larger than the tip of the little finger, when the uterus apparently held all the cancer present, and yet he has seen the woman die from a recurrence of the disease within a year. He has removed the uterus for carcinoma of the cervix when the disease was apparently in its earliest infancy and has seen the growth recur within a few months, the patient succumbing to the disease a few months later. Surely, he said, this is not encouraging. There has been no part of his work in which he has obtained such poor satisfaction. If this result is so unsatisfying in such cases, surely the results from a more radical and more dangerous operation will be equally disappointing as to the return of the disease.

If the growth can not be efficiently dealt with in its very incipiency, is it for one moment to be supposed, he said, that it can be dealt with efficiently by any similar or more exhaustive treatment in its later stages? He has long since refused to touch the advanced cases. He has used caustics; used the curette, even the abdominal cavity has been entered

by the curette, but has found such procedures not only useless, but positively harmful. The growth seemed to be stimulated to grow faster. He has tried the *x*-rays and has not been satisfied with the results. The mental effect, he thinks, may have been good, but the local effect did not satisfy him. The disease proceeded in the glands in spite of any such treatment. When at last it is found that surgical as well as non-surgical measures have failed, Dr. Ross, for one, feels that again we must fall back on the physician, on the pathologist, on the physiologic chemist, for a solution of the difficulty. Surgeons have made every use of the knowledge of the most advanced pathologists; they have availed themselves of the accurate observations of the wide-awake family physicians, and yet they have to acknowledge a great measure of defeat.

DR. M. I. ROSENTHAL, Ft. Wayne, Ind., said that the status of cancer is to-day the same as was that of tuberculosis before Koch's paper was written in 1882, i. e., it is, the cause of cancer is unknown, but certain of its characteristics are known. It is known to be infectious; stitch implantations are not an uncommon occurrence. Cancer is known to spread through the lymph channels from the seat of the primary infection. Carcinomata vary in malignancy. Some carcinomata grow rapidly and early produce metastasis. These are what may be called the malignant variety, while other carcinomata grow slowly and only later produce metastasis. These may be termed the benign carcinomata, i. e., they are comparatively benign, and hence would require less extensive and less dangerous surgical interference. It is known that the malignancy or benignancy of the cancer is not so much dependent on the cell structure or the character of the cells, as on the organ or part of the organ in which it has its origin. Cancer of the fundus of the uterus is of the benign variety, as is the early cancer of the vaginal portion of the cervix, while that of the uterine portion is of the malignant type.

Baisch reports that in 120 abdominal operations for uterine cancer at the Tübinger Frauenklinic operable cases showed no pelvic glandular involvements in cancer of the fundus. Thirty per cent. of the cases of cervical cancers had metastatic involvements, while of those cases where the uterine portion was the seat of the disease the parametrium was found to be involved three times more frequently than in cancer of the vaginal portion.

Re-occurrence of cancer in the vaginal scar is the rule after vaginal hysterectomy, which, Dr. Rosenthal thinks, indicates that the operation of choice is the abdominal radical operation, with the ureters in full view, with broad excision through healthy structure. Recurrence in the vaginal scar is the exception in the radical operation. The important structures are protected from accidental injury while they also may be resected deliberately, if necessary, so that carcinomatous areas may be treated, because of their infectiousness, with the same respect which is shown to suppurating areas. The fact remains, however, that the mortality of the radical operation is greater than that of the vaginal operation, hence the vaginal operation may be resorted to in the less malignant of the cancers of the uterus, while the radical abdominal operation should be performed in advanced cancers and in all cancers of the uterine portion. He thinks that so long as operators return next day anxiously inquiring for signs of injury to the ureters, when they have done anything like a proper excision by the vaginal route, so long will the vaginal operation remain only an imperfect and incomplete excision.

DR. C. P. NOBLE, Philadelphia, stated that the profession must accept the responsibility for the popular belief that cancer is incurable, and that the menopause is accompanied by discharges. The laity should be taught that all women who have hemorrhagic or other discharges after 30 should be sent to a skilled gynecologist for diagnosis in order that the question whether or not cancer is present may be decided. The average family doctor can not make this diagnosis at an early period. The next question, he said, is the one of radical operation. This operation, as presented by von Rosthorn, is the logical operation. If the question were to be decided on *a priori* grounds, it would be accepted at once. Three years ago Dr. Noble had the privilege of seeing Prof. von Rosthorn do the radical operation. In one hour and five minutes the operation was completed without any appreciable loss of blood. The abdomen was closed by the tier method. Dr. Noble adopted this operation when it was brought out by Clark and Werder. With his ability as an operator it was a serious operation. The primary mortality was high and he had recurrences; therefore, he abandoned it. The studies of the secondary involvement of the glands by Schauta and also by Wertheim tend to throw discredit on the operation; and another practical fact, that it does not accomplish what it sets out to do, namely, remove the disease, is of more weight in leading him to this conclusion. Much connective tissue is left behind the bladder and in front of the rectum; and the so-called radical and complete operation is necessarily incomplete. Since then he has adopted a modified operation. It must not be forgotten that no man has had as good results as Dr. John Byrne, of Brooklyn, who used the electric cautery. Therefore, Dr. Noble has been driven to the conclusion that the best thing to do is an abdominal hysterectomy, to lay bare the ureters and to isolate them, and then to remove everything with the electrothermic clamp below and external to the ureters.

DR. J. W. BOVÉE, Washington, D. C., referred to a paper he published in 1890 in which he reported fifteen cases that he had operated on by this radical method because he had combined a part of the method of Ries, of removing all the glands, and he removed the whole of the vagina and pushed the specimen down through the vulva. He still performs that operation in all the early cases. He thinks that vaginal hysterectomy is inadvisable in any case of cancer of the uterus, and the earlier the stage the more radical should be the operation. In those cases in which he does not feel fairly confident, he resorts only to the curette and to the galvanocautery. In 1888 he operated on a case of cancer in the broad ligament, with nodules surrounding the ureter. He resected the two lower inches of the ureter with the cancerous mass. He was assured at the time that there was no invasion of the ureter, but that the nodules surrounding the ureter were cancerous. This observation has since been corroborated, that is, that carcinoma does not involve the ureter, though it may involve the connective tissue surrounding it.

Dr. Bovée does not believe it to be wise to resect or exsect the bladder and implant the ureter. He would prefer doing nothing to the ureter, as is done where the bladder is extirpated, leaving a fistula passing out through the vulva. He does not employ any preliminary vaginal treatment in these cases. His work is all done from above. The ureter is isolated to a certain extent by passing a suture around it to lift it up. A little piece of gauze sufficient to fill the space is stitched to some portion of the tissue to be removed, the peritoneal wall is closed, and the patient is placed in Simon's position when the rest of the operation is done. The gauze comes out with the specimen. There is less tax to the patient's strength by not resorting to curetting. Dr. Bovée invariably ligates the internal iliac artery, and in that way lessens hemorrhage. He has never had any sloughing, and it gives a clear field for operation. As to implantation, he is not sure of its existence. He has seen cancer in the vaginal wall two inches away from the carcinomatous cervix, with apparently healthy tissue intervening.

DR. J. G. CLARK, Philadelphia, said that after a careful review of his experience he very reluctantly has reached the conclusion that more is lost than is gained in the radical operation when the glands are painstakingly extirpated, and that to remove here and there a palpably enlarged gland will certainly not promote the patient's interests so far as a radical cure is concerned. His own rule, therefore, is to remove one or more glands for microscopic examination, provided they are palpably enlarged and easily accessible. If metastasis is found the prognosis inevitably is bad. If, he said, we are not to look for improvement in ultimate results from the radical operation with the removal of the glands, from what operative procedure may the greatest good be gained? Shall it be a high amputation of the cervix, either with the knife or actual cautery, a simple vaginal hysterectomy, a Schuckart's vaginal hysterectomy facilitated by a paravaginal incision, or a radical operation of Wertheim's. Of these various methods he ad-

heres to the abdominal. This he carries out most radically with the actual cautery, so far as the vagina and parametrium are concerned, and in this he reverts to the principle so strongly insisted on by Russell after his study of forty-eight vaginal hysterectomies in the Johns Hopkins Hospital. He found almost invariably that there were recurrences at the site of the vaginal scar, and not in more or less widely remote metastatic areas. The rule, therefore, by which Dr. Clark works is to remove all possible tissue in the vicinity of the primary site of the growth, using the cautery rather than the knife. In general, the principles laid down in Wertheim's latest publications are followed, which consist in the removal of a considerable cuff of the vagina with the uterus, and as much parametrium as is possible, but not prolonging the operation by a dissection of the glands. In acting on this principle Dr. Clark is influenced by the fact that, as yet, no operation has saved 50 per cent. of cases, and that of Wertheim's operable cases, 59 per cent. showed no glandular metastasis, while even in the far advanced cases of Schauta there were 43 per cent. free of lymphatic involvement, and that of the remainder which were involved only 13 per cent. could have had their chances of a more radical cure enhanced by removal of the glands. This small percentage of possibility is at least equalized or more than offset by the much greater immediate mortality of the very radical operation.

DR. G. BETTON MASSEY, Philadelphia, protested against curetting as being a most unscientific method of treatment for a disease supposed to be parasitic. He regards it as dangerous to allow more than five minutes to pass between curetting and proceeding to the destruction of that growth. The veins and lymphatics are ever aspirating the juices of these wounds. The metastases that appear next year may have been due to the delay caused between the curetting and the operation. He believes that all finally will come to agree with Dr. Noble and Dr. Bovée as to the inapplicability of vaginal cutting operations in any case, and the far greater value of cauterization, though he prefers electro-chemical cauterization. By the cataphoric diffusion of mercury and zinc he gets some excellent results. He can not report a long series of cases of cures by that method because he has seen only three case that were operable. Two of these were cured; one is living and one died after seven years from tuberculosis. The method has been confined almost entirely to inoperable cancer of the cervix and it has been an invaluable palliative. He urged surgeons to take up this method, especially those who know the intolerable stench that comes from even the electro-thermic operation. Cataphoric sterilization controls the odor completely.

DR. E. W. CUSHING, Boston, said that it is nineteen years since August Martin came to Boston and performed the first operations in this country for vaginal hysterectomy. In 1888, one year later, Dr. Cushing reported 21 cases, with 2 deaths. He protested against the pessimism of Dr. Ross because some of these patients are living now. When abdominal operations became better understood, and the modern technic of abdominal hysterectomy was developed, he adopted the most natural procedure, which was to first open the abdomen and tie all the vessels, and separate the uterus as far as possible from above. Then, after closing the abdomen, to finish the operation by vaginal hysterectomy. This he still finds a very good method of operating, since it avoids the danger of infection of the abdominal cavity, and particularly the risk of inoculating the cut surfaces of the vagina with the juices of the cancer, which is the principal reason for recurrences. When all connections have been tied off and severed from above, the uterus can easily be pulled down and out, and the vagina severed, so that a finished operation is thus possible. This method is easier of performance than that described by Werder, which is very difficult in case of a large uterus.

In regard to recurrences he previously reported a case, he said, in which abdominal hysterectomy had been performed by another surgeon, and after a few months there was a manifest recurrence on each side, at the angle of the vault of the vagina. On opening the abdomen there was found on each side a tract of cancerous infection in the broad ligament, and the glands at the junction of the iliac arteries were enlarged, but not adherent. The glands, the cancerous tracts, and the vault of the vagina were thoroughly removed from above, and the patient is now alive and well four years after the original operation.

DR. H. J. BOLDT, New York, believes that an abdominal radical operation is the best theoretically, but there is some practical experience to back the opinion that a vaginal operation may result in a complete cure without recurrence. He opened a woman last week whom he had operated on thirteen years ago for cancer of the cervix, and there was no sign of recurrence. It is known that recurrence occurs more frequently in young patients, but even in young patients the disease may last a number of years before fatal termination. He had a woman under observation for seven years without fatal termination. A very important point, he said, was made by Dr. von Rosthorn, and that is that very much depends on the matrix. That is true. To make a diagnosis of this is impossible. Other points have been mentioned. In this country the anesthetic is too prolonged. A patient should be prepared for operation before the anesthetic is begun. Necrosis of the ureter after abdominal operations does occur. He has had three cases. This may be due to a lack of proper technic, but fortunately only one of the women had to have one of the kidneys removed. Patients should be re-examined at frequent intervals after operation. He has them return at intervals of four weeks for two years.

PROF. A. DÜHRSSEN, Berlin, Germany, believes that pregnant women who are exhausted by hemorrhage, can not stand ventral extirpation of the uterus very well. In all other cases he prefers the abdominal route, and believes that by Mackenrodt's method it is possible to operate radically. Dr. Dührssen extirpates the whole connective tissue to such an extent that in several cases he separated the rectum 10 centimeters from its adhesions to the pelvic wall, and there was no bad result, except a diarrhea. He believes that by taking out the connective tissue to such an extent, it is easy to take away all the glands. There is nothing left if the connective tissue is extirpated radically. In 1899, he said he published some papers in which he emphasized the necessity of spreading the knowledge about uterine cancer among the laity, and he tried to win over parliament and the minister, but they declined. He, therefore, wrote a brochure on the subject, which was quoted by the daily press and in several publications for women, and in this way some good results were obtained.

DR. J. H. CARSTENS, Detroit, said that Professor Von Rosthorn made that point that cancer is at some time a local disease, and if that is true the diagnosis ought to be made early. If all lacerated cervices were subjected to an examination, such a diagnosis could often be made. No man, he said, can remove all the glands because he does not know where they all are. Cancer is not only in the lymphatics, but it is also in the surrounding loose cellular tissue. In a great many cases the diaphragm lymphatics are involved and no others. He does not believe that abdominal section is a justifiable operation because, although it prolongs the lives of a few women, it shortens the lives of many. To advanced cases, the old operation of removing the cancerous tissue and cauterizing will make the patient comfortable for four or five years, very often.

DR. PHILANDER HARRIS, Paterson, N. J., said he performed his first vaginal hysterectomy in November, 1897, for unmistakable cancer of the uterus. The woman is still living and in excellent health. He has since removed the uterus by the vaginal route in more than one hundred cases. Most of these were cancerous. Some of the cancer cases are still living, one or two of them are showing no signs of return, although several years have elapsed since operation. The removal of the cancerous uterus by the suprapubic route with extensive dissections, has afforded very much higher mortality than the operation of hysterectomy by the vaginal route.

DR. THOMAS S. CULLEN said that Dr. Kelly and his associates are all in accord that the abdominal method is the only satisfactory and scientific one to employ, except when the patient is exceptionally stout. The abdominal operation for cancer is one of the most difficult in the whole range of surgery. Not only should the patient be strengthened as much as possible, but the surgeon should also be in the best of trim. It should be the first operation for the day and should be

performed early in the day before the surgeon is in the least fatigued by other duties.

DR. E. RIES, Chicago, said that as long as men say, "I had a patient that lived five years," and say nothing about the hundred that are dead, no progress can be made. Dr. Byrnes, of Brooklyn, had few recurrences and a man in St. Louis reported that all his cases are well. He asked what could be done with such statistics. It is agreed from all that is known on the pathology of cancer, that vaginal hysterectomy, in a very few cases, is able to get away all the carcinomatous tissue, but that abdominal hysterectomy, with the radical method which he has proposed, is better. But if carcinoma progresses from the uterus to the liver, the removal of the uterus does not remove it from the liver. Such cases should not be operated on. This operation is not a panacea. It will remove more than the old operation, but that is all. It is true the operation is dangerous. Is carcinoma less dangerous? Surgeons claim that they save so many patients by modern radical operation. What becomes of the cases? Have they been saved? Dr. Ries asked that they be hunted up five years after the operation and then reported on.

PROF. A. VON ROSTHORN, Heidelberg, Germany, said that usually, in teaching his pupils about carcinoma uteri, he tells them a story. When he was assistant to Chrobak, in Vienna, two patients were brought in. One was a young, healthy looking woman, and, on examination, she had a little cauliflower growth on the anterior lip of the vaginal portion. It was a beautiful case for vaginal extirpation. It was taken out in twenty minutes and in two weeks the patient left the hospital. The same day a woman, 70 years old, came in with a totally inoperable case of carcinoma with immovable uterus. There was nothing to be done. She was, however, curetted. This woman lived two years longer than the young woman with the simple little cauliflower growth. Jacobs, of Brussels, in 80 cases he cites, saw none who lived longer than two years. In some cases it is possible to get it all out and in others it is not, and there is a recurrence in both. There is nothing certain. If this operation is done in initial cases, we will get better and permanent results. The mortality is high. Jacobs, of Brussels, has only 6.3 per cent.; his first series was 9.1 per cent.; Zweifel, 9.6 per cent. One man, he said, will advise operation only when the cancer is localized in a small spot, and with a restricted operation he may get good results. Olshausen has good results, 40 per cent. with the vaginal operation. He gets all good cases in the initial stage. There are limits to the abdominal operation, but present knowledge may change in the course of a few years. Sometimes a whole breast and the glands are removed and recurrences take place; then, again, only a little is removed, and no recurrence occurs. It is wrong, he said, to say that if the cancer is localized a vaginal operation should be done, and if it has gone farther, an abdominal operation is indicated. According to our present teaching the abdominal method is the correct one.

As to curettement and ligation of the ureter. Curetting is done as a preparatory stage, where the tissue is broken down, and even Wertheim does it now. It is necessary to have a perfect field, as clean as possible. It is only palliative at best, but it reduces hemorrhage and lessens the bad discharge, but nothing else. Physiologists have taught that a ligation of the ureter can be done, and if the other kidney is in good working order, there is nothing to fear. Dr. von Rosthorn did it only in those cases in which he had to do an operation lasting two hours, and the patient was exhausted. Seeing that atrophy followed without disturbance he did it again in several other cases and he has seen no bad results from its use. He would not, however, recommend it as a regular procedure. Schauta's examinations have been done on cancer cadavers where everything was full of cancer, and he found all the glands invaded with cancer. He thinks that if the patients who die after an operation for carcinoma in the primary state were examined it would be ascertained whether or not it is reasonable to take out the glands.

Naming of Carbon Compounds.—The ending ose indicates a sugar, thus lactose, glucose, fructose, sucrose, etc.—*Pharm. Rev.*, August, 1906.

FIBROID TUMORS OF THE UTERUS.

A STUDY OF THE DEGENERATIONS AND COMPLICATIONS IN TWENTY-TWO HUNDRED AND SEVENTY-FOUR CASES.† ALSO A STUDY OF FORTY-EIGHT HUNDRED AND EIGHTY CONSECUTIVE CASES IN THEIR RELATION TO CARCINOMA AND SARCOMA OF THE UTERUS.*

CHARLES P. NOBLE, M.D.
Surgeon-in-Chief, Kensington Hospital for Women, Gynecologist to the Stetson Hospital.
PHILADELPHIA.

As early as 1894, as a result of the observation of the clinical history of women suffering from fibroid tumors, I became convinced of the fallacy of the classical teachings concerning the natural history of these tumors. At that time I had operated on but thirty women suffering from fibroid tumors. In the conclusion of a paper read in 1894,[1] I said:

> The comparatively small number of operations which I have done for fibroid tumors is evidence of the fact that for a long time I was profoundly influenced in my practice by the classical teaching concerning this disease. It was not until my own observations convinced me of the fallacies of the past teaching that I felt justified in resorting to the removal of fibroid tumors except in the worst class of cases. I am coming more and more to believe, however, that it is the part of wisdom to remove fibroid tumors which are producing symptoms as soon as they are discovered. In other words, that the principle of early operation which is now generally accepted with reference to ovarian tumors is equally applicable in the treatment of fibroid tumors.

During the past twelve years every phase of the subject of fibroid tumors of the uterus has engaged my attention and diligent study, and I desire to present the results of my own experience with the subject and my study of its literature.

In 1897, sixty-six hysteromyomectomies had been performed.[2] The degenerations and complications present in these 66 women were tabulated and analyzed, and the conclusion was drawn that 20 of the women, or about 30 per cent., would have died as a result of degeneration in the tumor itself or of the complicating diseases of the uterus, the tubes or the ovaries.

In 1901, the number of patients operated on for fibromyoma of the uterus had increased to 218. These cases were tabulated, analyzed, and studied in a paper read before the British Gynecological Society.[3] The complications and degenerations were divided into three classes: (1) Those which would lead to the death of the patient; (2) those threatening the life of the patient; and (3) those predisposing to more or less permanent invalidism of the patient. Of the 218 women operated on, it was estimated that 66, or 30 per cent., would have died from the complications and degenerations present; that the lives of 25 were threatened, and that in 30 others the patients were suffering from more or less permanent invalidism.

In this connection, the idea was developed that the proper method of studying the real nature of fibroid tumors was to study a consecutive series of cases, care-

† Including 337 cases of the writer's.

* Read in the Section on Obstetrics and Diseases of Women of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

1. Noble: "Uterine Fibroids," Med. and Surg. Reporter, June 2, 1894.

2. Noble: "The Development and the Present Status of Hysterectomy for Fibromyomata," Trans. Amer. Gyn. Soc., 1897.

3. Noble: "The Complications and Degenerations of Fibroid Tumors of the Uterus as Bearing on the Treatment of These Growths," Brit. Gyn. Jour., November, 1901.

fully noting the natural history of the tumors, the degenerations present in the tumor itself, and the complications present in the uterus, in the adnexa and in other organs. It was held that in this way only a true estimate of the dangers of fibroid tumors could be reached. Reference was made to the only paper previously published in any way bearing on the subject, in which the complications of fibroid tumors in the tumor and uterus itself met with in 205 cases were tabulated by August Martin.[4]

Such questions were discussed as sarcomatous degeneration, necrosis of the tumor, the relation of the menopause to fibroid tumors, the disappearance of fibroid tumors after the menopause and after labor, the ages of the patients operated on, sterility, phlebitis, embolism, anemia, carcinoma as a complication, and death from fibroid tumors in the natural history of the disease. The conclusion was drawn that upward of one-third of all women suffering from fibroid tumors would die without operation, as contrasted with a mortality of less than 10 per cent. from operation.

The plan advocated in that paper, to study definite consecutive series of cases, bore fruit, and since that time a number of valuable papers have appeared, each paper consisting of a study of a consecutive series of fibroid tumors treated by operation; so that, at the present time, I am able to present for your consideration a study of the degenerations and complications in 2,274 cases of fibromyoma of the uterus.

It must be insisted on that each of the series reported by the various authors is *consecutive*. The importance of this fact is at once evident, as it means that the entire subject is presented for consideration and not merely a study of the particular phases of the subject or the particular case which may have interested the individual authors. The series, in the order of publication, is as follows:

Martin	205	McDonald	280
Noble	337	Lauwers	200
Cullingworth	100	Eastman	117
Frederick	125	Webster	210
Scharlieb	100	Martin, F. H.	200
Watt-Keen (Hofmeier's clinic)	300	Total	2,274
Hunner	100		

Complications and Degenerations in 2274 Cases of Fibroid Tumors. Conditions Relative to the Tumor and Uterus.

Condition.	Number.	Percentage.
Carcinoma of the corpus uteri	42	1.8
Epitheliomatous infiltration of a fibroid tumor arising from adenocarcinoma of the corpus uteri by metaplasia	1	..
Carcinoma of the cervix uteri	16	.7
Sarcoma	34	1.4
Chorioepithelioma	2	..
Necrosis of tumor	119	4.7
Myxomatous degeneration	89	3.4
Cystic degeneration	58	2.5
Hyaline degeneration	72	3.1
Hyaline degeneration and calcareous infiltration	8	.25
Fatty degeneration	7	.30
Hemorrhagic degeneration	13	.57
Calcareous infiltration	39	1.7
Edema of tumor	17	.74
Twisted pedicle, pedunculated tumor	3	.13
Dangerous uncontrollable hemorrhage	41	..
Intraligamentous development of tumor	80	3.5
Subvesical development of tumor	2	..
Adenomyoma	12	..

Conditions Relative to the Uterus.

Condition.	Number.
Procidentia uteri	15
Retroversio uteri	29
Pregnancy	13
Pregnancy, ectopic	6
Pregnancy, ectopic, salpingitis and hydrosalpinx	1
Endometritis, senile	3
Endometritis, suppurating	5

4. Martin: "Pathology and Therapeutics of the Diseases of Women," Boston, 1900.

Conditions Relative to the Ovary.

Condition.	Number.
Dermoid cyst	10
Dermoid cyst, suppurating	3
Dermoid cyst, with twisted pedicle	1
Dermoid cyst, suppurating; sinus through abdominal wall from drainage operation	1
Dermoid cyst, bilateral; umbilical hernia	1
Ovarian cyst, suppurating	4
Ovarian cyst, with twisted pedicle	2
Ovarian cyst, bilateral	16
Ovarian cyst, unilateral	115
Cystic degeneration of ovaries	87
Chronic interstitial öophoritis, bilateral	31
Chronic interstitial öophoritis, unilateral	3
Calcification of ovary	1
Fibroma of ovary	3
Carcinoma of ovary	4
Papillary carcinoma of both ovaries	1
Hematoma of ovary	18
Abscess of ovary, bilateral	2
Abscess of ovary, unilateral	9
Tubo-ovarian abscess	2
Parovarian cyst	14

Conditions Relative to the Uterine Ligaments.

Condition.	Number.
Cyst of broad ligament	2
Hematoma of broad ligament	7
Abscess of broad ligament	1
Myoma of uterine ligaments	4

Conditions Relative to the Fallopian Tubes.

Condition.	Number.
Hematosalpinx	10
Pyosalpinx, bilateral	33
Pyosalpinx, unilateral	36
Pyosalpinx and tubo-ovarian abscess	2
Hydrosalpinx, bilateral	17
Hydrosalpinx, unilateral	68
Hydrosalpinx and tubo-ovarian abscess	1
Salpingitis, bilateral	48
Salpingitis, unilateral	66
Salpingitis and pyosalpinx	7
Salpingitis and hydrosalpinx	3
Salpingitis and tubo-ovarian abscess	3
Fibroma of Fallopian tube	1
Papilloma of appendages	1

Conditions Relative to the Pelvis Outside of the Tumor, Uterus or Appendages.

Condition.	Number.
Varicose veins of the pelvis	9
Thrombosis of veins of lower extremities	2
Chronic pelvic peritonitis	4
Tubercular peritonitis	4
Universal adhesions	4
Adhesions to viscera	34
Adhesions to tumor	5

Conditions Relative to Pressure from the Tumor.

Condition.	Number.
Intestinal obstruction, chronic, from tumor pressure	7
Intestinal obstruction, acute, from tumor pressure	2
Dilated ureters from tumor pressure	2
Hydronephrosis, large, from tumor pressure	2

Conditions Relative to Complications Outside of the Pelvis.

Condition.	Number.
Appendicitis	54
Hernia	7
Hernia, ventral	1
Hernia, umbilical	7
Carcinoma of umbilicus	1
Extreme anemia from hemorrhage	41
Phthisis pulmonalis	2
Total	1,553

Total, 1,553 cases complicated in 2,274, or 68 per cent.

This formidable list of degenerations and complications in the tumor and uterus encountered in 2,274 women operated on for fibroid tumor by no means portrays the entire list of complications. For example, in the lists of both Cullingworth and Scharlieb, the authors expressly exclude all patients operated on for necrotic fibroids by the vaginal route, on the ground that no one questions the necessity for operations in such cases. Likewise, in Lauwers' list, only abdominal hysterectomies are tabulated, whereas, if the tumors operated on by the vagina were included, the percentage of necrosis would inevitably be higher, as the necrotic submucous fibroids, almost without exception, are operated on by the vaginal route. Among the early cases in my own experience, there is no doubt that no record was made of many of the degenerations, more especially such as myxomatous degeneration, edema and the earlier stages of cystic degeneration.

CONDITIONS RELATIVE TO THE TUMOR AND THE UTERUS IN 2,274 CASES WHICH WOULD BE FATAL WITHOUT OPERATION.

Condition.	Number.
Carcinoma of the corpus uteri	42
Epitheliomatous infiltraton of a fibroid tumor arising from adenocarcinoma of the corpus uteri by metaplasia	1
Carcinoma of the cervix uteri	16
Sarcoma	34
Chorioepithelioma	2
Necrosis of tumor	119
Cystic degeneration	58
Twisted pedicle, pedunculated tumor	3
Total	275
	12 per cent.

A certain number of myxomatous and hyaline degenerations and cases of edema of the tumor would become cystic or necrotic, which would probably increase the mortality in this class of cases 3 or 4 per cent., and thus give a mortality of from 15 to 16 per cent.

From this table the conclusion must be drawn that of the 2,274 women 275, or 12 per cent., would have died from the degenerations and complications in the tumor and uterus itself had operation not been performed; and, in addition, an unknown number would have died from myxomatous and hyaline degenerations and edema of the tumor.

It is of interest to compare this large series of 2,274 cases with the total number of fibroid tumors which have come under my own observation (337) and also with my last 100 abdominal hysterectomies for fibroid tumor.

CONDITIONS RELATIVE TO THE TUMOR AND UTERUS IN THE WRITER'S 337 CASES WHICH WOULD BE FATAL WITHOUT OPERATION.

Condition.	Number.
Adenocarcinoma of the corpus uteri	8
Epitheliomatous infiltration of a fibroid tumor arising from adenocarcinoma of the corpus uteri by metaplasia	1
Carcinoma of the cervix uteri	5
Sarcoma	2
Chorioepithelioma	1
Necrosis of tumor	22
Cystic degeneration of tumor	7
Twisted pedicle, pedunculated tumor	2
Total	48
	14 per cent.

CONDITIONS RELATIVE TO THE TUMOR AND UTERUS WHICH WOULD BE FATAL WITHOUT OPERATION, IN THE WRITER'S LAST 100 CONSECUTIVE CASES SUBJECTED TO ABDOMINAL HYSTERECTOMY.

Condition.	Number.
Carcinoma of the corpus uteri	5
Epitheliomatous infiltration of a fibroid tumor arising from adenocarcinoma of the corpus uteri by metaplasia	1
Carcinoma of the cervix uteri	2
Cystic degeneration of the tumor	2
Necrosis of tumor	4
Twisted pedicle, pedunculated tumor	1
Total	15
	15 per cent.

Thus, in the total series of 2,274 cases, 12 per cent. are estimated as fatal; in the series of 337 of my cases, 14 per cent. are estimated as fatal; and in the last 100 hysterectomies in my practice, 15 per cent. are estimated as fatal from degenerations in the tumors or complications existing in the uterus.

OPERATION PERFORMED FOR FIBROID TUMORS OF THE UTERUS BY THE WRITER TO FEB. 26, 1906.

Condition.	Number.
Abdominal supravaginal hysterectomies	235
Abdominal panhysterectomies	14
Abdominal myomectomies	22
Removal of ovaries, etc.	15
Celiotomies	286
Vaginal hysterectomies	7
Vaginal myomectomies	44
Total	337

DEGENERATIONS AND COMPLICATIONS OF FIBROID TUMORS IN A SERIES OF 337 CONSECUTIVE CASES, IN THE PRACTICE OF THE WRITER.

CONDITIONS RELATIVE TO THE TUMOR AND UTERUS.

Condition.	Number.
Adenocarcinoma of the corpus uteri	8
Epitheliomatous infiltration of a fibroid tumor arising from adenocarcinoma of the corpus uteri by metaplasia	1
Carcinoma of the cervix uteri	5
Sarcoma	2
Chorioepithelioma	1
Necrosis of tumor	22
Myxomatous degeneration	8
Cystic degeneration of tumor	7
Calcareous infiltration of tumor	7
Twisted pedicle, pedunculated tumor	2
Hyaline degeneration of tumor	3
Intraligamentous development of tumor	21
Adenomyoma	4

CONDITIONS RELATIVE TO THE UTERUS.

Condition.	Number.
Procidentia uteri	6
Retroversio uteri	6
Pregnancy, ectopic	3

CONDITIONS RELATIVE TO THE OVARY.

Condition.	Number.
Dermoid cyst	1
Dermoid cyst with twisted pedicle	1
Dermoid cyst, suppurating; sinus through abdominal wall from drainage operation	1
Dermoid cyst, bilateral; umbilical hernia	1
Ovarian cyst, suppurating	2
Ovarian cyst, with twisted pedicle	1
Ovarian cyst, bilateral	3
Ovarian cyst, unilateral	24
Cystic degenerations of ovaries	11
Chronic interstitial oöphoritis, bilateral	2
Adenocarcinoma of ovary	1
Papillary carcinoma of both ovaries	1
Abscess of ovary, unilateral	3
Parovarian cyst	2

CONDITIONS RELATIVE TO THE UTERINE LIGAMENTS.

Condition.	Number.
Abscess of broad ligament	1

CONDITIONS RELATIVE TO THE FALLOPIAN TUBES.

Condition.	Number.
Hematosalpinx	1
Pyosalpinx, bilateral	10
Pyosalpinx, unilateral	6
Hydrosalpinx, bilateral	11
Hydrosalpinx, unilateral	9
Salpingitis, bilateral	6
Salpingitis, unilateral	11

COMPLICATIONS OUTSIDE OF THE TUMOR, UTERUS AND APPENDAGES.

Condition.	Number.
Chronic pelvic peritonitis	4
Appendicitis	17
Total	236

THE RELIABILITY OF THE TABLES EMBRACED IN THIS PAPER.

The common statement that statistics are misleading is familiar to us all. With reference to the tables and statistics in this paper, every care has been taken to make them accurate. My own series of 337 cases has been tabulated by Dr. Stephen E. Tracy, who has prepared the tables for all my various papers (including this one) on fibroid tumors for the past six years. In but two instances was any liberty taken as to including or excluding a case from the table. In one case, in which an operation was attempted for cancer of the cervix, it was abandoned because of secondary cancerous deposits. The woman had a fibroid tumor, but it was considered best to exclude the case. In another instance, a woman was operated on for pelvic abscess and a hysterectomy was performed. In the pathologic report it was stated that a tiny fibroid was present in the uterus. This case also was excluded. In both instances it was felt that the tables would be more accurate by excluding these borderline cases. Otherwise the facts are as found in the records. There is no doubt, however, that numerous degenerations and complications have been omitted in my early cases, because at that time I was not in the habit of making such careful records when a patient was operated on for fibroid tumor. That diagnosis alone was recorded. Hence the facts as to degenerations and complications in my own series are worse than the figures given.

In editing the reports of others, in order to simplify and shorten the list of complications and degenerations, the following changes were made:

Serious adhesions to soft parts, extensive intestinal adhesions and adhesions, are classified with adhesions to viscera.

Suppuration, necrosis in center of tumor and necrobiosis, are classified with cases of necrosis.

Malignant adenocystoma of the ovary is classified with carcinoma of the ovary. Ovarian cysts, large, are classified with ovarian cysts. Abscess of ovary is classified with abscess of ovary, single. Cases of salpingo-ovaritis are classified as salpingitis.

All cases of ovarian cyst, pyosalpinx, hydrosalpinx and salpingitis, in which mention was not made whether the condition was bilateral or unilateral, are classified as unilateral.

The tables from the recent German literature have been prepared by Dr. Brooke M. Anspach.

In the discussion of a former paper on fibroids, one physician spoke of the statistics supplied as prearranged, conveying the implication that, having a theory to sustain, I have collected statistics which would uphold the theory. Not to refute such an implication, but in the interest of truth, I would draw attention to the following facts:

Cullingworth, Scharlieb, Kelly and Winter, from whom more than half of the cases have been secured, are adherents of the classical position; namely, that the gravity of fibroid tumors should be estimated by the symptoms which they produce at the time they are under observation, and that operation is only indicated at a given time when the symptoms present threaten life.

If the facts supplied by these gynecologists are contrary to the classical teaching, it is simply additional evidence of its fallacy.

THE FACTS WITH REFERENCE TO THE DEGENERATIONS AND COMPLICATIONS OF FIBROID TUMORS ARE WORSE THAN INDICATED BY THE TABLES.

In various sections of this article reference has been made to the omission of degenerations and complications by different gynecologists from whom tables have been taken for some particular reason which appealed to them, together with the statement that had these complications been included it would make the facts shown by the tables worse than they now appear. It must not be forgotten, also, that, in recording the degenerations and complications found in women operated on for fibroid tumors, the system in use in clinics is not perfect, and that many such degenerations and complications, therefore, have not been recorded. This is certainly true of my own early cases. It is also evident in reading the lists of complications that many are omitted. Only nine cases of varicose veins of the pelvis are recorded; only two of thrombosis of the veins of the lower extremity; only four of chronic pelvic peritonitis; only thirty-four of adhesions to viscera; only five of adhesions to the tumor; no case of cystitis (a frequent complication); only three of twisted pedicle (two from my own series); and no case of phlebitis or thrombosis, although I have seen at least two myself. Any one familiar with fibroid tumors, as they are seen in the operating room, will at once see that there are many omissions in the tables covering a series of 2,274 cases. All of us, also, are influenced by our early teachings. Doubtless the number of cases of cancer is far larger than is reported in the tables, because if a well-developed cancer is complicated by a small fibroid, the cancer being the major condition for which the operation is done, the fibroid makes little or no impression on the surgeon, and frequently in the past, no doubt, its presence has not been recorded. The same is true of pyosalpinx, ovarian abscess and ovarian tumor, when existing in association with a small fibroid tumor of the uterus. The influence of tradition has doubtless caused the omission of any record of the fibroid in many of these cases.

These facts are insisted on to demonstrate the fallacy of the argument that the tables make too bad a showing, because of the women having fibroid tumors who are not operated on and, therefore, are omitted from the tables. There is no doubt that a certain percentage of fibroid tumors are not removed, but at the present time, sooner or later, a great majority of them are removed. It is easy to state that many women have fibroid tumors which produce no symptoms and that, therefore, they do not consult a physician; but it is at once manifest that this is a bald statement without any evidence in its support. That there are such cases all will admit, but that they are frequent there is no evidence whatever. If those who support the classical or traditional position wish to furnish a valuable contribution to our knowledge of the subject, they should study the autopsy records of almshouses, old women's homes and similar institutions, in which consecutive autopsies are made and recorded. If such records are to be found, made under definite conditions, it would be possible to throw some light on the frequency of fibroid tumors which produce few or no symptoms. I know of no other way of arriving at these facts.

CANCER AS A COMPLICATION OF FIBROMYOMATA.

The relation of fibroid tumors of the uterus to cancer of that organ is one of special interest. In discussing my own experience with this question in 1897, I stated that it indicated that malignant disease may be a more frequent complication of fibroid tumors than is usually believed. In 1901, in 218 patients I had seen adenocarcinoma of the body of the uterus in 3 and epithelioma of the cervix uteri in 4. This fact led to the statement that in proportion to its relative frequency adenocarcinoma of the body of the uterus is more often associated with fibroid tumors than is the more common squamous epithelioma of the cervix. In 1904, in 278 women having fibroid tumors there were 4 cases of epithelioma of the cervix and 6 cases of adenocarcinoma of the corpus uteri.[5] As the usual ratio between epithelioma of the cervix and adenocarcinoma of the corpus uteri is probably as 10 to 1, the fact that in this series 6 cases of cancer of the body of the uterus were encountered, as compared with 4 cases of cancer of the cervix, led to the belief that the irritation in the uterus and more particularly in the endometrium, or changes in the nutrition of the uterus, arising from the presence of fibroid tumors in the uterus, bears a causal relation to the development of cancer.

The usual ratio of epithelioma of the cervix to adenocarcinoma of the corpus uteri is given by Cullen[6] as 4 to 1. That is, he examined 35 cases of cancer of the corpus uteri and 147 cases of cancer of the cervix, in the gynecologic service at the Johns Hopkins Hospital.

Winter[7] gives the ratio as 15 to 1. That is, in 2,331 cases of cancer of the uterus compiled from various German authors and including 210 cases of his own, Winter found 1 carcinoma of the body of the uterus to every 15 carcinomata of the cervix.

5. Noble: "The Nature of the Indications for Operation for Fibroid Tumors of the Uterus," Amer. Medicine, Sept. 10, 1904, p. 451; and, "The Treatment of Fibroid Tumors of the Uterus," The Journal A. M. A., May 21, 1904.

6. Cullen: "Cancer of the Uterus," N. Y., 1900, p. 3.

7. Winter: "Die malignen und benignen Degenerationen der Uterusmyome," Ztschr. f. Geburts. und Gynäk., 1906, vol. lvii, No. 1, p. 10.

Sinclair[8] states that from 2 to 3 per cent. of all cases of cancer of the uterus are instances of cancer of the fundus.

Williams[9] states that of 160 consecutive cases of cancer of the uterus coming under his observation only 4 were cancers of the corpus uteri, or 1 in 40. He states that the reason some other authorities give a higher ratio is that their estimate is based on patients who are operated on, instead of on the ratio as it exists when patients consult the physician, and that there are far more inoperable cancers of the cervix than of the corpus uteri.

It is evident that there is a difference of opinion as to the usual ratio between cancer of the cervix and cancer of the body, but as seen in the operating room it is probable that a mean between the statement of Cullen and that of Winter is approximately correct, and may be assumed as 10 to 1.

In the total series of 2,274 cases, there have been 43 cases of adenocarcinoma of the body of the uterus (1.8 per cent.) and 16 cases of cancer of the cervix (0.7 per cent.).

In my own series of 337 cases, there have been 9 cases of cancer of the corpus (2.6 per cent.) and 5 cases of cancer of the cervix uteri (1.4 per cent.).

In the last 100 cases of fibroid tumors operated on by me by abdominal hysterectomy, there were 5 cases of adenocarcinoma of the body of the uterus, 1 case of epitheliomatous infiltration of a fibroid tumor arising from the adenocarcinoma of the corpus uteri by metaplasia, and 2 cases of cancer of the cervix, which makes 6 cases of cancer of the body of the uterus to 2 of cancer of the cervix, and which constitutes 8 per cent. of fibroid tumors complicated by cancer of the uterus—a very striking experience.

In view of the usual ratio of frequency existing between cancer of the cervix and cancer of the body of the uterus, the conclusion seems to be inevitable that the development of the adenocarcinoma of the corpus uteri is favored by the presence of fibroid tumors in the uterus. With the usual ratio, for 43 cancers of the body of the uterus there should have been 430 cancers of the cervix instead of 16 as reported.

In addition to the 2,274 consecutive cases which have been collected for the study of all the degenerations and complications of fibroid tumors, I have been able to collect 2,606 additional cases for the study of the relation of fibroid tumors of the uterus to carcinoma and sarcoma of that organ.[10]

Winter[7] has studied 1,607 consecutive cases of myoma from the clinics of Hofmeier, Fehling and himself, in which there were twenty carcinomata of the corpus uteri, or 1.2 per cent.; also 1,270 cases of myoma from the clinics of Hofmeier, Freund and himself, in which there were 25 cases of carcinoma of the cervix, or 2 per cent.

In order to reduce these figures to a percentage basis for statistical uses, as Winter has studied a different number of patients having cancer of the body than of patients having cancer of the cervix, I will take the liberty of assuming that if in 1,270 cases of fibroid tumor there were 25 cancers of the cervix, in 1,607 cases of fibroid tumors there would be 31 cancers of the cervix. That this is practically correct is indicated by the fact that if the statistics of Hofmeier and Winter, which figure in both lists, are taken, omitting those of Freund and Fehling, the proportion would be, if in 1,198 cases of fibroid tumor were found 24 cases of cancer of the cervix, in 1,607 cases there would be found 32 cancers of the cervix.

In Kelly's clinic at the Johns Hopkins Hospital, in 999 cases of fibroid tumor of the uterus (private communication), in which myomectomy was performed 308 times and hysteromyomectomy 691 times, cancer of the corpus uteri was found in 12 cases and cancer of the cervix was found in 16 cases. Adding the 2,274 cases of the original table to the 999 from Kelly's clinic and the 1,607 from Winter's paper, gives a total of 4,880 cases of fibroid tumor of the uterus in which cancer of the cervix was present in 63 cases and cancer of the corpus uteri in 75 cases, making a total of 138 cases of cancer in the 4,880 cases, or 2.8 per cent. Subdividing these, we find that cancer of the cervix was present in 1.29 per cent. and cancer of the corpus uteri in 1.54 per cent. It is interesting to compare these figures with my personal experience in 337 cases, in which cancer of the cervix was present in 5 cases and cancer of the corpus in 9 cases; and with the last 100 abdominal hysterectomies for fibroid tumors performed by me, in which cancer of the cervix was present in 2 cases and cancer of the body in 6 cases. This indicates, I believe, that in the total series cases of cancer have been omitted from the table because of the influence of tradition. When the gynecologist has operated for cancer, the presence of a fibroid tumor has not been recorded, and thus the ratio between fibroid tumors of the uterus and cancer appears to be less in the table than is actually true.

Piquand[11] concludes from a study of the literature that primary carcinoma developing in the midst of a fibroma is possible, though rare. He has collected 24 cases, most of which appear to be indisputable. He explains this development of carcinoma on the ground that there has been an inclusion of mucous membrane from the uterine mucosa which has grown into the tumor and from which has developed the primary carcinoma. In other words, he attributes the development of carcinoma in the fibroid itself to the processes which take place in the development of adenomyoma.

Under the title of the coexistence of fibromyomata and cancer, he discusses (1) the coexistence of fibromyomata and cancer of the uterine body, and (2) the coexistence of fibromyomata and cancer of the neck of the uterus. He has collected 179 cases of the coexistence of fibromyomata and cancer of the corpus uteri. He states that cancer of the corpus uteri is eight or nine times more frequent in women having fibroid tumors than in those without this lesion, and draws the same conclusion from his study of the literature that I had drawn, namely, that fibromyomata predispose to the development of cancer of the corpus uteri. He also believes that the presence of a fibroid tumor favors the development of cancer of the cervix.

As Piquand's monograph is not based on the study of a consecutive series of cases, it is only of relative value for the purposes of this paper with its strict limitations, but his conclusions support those to which I have been driven from the study of more definite material.

8. Sinclair: "Malignant Diseases of the Uterus," Allbutt and Playfair's System of Gynecology, 1896, p. 656.

9. Williams: "Uterine Tumors, Their Pathology and Treatment," London, 1901, p. 196.

10. There is a partial reduplication of cases in this paper. Thus Watt-Keen's 300 cases were reported from Hofmeier's clinic, and Winter's paper includes 445 cases from Hofmeier's clinic. How much the reduplication actually is, is not apparent, as no dates are given.

11. Piquand: "Fibromes et Cancer utérins," Ann. de Gyn. et Obstet., July, August, September, second series, 1905, vol. II, pp. 393, 583.

Klein,[12] in a study of 406 uterine myomata, reports that in 206 patients operated on there existed as a complication either sarcoma or cancer of the uterus in 10 cases, or 4.85 per cent.

One of the recent converts to the view that the presence of a fibroid tumor in the uterus predisposes to the development of cancer is Cullen,[13] of Baltimore. He states that my paper first aroused gynecologists to an appreciation of the danger of allowing myomata to remain year after year without operative interference, and adds that in going over the large number of myoma cases in the Johns Hopkins Hospital clinic he has been surprised at the number of instances in which myomata are associated with cancer either of the body or of the cervix, and also of the relatively frequent occurrence of sarcomata developing in myomatous tumors. Cullen was prepared to accept the views which I advocated because of his experience as a pathologist, which taught him that fibroid tumor and cancer are frequently associated. In 1904, in discussing McDonald's paper before the Philadelphia Obstetrical Society, he supported my position, and stated that the material at the Johns Hopkins Hospital, embracing about 1,000 fibroid tumors, taught the same lessons which I had drawn from my own experience and from the literature.

Winter,[7] in his last article, commits himself to the view that there is a distinct connection between fibroid tumors of the uterus and carcinoma of the corpus uteri, and that the carcinoma probably results from the hyperplastic condition of the endometrium existing in consequence of the myoma. In 1898,[14] he had drawn attention to the fact that carcinoma of the uterus in combination with fibroid tumors exists in the ratio of 23 cases of cancer of the corpus uteri to 13 of the cervix. At that time he had drawn no conclusion from these facts. He stated that the relation of the two tumors is uncertain and that one could only speculate about it, and that the solution of the problem must be left to the future.

From the study of the 4,880 consecutive cases of fibroid tumor of the uterus in their relation to cancer of that organ, the conclusion seems inevitable that fibroid tumor of the uterus predisposes to the development of cancer of the corpus uteri. Were this not true, with the 75 cases of cancer of the corpus uteri existing in this series there should have been found 750 cases of cancer of the cervix, on an average calculation. Even taking the minimum estimate of Cullen, there should have been 300 cases of cancer of the cervix, whereas but 63 were present. To explain this as an accidental circumstance in such a large series of cases (more especially from the standpoint of my own experience, which speaks even more strongly than the total series) would be an assumption so far fetched as to be beyond reasonable bounds. It is my opinion that when this subject is studied in the future and the presence or absence of fibroid tumors, no matter how small they may be, is recorded in connection with all operations on the uterus, when cancer exists in that organ, the data secured will offer stronger evidence than is true of this particular series, in which doubtless the number of cancers given is far below the actual number, because of the influence of tradition in bringing about the failure to record the presence of a fibroid because of its supposed relative unimportance when complicating cancer.[15]

(To be continued.)

12. Klein: "Blutuntersuchungen bei Unterleibsleiden der Frauen besonders bei Uterusmyomen," Centralb. f. Gynäk., 1905, No. 31, p. 969.

13. Cullen: "Immediate Examination of Uterine Mucosa and Myomatous Nodules After Hysteromyomectomy to Exclude Malignant Disease," THE JOURNAL A. M. A., March 10, 1906, p. 695.

14. Winter: "Die bösartigen Neubildungen des Uterus," Veit's Handbuch der Gynäkologie, 1899, vol. iii, second half, p. 245.

THE PHYSICAL AND EVOLUTIONARY BASIS OF MARRIAGE.*

BAYARD HOLMES, M.D.
CHICAGO.

The perpetuation of a custom is dependent on the ordinary laws of evolution. Marriage as a union of the sexes and the basis of the family, the primary unit of society, is perpetuated by the action of both physical and psychic factors. It is my purpose to consider one of these physical factors only, the influence of the venereal diseases in initiating and perpetuating monogamy.

The two great venereal diseases, syphilis and gonorrhea, are well recognized as producing sterility or at least diminishing fertility. These diseases are ever contagious and generally spread through the sexual act. The sexual union of adolescents is never attended by gonorrhea and only by inherited syphilis unless one of the parties was previously infected. Such a healthy union is most prolific.

After venereal disease has been acquired by either party the fertility of both is likely to be diminished.

In the earliest stages of society the perpetuation of any tribe or family was largely a matter of numbers and strength at arms. Each little group was at war with every other group, and self-preservation and conquest were matters of endurance and constantly appearing fresh, young warriors. The struggle was a continuous struggle and was taken up by each succeeding generation. Success depended, then, on an unbroken stream of healthy progeny. This was possible when the fecundity of the tribe was undiminished by venereal diseases, a condition secured through monogamous customs while less fertility weakened their polygamous adversaries.

Thus the presence or absence of venereal disease determined the numbers of warriors in any tribe and this, in turn, determined that tribe's success in war. Success in war carried not only the yoke of power, but the yoke of custom. And thus monogamy has become the custom of all successful and all conquering people. It probably originated spontaneously in many places and at many different periods. It is an ever-acting factor and will ever be in such proportion as these diseases are uncontrollable. This physical limitation of the sexual relation is mindful only of fertility. It does not secure the survival of the best, the highest or, considering changing conditions, the fittest.

Other physical factors have acted with this one, but this one was early and has been and probably will be ever acting. Many social and psychic, even religious, legal or economic factors have been called into play to support

*Read in the Section on Hygiene and Sanitary Science of the American Medical Association at the Fifty-seventh Annual Session, June, 1906.

15. A statistical study of the relative frequency of cancer of the cervix and cancer of the body of the uterus in women admitted to hospitals, comparing those having fibroid tumors of the uterus with those who have not, would throw definite light on the question of the influence of fibroid tumors on the development of cancer of the corpus uteri and cancer of the cervix. A study of this percentage with the percentage of cancer in women in general, as shown by the vital statistics of cities and the census, would be misleading, for the reason that only selected cases of cancer are admitted to hospitals. The advanced and inoperable cases do not appear in hospital statistics as a rule, but naturally all of them figure in the death list of bureaus of vital statistics.

monogamy, but sterility as the result of venereal infection was doubtless the earliest and will ever be the most potent factor in the perpetuation of monogamy. It will act unconsciously and be attended by immeasurable errors and hardships. It will rarely be recognized in its true significance. Like many other factors in the evolution of human life, it is susceptible of artificial guidance or restraint. Such interference, however, is temporary, local and transient.

THE GUARANTEE OF SAFETY IN THE MARRIAGE CONTRACT.*

ALBERT H. BURR, M.D.
CHICAGO.

The most important function of the human body, biologically, is reproduction. Behind this function the Creator placed a dominating, imperative, sexual impulse to insure its activity. This is the animate magnet which attracts and mates the opposite sexes. Through this magnetic force marriage came to be and must forever remain the most sacred and important institution in human society.

The supreme importance of woman in these relations is apparent when we consider her office in prenatal existence; her roll as the nourishing mother; her place as the very foundation stone of every hearth and home, and her life as the vital center about which cluster families and tribes and nations. Around the sexual life of woman are grouped the most potential factors in the perpetuity, development, and highest good of the race, physically, morally and mentally. Around the sexual life of woman also are grouped some of the most adverse and perplexing questions of all time, involving the double standard of morals, divorce, prostitution, and the plague of venereal diseases; questions which seem almost as difficult of practical solution as the problem of perpetual motion.

The welfare of society depends far more on the physical, moral and intellectual excellence of woman than on that of "mere man." In a certain spirit of chivalry, not always free from a selfish bid for her favors, man pays tribute to her great and supreme worth. By the right of might, not always free from injustice and tyranny, he has constituted himself her physical guardian. Her safety then in the marriage contract, which binds them both in a common destiny, should be his most sacred care.

Slowly but surely, coming down through the ages, the leaven of the gospel of the lowly Nazarene is working out a more just solution of the equities of woman in her social, political and property rights. Even for her most unfortunate sister, Magdalene, at whom society casts stones to this day, the Savior had no words of condemnation, but viewing her in compassion, so deftly did he shift the sin on the shoulders of her accusers, that while he stooped to write in the sand they stole away like conscience-smitten cowards.

The progress of man from barbarism to the highest and best types of civilization has no better gauge by which to measure its development than the degree of debasement or exaltation of woman among the different races and nations of men. This uplift of humanity through a better recognition of the inherent rights of woman and her protection in the enjoyment of these rights has been greatly accelerated in our own country during the last half century.

It is a far-away cry from the concubinage of woman under patriarchial rule, when her husband was proprietor of her body and soul, if, indeed, she was credited with a soul, up to the higher ideals of her relations to her consort and to the state.

Animated with a sense of justice in some of these higher ideals we plead for certain sanitary measures, without which it is impossible to guarantee the safety of woman in the marriage contract. In this alliance there are risks from various physical and mental ailments which are shared alike by both parties to the contract, but there are diseases which peculiarly menace the bride at the marriage altar which may and do often transform it into a sacrificial altar, on which health and life itself are immolated. The great prevalence and gravity of venereal diseases, and their communicability during indefinite periods of chronicity and latency, among males of marriageable age, have been set forth with increasing emphasis from the epoch making publications of Noegerath and Neisser down to those of Sanger and Morrow. It is evident that marriage under these circumstances becomes a frequent means of spreading these infections with dire results to innocent wives and their offspring. Only the briefest allusions to the statements of authoritative observers on the baneful effects of these diseases in the home can be made in this paper. Pathologists tell us of their power to maim, blight and destroy human life. Gynecologists estimate that from 60 to 75 per cent. of their operations, chiefly on married women, are made necessary through gonorrhea. Joseph Tabor Johnson says: "The effects of gonorrhea on the female generative organs have been so destructive that no successful contradiction is feared when the belief is expressed that no disease in modern times has caused so much indirect mortality, mutilation and suffering, both mental and physical, as gonorrhea." Matthew D. Mann says: "Practically every case of pus tube is of gonorrheal origin." Joseph Price says that 95 per cent. of his abdominal sections for pelvic inflammation were from gonorrheal infection. Prince A. Morrow says that 70 per cent. of all the women who present themselves for treatment at the New York hospital, under his observation, "were respectable married women who had been infected by their husbands." Thus we are flooded with proof that however unfortunate the effects may be on the male offender, the pathologic relations of gonorrhea to the pelvic organs of helpless wives is a stupendous calamity. If this one disease could be eliminated from wedded life, gynecology as a specialty would shrink to small proportions.

There is another dark chapter in the rôle that venereal diseases play in the marriage relation, by which its supreme object is defeated. These vipers of venery which are called "clap and pox," lurking as they often do, under the floral tributes of the honeymoon, may so inhibit conception or blight its products, that motherhood becomes either an utter impossibility or a veritable curse.

Vedeler investigated 310 sterile marriages and found that 75 per cent. of them were directly or indirectly due to gonorrhea in the husband. The *ein kind sterilität* so-called by the Germans, in which the reproductive powers of the female are extinguished with the first pregnancy, through the extension of the infection previously confined to the cervex uteri, is of common occurrence, while gonorrheal endometritis is perhaps a more frequent cause of abortion than syphilis itself. The ban placed by venereal diseases on fetal life outrivals the criminal interference with the products of conception as a cause

* Read in the Section on Hygiene and Sanitary Science of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

of race suicide. To this chapter we must append the postnatal effects of blindness, deformity and degeneracy that fill our charitable institutions with their unfortunate victims. Is the picture overdrawn? The "half has never been told."

From marital dangers of this sort the lords of creation consider themselves reasonably safe through the expected virginity and chastity of their intended wives. Through voluntary extra-marital exposures only do they have apprehensions of venereal contagion. On the other hand, "my lady," the innocent, unsuspecting bride, without defense or recourse, too often reaps the "wild oats sown by her husband," which may invalid her for life, deny to her the joys of motherhood, carry her to the operating room or tragically terminate her existence. Let us suppose the tables could be turned for a time, and the husband had to bear the heavier penalties of these diseases to which his wife might lay him liable through the marriage contract, what then? We believe it would not be long till he found a way to guarantee his own safety. It is possible that this guarantee of safety may not be generally assured to woman until she becomes a real American citizen, and through the ballot also becomes a law maker. I venture to say that, if any of the animal industries of our country should suffer from such a scourge as the venereal diseases place on the human family every resource would be taxed to eradicate it speedily and completely.

What barriers are raised to stay this tide of disease and degradation? Practically none. We hide our heads in shame and prudery before the naked truth of it. In silence our tongues cleave to the roofs of our mouths lest we violate the proprieties by the mention of these things, while the suffering and mutilation and slaughter of the innocents goes relentlessly on. It is a disgraceful anomaly in state medicine in the United States of America that the most persistent of all contagions, the most prevalent of all excepting measles, the most costly and dangerous of all in the aggregate, barring none, should have no official existence. It is a fact that no national, state or civic boards of health or sanitary commissions are taking any account of venereal contagions. No appropriations of money or measures are made for their suppression. We can learn much of the Scandinavian nations who handles these matters more effectually. Over thirty years ago they placed gonorrhea and syphilis among the reportable contagions and required physicians to make weekly returns concerning them; with the result that during this period these social pestilences have been reduced by 34 per cent.

The day must come when the suppression of the gonococcus shall rank in sanitary importance with the destruction of the mosquito; when the culture beds of the "red light districts" shall be looked after as carefully as the drainage of stagnant and polluted waters.

We may now more intelligently consider measures which will go a long way toward guaranteeing safety in the marriage contract.

The problems of the social evil which is the great hotbed of these vile diseases we must pass over, with the expression of our conviction that the dismal failure of reglementation everywhere, in limiting venereal diseases, lies in the simple fact that the chief offender, the male purveyor of venereal diseases, is completely ignored in the reckoning and is allowed perfect freedom to scatter his private pestilence wherever he chooses. Neither can we discuss here the educational measures for the prevention of venereal diseases, except to express the belief that our public school instruction should include the physiology and hygiene of the sexual organs as of equal or of greater importance than those of the digestive organs. This instruction of our youths should begin at puberty, when the sexual life is in bloom and its susceptibility to the dangers of venereal parasites has begun. These and all other truly prophylactic or curative measures to diminish the evil are indirectly important in guaranteeing safety to the family, but there is a more vital and strategic point of defense, one portal where the infected male can be halted. To ensure a sanitary marriage it is imperative to establish a quarantine station before the marriage license window over whose gate should hang this legend: *No Health Certificate, No License!*

Every woman who would enter matrimony has the inherent right to do so without the hazard of bodily contamination from already existing contagion in her intended husband. Manifestly, the state is the only power capable of protecting her in this right. It declares marriage to be a civil institution, it places certain restrictions as to who may enter this relation, by whom the ceremony may be performed and on what grounds the bonds may be dissolved. It has the might and the right also to add to these restrictions. We believe no higher obligation rests on the state than to extend its power to protect the vital interests of wives and mothers and offspring by safeguarding the entrance to matrimony from infectious diseases. A few states, North Dakota, Michigan and Indiana, have enacted laws for this purpose; similar bills have failed to pass before many other state assemblies. The first and one of the best enacted is the Creel bill of North Dakota (1899), which requires all applicants for the marriage license first to present a certificate from a medical examining board of three physicians, appointed by the county judge, showing freedom from venereal disease, habitual drunkenness, insanity and tuberculosis. A vital defect of the Indiana bill (1905) is its lack of any provision for medical examination. It requires the State Board of Health to furnish a form of application for license to marry (Sec. 2) and denies the license "where either of the contracting parties is afflicted with a transmissible disease" (Sec. 3). "No license to marry shall be issued except on written and verified application" (Sec. 1). So far as the bill goes this verification may be the sworn statement of the applicant, who is incompetent to determine whether he has a "transmissible disease" or not. Clearly this inspection should be thorough and impartial and made by medical officials of the state under efficient modern clinical and laboratory tests when necessary. Only in this way can there be any adequate guarantee of safety in the marriage contract. Our medical education to-day is fully equal to such demands and could have no more worthy or humane employment.

In this great symposium on the "Duty of the Profession to Womankind" her safety in wedlock should make a strong and sympathetic appeal to the physician, who in all ages has been woman's high priest, to whom she has always turned for ministrations in her helpless hours of distress and pain. He alone has an adequate knowledge of the specific cause, the channels of transmission, the manifold pathology and the deplorable sequelæ of venereal diseases. By these tokens, such a knowledge carries with it a responsibility he may not honorably evade. It reaches further than his private office. It carries him out aggressively onto the higher plane of preventive medicine, of which marital sanitation should certainly constitute its most important field.

Let similar methods of popular education concerning these diseases and their prevention be followed up, which are proving so successful in the campaign waged against tuberculosis. The public must be taken into our confidence in this matter, to secure its co-operation, without which our knowledge is the talent hidden away in a napkin. We must meet it, face to face, in the open. The American Society of Sanitary and Moral Prophylaxis, under the lead of Prince A. Morrow, has instituted just such a move, to interest the laity in the discussion of every phase of venereal diseases and their prevention. There is an immoral side to these diseases which complicates their discussion beyond that of all other contagions. The fact that they are contracted and imparted chiefly through a voluntary act invests them with a criminality in proportion to a knowledge of the possibilities of such an act. Every man, therefore, who infects his wife or taints the blood of his children is more or less a criminal. If we as physicians fail to impart to the public our knowledge of these dangers and means of prevention we become *particeps criminis*. When the public is better informed, intelligent legislation will follow, and wifehood, maternity and progeny will be freed of much of the peril of contagions contracted and imparted by the volitional acts of man.

The duty of the physician seems plain in this matter. He should work, in season and out of season, in private office and in public function, in medical societies and in law-making bodies, until aroused and intelligent public sentiment enacts measures to restrict and to suppress the contagious perils of venery. Only when we have accomplished this can we count on a reasonable guarantee of safety for women in the marriage contract.

EDUCATION AS A FACTOR IN THE PREVENTION OF CRIMINAL ABORTION AND ILLEGITIMACY.*

J. H. CARSTENS, M.D.
DETROIT, MICH.

Illegitimacy can be prevented only by education and the development of self-control in the young. Naturally, it is a slow process so to educate and train the masses that illegitimacy shall cease. The home training, it seems to me, is where the trouble lies at present. The father does not explain to his sons, nor the mother to her daughters, the secrets of reproduction, and the result is, they learn it from some ignorant person and sexual thoughts are given a vicious direction. They hear from others still more and are coaxed and urged to practice the sexual act, and thus easily fall by the wayside. If the mother would explain the physiologic process to her daughter, there would be very little illegitimacy.

If, however, pregnancy has taken place, the crime of abortion must be strongly impressed on the individual, but somehow or another the religious teaching has been very weak on this point. People with the highest moral principles, otherwise, think it perfectly right to produce abortion or to have it produced on them. We can easily see how the unmarried woman becomes desperate and loses her fine sense of right, but for the married woman it is absolutely inexcusable. Appealing then to the moral sense without avail, we must call attention to the great immediate danger and the resulting chronic invalidism in many cases. We must do more, we must help the unfortunate unmarried by showing them a way to avoid exposure and shield them and take them to institutions where they can be safely delivered.

The whole question seems to me more deep-seated than all this. It is our whole social fabric that must be improved. One of the principal causes I think is late marriage. The women will not get married unless the man is rich or has a good income. A man can not have a good income until he has had experience, that is, he must be older. The man does not marry young because the woman puts on too much style and he can not afford it on a small salary, hence marriage is deferred until later in life. The sexual passion is strong, as nature intends it should be, and many fall. Hence, I must conclude, that the lessening of illegitimacy and abortion can be only brought about by home training and early marriages.

* Read in the Section on Hygiene and Sanitary Science of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

EDUCATION AS A FACTOR IN THE PREVENTION OF CRIMINAL ABORTION AND ILLEGITIMACY.*

HENRY O. MARCY, A.M., M.D., LL.D.
CAMBRIDGE, MASS.

A distinguished physician once said to me that he did not understand why there was implanted so strongly in both sexes the passionate desire for sexual relationship, while at the same time its gratification was hedged about by so many dangers and penalties.

I suppose this thought has been prominent in the minds of all wise men during the history of the race, from savagery to the present. Many-sided views have been expressed by previous speakers. Few questions pertaining to the civilization of the present are more important or have a greater influence for good or bad on the higher development of man.

EDUCATION THE NEED.

The only thing which I wish to emphasize at present is that every young man and young woman should be intelligently taught during the period of education, commencing at puberty, the meaning and possibilities of the sexual relationship. The inherent forces of Nature compel each individual to give heed to these desires and it is the duty of a wise training that a correct interpretation be made of them. It is easier to write a book on such a subject than to give definitions which are not misleading in the limit of a paper of this character.

I assume, although there are many who will not agree with me, that if the individual can be taught to accept and fully to believe in a mode of living that shall give him the longer life, the less suffering and the greater happiness, this will be the one way of living from which he will not depart.

I assume that a young man or woman just entering life, with ordinary intelligence, looks down through the vista of the coming years, actuated with the desire of "how can I make the most of this life and extract therefrom the greatest pleasure and profit?" and just here is where the education should rightly begin and it is the duty of those who are experienced to teach the inexperienced and of those who are wise to teach the ignorant.

"No new thought," you say, and you may justly quote the instruction of one of the wisest of the old writers, who said, "Train up a child in the way he should go and when he is old he will not depart from it."

* Read in the Section on Hygiene and Sanitary Science of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

It is just here that the new temperance movement, teaching the children from a scientific standpoint the effect of alcohol, is having its largest fruitage in the cause of temperance. We stop a moment to pay a tribute to the memory of the late Mrs. Hunt, of Boston, the apostle of this new training.

Much more difficult, much more delicate, is the teaching of the young regarding their new-born sexual instincts. A boy, even much less a girl, at all daintily reared, will not go to father or mother for explanation or instruction. They seek it much more naturally from their own mates and comrades, who are equally ignorant and their speculations are very like to lead them into an experimental school, feeling their way blindly and often in the greatest danger after knowledge. Too often they repeat the experience of the boy, dancing with pain, as he blew his fingers, stating that he thought only red iron burned, not black. In the full tide of the young vigor, the fires of life under the forced draught of licentiousness may cut short a pleasure that was intended to last into the later years of life, and what is more pitiable than such a man introduced into the matrimonial relationship, who can be neither husband nor father; or such a woman, who can be neither wife nor mother?

EARLY NEW ENGLAND HOME LIFE.

I grant that it is extremely unfortunate that there are so many forces actually brought to bear against early marriages, especially in the class better fitted for parental duty. Of course, it is better to educate one child aright than to worry over a brood of half-trained children; but I look hopefully into the future when the sound sense of the generations to come will not be warped by the false ideas dominating the present, which unduly influence to a false life of society, pretense and fashion.

The earlier New England home life of the young mated couple setting up their lares and penates around a simple hearthstone of independent ownership and working out life's problems together is far more ideal. A young man fully conscious of his ability can become convinced, however, that a life of sobriety and continence is best, although he may consider it in the extreme self-denying, and then he is willing to defer present pleasure for the future satisfaction which he knows will bring him compound interest. This is much more true of the young woman thus intelligently taught. Each should know the laws of reproduction and especially the dangers of their violation. Virtuously trained, a young man and a young woman may resist the temptation of yielding to sexual desire, but how much more carefully will they train themselves to resist the temptation of desire when they know more of its penalties. No young man ever deliberately contracted venereal disease. I suppose the large majority of the sufferers will confess to a truthful ignorance coupled with the statement that "had I known I would not be thus punished." Farther than this, when he is made aware that thereby he imperils his manhood, perchance forfeiting all right to legitimate marriage, he will stand appalled at the temerity of his ignorant gratification.

Who are the women leading this public life, alluring young men to danger? Are they not themselves the victims of previous ignorant infatuation and misguidance? Some one's daughter, trained by a fond mother in the trusting faith that such a fate can not belong to her own. If for no other reason than this there can be but little argument in favor of prostitution, no matter how regulated, since the ultimate fate of these women is unspeakably sad. It is said that crime goes not single handed, and debauchery of this sort is ever accompanied by the detrimental effects of intoxicating drink, and the last estate of these devotees is worse than the first. But we can not dwell on this side of the picture longer.

THE AFFIANCED.

The affianced reason, "Are we not each to the other at onement?" And following the hour of ignorant gratification comes impregnation with its attendant disgrace. Hence the abortionist, who holds out the promise of the easy and safe way of condoning the error. Infectious processes generally follow and, if life itself is saved, health may never be restored and the reproductive organs themselves may be ruined. All these bitter experiences are learned from the infraction of laws which would be respected in self-interest, if understood.

THE NEWLY MARRIED.

I fear a greater injury to the community comes from the ignorance of the newly married, where both husband and wife may consciously agree that the delayed menstruation can not be serious and, therefore, that legitimate means to "bring round" to regulation ways, can not be harmful. I think this type of wrong in the community is greater in the so-called higher classes of society. The bride of a few months is not willing to forego her social privileges and "to settle down," and why should she not institute means, in common practice among her social mates, that may relieve her from the dreaded duties? In their semi-ignorance they seek council together and confer over their supposed misfortunes.

I recall an illustrative incident. My reasoning with the young wife was fruitless. "If I did not care for her there were others whom she knew whose services would avail." Thinking a little delay might bring about a better reasoning, I gave her a placebo with very careful instructions how she should take her medicine. On her way home she met with a slight railroad accident, the jar and fright inducing a miscarriage. She showed her gratitude by sending to me one after another of her friends, I think seven in number, who insisted in having the same prescription that I had given Mrs. X., and not one of them could be convinced that, if I only would, I could easily produce a similar safe result. I leave it to others to make the emphasis on the crime of the destruction of the fetus even in its earlier stages of development.

With many this will have a proper influence, but I am sorry to feel that in the present stage of our education the average woman will reason that delayed menstruation when maternity is not desired is a stage of her existence and that the product of early impregnation is of so little importance that it will not be seriously estimated as a criminal offence.

CONCLUDING REMARKS.

I am aware that I have scarcely touched on some of the phases of this problem, a subject on which one does not willingly write, since he is easily open to misconstruction. This illustrative anecdote may be apropos: A Parisian gentleman was very anxious to instruct his son in the dangers of venereal disease, to which he was assured he had been exposed, and he took him to his friend, the distinguished Dr. Ricord, who, on request, showed him through the hospital where there were many suffering from these disgusting ailments. At the close of the

visit the wise physician bade the young man to beware of such diseases, but was surprised by the quick reply, "M. Ricord, you have shown me such evidences of your remarkable skill and ability that I shall immediately consult you on the first evidences of suffering."

A few cardinal rules should ever be kept prominent. Instil into the minds of both sexes high ideals. Teach them that God desires that His children may enjoy pleasure and not pain, happiness and not sorrow, that virtue in all things adds to the real enjoyment of life and in the relationship of the sexes, that a virtuous man should be the complement of a noble woman, and that each should be to the other in such atonement that one life may be the full complement of the other. That the highest harmony and the greatest joy will be found in the declining years of life, when, still hand in hand, they are walking together actuated by a common purpose.

THE GUARANTEE OF SAFETY IN THE MARRIAGE CONTRACT.*

PROF. A. DUEHRSSEN.
BERLIN, GERMANY.

In the address of your chairman a sentence is contained which I should like to use as a motto for my short remarks:

Sanitary science prevents injury to another, even inadvertently.

Therefore it is the self-evident duty of a man entering into matrimony to show a medical certificate proving that he is in good physical and mental health. This demand is particularly necessary in the case of men who have indulged in sexual intercourse before marrying. But I doubt very much whether such a certificate is sufficient with regard to gonorrhea. I could mention many cases from my own practice in which men who had acquired gonorrhea five, ten or even fifteen years before, infected their wives, though they had been declared perfectly healthy by eminent specialists. And the cases of which I speak were not simply catarrhs of the uterus and the vagina, but cases of pyosalpinx and abscess of the ovaries, with consecutive inflammation of the peritoneum. These diseases had changed healthy girls, full of the joy of life, into despondent women, who, through their husbands' fault, were forever denied the blessing of children and who could be cured only by major surgical operations. In the worst cases these operations consisted in the removal of the uterus and both ovaries, so that thereby these women were deprived of their sexual character. Therefore it should be required that the physicians who have to issue certificates as to the absence of gonorrhea shall make exact and repeated examinations with all known diagnostic means before declaring the man to be free from gonorrhea.

According to my experience, chronic gonorrhea of the male, in contrast to syphilis, is still regarded by many physicians as a comparatively harmless disease. It is the merit of an American physician, Noeggerath, to have proved that chronic gonorrhea of the male is the cause of most of the inflammatory gynecologic affections.

Does a certificate protect the women from gonorrheic infection? According to my conviction, by no means! The man who for some time has presented no signs of gonorrhea may still carry about gonococci, which, in consequence of some irritation of the urethral mucosa, may come to the surface and give rise to infection.

It is, therefore, the duty of the physician to educate the general public to understand that the best guarantee of safety in the marriage contract lies in the sexual abstinence of the male, and it is the duty of every father—I myself have followed this precept—to instruct his sons concerning the physiologic processes of reproduction and the dangers of extramarital sexual intercourse. Have them reminded of the words of the Bible:

I will visit the sins of the fathers upon the children unto the third and fourth generation.

Have them reminded of the duties which they owe to their futures wives, their children and to the state, and by early matrimony enable them to carry out sexual abstinence.

Sexual abstinence is facilitated by hard study, by the various athletic sports and by abstinence from alcohol as practiced to such an extent in America.

Thus education in the parental home is the best guarantee of safety in the marriage contract.

* Read in the Section on Hygiene and Sanitary Science of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

THE PROTECTION OF THE INNOCENT.*

WILLIAM LEE HOWARD, M.D.
BALTIMORE.

The highest aim of the physician to-day is to prevent disease. Physical diseases are being studied in the laboratories and at the bedside. Mothers are taught the hygiene of the bedroom and teachers some useful facts about the care of the teeth and eyes. The women teachers in the mixed high schools attempt to give to their disinterested scholars academic fancies regarding the physiologic action of a glass of beer, meanwhile oblivious to the adolescent's silent appeals for some true statements concerning the laws of Nature. We need a new code of ethics of the sexes. A science of sex is necessary to a proper understanding of Christian sexual ethics. We can mature a perfect ethics of the sexes amid moral innocence, but not amid physiologic ignorance. The present unfortunate and antisocial conditions have been brought about by the orthodox moralist who has been afraid of Nature's truth and who persistently ignores facts. These negative individuals have too long labored under the erroneous idea that the influence of some vague intelligence or a mythical mentor will instruct the young girl in all of Nature's laws and impress on her the consequences of disregarding these laws.

PUBERTY: ITS SIGNIFICANCE.

As puberty silently and insidiously arouses the girl to introspection, as vague and sometimes uncontrollable sexual desire forces her along a trail of autoerotic queries, she seeks in vain for truths which she scarce dares to own to herself that she was conscious of and understood. Innocent of any wrong feeling, her soft, sweet and womanly emotions are ignored by her mother, her teacher and her married sisters, and either through harmful floundering in her unaided development or more often through the baneful tales of a sexual neurotic she learns that every living man and beast is the product of sexual gratification. This knowledge coming to her by muddy and contaminated channels can not but defile her thoughts and she goes out into the world without realizing the great truth that sexual gratification is not sensual gratification.

* Read in the Section on Hygiene and Sanitary Science of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

At this age of tremendous significance to the young girl she is left alone to wonder, and is denied her birthright to know herself. If she is in the hands of that antisocial being, the psychically unsexed woman, she receives no sympathy, no womanly instruction or advice, and either breaks away from such unnatural environment and succumbs to a powerful impulse which she has not been taught to control and to guard as woman's greatest blessing, or becomes one of those many unfortunate cases, a psychic and sexual neuropath.

The truth is denied the young girl at the time her mind and body are opening their wonderful blossoms to receive it. At this period in her life she has misty longings that fill her heart to overflowing and, like the young Greek girls who were wont to worship Aphrodite, she wishes to offer herself as a gift at the holy place so that the goddess might be glorified in her and herself be a participant in the highest happiness of woman, the joys of motherhood. But the bestial seems to have won a victory over the divine in parents, teachers and obscure philosophers, for the holy ideas of Venus Urania have been supplanted by those of the lupanar of Venus Vulgivaga. The majority of people, and many physicians, do not properly estimate the great factor underlying the basis of physical and moral health—sexual activity. They do not understand the necessity of early guidance of this force into mental and physical channels, nor the fact that explosions of sexual energy are protean in their effects. To successfully protect the adolescent from the fearful results of early sexual indulgence, instruction in sex physiology and statements of practical facts must go along gradually with the development of mental and physical growth. This necessary instruction can only be given by those who are virilely or womanly cognizant of sex differentiation; of the pitfalls and whirlpools into which the slightest sexual variant may be drawn, and of the sensual ideation teasing the plastic thoughts of the adolescent.[1] It is too late to teach the present parents, but we can get their assent to a proper teaching of those who later on will be parents, especially those of potential motherhood. What we purpose, and the reasons thereof, must be outlined for the mothers and fathers of to-day to understand and to accept. Give the public to understand that we desire to throw around the girl such an armor of practical knowledge of herself and of Nature's laws that she will be invulnerable to the wiles, lies and seductive promises of a certain class of men and their advertisements, and the public will readily assent to our proposal, for, as Huxley said, "An intelligent assent is based on knowledge."

Whether we are followers of Lamark or Weismann, or simply laymen of acquisitive experience, we recognize the influence that past habits and social conditions in sexual matters have had on the psychosexual activities of young women. It is due to the fact that such subjects have been left to those totally unfit by experience and training to understand life as it is; individuals who are either blind to the truth or else wrapped in a fog of morbid and hypocritical cowardice, that many an ignorant but good girl had lost her virtue through curiosity. This is not a subject for the ethical philosopher or the individual of monastic habit and negative sexuality to teach. It is for the live, virile physician to go into the details of the lives of individuals, for it is he who will detect the causes of social diseases that have their genesis in secret.

1. Howard, W. Lee: "Feminization of the High School," The Arena, June, 1905.

THE PRECHRISTIAN AND CHRISTIAN ERAS CONTRASTED.

Sexual activities were honored and revered in all civilization up to the time of the Christian era. Laws were made governing the acts of men and rules were laid down for the safety of good women.[2] Teaching hygiene of the sexual organs as well as condemning and explaining secret vices, vices which are now ignored by mothers and teachers, yet practiced to-day, were part of a mother's duties, while in the schools widows were appointed to the chair of sex science.

With Christianity came shame of God's greatest gift and wonder, the organs of procreation. The dark, chilling atmosphere that enshrouded the church produced fearful abuses of Nature's desire to bloom and blossom; abuses which brought about flagellation, scourging of the body, hysterical illusions of an erotic form and the autoeroticism of the monks and nuns. The history of these polymorphic explosions of divergent sexual activities forms a horrible and sad story of perverted sexual morality, and is only hinted at here in order to get a glimpse of the conditions that have produced this inherited false modesty and hypocrisy in parents of to-day which is the cause of ill health in thousands of girls and the reason so many are morally blind and sexually secretive.

THE PHYSICIAN'S RESPONSIBILITY.

Why are parents to blame in this most important matter to our social state? Why is it that a mother allows her 15-year-old daughter, whose whole attitude, eyes, lips, breath, demonstrates the smoldering sexual volcano, to attend the theater with young acquaintances, often physical virgins but mental prostitutes, and listen, yes, become absorbed in erotic suggestions? Who is to blame if in a few months this child goes wrong, becomes a social outcast? The medical men, the men who should, and whose oath demands that they should protect the ill, the innocent, the weak.

It is the men of our profession who should take aside the father and mother and point out the oncoming of the great psychic and sexual upheaval. We should take the daughters and so carefully guard their thoughts and ideas that there will be no morbid curiosity aroused, no shock, no wonder. The young girl who has been accustomed to view the old family physician in the light of a kindly moralist and adviser in mumps and chicken pox, fears to question him; especially she who is conscious of a passion that produces an hysterical state which is difficult to conceal. *Heu! quam difficile est crimen non prodere vulto* (Ovid). Such men when they see their duty and don't do it are moral cowards. If they do not recognize all the little psychical and physical signs of adolescent eroticism they have missed their calling. A man who sees anything harmful, unsavory, or peculiar in stating the truth to young people of what we know of Nature's laws, belongs to the period of monastic eroticism. How can we protect a girl from falling into sexual errors, from actual physical sufferings or dangerous tampering with a natural desire, if knowledge of her sex laws are left for her to define and her psychic explosions to relieve?

There are masses of facts concerning this question of the protection of the innocent that can never find a place in mere statistical tables. These facts are well known to those who have been brought into confidential relations with young girls and women; who have been able to follow them from luxurious homes to the dark, oppro-

2. Howard, W. Lee: "Laws and Teachings of the Ancient Hindus in the Art of Love," Medicine, April, 1906.

bious dens of shame; who have carried them in the ambulance or private carriage from grewsome lupanar holes to the hospital wards, and watched the innocent school girl gradually merging into a state of psychasthenia because the mother denied the very existence of that passion by which she was able to give birth to the daughter. Those of us who have had this experience should speak to the public with authority and not in a tampering manner or a "leave it to God" attitude. Some opinions of social conditions are not so much compromised by ignorance as by lack of moral courage, or, what is baser, a commercial spirit; the fear of losing the patronage of the church or of smug patients. It is so easy to acquiesce complacently in the mother's idea that the minister or priest can inhibit by prayer and admonition the greatest physiologic function given by God to man—sexual activity.

I have interviewed girls and women in cities throughout the world; I have had confidential relations with all classes of outcasts and demi-outcasts; I am cognizant of many innocent downfalls of school girls and feel confident that many of all these classes could have been saved from a detestable life of shame and disease had they been instructed early in sexual hygiene as well as in physiologic laws. I make a special point of sexual hygiene because many girls first become awakened to sensuous feelings through the itching and irritation produced by the smegma and other by-products of physiologic economy, thus insidiously falling into the habit of masturbation. Then follows rapidly erotic ideation, morbid curiosity, secretiveness, salacious reading and all the other psychic disturbances known to the student of morbid mental conditions. If such unfortunate girls had been taught the necessity of keeping the sexual organs clean, as they had been taught to care for their ears and teeth, many of them would never have had an abnormal or unnatural imagination.

It is beyond cavil that there are born prostitutes as well as born criminals; that there are also women who develop along the line of least resistance and remain demi-virgins all their lives. These latter are of the mentally and physically neurasthenic type; they have not the psychic balance to resist morbid erotic fancies nor the impelling physical force which breaks out in imperative sexual desires. It is not my intention to speak here of either of these two classes. One, the born prostitute, we have always with us and probably always will have with us. She belongs to all men to treat with pity and kindness. She is a part of our social fabric, but she is on the ragged border, she must be kept there, and those who wish to tread on this border do so at their own risk. But it is our duty as medical men to show to both sexes the poison, the misery, the suffering and the mephitic sting of rottenness that lies on this outer fringe of the social fabric. The second class, the erotopath, belongs to the physician to treat as psychically diseased persons, very often as mentally diseased.

NOTES FROM THE AUTHOR'S EXPERIENCE.

The girl I wish to interest you in is the innocent girl of normal physiologic attributes who is always in danger of becoming a social outcast through ignorance of those laws which it is our duty to see that she thoroughly understands before it is too late. One or two examples of many, Oh! how many! that have come under my personal observation will give you a clear idea of what I mean.

I had a lawyer under my care. His wife was childless and apparently, psychically unsexed. This wife had had charge of an orphaned niece for many years. At this time the girl was fifteen years of age and fully developed as regards womanly attributes. I had several confidential talks with the lawyer about this girl going constantly to matinees and warned him of the danger. He thoroughly understood that she needed mental quietude, proper instruction in sexual matters and a real woman's care. He tried to get his wife to understand the conditions, but she would not listen. This female would not admit the existence of sexual passion in a good woman, and said that M. was an innocent child and that she, his wife, would never, no never, listen to the nasty advice of Dr. Howard.

Well, it is only another chapter in my book of human documents. The wife became very angry with her husband and myself. One evening about a month after Mrs. B. had refused to listen to me, I entered her house and found the young girl alone and in a state of sexual excitement. I was not surprised. Instead of such care and instruction as would have enabled her to suppress and guard this passion, everything possible had been allowed to feed this physiologic and psychic upheaval. She had never had a word on the subject, and helpless and alone the fires of uncontrolled activities were allowed to smolder and burst into a sad sexual holocaust. I at once sent for a good nurse who was not burdened with ignorance or false modesty; neither was she psychically unsexed nor ashamed of her sex. Both doctor and nurse had to leave the house without seeing the girl. What followed is only a variation of these sad cases. The pent-up and directed sexual fires were fanned by all-night vigil of erotic fancies. In the morning they broke out in irresistible impulses and at eleven o'clock she went to the office of a young man she knew and solicited his services. So down she fell, and at nineteen is a by-word for all that is immoral. She has repeatedly told me that if she had been properly watched, advised and had had plainly explained to her what her teasing nature and increasing nervousness indicated; if she had had medical advice, had been taught the necessity of keeping the sexual organs free from irritating substances, she would to-day have been a pure girl.

All the women, teachers and guardians, also many mothers, who have under their charge young girls, should be carefully selected. Those who will not shake off prurient prudery and hypocrisy and teach plain facts, should be put aside and their charges given over to womenly women and those endowed with normal physiologic instincts whose sympathy and truthfulness will redound to the future purity of the girl.

I know of three girls, not one of whom was over seventeen years of age—one was fifteen—attending a normal school, who were pregnant the same year their first years at this mixed school. They were from the country and had been sent away from home without the slightest advice concerning sexual matters. One of these girls did try to ask her mother questions but was turned away with the ordinary platitudes of the moral coward. The farcical side of this hypocricy and deception is seen when we remember that these girls were to be turned out as teachers of the young.

These cases are a few examples of the ruin of young girls through the criminal neglect of parents and physicians. A sad instance of this antisocial condition I have reported elsewhere,[3] while in my work dealing with abnormal sexual activities, I try to show the baneful results of false sexual education.[4]

3. Howard, W. Lee: "Masturbation in Young Girls," Buffalo Med. Jour., Dec., 1905.
4. Howard, W. Lee: "The Perverts," G. W. Dillingham Co., New York.

PROTECTION BY EDUCATION.

The question of protecting the innocent is neither medical nor legal in the strict meaning of those terms, but educational. There is only one remedy for all acts whose basal cause is ignorance, and that is education. In this matter the objects for attack are the mothers and teachers; the subjects for education are the young girls.

The separation of the sexes in schools is neeessary to give proper instruction in sex knowledge. In fact the sexes during the adolescent period should always be separated if we wish to get the best educational and moral results. In sex instruetion, even with the sexes separated, we must have group instruction, according to the mental and physiologie development of the individual girl. This instruction must be given by those who realize the tremendous significanee of the sexual awakening. The men and women who are to impart sexual knowledge should be those of strong sex eharaeteristies. The female of masculine tendeneies or the effeminate male do harm; they are unfit to associate with adoleseents.

It has been the general attitude of the pulpit moralists and superficial observers to say that no girl was ignorant of what she was doing; that she should have had "moral courage;" that no decent minded girl would think of vile actions, ete., ete., *ad nauseam*. This elass of library moralists confound innoeenee with ignorance and are blind to the tremendous sexual foree in many natures. With the false ideas and ignorance of Nature's ways, as well as the parental silence and denials displayed daily in homes and churches, it is not strange that so many girls give way to an unguided impulse, but strange that more do not fall, for remember, it is not innoeenee that saves a girl, but ignoranee that ruins her.

There are thousands of girls in the upper and middle elasses who, while not innocent, are ignorant of the primal laws of Nature. Many have tried to get the information their adolescent longings crave; many have striven to seek out the mystery after having been snubbed or denied by their own mothers. If the opportune moment arrives, and it generally does, the girl falls into the salaeious seductiveness of some vieious minded woman, the seeds of false sexual edueation are sown and their spurmy growth forever crowds out the tender tie between mother and daughter, and, as the mother dissembled, so will the daughter lie.

As I have suggested, the truth as we know it, should be instilled into the mind of every girl. I should eommence when they are very young by teaching them the beautiful laws and arrangements of Nature in the reproduction of plants and flowers, emphasizing the sex differentiation. Gradually, as she mentally develops, she should be led along Nature's path up to the reproduction of birds, then animals, explaining their mating habits and the reasons therefor. When Nature was giving the girl the first early signs of her own reproduetive powers she should have the whole truth plainly told her. Now the girl will see the beauty, the wonderful, the ethical side of a normal sexual feeling, and sensual sensation will be suppressed. She will seek for no mysteries to dream about, have no morbid euriosity to lead her to experiment, but be in the normal condition of a healthy woman who knows and will be master of natural passions until her time of mating eomes.

Another form of instruction I find advisable in many cases is, to tell the truth, about the advertisements seen in some daily papers, as well as the facts concerning the seeret circulars sent surreptitiously to girls.[5] We have, as a profession, protested against the publieation of these criminal advertisements. Laws regarding such filthy stuff seem ineffective and only when the business end of the paper is guided by a clean, moral minded man, have these advertisements been suppressed and forever excluded. It has been the habit to blame the editors for allowing sueh advertisements to appear, but from an extensive experience in editorial rooms, I can safely say that almost every editor, if he eould have his way, would never allow such filth to befoul his eolumns. We can drive many of these advertisers out of business, however, by exposing their wares. Many girls have told me that they thought they eould avoid exposure by taking the pills, etc., that were advertised. They discover the truth when it is too late. These girls, some of them on the verge of reekless despair, many committing suieide, would have remained virtuous had they been emphatically told that these advertisements are fakes and the drugs either very dangerous or useless.

We must look on this whole question as it is, not as we would have it, or, as some fatuously believe, non-existent, and it is only sliding from the question to say: "No girl who has a tendency to go wrong will be stopped by knowing the facts about these lying advertisements." Boldly and frankly I say there are girls whose natures are such that only the knowledge of what follows unchaste habits and the fear of pregnaney, keeps them pure. These are the young girls from fourteen to eighteen; after this period there is something of the personal responsibility in the woman.

Only a few days ago I became cognizant of a fourteen-year-old girl who was pregnant. Her mother is a mental wreck from the shock, which is a severe punishment for her neglect and cowardice. She allowed the child to grow up without a word of instruction eoneerning her sexual organs or sexual life. Now in her mania she piteously cries that it never entered her head that F. "was anything but a little innocent ehild." If she had said an ignorant child with a criminal mother, she would have been nearer the truth.

On questioning this ehild I found she had been allowed to go to "harmless danees," where she met older girls of vicious tendencies. They wore watehes and other jewels which aroused invidious thoughts. It is the old story of the vanity of adornment plus the ignorance of the child. The little girl asked her mother for a watch and she was denied. She was promised a wateh by one of the male dancers. She had some slight, indefinite knowledge, information picked up sporadically and left-handed, eoncerning the danger of beeoming pregnant, but these hazy fears were all calmed by pointing out to her the advertiscments of "female regulators." She told me with tears and agonizing appeals that had she not been told that these "regulators" would keep her from getting into trouble she never would have been tempted by a gold wateh.

Probably in no other way can we so rapidly drive out these nefarious fakers as by frankly and eonstantly teaching the public concerning them.

5. Howard, W. Lee: "Masturbation Among Women," Medicine, March, 1906.

Lung Gymnastics.—L. Sexton, New Orleans, in discussing the treatment of pulmonary tuberculosis, stated that if lung gymnastics were practiced by deep breathing for a limited space of time, three or four times daily, the lung tissue would be developed as is the right arm of the blacksmith.

PROTECTION OF THE INNOCENT.*

EDWARD L. KEYES, JR., M.D., PH.D.
NEW YORK CITY.

What is the conclusion to be drawn from the previous papers on this subject? It is, I think, twofold. First, as regards those who assume the rôle of protectors of innocence: let them beware of their ignorance, for, unhappily, they are not all-wise. Even supposing that those who speak here to-day and who have contemplated gravely the duty of our profession to womankind are, in some degree, competent to advise and to guard the innocent, we can not serve for all; our authority must be delegated. And strange and various will, doubtless, be the doctrines taught by those whose chief qualification as protectors of innocence is their boundless enthusiasm and a superficial knowledge of what wiser men have spoken. Witness current school instruction on the effects of alcohol.

Hence our mistrust of the old-fashioned patriarchal methods of protecting innocence by enshrouding it in ignorance. Our forefathers so confused the two terms that to them knowledge in woman often meant wickedness and ignorance.

Our second conclusion to-day is manifestly the converse of this. We find it possible to fortify woman's innocence chiefly, if not solely, by her own wisdom. We wish to protect her by teaching her, not by preaching to her. We would have her innocence so protected by her own experience that she should herself distinguish the true guide from the false. We would prove true in every-day life those words of Horace which, though spoken some twenty centuries ago, are even yet the expression of an ideal:

> Virtue, dear friend, needs no defense,
> The surest guard is innocence.

But in thus delivering weapons of offense and defense into the hands of our sisters, shall we not mar the bloom of their innocence? Will not some grime of worldly wisdom cling to their skirts? In some instances surely it will. It were old-worldish to cry with Butler:

> The souls of women are so small
> That some believe they've none at all.

Yet it were blind to overlook those weak sisters (and brothers, too, for that matter) whose minds can not contain the knowledge and experience necessary for their own salvation. They will always be with us; but a contemplation of them has too long impeded the progress of morality. It is more profitable to consider, as we are doing, the far more fearful spectacle of the prostitution, the abortion, the illegitimacy and the disease that spring so largely from ignorance. Above all, let us contemplate that sublime and pervading innocence which so often shines from the countenance of our philanthropic men and women. They consort daily with crime, ignorance and filth, and yet come forth resplendent in a new and fortified innocence, an ideal innocence, compounded of wisdom and experience and native virtue. Such is innocence self-protected: such our aspiration.

Thus, with due recognition of our own fallibility, we set out to protect the innocence of woman by a campaign of education. No one but the physician could inaugurate this campaign; for no one but the physician is in possession of the facts on which it is founded. Outside the medical profession we are like to fall between the impassioned and bigoted moralist on the one hand and the materialistic cynic on the other. Except ourselves only educators and sociologists are prepared to view the subject sanely. All others must be instructed. Hence we medical men are instituting this campaign, and, fortified by our incredible success in the campaign against tuberculosis, we hope to succeed in conquering or at least in mitigating this deeper-rooted evil.

Yet I confess the problem dismays me. The inherent lust of man and frailty of woman are not to be overcome by any confabulation of learned and aged scientists. We all recognize that. Yet those of you who listened to the graphic depiction of venereal disease brought before this Section last year and again this year and to the discussion concerning its suppression, must realize how far we are from a practical solution of this great moral and social and medical problem. We are only beginning to grope our way amid the darkness of centuries in the hope of grasping a few fundamental truths which may lead to a brighter day. As though the natural difficulties of the situation were not themselves sufficiently trying, we are still further impeded by the contempt of the Pharisee and the scorn of the cynic. But the fight for sexual purity and against venereal disease is becoming organized. The various purity leagues and prophylactic societies are gaining the adherence of the best citizens of many cities.

And now the question arises, Who is to be the actual educator? Physician or layman? Thus far the burden has been assumed almost entirely by the physician, and we all must pay tribute to those few men like our chairman and Dr. Prince Morrow, who have dared for years to face ridicule and scorn, urging the cause in season and out of season until, at last, their efforts are being rewarded. The public attention is being caught and held. But can the physician go much further? He can supply material, he can arouse enthusiasm and temper it by experience; but can he, generally speaking, undertake the details of education? I am inclined to say, No. From my own experience in lecturing on these subjects, as well as from listening to the remarks of other medical men, I should say that we prove ourselves none too well equipped for the actual educational campaign, for the practical didactic application of our theories. An example of the ideal man for such work among men is the Y. M. C. A. physical director. He is half medical man, half teacher, and is vitally interested in the problems of sex and venereal disease. Moreover, I have found these men, in my part of the world, much more practical in their ideas of how this education should be handled than most physicians are. They look at it from the pedagogic rather than from the medical viewpoint and are already equipped with a large fund of practical educational experience. To such men I think we should confide the actual working out of these educational problems among men; and to similar women teachers among women if the mother is not available, as is so often the case.

Our efforts should be reserved for the direction of the medical and physiologic basis of the enterprise.

Yet there is one side of the subject which we and we alone can attack. That is, not the side of the defenseless and innocent, but the side of the infected offender. We can and we must insist that every patient who comes to us with a venereal disease shall understand that he is infectious, how he is infectious, how long he is likely to remain infectious, and what results may ensue if he

* Read in the Section on Hygiene and Sanitary Science of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

transmits his infection to some one else. Herein lies the manifest and prime duty of every physician to his patient and to society. You have heard in previous papers the practical facts and how these venereal patients should be talked to. Do this, and do it earnestly. Whether your personal creed is for or against general sexual education, for or against reglementation, for or against personal prophylaxis, on this at least we can all agree: that no venereal patient shall pass out of our doors without a full knowledge of the infectiousness of his disease. If you will talk to the men, as well as to the women, on a high moral plane and bid them aspire to a possible, though difficult, continence, so much the better. If you will join in the organized crusade against vice and venereal disease, better still. If you will instruct your patients and their families in their duties as parents and as citizens, best of all. But these things can be asked of you only as a contribution to a noble cause, while a full warning to your venereal patients is demanded of you by your conscience and by your profession. Indeed, so simple and fundamental is this proposition that I fear you will regard it as an anti-climax to what has gone before. Yet, were every medical practitioner to issue only this warning, more would thereby be accomplished toward protecting the innocent than by any other single effort. And this is a call, not of philanthrophy, but of stern professional duty.

THE DISCUSSION ON THE SYMPOSIUM ON THE DUTY OF THE PROFESSION TO WOMANKIND COMMENCES ON PAGE 1947.

MALARIAL HEMOGLOBINURIA.*

WALTER V. BREM, M.D.
Physician at Ancon Hospital.
ANCON, CANAL ZONE.

INTRODUCTION.

The fourteen cases of hemoglobinuria here reported occurred in the "white fever wards" of Ancon Hospital between the dates of Nov. 10, 1905, and May 10, 1906. During this time 1,107 cases of malarial fever were treated.

Blood examinations for malarial plasmodia were made with dried smears stained by Hasting's modification of the Nocht-Romanowsky stain, except the examination in Case 1, when the fresh preparation was used. Sahli's hemometer was the instrument used for hemoglobin estimations, except in Case 7, where Dare's hemoglobinometer was substituted. Tests for hemoglobin in the urine were made by the sodium chlorid and glacial acetic acid method. The quantity of albumin in the urine was estimated by bulk, i. e., the coagulum in boiled and acidified urine was allowed to settle for 24 hours in a test tube, the bulk of albumin and the bulk of urine were measured by rule, and the percentage of albumin was estimated. The term, blackwater, is used to describe urine when no tests for hemoglobin was made; the term, hemoglobinuria, is used when the test was made.

The main points brought out by a study of the cases are: (1) The only etiologic factor discoverable was a febrile affection resembling the estivo-autumnal type of malarial fever; previous attacks of malarial fever appeared to furnish a good, but not essential ground, for the development of hemoglobinuria; previous administration of quinin did not appear to be an etiologic factor, either predisposing or exciting. (2) In every case hemoglobinuria disappeared more or less promptly following the administration of quinin by intramuscular injection, but quinin did not influence the excretion of hemoglobin after the production of hemoglobinemia during a paroxysm. (3) The sequence of events seems to be corpuscular destruction, hemoglobinemia, hemoglobinuria. (4) Anemia was usually exceedingly rapid in progress and recovery was very rapid; the symptoms and signs of the disease may be very mild; a peculiar febrile disturbance sometimes followed hemoglobinuria and was uninfluenced by quinin. (5) Albuminuria, sometimes of an extraordinary degree, was a constant accompaniment of hemoglobinuria and ran a course more or less parallel with it. (6) Certain criteria are advanced for the probable diagnosis of hemoglobinuria when the positive diagnosis, by the test for hemoglobin, is not made. (7) The relative value for intramuscular injection of quinin bimuriate with urea and quinin bihydrochlorid is discussed and also the size and frequency of the dose.

CASE 1.—Nov. 10, 1905, No. 6970, Spaniard, aged 23, residence Panama; on the Isthmus of Panama 15 months. Admitted 4 p. m.

Past History.—One previous attack of malarial fever.

Present Illness.—Onset, evening of November 9, chill, fever, headache, vomiting.

Physical Examination.—Scleræ slightly jaundiced. Edge of spleen palpable at castal margin.

Course of Illness.—The patient had a chill shortly after admission. He was given 20 grains of quinin sulphate by mouth, during the afternoon. The following morning, November 11, the blood examination was negative for malarial plasmodia. The urine had the appearance of blackwater and albumin was 20 per cent. The patient was given 30 grains of quinin sulphate, by mouth, during the morning, and at 4 p. m. quinin bimuriate with urea was ordered to be given by intramuscular injection, 15 grains every 4 hours, for 6 doses. The third day, November 12, 15 grains every 6 hours were injected, until 3 additional doses were given, making in all 135 grains within 40 hours. Quinin sulphate, by mouth, 5 grains every 4 hours, was then ordered. Blackwater persisted until the afternoon of November 13. Vomiting was frequent. The scleræ became more jaundiced, but the skin of the trunk was only slightly icteroid; the jaundice cleared promptly. The temperature was recorded only twice daily—6 a. m. and 4 p. m.—and the curve has no character. The highest temperature noted was 101.5. There were slight rises of temperature on November 15, 17 and 19. The patient at no time appeared very ill and his recovery was good. There was considerable irritation from the intramuscular injections of quinin, and the thighs became swollen, red, hot, painful and very tender. The inflammation subsided, however, without serious result. Recovery was good.

CASE 2.—Nov. 18, 1905, No. 7110, American, aged 36, residence Savannas; on the Isthmus of Panama 4 years. Admitted 5:30 p. m.

Past History.—Malarial fever three or four times; last attack 5 months ago, ill 15 days. No blackwater previously. Alcoholic history, intoxicated often.

Present Illness.—Onset, November 16, fever, vomiting, loss of appetite, constipation, no chills, sweats, headache or backache. Urination free, but patient has noticed that his urine has been black.

Physical Examination.—Large, well-nourished man, does not look ill. Respiration quiet. Scleræ slightly jaundiced; mucous membranes of good color; pulse 92, regular in force and rhythm, medium size, tension good. Edge of spleen palpable below costal margin.

Blood: Stained smears show a moderate infection with estivo-autumnal plasmodia; the larger-sized rings are present; no small rings, no sexual forms.

* Read before the first meeting of the Medical Society of the Isthmian Canal Zone, May 5, 1906.

Course of Illness.—The patient felt quite well until the day after admission, when his temperature began to rise at 12 noon. The ascent was slow and the fastigium was reached after 20 hours; the descent required an equal time. The patient vomited several times and suffered from mild headache and a feeling of feverishness. He did not appear very ill and there was no further fever. He became somewhat anemic. Recovery was good.

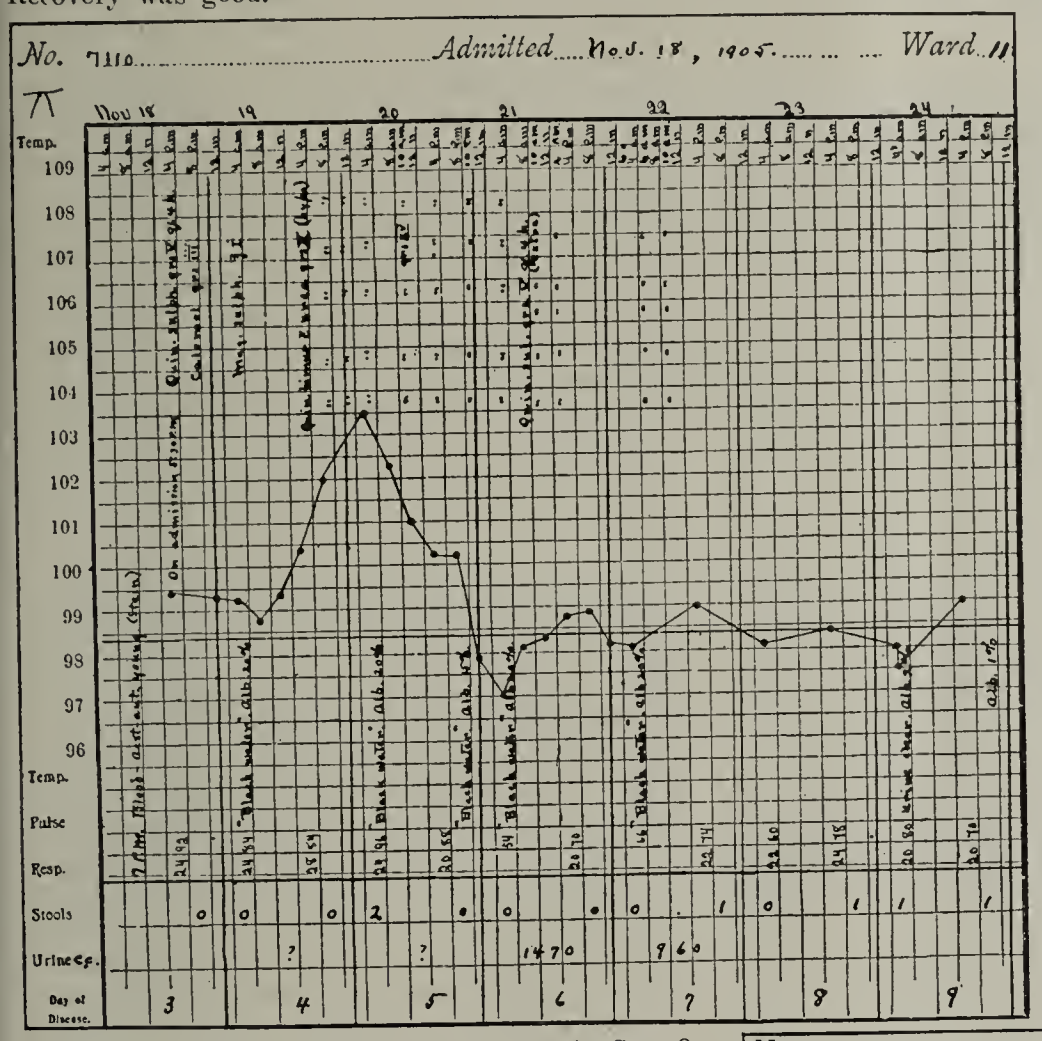


Chart 1.—Showing conditions in Case 2.

Urine: On the morning after admission, November 19, blackwater was discovered and was present for four days, hemoglobin being excreted for two days after the paroxysm ended. Albumin remained constantly about 20 per cent.

Quinin.—On admission 5 grains of sulphate were ordered by mouth every 4 hours. At 4 p. m., November 19, the bimuriate with urea was ordered intramuscularly, 10 grains every 4 hours, for 4 doses. At 10 a. m., November 20, 15 grains were ordered intramuscularly every 6 hours, for 4 doses. In all, 100 grains were injected intramuscularly within 36 hours. At the sites of several injections, small superficial areas of necrosis appeared. These were greenish in color and painless. There was no suppuration.

CASE 3.—Dec. 18, 1905, No. 8408, American, aged 28, residence Corozal; on Isthmus of Panama 7½ months. Admitted 5:30 p. m.

Past History.—Malarial fever three times previously; last attack 6 weeks before admission; ill 5 days. Alcoholic history unimportant.

Present Illness.—Onset December 16, chill about 2 p. m., followed by fever, which has been continuous since. Another chill December 17, 4 p. m. There has been headache, vomiting, constipation and abdominal pain. Patient took 30 or 40 grains of quinin during the 2 days preceding admission to the hospital.

Physical Examination.—Slight man, fairly well nourished. He appears to have a mild attack of malarial fever.

Blood: Stained smear negative for malarial plasmodia.

Course of Illness.—The patient's temperature reached normal on the morning after admission and remained so until the following morning, December 20. His temperature then rose to 101; at 11 p. m. he had a severe chill. On the morning of December 21, he had become intensely jaundiced, was vomiting frequently, the vomitus being dark green, almost black, and his urine was Burgundy red in color and yielded numerous hemin crystals by the glacial acetic acid and sodium chlorid test for hemoglobin. There was a heavy brown sediment, which, microscopically, showed a brown amorphous detritus, numerous brown granular casts, no red blood corpuscles. Albumin was 40 per cent. On examination, respiration was difficult, the patient had a sense of suffocation; the conjunctivæ were injected, the sclerotics lemon yellow; tongue was coated, mucous membranes were pale; the lungs were clear on percussion and auscultation; the pulse was slow, regular, large, tension good; heart was not enlarged; there was a systolic bruit at apex, heard over the body of the heart, but not transmitted to axilla; spleen was palpable below costal margin. The blood examination was negative again for plasmodia. Another chill occurred during the morning of December 21. Blackwater had disappeared by the afternoon of the next day, December 22, and albumin was only 10 per cent. Respiration, however, was more difficult. The pulse was rapid and small, there was another paroxysm of fever, and vomiting continued to be frequent. The condition continued until December 24, when the patient died, apparently of respiratory failure. There had been no recurrence of blackwater and jaundice had almost disappeared; involuntary defecation occurred before death. The fever reached its highest point, 103.4, shortly before death; it was estivo-autumnal irregularly remittent and intermittent in character. No necropsy was permitted, but a rib was exposed postmortem and smears were made from the bone marrow. Examination of these was negative for malarial plasmodia and pigment.

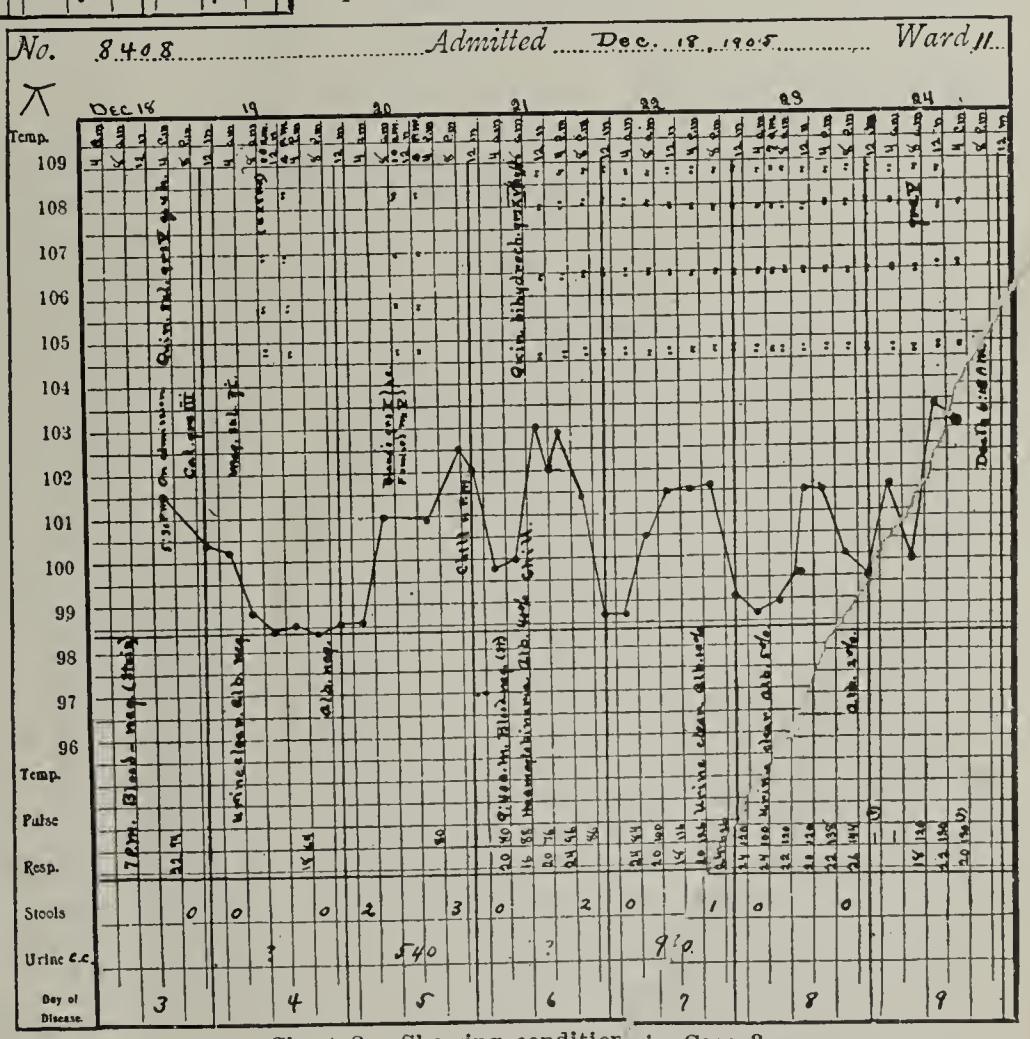


Chart 2.—Showing conditions in Case 3.

Quinin.—On admission, 5 grains of quinin sulphate were ordered every 4 hours. These doses were continued through

December 19 and 20, two additional doses of 5 grains each being given each day, that is, 40 grains daily, for 2 days, at least, were received before the onset of hemoglobinuria. At 8 a. m., December 21, 15 grains of quinin bihydrochlorid were ordered to be given intramuscularly every 4 hours. Blackwater disappeared promptly during the administration of these doses and did not recur. However, the posthemoglobinuric fever persisted and was uninfluenced by the large quantities of

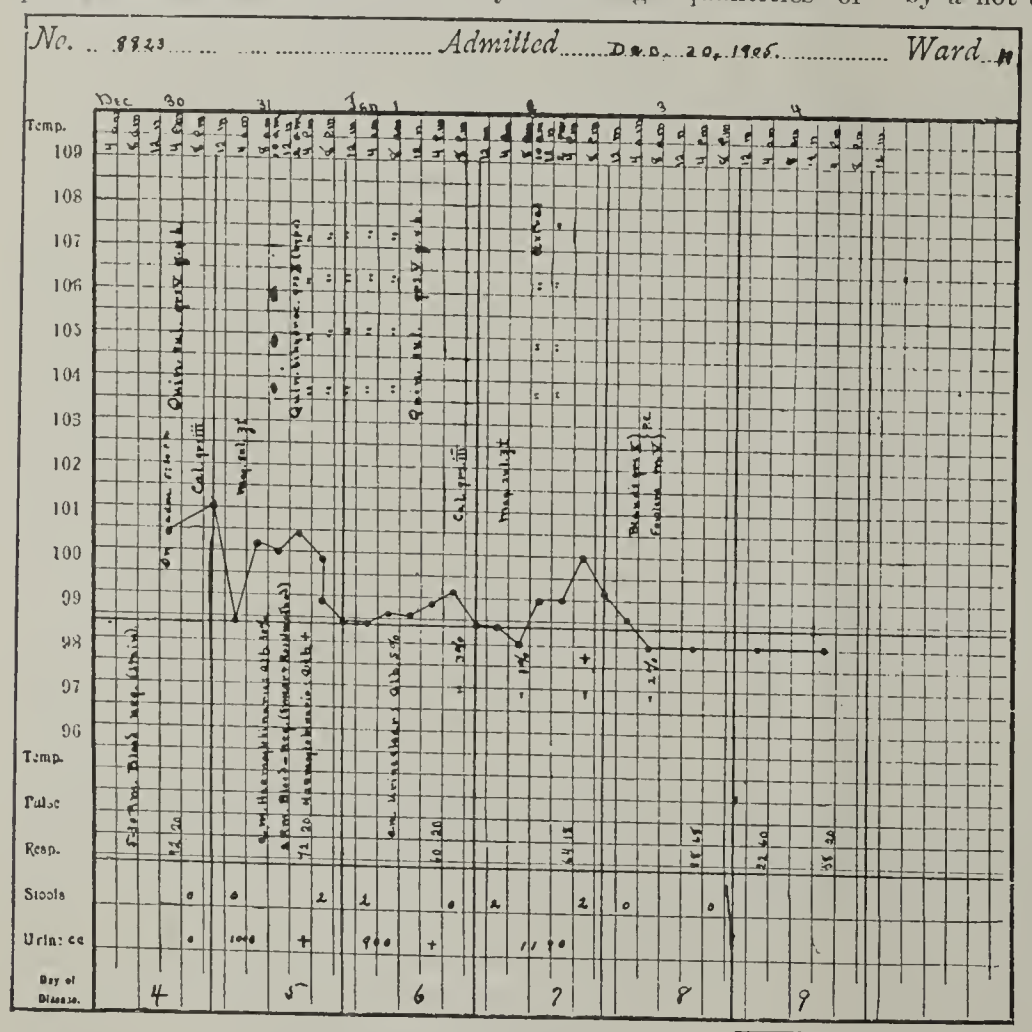


Chart 3.—Showing conditions in Case 4.

quinin. The large doses were continued until the morning of December 24, when 5 grains, intramuscularly, were ordered every 4 hours. I desire to call attention especially to this posthemoglobuinuric fever, which, as will be shown, occurred also in other cases. It was not understood at this time, and the quinin was pushed to an unwonted extent in an effort to prevent further paroxysms which, it was feared, might prove fatal. It is possible that the quinin itself hastened or caused the fatal termination. There were two small superficial areas of necrosis at the sites of two injections of quinin; no signs of suppuration were present.

CASE 4.—Dec. 30, 1905, No. 8823, American, aged 40, residence Pedro Miguel; on Isthmus of Panama 2 months. Admitted 5:30 p. m.

Past History.—No previous attack of malarial fever. Alcoholic history negative.

Present Illness.—Onset December 27. The patient received a wetting and then worked in the sun. He thinks that he was overcome by the heat. He became very weak, had severe headache, and pain all over the body. Fever daily since onset, loss of appetite, some abdominal pain. Bowels open. He has had frequent desire to urinate, but has voided only small quantities. His urine has been getting darker. No chills or vomiting, no special sweating. Quinin has been taken daily since onset, but quantity is not known.

Physical Examination.—Very large, robust man, does not look ill; skin suffused, scleræ slightly jaundiced, tongue coated, mucous membranes good color; pulse, 92, regular, large, tension good. Spleen not palpable.

Blood: Stained smear negative for malarial plasmodia.

Course of Illness.—The patient did not feel ill at any time while in the hospital, excepting some pain and tenderness over the hypogastric region on the morning after admission. He had had retention of urine since admission, the hypogastric region was full and dulness reached half way to the umbilicus; tympany was present in the iliac fossæ. Urination was induced by a hot enema, and about 1,000 c.c. of grecnish-red urine was voided, the foam was tinged with yellow, and there was a heavy sediment. Hemin crystals were obtained, Gmelin's test for bile was positive, albumin 30 per cent., and microscopically there was a brown amorphous granular detritus, hyaline and granular casts and casts covered with the brown granular material; no red-blood corpuscles were present. The blood examination was negative again for malarial plasmodia. Blackwater disappeared on the following day and did not recur, albuminuria persisted mildly for three days, jaundice cleared promptly; after the fifth day the temperature remained normal, and the patient made an excellent recovery with the loss of but little blood. The quotidian temperature was estivo-autumnal irregularly intermittent. Recovery was good.

Quinin.—On admission, 5 grains of quinin sulphate were ordered to be given by mouth every 4 hours; 30 grains were received before hemoglobinuria was discovered. At 2 p. m., December 31, 10 grains of quinin bihydrochlorid were ordered intramuscularly every 4 fours for six doses; 60 grains were received within 20 hours. Blackwater promptly disappeared, and quinin sulphate, 5 grains, every 4 hours by mouth, was resumed The patient was seen again on Feb. 26, 1906, and it was found that necrosis, infection and suppuration had occurred at the site of one injection of quinin. The suppurating area had been incised

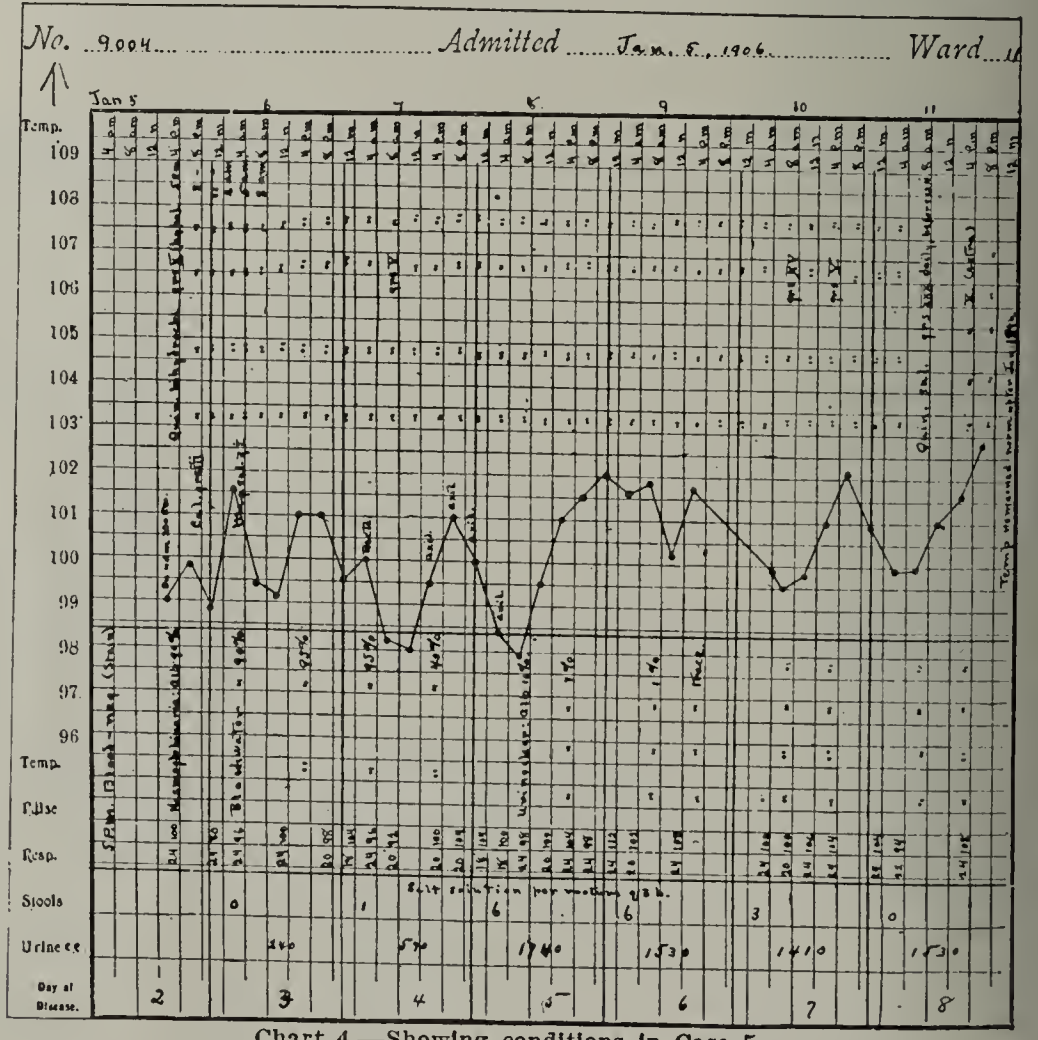


Chart 4.—Showing conditions in Case 5.

and about 300 c.c. of pus evacuated. The cavity was clean and healing was progressing well. The patient stated that when the sixth injection was given, a lump appeared at the site, and it required some time to subside. It is probable that the injec-

tion was given subcutaneously, instead of intramuscularly, and necrosis followed[1].

CASE 5.—Jan. 5, 1906, No. 9004, Spaniard, aged 29, residence Ancon; on Isthmus of Panama 16 months. Admitted 3:30 p. m.

Past History.—Three or four mild attacks of malarial fever during the past two years, none severe enough to confine patient to bed, and none accompanied by blackwater. Quinin was taken during these attacks. Alcoholic history negative.

Present Illness.—Onset 6 days before admission, but patient did not stop work until January 4, the day before admission. On that date he had a chill about 8 p. m., fever, profuse sweating, vomiting, great weakness, some abdominal pain. Very little pain in head, back and limbs. Bowels regular. Bloody urine was noticed on the night of January 4. No quinin had been taken for some time previous to onset, but 27 grains daily had been taken for past 6 days.

Physical Examination.—Sparely nourished man, looks very ill. Tongue coated, mucous membrane very pale, scleræ extremely jaundiced. Respiration quiet. Pulse, 100 to the minute. Heart not enlarged, sounds clear. Lungs clear on percussion and auscultation. Abdomen very tender on palpation. Spleen enlarged and tender, reaches to umbilicus and to the crest of the ilium.

Blood: Stained smear negative for malarial plasmodia.

Urine: Hemoglobinuria; color, dark red; heavy sediment; albumin, 90 per cent.; hemin crystals readily obtained.

Course of Illness.—Blackwater continued through January 6 and 7, the maximum albumin being 95 per cent. Mild albuminuria persisted after the disappearance of blackwater. For three days the patient was critically ill. He was restless, irrational, vomiting almost incessantly, and had involuntary passage of feces and urine. Jaundice of scleræ and skin was intense, and anemia was marked. The hemoglobin had fallen to 24 per cent. on January 15, but rose rapidly afterward to 55 per cent. on January 26. The hemoglobinuric fever was relatively low and was estivo-autumnal irregularly remittent and intermittent in character. The maximum was 101.5. The post-hemoglobinuric fever rose to a higher degree and was irregularly remittent; it persisted 10 days and was unaffected by quinin. Recovery was good.

Quinin.—The patient received 10 grains of quinin bihydrochlorid intramuscularly every 3 hours for 6 doses, then every 4 hours for 5 doses, in all 110 grains within 36 hours. He then received 5 grains intramuscularly every 4 hours for 4 days, two injections of 15 grains being substituted on January 10. On January 11, 30 grains of quinin sulphate by mouth were ordered to be given daily, in broken doses, before 12 noon. There resulted from the injections great pain, tenderness and swelling of the thighs, which later became necrotic and suppurated. The patient was seen on February 20. The skin over a wide area of the right thigh and over a smaller area of the left was freely movable, being separated from the deep tissues. Former incisions were connected and the necrotic tissue, including portions of the fascia lata, was excised. On February 25, patient's condition was much improved and the wound was clean and healing well. It was thought that skin grafting would be necessary later. The solution that caused the trouble was the same as that which produced necrosis in the preceding case.

CASE 6.—Jan. 18, 1906, No. 9372, American, aged 31; residence Empire; on Isthmus of Panama 13 months. Admitted 11:40 a. m.

Past History.—One previous attack of malarial fever. Alcoholic history negative.

Present Illness.—Malaise for about one week. On January 17 the patient had fever, followed by sweating; vomiting was frequent; there was severe headache, backache and extreme weakness. No chills. Bowels loose. Urine dark red in color since noon of January 17. Quinin about 20 grains daily during past 2 days.

Physical Examination.—Slight man, blond, fairly well-nourished, appears to be very ill. Scleræ and skin of body jaundiced; mucous membranes very pale, tongue coated. Respiration quiet, 16 to the minute. Pulse 92, regular, tension good. Heart not enlarged, sounds clear. Edge of spleen palpable below costal margin.

Blood: Stained smear negative for plasmodia, no pigment in leucocytes; examination by Ross's method negative for plasmodia and pigment.

Course of Illness.—Though no urine was voided on day of admission, hemoglobinuria was suspected and treatment instituted. Vomiting was frequent and jaundice became more intense by the following day. Urine was voided during the night and examination showed hemoglobinuria, albumin 90 per cent., test for hemoglobin positive. Microscopically there were scattered leucocytes and epithelial cells, a brown amorphous granular detritus, and many casts covered with the brown material, but no red blood corpuscles. The afternoon urine showed 60 per cent. albumin. The urine was clear on the morning of January 20, with only a trace of albumin, which persisted for two days. The patient's condition grew better rapidly after the disappearance of blackwater, though the posthemoglobinuric fever persisted for 14 days. Temperature was observed only twice daily. The maximum temperature recorded during hemoglobinuria was 100.2, the maximum posthemoglobinuria record was 101.5. Fever appeared to be remittent. The hemoglobin estimation on January 29 was 55 per cent. Recovery good.

Quinin.—Quinin bimuriate with urea, 10 grains intramuscularly at 4 and 8 p. m., was ordered on the day of admission; 10 grains intramuscularly at 8 and 10 a. m. were given daily for 4 days afterward, and then quinin sulphate, 30 grains by mouth, was ordered to be given daily in 10-grain doses at 6, 8 and 10 a. m. No untoward result followed the injections.

CASE 7.—Feb. 3, 1906, No. 9925, Italian, aged 47, residence Empire; on Isthmus of Panama 22 years. Admitted 4:30 p. m.

Past History.—Malarial fever many times.

Present Illness.—During two weeks, patient has had pain over splenic area and under sternum. On February 1, 2 days before admission, fever began and has been continuous since. No chill or vomiting and but little sweating. Bowels constipated. Patient states that he has taken no medicine.

Physical Examination.—Thin, sallow man, poorly nourished; conjunctivæ pale, tongue clean. Heart and lungs negative. Liver is palpable at costal margin. Spleen reaches to mid line and to the crest of ilium.

Blood: Stained smear negative for plasmodia.

Course of Illness.—Until the fourth day in hospital, patient appeared to have an ordinary attack of estivo-autumnal malarial fever. His urine was clear and free from albumin on the second day. On the fourth day fever rose to 103 and was accompanied by vomiting and headache. Urine voided before the paroxysm had the appearance of blackwater; albumin 15 per cent. On the morning of the fifth day the temperature had fallen to 100.4, vomiting continued, and the scleræ and skin of body were jaundiced. The urine contained about 12 per cent. of albumin, was dark-red with a small sediment; microscopically there were present granular casts, an amorphous detritus, no red-blood corpuscles. Hemin crystals were obtained. The urine was clear and albumin negative on the seventh day, February 9, and there was no further blackwater, but albuminuria reappeared on February 10, and ranged between a trace and 4 per cent. until February 23, when it disappeared permanently. The fever persisted intermittently for 15 days; there was a chill on February 18 and the temperature rose to 104. This fever did not appear to be the type of fever that I have called posthemoglobinuric, illustrated by cases 3, 5, 6 and 11. It was due probably to the persistence of malarial parasites in the blood. The temperature was observed only twice daily. The patient became much emaciated, and hemoglobin fell to 30 per cent. (Dare's hemoglobinometer) on February 17. Recovery.

Quinin.—Quinin sulphate, 15 grains, by mouth, was given on February 3, the afternoon of admission; 30 grains by mouth, before 12, noon, on February 4, 5 and 6. Blackwater appeared during the afternoon of February 6, and 10 grains of quinin bimuriate with urea were given intramuscular at 8 p. m. On February 7 and 8 at 8 and 10 a. m., intramuscular injections of

1. The injections of quinin were given in all cases with ordinary hypodermic syringes. Owing to the short needles, the injections could not be made deep into the muscles, and the solution often escaped into the subcutaneous tissue, where it usually caused trouble. This special solution proved defective for other reasons, and will be discussed later.

quinin bimuriate and urea and quinin bihydrochlorid were given alternately, each dose 10 grains. Quinin sulphate, 30 grains by mouth, was ordered on February 9, and was continued daily until February 15. On February 15, 10 grains of quinin bimuriate with urea, and 10 grains of quinin bihydrochlorid were given by intramuscular injection, one injection at 8 a. m. and one at 10 a. m. The orders were the same for seven days, when quinin sulphate, 20 grains daily by mouth was ordered, and continued until patient was discharged. There was slight irritation from the injections of quinin bimuriate with urea; practically none from quinin bihydrochlorid.

CASE 8.[2]—Feb. 12, 1906, No. 10,163, Greek, aged 42, residence La Boca; on Isthmus of Panama 3 years. Admitted 2:30 p. m.

Past History.—Malarial fever many times.

Present Illness.—Onset February 8, with chill, fever, sweat, headache, vomiting, pains in legs. Similar paroxysms have recurred daily. Bowels constipated. Patient has taken small doses of quinin.

Physical Examination.—Heart and lungs negative, liver enlarged and tender, spleen very large and tender.

Blood: Stained smears, made at 2:30 p. m. and 4 p. m. were negative for plasmodia.

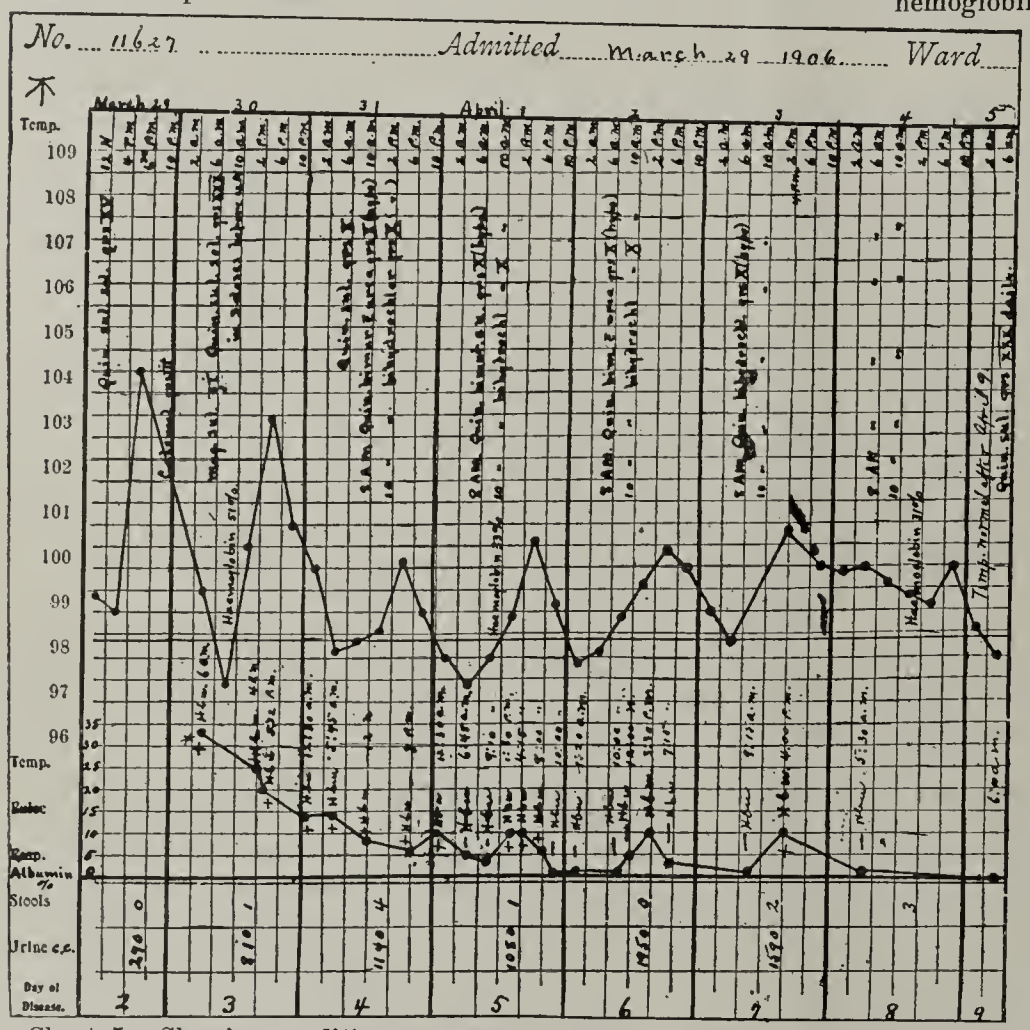


Chart 5.—Showing conditions in Case 10; + Hbu. = hemoglobinuria.; — Hbu. = no hemoglobinuria. April 16, hemoglobin (Sahli's) 48 per cent.

Urine: Catheterized specimen, blackwater, albumin 55 per cent.

Course of Illness.—The patient had a chill on admission; temperature 104.2. After admission, vomiting was frequent; jaundice was intense. The temperature gradually fell and reached normal on the fourth day. It ranged between normal and 96 F. for the four days following, death occurring on the morning of February 19. Temperature observations were made only twice daily. Catheterization was necessary during the first three days. The minimum output of urine for 24 hours was 30 c.c., the maximum 450 c.c. Blackwater disappeared on February 15 and albumin decreased to 2 per cent. and ranged between 2 and 10 per cent. until death.

Quinin.—Quinin bimuriate and urea, 10 grains at 8 and 10 a. m., was given daily by intramuscular injection.

Necropsy.—The anatomic diagnosis was (1) edema of lungs and brain; (2) dilatation of right and left heart; (3) brown atrophy of heart; (4) acute gastritis; (5) acute splenic hyperplasia; (6) chronic parenchymatous nephritis with acute exacerbation. Cause of death, nephritis. No malarial plasmodia or pigment was found in the viscera. (Darling.)

CASE 9.—Feb. 21, 1906, No. 10,474, American, aged 38, residence Empire; on Isthmus of Panama 7 weeks, in Cuba 7 years. Admitted 11:45 a. m.

Past History.—Malarial fever once on Isthmus, many times in Cuba.

Present Illness.—Onset February 19, with fever. Chill, fever, sweat, headache, backache, nausea, on February 20 and 21. Bowels open. The patient has been in the habit of taking 9 grains of quinin every 7 days; he has taken 10 grains daily for past 2 days.

Physical Examination.—Conjunctivæ pale, scleræ jaundiced, spleen about 8 cm. below costal margin in mammillary line.

Blood: Stained smear negative for plasmodia.

Course of Illness.—Temperature on day of admission was 104.8. On the morning after admission it was 100.6, but following a chill it rose to 102.5. The maximum daily temperature decreased gradually and reached normal on the ninth day, March 1. The character of the fever was not that of the "post-hemoglobinuric" fever. Temperature observations were made twice daily. Blackwater was discovered on the morning after admission, and persisted two days. Albumin was 20 per cent. on the morning after admission, February 22; 30 per cent., February 23; 3 per cent., February 24; negative afterward. The quantity of urine voided was 1,500 c.c. during the first 24 hours, and afterward ranged between 1,200 c.c. and 2,820 c.c. Vomiting and jaundice were marked during the period of blackwater. Anemia was rapid—hemoglobin 40 per cent. four days after temperature became normal. Recovery good.

Quinin.—The sulphate, 15 grains by mouth, was given on day of admission. Quinin bimuriate with urea, 10 grains intramuscularly, at 8 and 10 a. m. was administered for 4 days following. Quinin sulphate, 30 grains daily by mouth, was given afterward. No untoward results followed the intramuscular injections.

CASE 10.—March 29, 1906, No. 11,627, Spanish-American, aged 36, residence Las Cascadas; on Isthmus of Panama 2 years. Admitted 12 noon.

Past History.—He has lived all his life, except 4 years, in the tropics. Malarial fever four times during the past 7 years; last attack in January, 1906. He has never had blackwater before. Alcoholic history negative.

Present Illness.—Onset the night of March 27, with fever and vomiting. Fever was high on March 28, and vomiting excessive. No chills, headache or backache. Bowels open. Black urine was noticed on March 28; urine cleared on the morning of March 29, but became black that evening. The patient has taken from 4 to 8 grains of quinin daily, prophylactically, since March 1. The dose was not increased before he entered the hospital.

Physical Examination.—Patient is a spare man, looks ill, conjunctivæ not injected, scleræ somewhat jaundiced and skin of body slightly icteroid. Tongue thickly coated, mucous membranes pale. Lungs clear on percussion and auscultation. Pulse slow, regular in force and rhythm, tension good. Heart not enlarged, sounds clear. Spleen reaches 10 cm. below costal margin in mammillary line.

Blood: Stained smear showed young plasmodia, thought to be tertian.

Course of Illness.—There was a chill at 4 p. m. on day of admission, temperature rose to 104.5 at 6:30 p. m. Vomiting was frequent, and jaundice increased. There were no further chills, but the temperature curve was of double tertian intermittent type for four days. On April 2, the mild paroxysm resembled more closely the æstivo-autumnal character, and on April 3 a rise of temperature occurred which continued 34 hours. During the paroxysm of March 30, vomiting was frequent again, and the patient seemed very ill. On March 31 he had some dyspnea,

2. Cases 8 and 9 were not seen by me.

and mild hiccough. Otherwise, he remained in good condition throughout the remainder of his illness. Jaundice had cleared practically by April 4. Mild afternoon fever occurred on April 8 and 9. Temperature otherwise normal after April 4. The blood examination on March 30 was negative for plasmodia, no pigment in leucocytes. Recovery good.

Hemoglobin: March 30, 51 per cent.; April 1, 33 per cent.; April 4, 31 per cent.; April 16, 41 per cent.; April 22, 48 per cent.

Urine: Hemoglobinuria was discovered on the morning after admission, and persisted mildly through the next day. It was then intermittent for 3 days more, recurring with the mild elevations of temperature. Each specimen of urine was examined separately and tests made for hemoglobin in the supernatant urine and in the sediment when the supernatant urine failed to yield hemin crystals. A curve of albuminuria has been constructed on the chart, and by it may be seen that hemoglobinuria ran a course that varied with the albuminuria. The smallest quantity of albumin with which a positive test for hemoglobin in the supernatant urine was associated was 14 per cent.; the sediment yielded hemin crystals with albumin 6 per cent. It was found that at times in a clear straw-colored urine there was a small reddish-brown sediment which yielded abundant hemin crystals, practically all the hemoglobin being in the sediment. This is in striking contrast to cases reported later in which the urine contained no sediment but, nevertheless, yielded hemin crystals. Repeated microscopic examinations were like former ones reported. No red blood corpuscles were found.

Quinin.—The treatment is recorded on the chart. Two intramuscular injections were given daily, each 10 grains, for 6 days; the bimuriate and urea was alternated with the bihydrochlorid. The former produced some irritation; the latter practically none.

CASE 11.—April 19, 1906, No. 12,271, American, aged 27, residence Panama; on the Isthmus of Panama 8 months. Admitted 1 p. m.

Past History.—The patient has lived for 5 years in tropi-

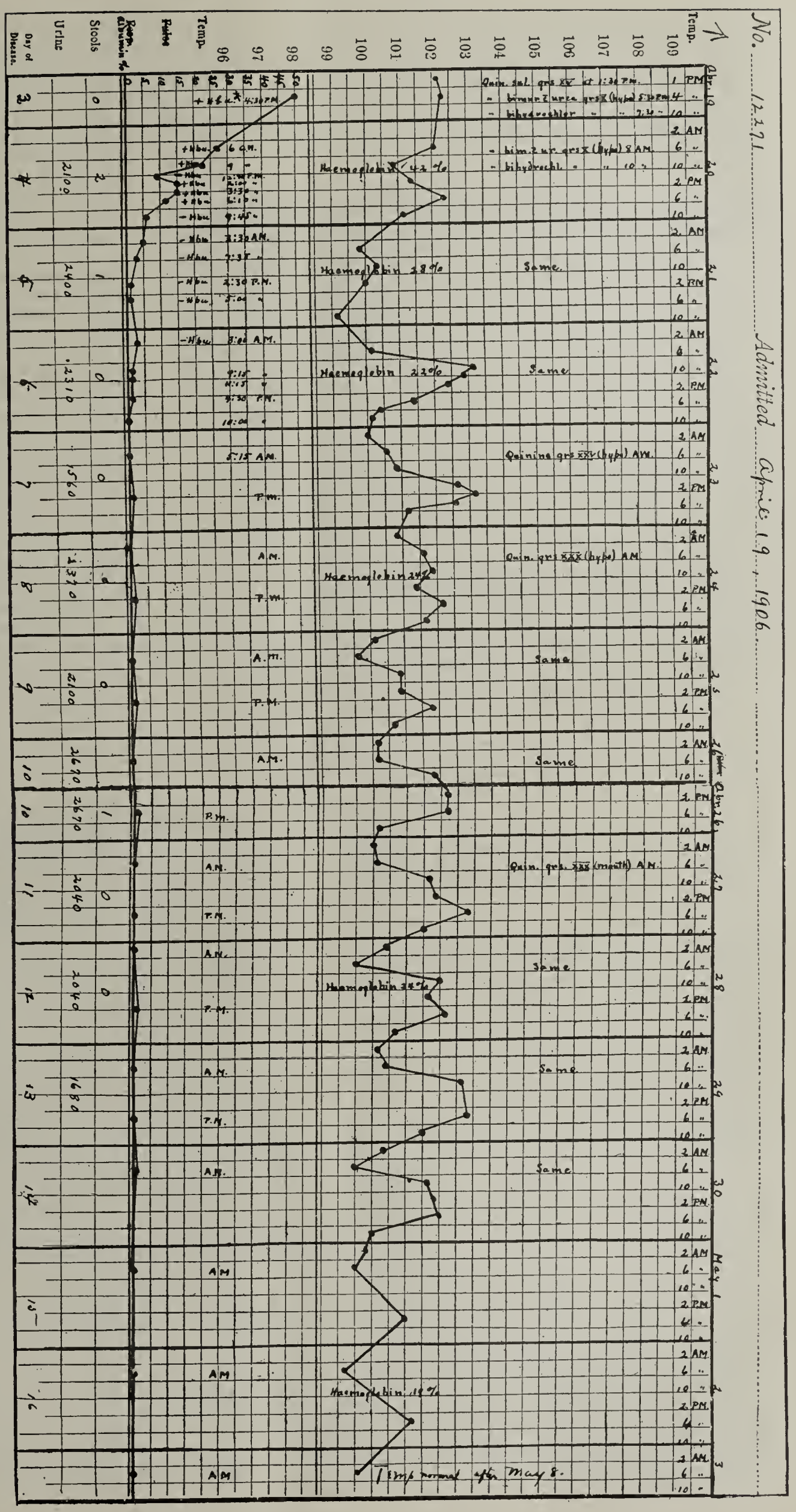


Chart 6.—Case 11. May 5, R.B.C., 900,000; Hb. 17 per cent.; color index, 94. May 22, R.B.C., 3,000,000; Hb. 60 per cent.; color index 1.

cal countries. He has had many mild attacks of malarial fever, but has never had blackwater before. He had been sleeping in a house with eleven other men, seven of whom have had malarial fever, but none blackwater.

Present Illness.—The patient had been feeling bad for two weeks, he became worse on April 17 and 18, and on the morning of April 19 he had a chill about 9 a. m. This was followed by fever, headache, sweating and vomiting. During the morning he noticed that his urine was very dark. Bowels constipated. He had taken quinin, 18 grains daily, for 2 days before blackwater appeared.

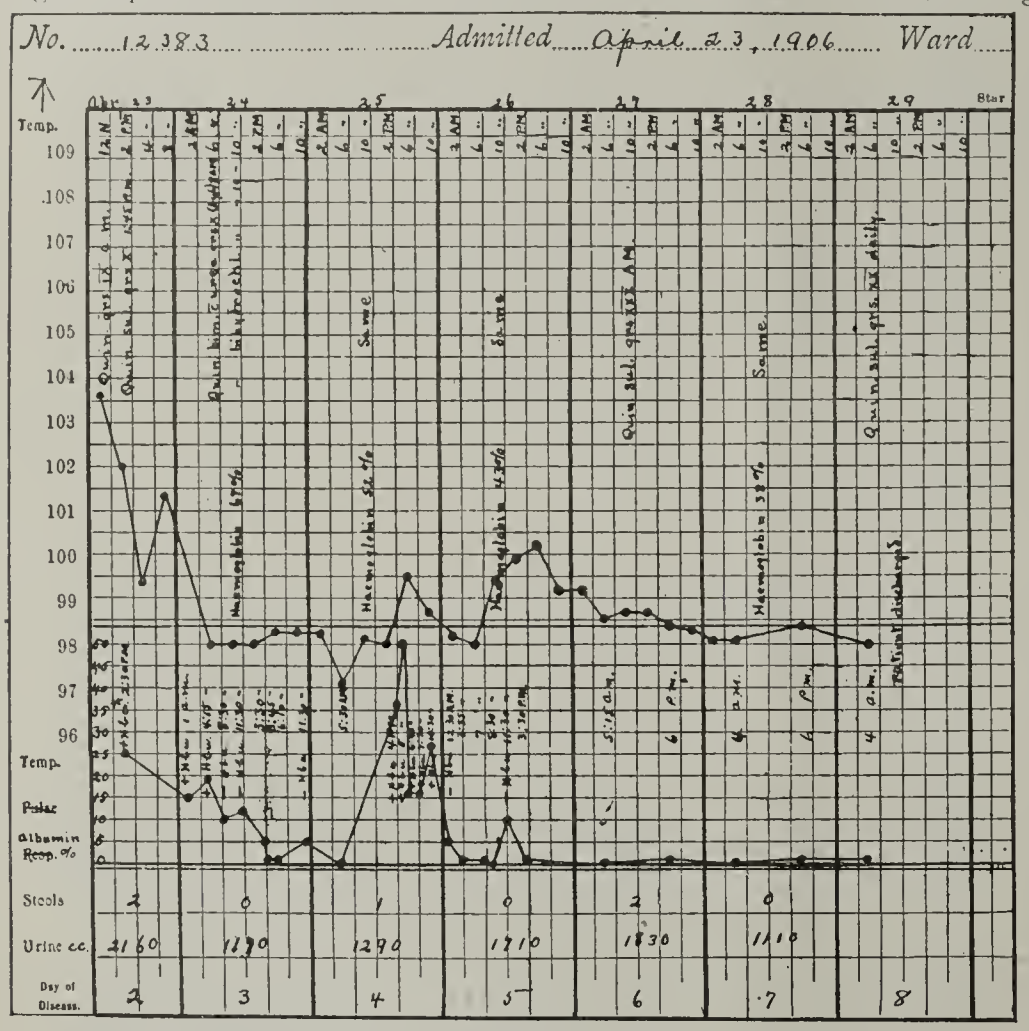


Chart 7.—Showing conditions in Case 12; + Hbu. = hemoglobinuria; — Hbu. = no hemoglobinuria.

Physical Examination.—Large, well-nourished man, looks ill; scleræ lemon yellow, skin of body icteroid. Conjunctivæ, tongue and gums pale. Heart and lungs clear. Spleen reaches 5 cm. below costal margin in mammillary line.

Blood: Stained smear negative for malarial plasmodia. Negative, also, April 20.

Urine: Specimen voided at 4:30 p. m.; hemoglobinuria, albumin 50 per cent.

Course of Illness.—Patient appeared very ill on April 19 and 20, during the hemoglobinuric period; jaundice deepened, vomiting was frequent and anemia rapid. Jaundice began to clear on April 21 and disappeared rapidly. Hemoglobinuric fever ranged between 100.8 and 102.4. On April 22, a quotidian remittent fever began and continued regularly and obstinately for 18 days. It was not influenced by quinin, the Gruber-Widal test was negative for typhoid on May 6, and the fever was not accompanied by discomfort on the part of the patient—no chills, sweats, headache or vomiting, and there was but slight decrease in hemoglobin during this part of the illness. This is the most marked instance of posthemoglobinuric fever. The case was a very severe one, accompanied by profound and rapid anemia. The character of the hemoglobinuric fever was estivo-autumnal, irregularly remittent. Recovery good.

Blood: Hemoglobin, April 20, 42 per cent.; April 21, 28 per cent.; April 22, 22 per cent.; April 24, 24 per cent.; April 28, 24 per cent.; May 2, 19 per cent.; May 5, hemoglobin 17 per cent.; R. B. C. 900,000; color index, .94; fresh specimen, slight irregularity in size and shape of red corpuscles, no marked poikilocytosis, color good; stained smear, negative for plasmodia, no nucleated red corpuscles, some polychromatophyllic degeneration. May 9, hemoglobin 25 per cent. May 11, hemoglobin 31 per cent.; R. B. C., 1,512,000; color index, 1.02. May 22, hemoglobin, 60 per cent.; R. B. C., 3,000,000; color index, 1.

Urine: Hemoglobinuria was present on admission, April 19, and persisted until 10 p. m., April 20. Separate specimens were examined and an albumin curve has been constructed on the chart, and the positive and negative tests for hemoglobin noted. Hemoglobin persisted in the sediment after the supernatant urine failed to yield hemin crystals. The smallest quantity of albumin with which a positive test for hemoglobin in the supernatant urine was associated was 23 per cent.; the sediment yielded hemin crystals with albumin, 12 per cent. Microscopic examinations were made from time to time. No red corpuscles were observed; the findings were similar otherwise, also, to previous reports.

Quinin.—The treatment is charted. Intramuscular injections were given for 7 days. Slight irritation was caused by the bimuriate with urea; less with the bihydrochlorid. No great discomfort resulted from either preparation.

CASE 12.—April 23, 1906, No. 12,383, American, aged 29, residence Empire; on the Isthmus of Panama, 19½ months. Admitted 12 noon.

Past History.—Patient has lived in Cuba 9 months and in the Philippine Islands 5 years. In both places and also in Florida he had malarial fever. During his first year on the Isthmus he had no malaria but he has since had numerous light attacks, no severe ones. He never before had blackwater. He lives in a house with two other men, one of whom has had malarial fever but not blackwater. Alcoholic history moderate.

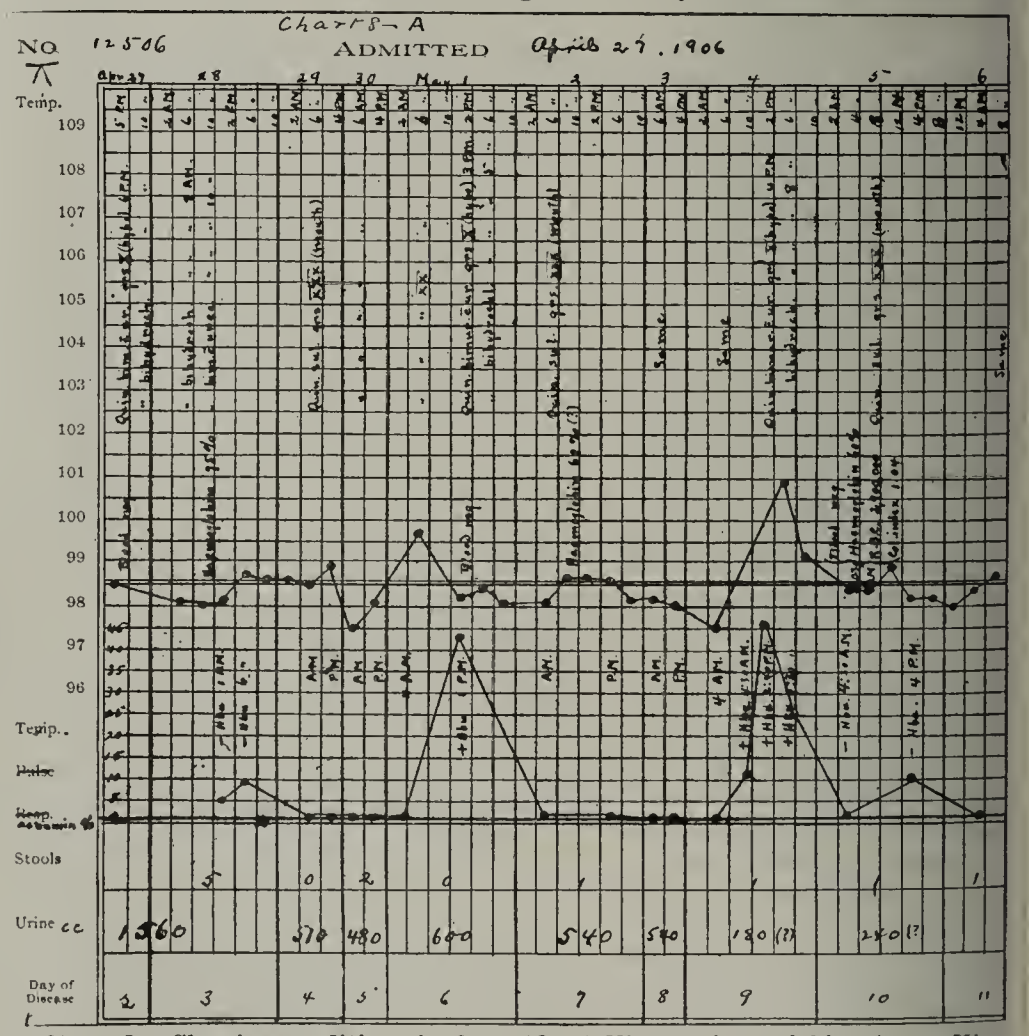


Chart 8.—Showing conditions in Case 13; + Hbu. = hemoglobinuria; — Hbu. = no hemoglobinuria.

Present Illness.—Onset April 21, with fever and headache. About 8 a. m. on April 22, the patient had a chill, fever, sweat, headache, vomiting. No backache. About 7 p. m. on same day another similar paroxysm occurred, and another at 6:30 a. m. on April 23. At about 2 p. m. on April 22, the patient noticed that his urine was dark, "about the color of claret wine," and it has continued so since then. Bowels have been loose. For 3 or 4 months he has taken 9 grains of quinin a day, three times a week. He had taken none, however, for 8 days before present illness. On April 21, he took 12 grains; on April 22, 27 grains; on morning of April 23, 9 grains.

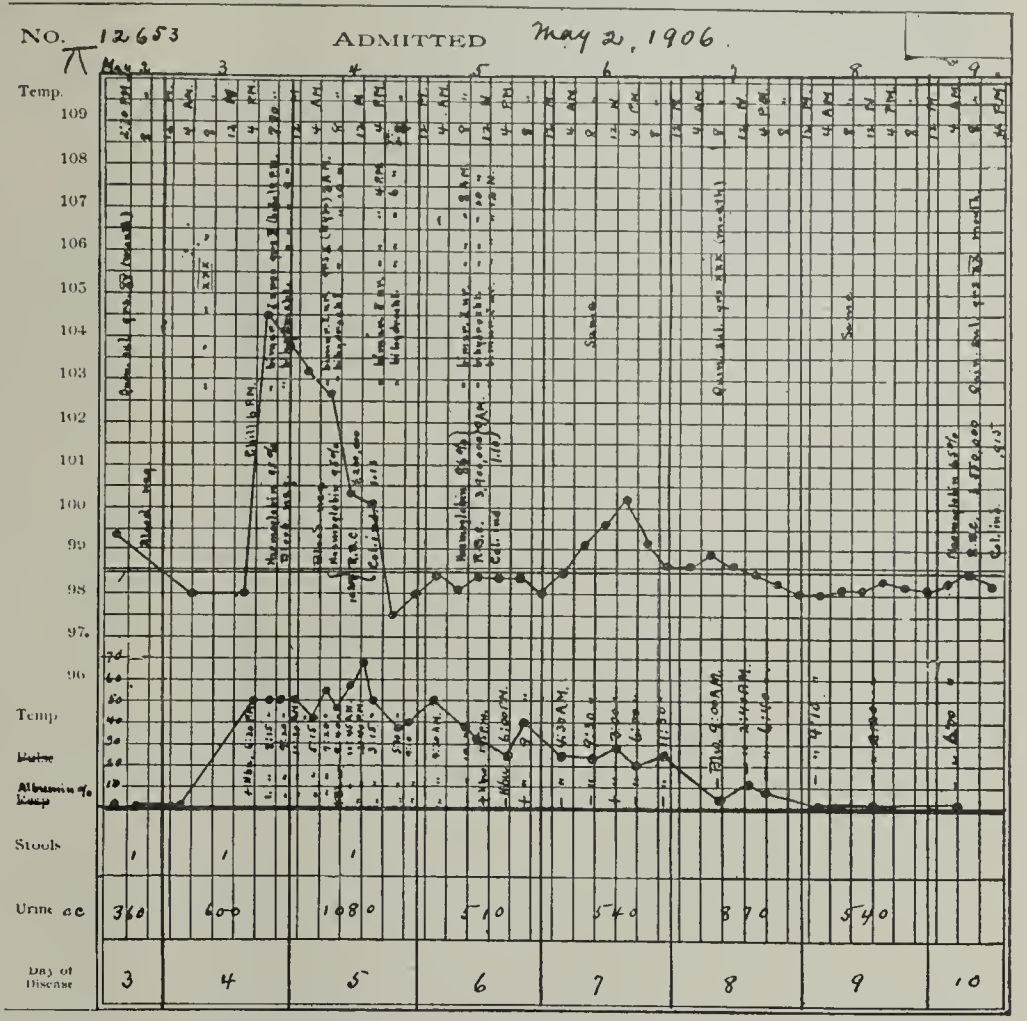
Physical Examination.—Large, well-nourished man; conjunctivæ pale. Scleræ lemon yellow, tongue coated. Heart and lungs clear. Spleen 5 cm. below costal margin in mammillary line. Skin of body slightly icteroid.

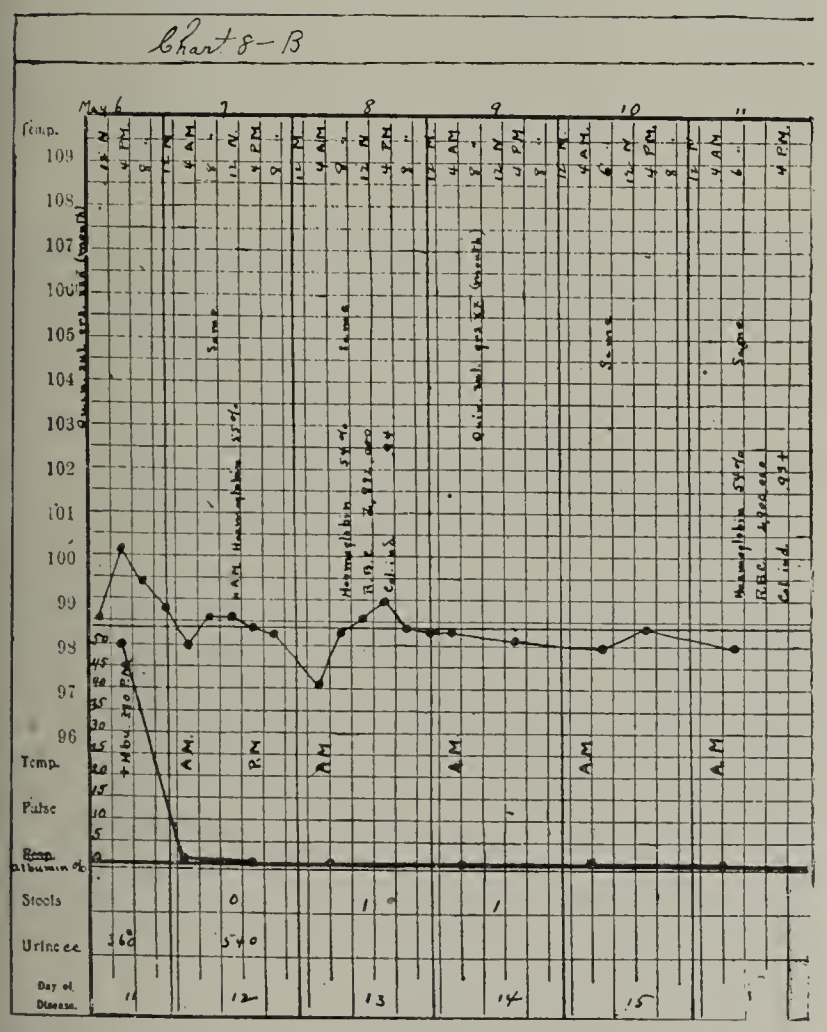
Blood: Stained smear negative for plasmodia.

Urine: 2:30 p. m. Hemoglobinuria, albumin 25 per cent.

Course of Illness.—The patient at no time appeared very ill, and after the day of admission he felt quite comfortable. Fever was estivo-autumnal, irregularly intermittent in character. There was no posthemoglobinuric fever. Ieterus was deeper on the second day, cleared somewhat on the third, but deepened again after the recurrence of hemoglobinuria, then disappeared rapidly. There was no vomiting while in the hospital; slight headache on April 25. Recovery good.

Urine: Hemoglobinuria disappeared on the morning after admission, and recurred with marked albuminuria on the next day, when it was associated with only a mild rise of temperature, maximum 99.5. The urinary output was fairly large. An albumin curve has been constructed and positive and negative tests for





hemoglobin indicated as in the previous charts. In this case, the test for hemoglobin was positive when there was no sediment; the smallest quantity of albumin with which a positive test was associated was 15 per cent. Repeated microscopic examinations were as in previous cases; no red corpuscles were observed.

Blood: Hemoglobin, May 24, a. m., 67 per cent.; May 25, 52 per cent.; May 26, 43 per cent.; May 28, 38 per cent.

Quinin.—Treatment is charted. The intramuscular injection of quinin bihydrochlorid caused slight irritation; none was caused by quinin bimuriate with urea.

CASE 13.—April 27, 1906, No. 12,506, American, aged 22, residence Cornet; on Isthmus 27 months. Admitted 5 p. m.

Chart 9.—Showing conditions in Case 14.—Blood neg. = no plasmodia; + Hbu. = hemoglobinuria; — Hbu. = no hemoglobinuria; + Blw. = blackwater; — Blw. = no blackwater.

Past History.—Patient had lived 3 years in Mexico. He has had three well-marked attacks of malarial fever and many mild attacks. No previous blackwater. He lives in the same house with eight other men, some of whom have had malarial fever, none blackwater.

Present Illness.—Onset April 26, about 1 p. m. Patient had felt perfectly well before, except that for about one week he has felt weak after voiding urine, but had had no pain. About 1 p. m. on April 26, he felt cold and afterward warm. A profuse sweat followed. He had, also, slight headache, severe backache and vomited freely. No definite chill. He noticed that his urine was dark at the onset of the paroxysm, about 1 p. m., and that it was still dark early on the morning of the next day, April 27. He voided last at 6 a. m. on April 27. The patient had taken no quinin before dark urine was noticed, and he took none until the night of April 26, at which time he had one dose of 20 grains. No more was taken before he entered the hospital.

Physical Examination.—Large, well nourished young man; scleræ slightly jaundiced, mucous membranes fairly good color, tongue coated. Heart and lungs clear. Spleen reaches 5 cm. below costal margin in mammillary line. Dulness above the pubis reaches about 3 cm., tympany in the iliac fossæ.

Blood: Stained smears negative for plasmodia.

Course of Illness.—Hemoglobinuria was suspected from the history, and intramuscular injections of quinin ordered. There was retention of urine until 1 p. m. on April 28, when 150 c.c. was voided. This urine was cloudy, yellow, and contained 5 per cent. of albumin. At 6 p. m. the patient voided 1,350 c.c. of dark brownish-red urine which contained 9 per cent. of albumin. Neither specimen gave a positive reaction for hemoglobin. Except for some pain from the retention the patient felt well, and, with the exception of slight headache with subsequent mild elevations of temperature, he was not uncomfortable, nor did he look ill during the course of his illness. The

mild elevations of temperature ocurred May 1, 4, 6 and were accompanied by paroxysms of hemoglobinuria and albuminuria. They were of short duration and can not be said to be characteristic of either variety of malaria. The maximum temperature was 100.8. No chills occurred. Recovery was good.

Blood: April 27, stained smear negative for plasmodia; April 28, hemoglobin, 75 per cent.; May 1, stained smear negative for plasmodia; May 2, hemoglobin, 60 per cent. (not confirmed and doubtless erroneous); May 5, hemoglobin, 60 per cent. (confirmed); R. B. C., 2,900,000, color index, 1.04; May 7, hemoglobin, 55 per cent.; May 8, hemoglobin, 54 per cent.; R. B. C., 2,872,000, color index .94; May 11, hemoglobin, 54 per cent.; R. B. C., 2,900,000, color index, .93+.

Urine: An albumin curve has been constructed, and positive and negative tests for hemoglobin indicated. Separate specimens were examined. No red blood corpuscles were observed, and the urine was similar otherwise to other hemoglobinuric urines reported. On May 1, urination was painful and in the urine were found twelve small black particles. Under the microscope these were seen to be bullet-shaped; they were black in mass, brown when crushed, rather friable; they did not yield hemin crystals. Darling found that they did not dissolve in nitric acid, but were changed to a green color by the reagent. The particles were about 1 mm. long by .5 mm. broad. Their nature was not determined. They were responsible probably, for the painful micturition.

In this case, on May 4, I had the only opportunity offered me of examining a hemoglobinuric urine early in the paroxysm. The specimen voided at 11:30 a. m. was pale red in color, contained no sediment, albumin was 11 per cent., and hemin crystals were readily obtained. The next specimen voided at 2:40 p. m. was the color of dark port, contained a heavy, brownish-red sediment, and albumin was 46 per cent.

Quinin.—(See chart.) The intramuscular injections of quinin bihydrochlorid caused less irritation than the bimuriate with urea;; neither caused much discomfort. The following points are worthy of note: (1) It seems very probable that the patient had had hemoglobinuria on the day before admission, before any quinin had been received. (2) Though quinin was administered continuously, the hemoglobinuric and albuminuric paroxysms occurred only when there was a synchronous elevation of temperature, and they ran parallel to the febrile paroxysms. (3) It seems certain that the quantity of quinin was not large enough to destroy the etiologic agent of hemoglobinuria, and thus to prevent repeated recurrence. (4) It is interesting that the first portion, 150 c.c. of the retained urine contained only 5 per cent. albumin and was lighter in color than the second portion, 1,350 c.c., voided 5 hours later. It seems probable that during this time, a small quantity of highly albuminous urine, possibly containing hemoglobin, was discharged into the already distended bladder. The hemoglobin could have been so diluted by the urine previously in the bladder that the sodium chlorid and glacial acetic acid test failed to detect it.

Case 14.—May 2, 1906, No. 12,653, American, aged 25, residence Empire; on Isthmus of Panama 6 months. Admitted 2:30 p. m.

Past History.—Malarial fever three times, no blackwater. Patient lives in barracks with about thirty other men; he knows of three who have had malarial fever, none of whom have had blackwater. One who lives in the next house has had blackwater (Case 12). The patient lived two years in the Philippine Islands, returned to the United States and lived five years in Kansas before coming to the Isthmus of Panama.

Present Illness.—Onset April 30, with chill, fever, sweat, headache, backache, vomiting. Similar paroxysm occurred May 1, when his urine was dark but nothing like blackwater. Bowels regular. The patient has taken some quinin, but does not know exact quantity.

Physical Examination.—Large, well-nourished, strong-looking young man. Scleræ clear, mucous membranes good color, tongue thickly coated. Heart and lungs clear. Spleen just palpable below costal margin. Marked urticarial rash over face, body and limbs.

Blood: Stained smears negative for plasmodia.

Course of Illness.—Urine was clear on afternoon of admission and on morning of May 3, when the temperature was normal and patient in good condition. The rash had almost disappeared. At 6 p. m. a severe chill occurred and temperature rose to 104.5 at 7:30 p. m. The paroxysm was accompanied by vomiting, headache and backache, and the conjunctivæ were much injected. On May 3, the scleræ and the skin of the body were jaundiced. The temperature reached normal by 8 p. m., the curve of the paroxysm was estivo-autumnal in character. There was no posthemoglobinuric fever. Jaundice cleared rapidly. There was a slight elevation of temperature on May 6. The patient felt quite comfortable after the first paroxysm, and made a good recovery.

Urine: The urine voided at 6:20 p. m. on May 3, 20 minutes after the initial chill, was the color of port with a heavy brown sediment, albumin 50 per cent. Many hemin crystals were obtained from the supernatant urine. The microscopic examination presented the usual picture, no red corpuscles were found; other examinations were similar. It appeared that the hemoglobin liberated in the blood during the paroxysm continued to be excreted through May 4 and 5. Hemoglobinuria was absent on the morning of May 6, but was found one time afterward corresponding to the slight elevation of temperature that afternoon. Hemoglobin persisted in the sediment after the supernatant urine failed to give the reaction. The minimum quality of albumin with which a positive test for hemoglobin in the supernatant urine was associated was 32 per cent.; the sediment yielded hemin crystals with 28 per cent. albumin. In the albumin curve the spaces represent 10 per cent. instead of 5 per cent., as in former curves.

Blood: May 2, stained smear negative for malarial plasmodia; May 3, 7:30 p. m., smear negative for malarial plasmodia; hemoglobin, 95 per cent.; May 4, 10 a. m., smear negative for malarial plasmodia; hemoglobin, 95 per cent., R. B. C., 4,200,000, color index, 1.13+; May 5, a. m., hemoglobin, 86 per cent., R. B. C., 3,900,000, color index, 1.10; May 7, a. m., hemoglobin, 76 per cent.; May 9, a. m., hemoglobin, 65 per cent., R. B. C., 3,550,000, color index, .915. The fact that hemoglobin estimations were the same on the night of May 3 and morning of May 4, can be explained by the vomiting, which probably caused a concentration of blood that counterbalanced the hemoglobin excreted during the night.

Quinin.—(See chart.) The intramuscular injections of quinin bihydrochlorid caused less irritation than those of the bimuriate and urea; neither caused great discomfort.

(To be continued.)

VALUE OF SMALL QUANTITIES OF HUMAN MILK IN THE TREATMENT OF INFANTILE ATROPHY AND THE INFECTIONS OF INFANTS.*

FRANCIS P. DENNY, M. D.

Assistant in Clinical Medicine, Harvard Medical School; Visiting Physician to the Massachusetts Infant Asylum.

BROOKLINE, MASS.

Recent additions to our knowledge of the differences between human and cows' milk as a food for infants seem to show that the superiority of mothers' milk depends in part on the action of substances which are of the nature of ferments. As ferments are bodies "which are themselves unaffected by the changes which they produce" and which "can work on indefinitely, provided the products of their action do not accumulate too much,"[1] it follows that the benefits of human milk, in so far as they are dependent on the action of ferments, will not be proportional to the amount that is given, but effects may be expected from relatively small amounts.

It is the purpose of this paper:

1. To discuss recent investigations in regard to human milk, and to show that artificial feeding fails in just those conditions in which the action of ferments is

* Read in the Section on Diseases of Children of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

1. Schaefer: Text-book of Physiology, 1898, vol. i, p. 317.

thought to play an important part, namely, in infantile atrophy and in bacterial infections.

2. To report my own results in the use of small amounts of human milk for therapeutic purposes in these conditions.

3. To suggest means of obtaining small amounts of breast milk.

4. To discuss the use of breast milk in infant hospitals, where this subject is of the greatest practical importance.

LIMITATIONS OF ARTIFICIAL FEEDING.

As a result of the work of the past twenty years in the modification of cows' milk for infant feeding, it is now possible to give an infant an artificial food which, as far as experiments in the test-tube show, is nearly, if not quite, as digestible as human milk. Mortality records show that infants seldom die on account of their inability to digest a properly modified cows' milk. They die on an exclusive artificial diet because, *a,* they have disturbances of assimilation of which infantile atrophy is an extreme type; and *b,* they can not resist bacterial infections. These are the limitations of artificial feeding, and it is along these lines that advances must be made to reduce infant mortality still further.

At first sight, it seems as if the power of breast milk to aid the assimilation of food and to increase the resistance of the infant to infections, were two functions wholly different from each other. It is only necessary, however, to remind one of recent theories in regard to immunity, especially those of Ehrlich, to realize how close is the relation between the digestion and assimilation of food on the one hand, and the effect of toxins, the production of antibodies, and the destruction of bacteria within the body, on the other. It is therefore to be expected that if substances which aid assimilation can pass from mother to child through the milk, those which increase the resistance of an infant to infection can also be transmitted.

HUMAN MILK IN INFANTILE ATROPHY.

We know very little of the etiology of infantile atrophy, or of the mode of action of human milk in the cure and prevention of that condition. There is, however, a growing belief among those who have made a special study of the subject that human milk is of value in these cases through the action of ferments.

In a recent article Wentworth[2] reviews the literature, gives the results of his own metabolism experiments, and offers the suggestion "that human milk contains special ferments that stimulate the activity of the digestive glands."

At the Thirteenth International Medical Congress, Paris, 1900, Escherich[3] advanced the theory that infantile atrophy was a disturbance of intermediary metabolism and was caused by a deficiency of those ferments of the "internal secretions," which regulate and control the nutrition and growth of the tissues (*Stoffwechselfermente*), and which are the products of the so-called ductless glands. He believed that ferment-like bodies of the internal secretions are taken out of the blood by the mammary gland, that they are absorbed with the food by the infant, and so pass into its body fluids, where, as in the mother, they aid metabolism and make good the deficiency of these ferments in the infant.

Escherich offered these ideas only as a hypothesis which needed to be proved. For support of this view, he points to the results obtained in mixed feeding, and in the use of very small amounts of breast milk, when the effects are not at all proportional to the amount given.

Marfan[4] and Concetti[5] have advanced theories in regard to infantile atrophy which are very similar to that of Escherich. Escherich's hypothesis has stimulated the investigation of milk along biologic lines and a number of ferments have been found in human milk, which probably have their origin in the maternal blood stream. Moro[6] says it is doubtful whether these ferments which have been demonstrated have any significance in the nutrition of the infant, but they show that ferment-like substances are excreted from the maternal blood in the milk, and the inference is justifiable that other ferments, those that concern metabolism, but which can not as yet be demonstrated, will also be excreted in the same way.

RESISTANCE TO INFECTIONS OF BREAST-FED INFANTS.

The artificially fed infant is more susceptible to every form of infection than the breast-fed infant. The infections of the gastrointestinal tract are the most frequent, because digestive disturbances make these organs a *locus minoris resistantiæ* and because the infectious agents often gain access in the food.

The resistance of breast-fed infants to infections probably depends on the marked bactericidal power of their blood as compared with that of infants artificially fed. In this connection, the investigations of Moro[7] in regard to the bactericidal power of infants' blood are most instructive. Using the plate method, he found that the average of a large number of tests made under exactly similar conditions showed that:

	Per cent. of bacteria.
Maternal blood (placental) killed	58.9
Blood of older children killed	46.3
Blood of artificially fed infants killed	33.4
Blood of breast-fed infants killed	77

The bactericidal power of the infant's blood at birth corresponds very closely with the placental blood. Following the breast feeding there is an increase, so that it is considerably greater than that of the mother's blood, while on an artificial diet there is a rapid falling off.

Tests of the bactericidal power of the blood of the same infant while being nursed and then after being weaned were also instructive. The tests in this case showed:

	Per cent. of bacteria.
Mother's blood (placental) killed	56
Infant's blood, after being nursed for two weeks, killed	72.9
Same infant's blood, two weeks after being weaned, killed	40.7

It might be supposed that the greater bactericidal power of the blood of the breast-fed infant was merely an expression of its better health and more flourishing condition. Moro found, however, that even in weak and delicate breast-fed babies, those that were not doing well, the blood showed greater bactericidal power than in the most healthy and flourishing bottle babies.

It is not possible to discuss here the various theories in regard to bacterial immunity. It can only be stated that it is generally accepted that the destruction of bacteria within the body depends on the action of certain substances, the *alexins,* or the *complement* of Ehrlich. These substances are destroyed by a temperature of 55 C. and are almost certainly of the nature of ferments. These alexins can not be demonstrated in the milk, and

2. THE JOURNAL A. M. A., vol. xiv, 1905, pp. 579 and 771.
3. Wien. klin. Wochschr., vol. xiii, 1900, p. 1083.
4. Presse med., vol. ix, 1901, p. 13.
5. Arch. de Médec. des enf., vol. v, 1902, p. 129.
6. Jahr. f. Kinderhlk., vol. lvi, 1902, p. 391.
7. Wien. klin. Wochschr., vol. xiv, 1901, p. 1073.

milk itself has practically no bactericidal power. Moro reasoned, however, that inasmuch as the bactericidal power of the infant's blood increased after birth if it was nursed, so that it was even greater than that of the mother, the alexins must come over in the milk and that they were probably there combined with the casein molecule in such a way that their presence could not be demonstrated.

In a different way Wasserman[8] explains the greater bactericidal power of the breast-fed infant's blood. The soluble albumin of human milk can pass unchanged from the intestinal canal into the circulation of an infant, while the albumin of cows' milk, being the albumin of a different species of animal, can not so pass, but has to be transformed by the action of ferments in the intestinal wall. Wasserman believes that the ferments which transform the foreign albumin in the wall of the intestines are indentical with those ferments which destroy bacteria in the body, namely, the alexins, or Ehrlich's complement. According to him, therefore, the bactericidal power of the artificially fed infant's blood is low, because these ferments are wholly employed or used up in transforming the cow albumin of the food into human albumin of the infant.

HUMAN MILK MAY CONTAIN SUBSTANCES WHICH BRING FERMENTS INTO ACTIVITY.

To support the theory that the benefits of human milk in infantile atrophy and bacterial infections depend on the action of ferments, it is not necessary to suppose that the ferments themselves are in the mother's milk. It is possible that the milk contains substances which bring these ferments into activity, for which theory the chemistry of digestion offers several analogies. Thus there is now known to be a wholly new class of ferments whose function is to activate other ferments, as *enterokinase,* which has the function of activating the trypsinogen of the pancreatic juice. There is also *secretin,* a substance not itself a ferment, secreted by the cells of the duodenum, which is absorbed and carried by the blood stream to the pancreas. The minutest quantities of secretin in the blood suffice to call forth a copious flow of pancreatic juice. It is possible that human milk contains substances in the nature of secretin which serve to call forth the secretions of those glands whose ferments are concerned in the assimilation of food and in the destruction of bacteria in the body.

From what has been written it is obvious that there is a good deal that is obscure, and, at best, pure theory in regard to the mode of action of human milk in infantile atrophy and bacterial infections. It would seem, however, that we were justified in assuming as a working hypothesis, that the benefits of breast milk in these conditions depend in part on the action of ferments, and it would therefore be rational to expect to get effects from relatively small amounts.

RESULTS IN THE USE OF SMALL AMOUNTS OF BREAST MILK IN INFANTILE ATROPHY AND IN INFECTIONS.

My own experience in the use of breast milk has been chiefly at the Massachusetts Infant Asylum, where for some years it has been the custom to have a few wet nurses. The nurses have their own babies with them, which they nurse alternately with the sick ones. As there are usually not enough wet nurses to be found, only the most sickly babies are nursed, and of these the great majority are either atrophic cases or infants suffering from some infection. As a rule, the sick babies are given three nursings and three or four bottles in twenty-four hours, occasionally only two nursings.

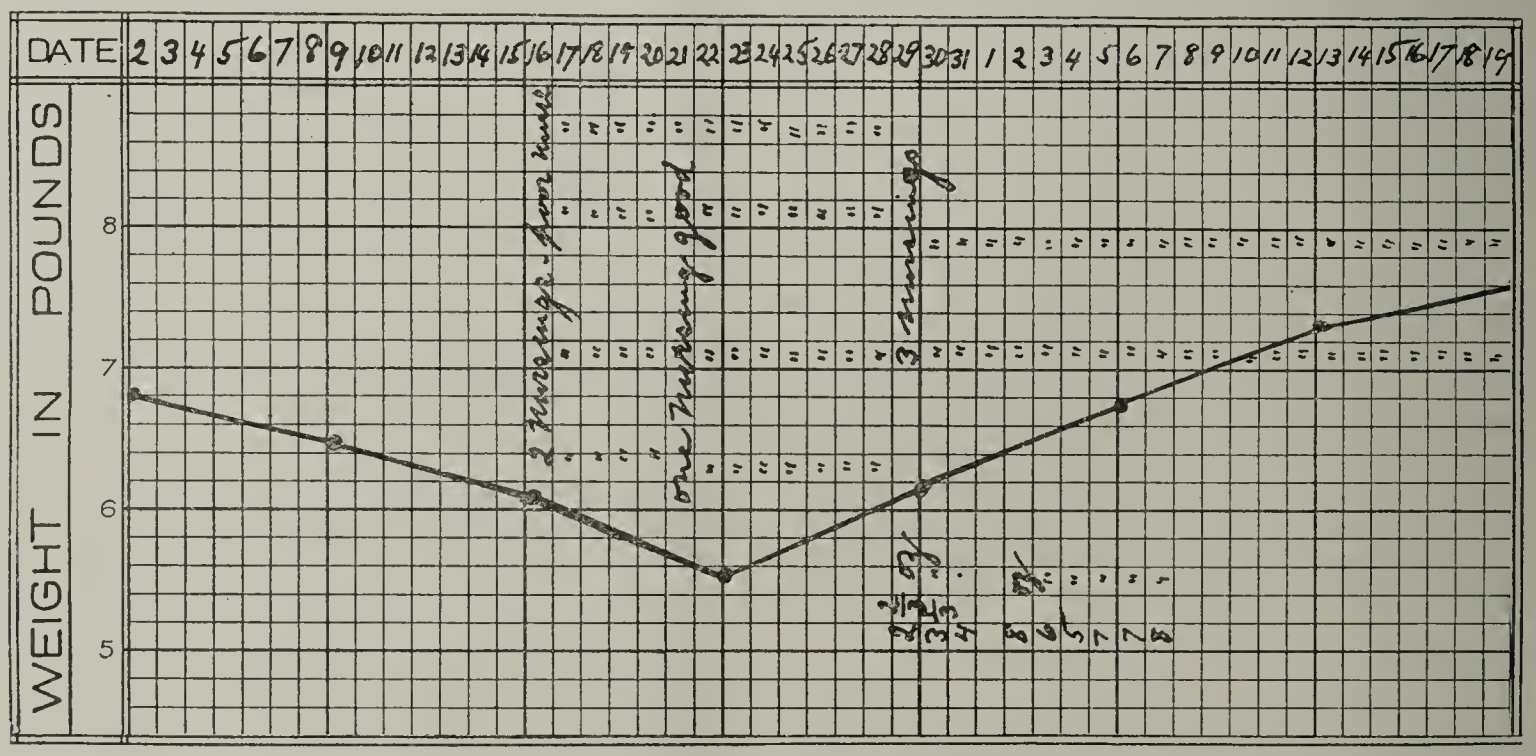


Fig. 1.—Weight chart of Case 1.

It has been my experience, as it must have been of every one who has made use of mixed feedings in this way, that often the sick infants show almost immediate improvement when put on the alternate breast feedings. It is exceptional not to see improvement within a week. At first sight, such results do not seem remarkable, for one might expect to get improvement if half the infant's food is human milk. As a matter of fact, however, a sick, bottle-fed infant when first put on the breast with alternate bottle feedings gets much less than half of its food from the breast. It is probably seldom over a quarter, and more often an eighth or a tenth. Keller[9] and others have called attention to the very small amounts of milk which are taken by a bottle-fed infant when first put on the breast. He found that often only 20 to 30 gm. (one ounce or less) at a feeding were taken, perhaps only 100 to 150 gm. in twenty-four hours when wholly nursed.

8. Deutsch. med. Wochschr., vol. xxix, 1903, p. 16.

9. Jahr. f. Kinderhlk., vol. liii, 1901, p. 59.

In a few cases in which I have had the babies weighed before and after nursing, the amounts taken by the bottle baby when first put on the breast have been very small, very similar to Keller's figures, and it has also seemed that when the baby was on mixed feedings it was very much slower in learning to take a reasonable amount.

To repeat what has just been said: The atrophic infants and those suffering from some infection often show prompt improvement when put on alternate nursings, and inasmuch as they take very small amounts from the breast at first, it follows that the improvement which results has been brought about by the addition of these small amounts of human milk to the infant's food. It is true that after a time the sick infant will take more from the breast, but if improvement has begun when only the small quantity was obtained, it will usually continue even if the amount of breast milk is not increased, and often it can be slowly reduced.

These in general are the results of the use of small amounts of breast milk for therapeutic purposes. The three following cases will serve to illustrate what has been the experience with a large number of cases of the same kind.

CASE 1.—Atrophic type. H. F., male, 14 weeks, admitted to Massachusetts Infant Asylum, Sept. 29, 1905; had never been very vigorous or strong. Previously he had had some digestive disturbances, but none recently. There was no vomiting, and the stools were normal. The infant, however, had been losing weight. Physical examination at entrance negative except for emaciation. During the first three weeks at the Asylum the infant did not gain on the usual mixtures of modified milk, although the digestion appeared to be all right (Fig. 1).

October 16 to 21, the baby was given two nursings a day in place of two of the bottles. The wet nurse was a pale and chlorotic girl whose own baby did not gain and she was discharged.

October 21 to 28, the baby had one nursing a day from a good nurse, and on October 29 he was given three nursings a day. The amounts of breast milk taken each day are given in Figure 1. Slight improvement began on one nursing a day from the good nurse, and was marked on the three nursings, although the baby received only two and two-thirds to four ounces per day during the first three days.

CASE 2.—Atrophic type. E. D., age four months, was sent to the Massachusetts Infant Asylum on Aug. 16, 1905, from the Floating Hospital.[10] Diagnosis: Infantile atrophy. The infant had been losing weight steadily at the Floating Hospital, as shown by the chart, and on the recommendation of Dr. J. L. Morse it was sent to the Asylum to be wet nursed. With three nursings a day and four bottles there was almost immediate improvement. Unfortunately the amounts of breast milk taken by this infant were not determined, but judging from our experience with other cases this infant took only from three to five ounces a day during the first week (Fig. 2).

10. I am indebted to Dr. R. W. Hastings for the records of this infant at the Floating Hospital.

CASE 3.— Infectious type. Baby D., aged 10 months, seen in private practice, never nursed. July 21, 1905, a severe prolonged ileo-colitis began. The stools contained a large amount of mucus with a little blood. The temperature at times reached 103. Occasionally there were short periods of slight improvement, but there were repeated relapses, each one leaving the baby weaker than before. The case was seen twice by Dr. J. L. Morse in consultation, and I believe that everything was done for the child in the way of treatment that was possible on an artificial diet.

On September 11, when the baby had been sick about seven weeks, its condition was very alarming. Temperature 102, pulse 160, eyes sunken and frequently rolled up; there were eight to twelve movements a day, copious and composed almost wholly of mucus. Breast milk seemed to offer the only hope, but no wet nurse could be found, and it is improbable that a sick baby almost a year old who had never been nursed would have taken the breast.

On September 12, I called on a neighbor, a nursing mother, and begged her to draw off some of her milk with a pump. That evening she sent in an ounce of her milk, the next morning another, and a third in the afternoon. This breast milk was given to the baby diluted 1/3 with water, in addition to the whey and rice water which he was already taking.

On the evening of September 13, when only three ounces of the breast milk had been taken, there was a marked improvement. The baby was brighter, stronger and seemed hungry, the temperature was lower, and from that time on he continued to improve.

After having this child under observation for seven weeks without ever seeing any decided improvement, one could feel very sure that the baby received something in

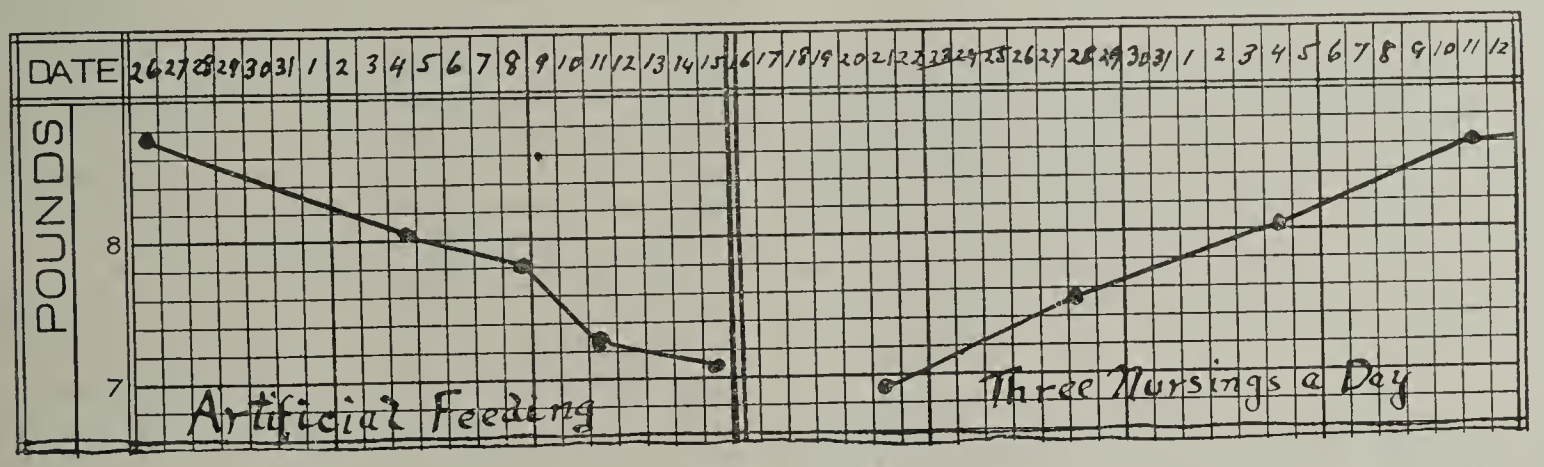


Fig. 2.—Weight chart of Case. 2.

those three ounces of breast milk which enabled it to resist the effects of the infection.

If no more than the two ounces a day had been given, I believe the improvement would have continued. However, in order to make the cure a certain one, I visited three other nursing mothers and induced them to contribute some milk. For five weeks the baby was given breast milk (together with its other food) in amounts varying from one to sixteen ounces a day. In all twelve quarts of breast milk were so obtained. I believe that one or two quarts would have been sufficient to save the baby's life, and the remaining ten or eleven quarts might have been used to save the lives of other sick babies.

My experience in the use of small amounts of breast milk in infections has been almost wholly in the infections of the gastrointestinal tract. As the breast-fed infant shows an equally strong resistance or lack of susceptibility to infections of the respiratory tract and to suppurative conditions, there is reason to believe that small amounts of breast milk would also be of value there.

DANGERS OF BREAST MILK.

The importance of securing breast milk from healthy women, free from tuberculosis, syphilis, or other con-

tagious disease, is sufficiently emphasized in the text-books. Of course this is equally important where only a small amount of breast milk is used. It must also be remembered that in the early stages of infections of the gastrointestinal tract there are times when it is dangerous to give milk in any form. Breast milk itself has no bactericidal power and probably furnishes as good a medium as cows' milk for the growth of bacteria. The giving of breast milk to an infant who has an infection with organisms producing toxins in milk may result in the death of the infant, as in the cases reported by Salge.[11] Human milk, however, can be started earlier in gastrointestinal infections than cows' milk, because if the first effects are not too serious it gives the infant increased resistance to the infection from which it is suffering.

CHANGES ARE NEEDED IN THE PRACTICE OF WET NURSING.

The leading text-books of pediatrics discuss the subject of wet nursing as if the only way to secure breast milk for a sick baby was to find a woman who would abandon her own child. Such a course is poor practice and I believe never justifiable. To take away a vigorous healthy child from its mother, and put in its place a sick baby who will at first take only a few ounces a day, is to invite disaster. Stasis will often result and colostrum corpuscles appear in the milk, which rapidly deteriorates. Moreover, the psychologic effect of the presence of the mother's own child, as well as its vigorous nursing, is of great value in securing a normal secretion of milk.

The welfare of the wet nurse's own child must be considered. It might be right for a poor woman to wean her own child if this were absolutely necessary to save the life of a sick baby, but it is not justifiable when it is for the interest of the sick baby also that the mother continue to nurse her child a few times a day. If the statistics quoted by Holt[12] are correct that only one wet nurse's baby in ten survives, then wet nursing as it has been practiced in the past has cost more lives than it has saved.

It is often difficult to secure good wet nurses, at least in Boston, among the class of persons usually employed. This is especially true for families of moderate means and for institutions. A sufficient amount of breast milk can be obtained if we make use of the tenement house mothers, women who would continue to live in their homes.

I have recently tried a plan at the Massachusetts Infant Asylum which has seemed to be satisfactory. A woman came to the asylum at 9 a. m. and nursed two sick babies; at 11:30 she nursed them again, and then returned to her own home in time to get dinner for her other children on their return from school. She nursed her own baby at 3 p. m. and at 5 p. m. returned to the asylum to nurse the two sick babies. The babies were weighed before and after nursing and the woman was paid so much an ounce for the milk she furnished.

The advantages of this plan are obvious. The milk of such women is better than that of the wet nurses whom we are obliged to employ; it is not necessary to take the wet nurse into the household, always an unpleasant feature of wet nursing; and there is no expense for her keep.

The advantages to the poor mothers are equally obvious. Too frequently they have to wean their babies and leave them at the day nurseries in order to go to work at a time when they are unfit to do so. The opportunity to earn a little money by nursing a sick baby would be much appreciated by them, as it was in the case cited. If poor women could have more of such opportunities, the practice of wet nursing would result in saving the lives not only of the sick babies but of the nurses' own babies as well, who would otherwise have to be weaned.

The plan is applicable for private homes as well as for institutions. The practice of weighing babies before and after nursing is of great advantage and is insisted on by Schlossman in all cases in which sick babies are on the breast. It takes very little time, as the baby need not be undressed. It enables one to see just what the baby is getting, and if the nurse's compensation is made dependent on the amount of milk she furnishes, it does away completely with the criticism often made that the nurse will favor her own child at the expense of her foster child.

If a baby can not be nursed, it is often possible to obtain breast milk which has been expressed or drawn with a pump, as was done for Case 3.

NEED OF BREAST MILK IN INFANT HOSPITALS.

The causes of high mortality in infant hospitals have been carefully studied by Huebner,[13] who found that the high death rate resulted from the fact that infants who recovered from the disease for which they entered were stricken down by some infectious process, gastrointestinal disease, bronchopneumonia, etc., to which they often succumbed; so that the mortality of an infants' hospital is the mortality of the diseases for which the infants entered, plus the mortality of the secondary infections which they contract there. In the same way the mortality was high in surgical and lying-in hospitals before the days of antisepsis, on account of the deaths resulting from the secondary infections of wounds.

That these secondary infections can be largely prevented in infant hospitals by giving the babies alternate feedings of breast milk has been demonstrated for many years at the Massachusetts Infant Asylum, and Schlossman[14] has recently reported the same results at Dresden, where he had a mortality of 25.6 per cent., as compared with 58.5 per cent. at the Charité, where no breast milk was given.

Thanks to Moro's[7] work on the bactericidal power of the infant's blood, we can now understand the results of the use of breast milk in infant hospitals. The mucous membranes of the breast-fed infant, owing to the marked bactericidal power of its serum, are not a favorable soil for the growth of pathogenic bacteria. The mucous surfaces of the artificially fed infant, however, with its serum of low bactericidal power, offer slight resistance to the growth of the pathogenic bacteria which are inevitably present in hospitals. The mucous surfaces in the artificially fed infant become just like an open wound, furnishing favorable conditions for the growth of bacteria. Unlike a wound, however, it is not possible completely to protect the infant's mucous surfaces from infection by means of asepsis and disinfection. Something may be done along these lines as Heubner has shown, but only at an enormous *per capita* expense for nursing.

The only way to prevent a high mortality in infant hospitals and institutions is to add a sufficient amount of human milk to the babies' diet to make them resist-

11. Jahr. f. Kinderhlk., vol. lviii, 1903, p. 641.
12. "Diseases of Children," 1900, p. 159.
13. "Säuglingsernährung und Säuglingsspitäler." Verlag von Aug. Hirschwald, 1897.
14. Arch. f. Kinderhlk., vol. xxxiii, 1902, p. 177.

ant to the infections to which they are constantly exposed. Alternate mixed feedings are sufficient to give them this resistance, and the smallest quantities of breast milk are better than none at all.

In view of this knowledge, it is as unjustifiable to keep infants in hospitals or institutions without giving them breast milk, as it would be to conduct a surgical or obstetrical hospital without the use of antiseptic and aseptic methods. The breast milk is just as necessary as the antiseptic methods to prevent the secondary infections. Those in charge of infant hospitals should realize that if they give their infants no breast milk, they are not only failing to give them the best therapeutic measure to hasten their recovery, but they are also exposing them to very serious risks of contracting infections to which they may succumb, even if they recover from the primary disease.

SUMMARY.

1. The chief causes of failure of an exclusive artificial diet are, *a,* disturbances of assimilation, of which infantile atrophy is an extreme type; *b,* a diminished resistance to bacterial infections.

2. The benefits of human milk in these conditions probably depend on the action of ferments, and it is therefore rational to expect to get results from the use of small amounts of human milk.

3. Good results are obtained by the addition to the infant's diet of two to five ounces of human milk a day.

4. Discretion must be exercised in giving breast milk in the early stages of a gastrointestinal infection.

5. It is poor practice and unjustifiable to have a wet nurse abandon her own child in order to nurse a sick baby.

6. Much can be done with breast milk obtained from poor mothers, women living at home, who come to the hospital or house a few times a day. The amounts obtained at each nursing should be determined by the nurse's compensation made proportional to the quantity furnished.

7. It is unjustifiable to keep babies in hospitals or institutions unless a sufficient amount of breast milk is added to their diet to render them resistant to hospital infections.

It is not claimed that small quantities of human milk will accomplish all that larger quantities can, or that every case which improves when wholly nursed, will improve on a small amount. It is always better to nourish a sick baby wholly on the breast, but when we are unable to do this, much can be accomplished by the use of small amounts. As physicians we are not doing the most for our patients if in every case of infantile atrophy, or infectious disease, in which the life of the infant is threatened, we do not make an earnest effort to secure for it at least a small amount of human milk.

Treatment of Corns.—According to J. F. Palmer, in the *Clinical Journal,* Aug. 15, 1906, a corn should never be cut, since the cutting merely removes the superficial hardened epidermis, while the essential part of the corn, the plug of epidermis, which presses into the corium, is untouched. The author says that any uncomplicated corn can be cured if its owner will only permit it. An attack of typhoid fever is a sure cure, as the patient lies in bed and the corn has time to get well. In most cases, however, he states, that it is only necessary to soak the part with water or glycerin during the night and to protect it during the day by a soft perforated plaster of spongiopiline, the perforation of which may be filled with glycerin. Soaking the feet in water containing sodium carbonate, night and morning, may suffice. A corn complicated by suppuration should be treated like any other abscess.

A PLEA FOR A SQUARE DEAL FOR THE WET NURSE.

WET-NURSING OF FOUNDLINGS A PERNICIOUS PRACTICE AND SHOULD BE ABANDONED.*

WILLIAM T. WATSON, M.D.

BALTIMORE.

In Baltimore the care of foundlings devolves on the Board of Supervisors of City Charities. This board is composed of our best citizens, and its personnel will, I am sure, compare favorably with that of any similar board in this country. It is guided only by the best of motives. In matters medical they will, I have no doubt, be glad to act on the opinions of the medical profession and will welcome any light that may be shed on the subject of wet-nursing city babies by its discussion here.

I wish it understood that I am not criticising the board of charities, but only the practice of wet-nursing foundlings which it adopted in good faith, a practice which is in vogue in certain New York institutions on whose boards are some of the leading members of this Section.

A Case in Point.—About a year ago Mrs. M., a wife of a mechanic, gave birth to twins. One died immediately; the other lived three weeks. After the death of the second baby the Baltimore board of supervision of city charities solicited Mrs. M. to take a "city baby" to nurse. For this she was to be paid 40 cents a day. On July 4, 1905, she took the city foundling to raise. The baby was said to be six weeks old. It was a child of a prostitute. The baby was apparently healthy except for a rash about the anus, which soon disappeared.

In August the baby developed "snuffles," which interfered with nursing and sleeping. This lasted six weeks or more. Coincident with the snuffles a fissure appeared near the middle of the upper lip and bled at times when the baby nursed. In October a discrete papular rash appeared over both buttocks. Notwithstanding these symptoms the baby gained in weight and strength, and by November 8, when I first saw it, was on the whole a rather healthy looking infant. Shortly after this date it was returned to the city and is now apparently in very good health.

The members of the board were aware that the wet-nursing of foundlings was fraught with danger to the nurse; they knew that this infant was the offspring of a prostitute. They hoped that, by sending an inspector to see the baby once a week or so, if syphilis developed in the baby, the latter could be removed in time to prevent infection. They put on their medical inspector an impossible task.

No warning was ever given to Mrs. M. that the baby might be a source of contagion. On November 8 I was called to the M. household. On the left nipple of Mrs. M. I found a chancre the size of a quarter and on the lower lip of her 9-year-old daughter a chancre a trifle larger. The mother's infection came from nursing, the daughter's from kissing the infant.

The Situation in the M. House.—The havoc wrought by the board of supervisors of city charities in Mr. M.'s home is unspeakable. It has been converted by the city nursling into a pest house where physical suffering and mental anxiety prevail. Mr. M. and his boy of 4 years must ever be on the alert not to be in close contact with Mrs. M. and the girl of 9. They must not use the same dishes or utensils of any kind. Fear must constantly pervade all or the dread malady will spread in the household. Mr. M. must have no marital relations for from two to four years to come. He can not kiss his wife without danger. The daughter must remain home from school for two years or more, otherwise she may give the disease to her schoolmates as she may even now have given it to her playmates.

Mrs. M., being a conscientious woman, has not taken a drink of water away from home since her trouble became

---

* Read in the Section on Diseases of Children of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

known for fear of spreading the disease; she has not taken a meal or even a cup of tea at the home of a friend or relative for fear she might afflict them. She tries so far as possible to have her daughter live likewise. She has lost weight and strength and is greatly depressed in spirit. She has no heart or strength for her work and her usual household duties are a burden to her. She worries over having so foul a disease and the thought that her husband must regard her as a menace to him preys on her mind. She is sick, humiliated, heart broken. Her home is a wreck.

The possibilities in store for this family I need not go into before an audience of physicians. I will mention but a few. Husband and son may contract the disease. After years of treatment the mother and daughter may or may not be cured. They may die from the disease; they may become insane or paralyzed; their eyesight and hearing may be lost; their noses may cave in or other hideous deformities may result. If they conceive they may abort or give birth to dead babies, or, worse still, to living but syphilitic babies liable to spread the disease and to have such disabilities as may make them a burden on the state.

Measures of Relief for the Afflicted Family.—The board of charities has not a cent which it can lawfully appropriate for their relief. City Solicitor Bruce informs me that there is no provision in law whereby this family can compel the city to pay them one cent for damages or for the treatment of their ills. They have no rights, but must humbly accept such charity (if any) as the city chooses to dole out to them from the mayor's emergency fund.

REASONS FOR CONTINUING THE PRACTICE.

The members of our Board of Supervisors of City Charities, knowing the horrible condition created in this home by their foundling and aware of their own helplessness to alleviate these conditions, nevertheless propose to continue the practice of wet-nursing foundlings. They know and admit that they will sooner or later infect some other innocent unsuspecting family. Their justification is that they will raise more foundlings this way than could be done on the bottle in institutions, and that the system is in vogue in New York and foreign cities and must, therefore, be proper. I grant that they will raise more foundlings by this system, but I maintain that the price is too great when it means the wrecking of the homes of healthy and happy people. Because New York and foreign cities continue the practice, is not an all-sufficient reason to some of us.

They are looking at the subject from a one-sided standpoint, that of the baby's interest alone, forgetting the interests and rights of the community at large. This matter can not be settled by a review of statistics, so many foundlings raised to only so many nurses syphilized. The right of the nursing woman to a square deal must also enter in, and it is the purpose of this paper to make a plea for such a square deal.

RESULTS OBTAINED IN BALTIMORE.

Of 61 foundlings put out by the city to different city institutions between March, 1900, and Dec. 31, 1905, all died; 100 per cent. mortality. The private wet-nursing system was adopted in 1902. Of 18 foundlings wet-nursed since then, 13 died and 5 lived. As a rule, the more favorable cases were selected for wet-nursing.

In four years' time 5 foundlings have been raised, and at what cost! For each 2½ babies raised, to say, from 1 to 4 years of age, they have syphilized one innocent woman. In these two women, one about 30 and one now 10 years of age, the state may lose by abortions or still-births more than five children. and children doubtless of a better mental, moral and physical equipment. Then, think of the mental anguish and physical suffering that has been inflicted on these innocent victims. Of course, if the practice were continued longer, a better showing would doubtless be made.

THE PRACTICE IN VOGUE IN NEW YORK CITY.

Our board has quoted the experience of New York City as follows:

> During the last five years in New York, the State Charities Aid Association has handled about 700 infants, over 50 per cent. of whom were foundlings. They had one case in which it seemed probable that the child carried the infection; one case in which it seemed probable that the infection had a different origin.
>
> The New York Foundling Hospital, the New York Infant Asylum and the New York Guild of the Infant Savior have used the wet-nursing system for three or four years. These institutions receive from 1,500 to 1,800 infants a year, mostly illegitimate, though probably not over 125 are foundlings. Each institution has had one case in which an infant infected the wet nurse.

The number of foundlings raised to each woman syphilized is not given. The showing is apparently very much better than that of Baltimore. If, however, these New York cases were investigated, possibly infected husbands and children might be found and the subsequent progeny of these mothers may be syphilitic.

INFECTION OF INNOCENTS IS INHERENT IN THE PRACTICE.

Wherever this system of wet-nursing is in vogue there chancres of the breast abound. Some years ago Bulkley collected 1,148 cases of chancre of the breast. He says regarding them: "Italy takes the lead, furnishing 33 per cent. of the cases. Russia, Poland and France also give large numbers, in all of which countries baby farming is very prevalent."

Conditions are such that these infections can not be avoided. In the first place, hereditary syphilis is extremely contagious. Morrow says:

> Nothing is more certain than that the cutaneous and mucous accidents of hereditary syphilis are eminently contagious. Abundant clinical observations prove that nothing is more dangerous to the persons surrounding it than a syphilitic infant. . . . A syphilitic child will almost certainly infect a healthy nurse.

Bulkley says:

> When the nurse is not the mother there is no question in regard to infection readily taking place and the instances of reported chancre of the breast given to healthy nurses by children with inherited syphilis are so innumerable that it is hardly necessary to illustrate the subject.

In the second place, the diseased condition of the infant is usually masked, for the baby may appear perfectly healthy up to three months or more. In the third place, infection may take place through and from the most minute lesions. These being the facts, no amount of inspection of these babies can protect the wet-nurse.

DECEIT AND IMPOSITION ARE INSEPARABLE FROM THE PRACTICE.

If, when the city's agent calls on the bereaved mother and asks her to nurse a city foundling, she, at the same time, tells her the truth as known to the board of charities, that the baby may have this loathsome disease, that she may contract it and be ruined in health, may in turn give it to her husband and children, may transmit it or its effects to two generations, that her husband might have to shun her for several years—would any

woman not a fool accept such a baby? If the woman is unable to understand the dangers, then to induce her to take it is to take a mean advantage of her ignorance. If a contract is signed with the nurse and the word "syphilis" incorporated in it without its significance being effectually explained, then it is no more than a despicable trick to entrap the poor woman and to release the city from the dangers of a suit. Mrs. M. says that, had the dangers been intimated to her, not for the world would she have taken the tainted baby. Mr. M. is even more emphatic.

If the truth is told to these wet-nurses there will be no wet-nursing of foundlings.

A VIOLATION OF THE GOLDEN RULE.

If a man saw my wife and daughter in danger of acquiring syphilis and gave no warning, I would regard him as inhuman. If a man knowingly put my wife and daughter in danger of syphilis and gave no warning and they acquired it, I would consider a bullet too good for him. The Board of Supervisors of City Charities put Mr. M.'s wife and daughter in danger of acquiring syphilis without warning and they acquired it. Not a member of the board would care or dare to put a member of his own family or social circle or acquaintanceship in danger of acquiring syphilis for the sake of enabling the city to raise more foundlings.

Because these women are poor and live humbly, the board seems to consider (by what right I know not) that they are in a class with rabbits and guinea-pigs to be inoculated with disease, if necessary, for what it considers the public good. This is a clear violation of the golden rule and is a class distinction which may go in Europe, but which, I believe, will not go in this country when properly brought to public notice.

I have asked many physicians, several lawyers and ministers of the gospel if they would allow themselves or their families to be endangered by syphilis for the sake of allowing the city to raise a few bastard children. I have always received an emphatic "No." I ask my brother physicians here and now the same question as regards themselves and their families.

THE PHYSICIAN'S DUTY TO PROTECT THE NURSE.

It has been said that these nurses when they enter the city employ are on the same footing as firemen, policemen and street cleaners, who are all subject to risks connected with their duties. This is, of course, a very superficial view of the case, for the dangers to which these employés are subjected are obvious and can be comprehended by a child. The insidious dangers of syphilis can only be comprehended by one who has had a medical training. When 40 cents a day is held before the eyes of a woman of limited means, limited education and limited intelligence, she is thereby absolutely blinded to any insidious dangers. Let us, who can see, protect her.

THE PRACTICE IS A PERNICIOUS ONE AND SHOULD BE ABOLISHED.

This practice is fraught with danger to innocent people; it can only exist by the practice of cruel deceit and by making a class distinction that ought not to be countenanced in the United States. Better, in my opinion, that every city foundling should die than that the health and happiness of one innocent woman should be sacrificed. Our city has heretofore apparently not regarded the lives of foundlings as of great importance, for it has never paid institutions more than 20 cents a day for their housing, feeding, nursing and medical care. But now, forsooth, they are regarded as of such value that women must be syphilized in order to raise them. This new standard of value seems to me sentimental and unreal. Common sense does not accord these waifs such a right to life.

THE WAY OUT.

But need these babies all die, if wet-nursing is abandoned? In the past fifteen or twenty years we have seen the evolution of a trinity of useful agencies that may be combined for the benefit of these little waifs, pediatrists who make infant feeding a specialty, trained nurses and milk laboratories. When these agencies are utilized to their limit (which as yet has not been done), then many foundlings will be raised. If babies yet die, who will cast on the city authorities the slightest blame?

The Discussion on the Papers of Drs. Denny and Watson Commences on page 1849.

A SERIES OF INTERESTING CASES OF SURGICAL CONDITIONS OF THE KIDNEY.

G. FRANK LYDSTON, M.D.

Professor of Genitourinary Surgery and Syphilology, State University of Illinois; Attending Surgeon, St. Mary's and Samaritan Hospitals.

CHICAGO.

CASE I.—RENAL SARCOMA IN A CHILD.

History.—A child, a year and a half old, was brought to me with a history of hematuria of four weeks' standing, and with a "lump" in the right side. The tumor had been discovered accidentally only a few weeks before the hematuria began; it was, therefore, impossible to determine when the growth had first developed. The child had always been fretful and poorly nourished, but had apparently suffered no pain until five or six weeks before I was consulted. There was a history of possible injury to the back some six months before the hematuria was noticed. A blow on the back was produced by the nurse letting the child fall in taking it out of the crib. The child cried a little after the accident, but was soon thereafter apparently none the worse for it. Family history was negative.

Examination.—Examination revealed a smooth, ovoid, moderately hard tumor in the right ileo-lumbar region. The tumor was apparently the size of a small orange and was distinctly retro-colonic. The child was restless under examination, but the tumor was not painful to pressure. The growth was almost, if not quite, immovable, and was apparently solid. Examination of the urine revealed bloody urine. The hematuria, the mother stated, had been constant since its inception. She also stated that the child's emaciation was increasing very rapidly. There was no rise of temperature. So far as could be learned, the child gave no manifestations of pain in passing urine. Micturition was no more frequent than in healthy children. Aside from the presence of blood, the microscope showed no abnormal characters of the urine.

Further History.—A diagnosis of sarcoma of the right kidney was made, and an unfavorable prognosis given, but operation suggested as the only possible chance of relief. Operation was declined. I lost track of the case for several weeks, when the patient was brought to me again, and I was requested to operate. I, however, refused to do so, as the child was in such condition that operation was, in my opinion, absolutely unjustifiable.

Autopsy.—I impressed on the family the advisability of an autopsy on account of the important bearing of the findings on the family history. My argument must have appealed forcibly to the relatives of the child, for when it died, several weeks later (about 3 months from the time the hematuria began), I was permitted to perform an autopsy and verify the diagnosis of renal sarcoma. The tumor had grown to double the size presented at my original examination, and had become

slightly lobulated. As one of the conditions on which the autopsy was granted was that no organs should be removed, I was not able to make any examination of the gross specimen. I was able to take a small portion of the kidney for microscopic examination, however, and was thus able later to verify the diagnosis.

The probabilities are that in this case the tumor had been developing for some little time before hematuria began. Because of its painlessness and the fact that it grew to a considerable size before it made itself evident in the flank it had eluded observation.

A somewhat similar case came under my observation several years ago:

The mother of the child had suffered from an attack of pneumonia just before confinement. The child was improperly fed, the quality of the food being poor and the quantity insufficient for its nourishment. When first seen he was in a marasmic condition from simple inanition. Under proper feeding improvement occurred, but at the age of 3 months the child began to cry incessantly and was evidently suffering considerable pain. Hematuria developed; the abdomen became swelled and tympanitic; the stomach refused to accept nourishment, and in a few days diarrhea supervened, wasting being consequently very rapid.

A few days later the distension of the abdomen disappeared, and careful examination revealed the presence of a flat, lobulated tumor, corresponding to the situation of the left kidney, This occupied about one-half of the abdomen, was moderately movable, and presented the usual physical signs of renal tumor. After a day or two marked and persistent hematuria occurred. A diagnosis of renal cancer was made. The child died within two weeks after the development of marked symptoms, but unfortunately, an autopsy could not be secured.

Alsberg[1] quotes an interesting case of a similar nature:

A girl, aged 5, who had previously been well, suddenly had an attack of hematuria, the source of which could not be discovered. Three months later swelling appeared in the right renal region, which was believed to be due to a malignant growth on account of its rapid development. The swelling was punctured, and the fluid withdrawn was examined microscopically. It showed the microscopic characteristics of renal cancer.

The tumor was extirpated by Bergmann's method, an incision being made on the anterior aspect of the abdomen, the peritoneal cavity being avoided. The immediate results of the operation were sufficiently satisfactory; there was no evidence of shock, and after two months the abdominal wound had completely cicatrized. Eleven months later the child died from a recurrence of the disease in the cicatrix, with extensive metastases in the liver and lungs. The left kidney was entirely healthy.

Alsberg suggests that one should always bear in mind the possibility of the presence of malignant tumor in one or the other kidney when a child suffers from hematuria, the cause of which is obscure. He says further that with regard to surgical intervention it is, of course, essential that a precise diagnosis should be made at the earliest possible moment.

In connection with these cases it should be noted that while blood in the urine, in conjunction with a solid tumor of the abdomen located behind the colon, is generally supposed to be pathognomonic of renal cancer, Roberts has called attention to exceptional cases, in which an enormous cancerous renal enlargement was not attended by hematuria. Blood in the urine does not occur in the beginning in all cases of renal cancer. Both of my cases illustrate this point. Many cases do not develop hematuria at all, although it does develop in considerably more than 50 per cent. of the cases. As a rule, blood occurs in considerable quantity.

1. Revue Mensuelle des Maladies de l'Enfance, June, 1888.

CASE II.—PYLONEPHRITIC AND PERINEPHRITIC ABSCESS OF UNKNOWN ORIGIN MISTAKEN FOR APPENDICITIS.

History.—A woman, aged 45, was brought to me with a history of pain and swelling in the right side of the abdomen, attended by chills, daily evening chill, and constant temperature, with evening exacerbations. She had been in this condition for nearly two months. The urine showed only a moderate amount of pus. This, the patient stated, was not constant, the urine sometimes being as clear as she had ever known it. A diagnosis of appendicitis had been made, and operation suggested by her family physician.

Examination.—Physical examination revealed a tumor occupying the right flank, extending to the mesial line of the abdomen. The tumor was tender, immovable, and non-fluctuating. The colon was evidently displaced toward the median line. The tumor was uniformly dull on percussion. The patient stated that she had been troubled greatly with constipation for some weeks. Careful inquiry elicited the fact that more or less pain in the right side of the back radiating down in the direction of the ureter, and associated with frequency of micturition, had existed for some time.

There was a distinct history of a fall with injury to the corresponding side of the back some four months or more previously. The patient and her friends were unable to give the precise date of this injury; they were, therefore, compelled to approximate the time that it occurred. The urine contained a small amount of pus and blood, but was otherwise normal, save with reference to quantity, which was considerably diminished, the amount of excretion being 700 c.c. per diem.

Operation.—A diagnosis of renal or perirenal abscess was made, and immediate exploratory operation advised and consented to. Diagnosis was verified by the operation; the kidney was found extensively disorganized and riddled with abscesses. Surrounding the kidney was a large multilocular abscess extending as far as the middle line of the abdomen and well known to the iliac fossa. The upper part of the kidney was buried in a mass of exudate and adhesions. While the kidney apparently was a useless organ, it was not deemed advisable to remove it by primary nephrectomy. Drainage was, therefore, instituted, and the patient and friends informed that a secondary nephrectomy would probably become necessary.

Six weeks later the patient left for home with but a small sinus remaining. The urine escaped from the wound and the subsequent sinus for several months, but the track finally healed and the patient was apparently as well as she ever was in her life.

Cases like the foregoing illustrate very pertinently the fact that the recuperative power of the kidney is something which is very difficult to estimate at the time of an operation. The kidney, which is apparently a mere shell, will not infrequently be restored to a certain degree of structural integrity and functional capacity following the evacuation of pus. As the quantity of urine increased very rapidly after the operation, I have reason to believe that the remnant of kidney left by the operation resumed its functions. I will admit that complete healing of the wound may have been due to the kidney becoming obsolete; still, the escape of urine from the sinus during the time the latter remained open, and the speedy closure of the sinus, rather argued against this view. It is certain that cases of this kind emphasize the necessity of conservatism and the performance of nephrotomy and drainage rather than a primary nephrectomy. This is in general a good rule to follow in suppurating kidney. It must be acknowledged that, in certain septic cases in which the existence and normal function of the opposite kidney has been established, the constitutional condition may demand primary nephrectomy as the operation which is most likely to yield a favorable result.

It is hardly safe to formulate a hard-and-fast rule in these cases. Possibly the safest ground to assume would

be that nephrotomy rather than nephrectomy should be performed unless there are special indications for nephrectomy in a given case. The question, after all, must be decided on the merits of the individual case.

CASE III.—HEMATURIA IN INCIPIENT MALIGNANT DISEASE OF THE KIDNEY.

History.—A woman, aged 40, was brought to me with a history of hematuria of six months' standing, associated with paroxysmal pain in the left lumbar region, reflected along the course of the ureter. The hemorrhage was not constant, nor was it always synchronous with pain in the region of the kidney. During the attacks of what were evidently renal colic, ureteral casts were expelled on several occasions, their expulsion being followed by immediate relief. The amount of blood in the urine varied from a slight tinge to, as the patient expressed it, "almost pure blood." It is unnecessary to call attention to the tendency to exaggeration on the part of the patient as to the quantity of blood contained in the urine in hematuria.

Examination.—Cystoscopic examination during a moderately severe attack of hematuria and pain showed that the blood was coming entirely from the left ureter. The kidney was in its normal position, and was tender on pressure. The pressure sometimes produced pain similar to the colicky attacks which the patient experienced. The *x*-ray was negative; but the symptoms persisting, an exploratory incision for a probable small renal calculus was advised.

Operation.—At the operation I split the kidney freely, and after careful palpation and inspection was unable to find any trace of calculus. The kidney was larger than normal and intensely congested. There was no macroscopic evidences of neoplasm present. Patient was temporarily relieved of pain and hematuria.

Postoperative History.—When heard from several weeks after her return home, she expressed herself as delighted with the result. Some three months later I heard that the hemorrhage had returned, but without a recurrence of the pain. I subsequently lost track of the case, and it eventually fell into the hands of one of my surgical friends, who operated, and found sarcoma of the kidney which I had incised.

This is the second case of the kind that has come under my observation, the first having subsequently fallen into the hands of my friend, Dr. Theodore A. McGraw, who also removed a sarcoma of the kidney on which I had operated by simple nephrotomy. These cases are important as bearing on the pre-malignant stage of sarcoma and carcinoma of the kidney, and raise the question as to whether a nephrectomy would not be justifiable in some cases in which all the symptoms of calculus are present, and yet no calculus is found on exploration of the kidney. It is, of course, necessary to take into consideration the possibility of a circulatory disturbance of one or the other kidney sufficient to produce pain and hematuria without the presence of either calculus or malignant disease. Whether or not vasomotor disturbances may produce such a condition is open to argument.

CASE IV.—TUBERCULOSIS OF THE KIDNEY.

History.—A man, aged 32, strong and healthy-looking, was referred to me for operation for what had been diagnosed as renal calculus. There was an obscure history of an injury in the left renal region, occurring several years before I was consulted. For one year prior to the time of my examination the patient had experienced slight attacks of nephritic colic associated with hematuria. The pain was located on the left side. The attacks occurred at intervals of from 1 to 3 months. There was no rise of temperature, and at the time I first saw the case the urine was perfectly clear. On several occasions during the attacks, ureter-moulded clots were expelled, with sudden cessation of the colicky pain.

Examination.—*X*-ray and cystoscopic examinations proved negative. The urine contained mucus in slight excess, but no evidences of suppurative inflammation of the kidney or bladder. There was no history of specific infection.

Suspecting the existence of incipient tuberculosis of the kidney, and the microscopic examination of the urine failing to show tubercle bacilli, I suggested an inoculation test for tuberculosis. At the end of five weeks the guinea-pig showed a characteristic nodule at the point of inoculation, with associated nodulation of the lymphatic glands. Microscopic examination of the excised lymph nodes and the induration demonstrated the existence of tuberculosis.

Patient was sent away for a change of climate, but returned six months later with turbid urine and an increase in the frequency of urination. Examination of the urine demonstrated the presence of the bacillus tuberculosis. The cystoscope showed the bladder still healthy. The opposite kidney was apparently doing its work properly, the urine from this side being perfectly clear, as shown not only by the cystoscope but by the segregator, which in this case acted admirably well.

Operation.—Operation was suggested and readily consented to. The kidney, as to cortex, was perfectly normal, but there was a typic tuberculous pyelitis. Numerous cheesy nodules were just beginning to break down. No stone was found. The kidney was removed, patient recovered promptly, and at last reports, 6 months after operation, patient still remained perfectly well.

A very similar case recently came under my observation, in which the guinea-pig test alone enabled me to make a diagnosis. This patient is now in Arizona, at last reports was improving, and I hope will be able to avoid an operation.

CASE V.—RENAL CALCULUS WITH EXTENSIVE DISORGANIZATION OF THE KIDNEY.

Patient.—Man, aged 47, was referred to me, suffering with severe pain in the right ileo-lumbar region, associated with a tumor, which had filled the entire flank almost to the median line of the abdomen.

Examination.—The tumor was dull on percussion, save toward the median line of the abdomen, where the characteristic tympanitic note of displaced colon was obtained. The tumor was extremely tender on pressure. Pain was constant. The patient lay with his right thigh flexed on the abdomen in a manner suggestive of the presence of suppurating appendicitis. Temperature ranged from 101 in the morning to 103½ in the evening. There was a daily chill, followed by a sudden exacerbation of temperature occurring late in the afternoon. Profuse night sweats were complained of. Patient had been in this condition for about three weeks. The urine was heavily loaded with pus and blood. There had been no symptoms referable to the opposite side.

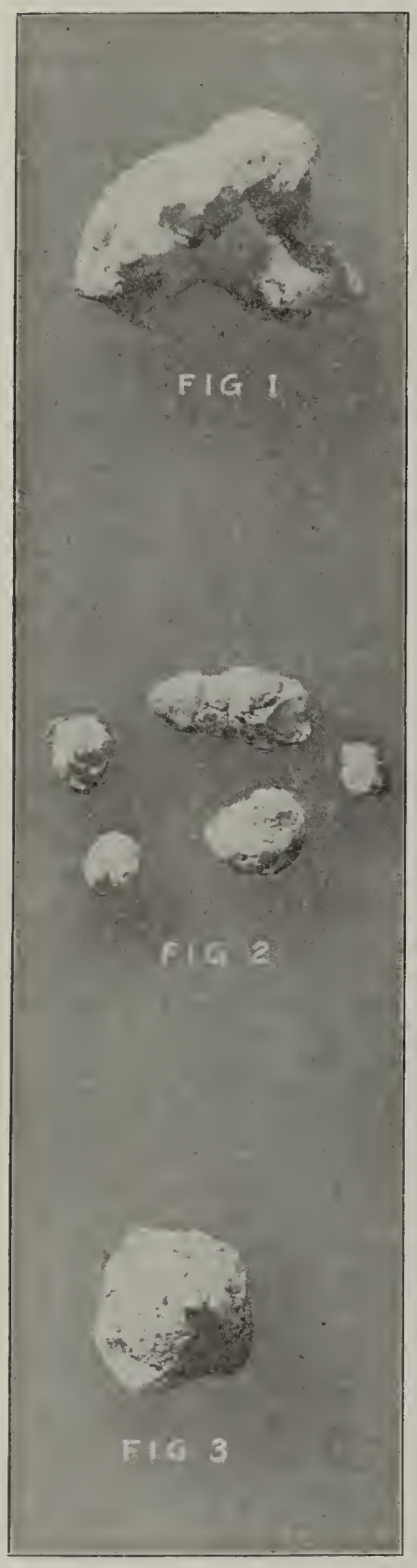
History.—There was a history of a number of attacks of renal colic. The diagnosis of renal calculus had been made about a year before I saw the case, and an operation performed. The kidney was incised and, according to the patient's story, some sort of fluid removed, but no calculus found. The diagnosis of suppuration in and about the kidney, probably secondary to calculus in the pelvis of the kidney, was made by me and an operation suggested and consented to.

Operation.—The usual lumbar incision having been made, the sac of a huge abscess was exposed. On incision of the sac an enormous quantity of fetid, ammoniacal pus escaped. This was apparently mixed with urine. The abscess cavity was found to be composed of numerous loculi, one of which extended forward and inward to about the region of the gall bladder. The lower portion of the abscess sac extended well down into the pelvis. The upper portion of the sac was found to be composed of thinned-out renal cortex, which had apparently returned at several points, at which there was a communication with the secondary cavities formed by the perirenal infection and accumulation of pus. A calculus weighing 5 gm. was found in the pelvis of the kidney, blocking up the ureter (Fig. 1).

The kidney being so thoroughly disorganized, I thought it wise to make the case an exception to the rule and to perform a primary nephrectomy. I, therefore, isolated the sac, so far

as the portion of it exposed by the kidney was concerned, with the intention of forming a pedicle and performing nephrectomy in the ordinary manner. In freeing the sac, much to my consternation, I peeled out the remnants of the entire kidney. I expected a severe hemorrhage, which was likely to prove very annoying on account of the depth at which the renal vessels were situated in the bottom of the huge abscess cavity, and the immediate impossibility of forming a pedicle for ligation. Much to my gratification there was no hemorrhage, the renal blood vessels having been obliterated. I had had this experience in one previous case, and in several on which I operated since.

Recovery in this case was uninterrupted, and the healing of the wound was complete at the end of 5 weeks. The urine cleared up within 26 hours, and has since remained perfectly clear. The patient at this writing is, as he expresses it, as well as he ever was in his life.



CASE VI.—RENAL CALCULUS.

History.—A woman, aged 35, with a history of left renal colic from time to time for a period of 5 years, small stones had passed on several occasions during micturition. The attacks had been associated with moderate hematuria. The last attack had occurred about 2 weeks before the patient consulted me. No stones had been passed since this attack.

Examination.—*X*-ray examination of this case was negative. The urine showed a considerable number of leucocytes and a few red blood cells, but was otherwise normal in constitution and amount. The patient had had various forms of palliative treatment, and her family physician had suggested an exploratory operation, so that she was ready to submit to any procedure which promised relief.

Operation.—I performed a nephrotomy and found in the pelvis of the left kidney five small calculi (Fig. 2).

Healing was prompt and satisfactory. Patient returned home apparently well, with the usual injunctions as to diet, water drinking and bathing, with a view to the prevention of further calculus formation. In a recent letter the patient informed me that she has had several slight attacks of renal colic on the opposite side within the past three months, so that it is possible I may again have occasion to explore the pelvis of the right kidney.

CASE VII.

History.—A woman, aged 40, with a history of severe attacks of renal colic attended by hematuria coming on at varying intervals for a period of 14 years, was taken with a severe attack of what was described as dysentery, about a week before coming under my care. The discharges were frequently painful and attended by severe tenesmus. The patient as not sure whether there had been any blood in the stools or not.

Course of the Disease.—At the time of my first visit the pain had become localized in the vicinity of the right kidney. There was distinct tenderness in the loin and anteriorly in the flank. The urine contained abundance of both blood and pus. The pain radiated typically along the ureter and was associated with frequent and painful micturition. The quantity of urine was considerably less than normal. The temperature varied from 101 in the morning to 102 in the evening. Patient stated that an *x*-ray examination had been made and a calculus found. I endeavored through the husband to secure the *x*-ray picture from the physician who had it in his possession, but was unable to do so, notwithstanding which I felt warranted in making a diagnosis of calculus in the pelvis of the right kidney and a calculous pyelitis. Urinary examination for tubercle bacilli was negative.

Operation was declined, so there was nothing to do but palliate. At the end of about a week the pain had disappeared, although the condition of the urine remained practically the same. The temperature remained uniform, approximating 102 F. I noticed at this time that the patient had a slight cough, and that in blowing the nose or expelling mucus from the throat, a small amount of blood was expelled. This, taken in connection with the suggestive facies aroused my suspicions, and I had a blood examination made, which showed a typic Widal reaction. The diagnosis of typhoid being thereby established, I turned the case over to Dr. William E. Quine for medical treatment. The characteristic rose spots were discoverable a few hours later, and were very plain when Dr. Quine and I first examined the case. The case ran the ordinary course of typhoid, but an unfortunate complication developed in the form of double parotiditis, a condition which proved exceedingly painful and exhausting.

I was asked by Dr. Quine again to take the surgical management of the case, and subsequently operated on first one parotid and then the other, evacuating a small amount of pus and necrotic gland tissue. The operations afforded relief. The patient was apparently convalescing nicely when severe pain recurred in the kidney, with an associated rise of temperature. The urine, meanwhile, had been at no time perfectly clear, although it had improved considerably.

Operation was suggested, but declined. The patient subsequently suffered so severely that it was necessary to administer large doses of opiates, and finally chloroform, in order to give her relief.

Operation.—Operation was finally consented to, but deferred until relatives could arrive from a distance, three or four days of valuable time being thereby lost. The last 48 hours before the operation the patient was compelled to take chloroform very frequently to afford relief from the frightful pain. I finally performed the operation and found the kidney extensively broken down, and the seat of three large abscess cavities connecting with a perinephritic collection of pus. In the pelvis of the kidney the stone showed in Fig. 3 was found.

The patient did not react from the operation, but died of shock, two hours later.

The coincidence of typhoid fever and the establishment of a diagnosis of that disease as an intercurrent condition in the course of severe and continued nephritic colic, followed by renal and perirenal abscesses from stone, form a very unusual and interesting clinical picture.

CASE VIII.

Patient.—A man, aged 40, referred to me for treatment of multiple perineal urinary fistulæ, secondary to slight coarctions of the bulbo-membranous region. One on the right side of the urethra had evidently resulted from suppuration of Cowper's gland on that side. There was a moderate amount of pus in the urine, and some slight irritability at the vesical neck, symptoms which were readily accounted for by the condition of the urethra.

Treatment.—Perineal section with excision of the fistulous tracts was recommended, but declined. Treatment by dilation and the instillation of antiseptic solutions was, therefore,

adopted. Dilation was carried on with fair results, although from time to time slight chills and febrile reaction followed the treatment. There was occasionally slight febrile reaction in the intervals of dilation. There was an obscure history of pain of a slightly colicky character in the vicinity of the left kidney. Slight recurrences of this occurred during the course of treatment by dilation. Stone in the kidney has been suspected.

The patient being decidedly adverse to any surgical interference, and of a rather nervous temperament, inclined to worry, I resolved not to make any very thorough examination as to the presence of calculus, so long as the patient remained in good condition. One year after coming under my observation the patient developed a large periurethral abscess, which burrowed forward into the scrotum in the median line.

Operation.—I suggested immediate operation, which was consented to. The operation necessarily proved to be a very formidable one. Very extensive dissection was necessary for the removal of the indurated and infiltrated tissues and fistulous tracts.

Patient took the anesthetic well, the irritability of the bladder subsided under subsequent drainage, and the postoperative course was ideal for several weeks, with the exception of the necessity of reopening some of the wound tracts, where the attempt to secure primary union failed. The perineum finally healed almost completely, leaving a very small fistulous opening in the median line, which subsequently closed soundly.

Further History.—During the persistence of this slight fistula, about a month after the operation on the perineum, but while the patient was still in bed, he developed severe pain in the vicinity of the left kidney, which was soon followed by the appearance of a large quantity of pus in the urine. The urine had cleared up almost completely after the perineal operation. No tumor in the flank was discernible. The temperature rose and there were slight chills. These symptoms followed almost immediately after the introduction of the sound for the purpose of dilation of the urethra, and were at first attributed to urinary fever, the pain originating in the kidney and disappearing very rapidly. A recurrence of the attack in conjunction with the more or less obscure history of trouble referred to the left kidney in times past, induced me to have a skiagraph taken. The skiagraph findings were not clear, but were suggestive of stone in the left kidney. The patient failing to improve there was at no time any swelling perceptible in the flank, but some tenderness on pressure. A cystoscopic examination was made, and the pus found to be issuing from the left ureter, the urine from the right side being perfectly normal. Operation was decided on.

Second Operation.—The patient bore the anesthetic very badly, and I narrowly missed losing him on the table, resuscitation being established with great difficulty. The shock of the operation was by no means an unimportant factor in the patient's collapse, and it was some hours before reaction was established. The kidney was found to be pretty thoroughly disorganized and the seat of three large pus cavities. The fatty capsule was adherent throughout, and had undergone almost complete cicatricial transformation. It was found almost impossible to deliver the kidney, and an incision was made at its border without doing so. After evacuation of the abscesses the kidney was explored with the finger and the stone shown in Fig. 4 found and removed. The patient did well after the operation, and the wound healed promptly, but left a fistula behind which at the end of almost a year still refused to close.

During the postoperative period there were from time to time exacerbations of temperature. Secondary pus pockets and sinuses formed in the vicinity of the original sinus on several occasions.

Third Operation.—It was finally evident that the kidney would have to be removed and I, therefore, performed a nephrectomy, which, on account of the adhesions and the immense amount of cicatricial tissue in which the kidney was embedded, proved very tedious and difficult. Mindful of my previous experience with the anesthetic in this case, I used the scopolamin-morphin method, and succeeded in getting through the tedious and prolonged operation with about half an ounce of chloroform. As one of the internes remarked, the patient left the table in better condition than when he was placed on it. The postoperative course was well nigh ideal. The patient is perfectly well.

CASE IX.

History.—A woman, aged 32, consulted me regarding typic renal colic on the left side, from which she had suffered for over ten years. The attacks had latterly been growing much worse and were then recurring at intervals of about two weeks. The attacks were attended by marked hematuria, and between attacks the urine constantly contained an amount of blood appreciable macroscopically, with a small quantity of pus.

Examination. — The skiagraph plainly showed a calculus in the pelvis of the left kidney. Segregation of the urine of the opposite kidney showed it to be performing its function normally.

Operation.—Operation was proposed and consented to. The usual operation of nephrolithotomy was performed, and the calculus seen in Fig. 5 removed. There was no suppuration in or about the kidney, the pus in the urine evidently having originated in the calculous pyelitis.

Recovery was uneventful. The urine escaped from the wound for some time, but at the end of five weeks the fistula was soundly healed.

The form of the calculus in this case is interesting as explanatory of the severe pain the patient experienced. It is extremely irregular, its surface presenting numerous spines, which might naturally be expected to produce severe irritation.

FIG 4
FIG 5
FIG 6

CASE X.

History.—A man, aged 35, with a history of recurrent right renal colic of one year's duration. The patient also stated that some six or seven years before, the exact date having escaped him, he had had a slight attack of renal colic, and passed a small calculus from the bladder, which was said to have been of renal origin. The urine had never contained any pus or blood, according to the patient's statement. The microscope showed both in small quantities. The attacks had recently grown more severe, and were recurring at intervals of about four to five weeks. Skiagraphy in this case gave apparently negative results.

Operation.—The patient consented to an exploratory operation, which was accordingly performed. Two small calculi were found in the pelvis of the kidney. One of these only is shown in Figure 6, the other having been lost in some way. Recovery in this case was interrupted, the wound being solidly healed at the end of the third week.

When this case was last heard from, 18 months after opera-

tion, patient had had a recurrence of the nephritic colic, several slight attacks having occurred during the last 2 months. I have not as yet had an opportunity to examine the patient, but presume that calculus has re-formed in the kidney, as the pain is on the same side as the operation.

Clinical Notes

A CONDITION IN A CASE OF TYPHOID FEVER SIMULATING INTESTINAL PERFORATION

PRODUCED BY A MEDICINAL DOSE OF OPIUM.

JAMES K. HALL, M.D.
Assistant Physician, State Hospital.
MORGANTOWN, N. C.

The following case was of extreme interest to me because of inability to discover an underlying pathologic cause for severe and unusual symptoms in a fairly mild attack of typhoid fever.

History.—B. M. F., white, male, single, aged 23, who for the past two years has been an attendant in this hospital, most of the time on night duty, came to me on July 31, 1906, and asked for medicine for the relief of a very severe headache. Inquiry brought out the fact that he had not been well for several days. Headache had been constant, and, in addition, there was general muscular discomfort, loss of appetite, uneasy sensations in the upper abdomen, and inability to sleep. At this time the tongue was furred, the temperature was 102, and there was slight acceleration of the pulse rate. He was put to bed, the bowels were opened with small doses of calomel, followed by a saline, and the diet was restricted to milk. The temperature on the following day ranged from 101.2 in the early morning to 103.4 at 6 p. m.; the pulse rate varied from 96 to 106; the respirations were about 22. The heart sounds were normal and no evidence of pulmonary or pleural disease could be discovered by physical examination. There was, perhaps, slight abdominal distension; tenderness and tumors were absent, but there was complaint of constant pain in the epigastric region and in the lumbar muscles.

There were several cases of enteric fever in the institution and this case was regarded as the beginning of such an attack. For several days the temperature range was from about 101 to 103.5, and there was little change in the condition except for the increased severity of the headache and the discomfort in the upper abdomen.

Administration of Opium.—For several days no medicine was given, but the complaint of headache became so constant that Dover's powder, gr. 10, was finally allowed. The powder was given in capsules at 10 p. m., August 5. At that hour the temperature was 102.2, pulse 90, respirations 22. At 12:30 a. m., two and a half hours later, I was hurriedly called to the patient's bedside, and found him in a paroxysm of agonizing pain. Bent almost double, he was tossing from side to side of the bed, and protesting that he could not live unless he obtained relief. His face had lost its flush, and was pale and anxious, and covered with a cold sweat; the pulse was rapid and weak, and the general appearance of the patient suggested great pain. In a few moments, when there was temporary relief, he described his sufferings as an awful colic, more severe, perhaps, in the upper right half of the abdomen. Paroxysms followed each other at about ten-minute intervals, each paroxysm lasting from three to five minutes. Soon after reaching him I administered an eighth of a grain of morphin, hypodermically, but relief did not result. In an hour, however, he was fairly comfortable. At 3 a. m. the temperature had fallen to 98.5; the pulse was 80, small and weak. Three hours later the temperature was 96.8, while the pulse rate was only 76 and the pallor was marked. Early in the morning the patient vomited once or twice.

Examination of Abdomen.—The abdomen was carefully examined, but aside from very slight tenderness in the upper right quadrant, nothing unusual was to be found. The abdominal wall was not rigid; there was no undue distension; liver dulness was normal; the spleen was barely palpable just below the costal margin, and flank dulness was absent.

Course of Disease.—The patient was comfortable, and during the day there was a gradual rise of temperature to 103 in the afternoon. The pulse improved in quality, the color was better, and the general condition became more hopeful.

Within the next few days the symptoms of typhoid fever became more prominent. The pulse developed a dicrotism and several rose spots were found on the chest and abdomen. The leucocyte count was about 6,500. The urine was dark amber colored, acid, specific gravity 1,020, showed a trace of albumin, no sugar, no casts, no bile pigment, but reacted positively to Ehrlich's test. During this time the patient was free from pain, took a sufficient quantity of milk, and had a bowel movement about every third day. The tub bath was used to reduce the fever.

Second Administration of Opium.—After a few days the patient again began to complain of headache, abdominal and lumbar pains, and could not understand why he should not be taking medicine regularly. I again yielded, against my judgment, to his importunities, and gave 1 gr. of pulverized opium at 10 p. m., August 8. Before three hours had passed I was called to the ward and saw him pass through a series of paroxysms of abdominal pain, almost, if not quite, as severe as those of the first attack. The attack, too, was accompanied by pallor, relaxed skin, cold sweat, weak pulse, and a decline in temperature from 102 at midnight to 97 six hours later. So severe did the suffering seem that one could well believe the patient's statement that unless he obtained relief he would soon be dead. An eighth of a grain of morphin was again given by hypodermic, and the bowels were moved by an enema. Slight vomiting again occurred, and after perhaps two hours the pain had subsided. Careful physical examination was again unable to establish the cause of the trouble. Within two days the temperature was running its usual course; within ten days convalescence was beginning, and recovery from that time was rapid.

Now, what was the cause of these alarming attacks of pain? The condition of the patient when I was called to see him during the first attack might have been explained by the presence of an intestinal perforation, accompanied by hidden hemorrhage, and I feared that this was the origin of the trouble. The rapid improvement in the patient's condition, however, induced me to doubt this tentative diagnosis, and the occurrence within a few days of a similar attack, followed by no grave sequelæ, caused me to abandon absolutely the theory of intestinal perforation.

The family history and the previous history of the patient were not helpful. The father died of enteric fever a few years ago; there are in the family eleven other children in good health. The patient states that a few years ago he had a severe attack of blood poison, resulting from a wound on one of the lower extremities. Two years ago he had grippe. He was never jaundiced, and had never experienced difficulty in urinating.

I had in mind, especially at the time of the second attack, the possibility of gallstones, or kidney stones, but the evidence in favor of these factors was extremely slight. Gallstones were not found in the intestinal dejecta, bile was not present in the urine, the gall bladder apparently was not enlarged and not tender, and jaundice did not occur. There were in the urine no findings to justify the assumption that the urinary tract had been traumatized by a stone.

It is to be noted that in each instance the attack of pain occurred after opium had been taken, and in each instance the first seizure came on about two hours and a half after the drug was given. The patient did not know at the time what the medicine was which he was taking, and he has told me since then that he does not think he ever took opium in any form before.

Although I am well aware that my conclusion is farfetched, nevertheless I am more and more inclined to believe that the patient was exhibiting unique manifestations of the physiologic action of a legitimate dose of opium in the presence of a marked idiosynerasy for the drug.

A MODIFICATION OF THE TECHNIC OF FIXATION OF THE MOVABLE KIDNEY.*

GEORGE ERETY SHOEMAKER, M.D.
Gynecologist to the Presbyterian Hospital, Consulting Surgeon to the Woman's Hospital.
PHILADELPHIA.

There are many methods of suturing the kidney to its place, some good and some bad. The question of material for sutures, or that of giving these their chief hold on the capsule or on the substance of the organ; again, whether the capsule proper is to be stripped or not, how many sutures are to be placed and where, I leave out of the discussion for the present; and likewise whether not sutures, but granulation methods, are to be relied on.

The point of my communication deals chiefly with the disposition of the connective tissue and fat which surround the kidney. On making an incision through the back down on the field through which a movable kidney makes its excursions, it is noted that a considerable development of the fatty capsule always exists and that this with its connective tissue is attached definitely to the parietal wall. The outer layer of this fat does not move up and down with the kidney, but as one tears or cuts through it there are encountered more and more movable or loosely attached layers, which permit of a large range of sliding motion until the kidney itself is reached, the tissues becoming more and more definitely fixed with relation to the kidney as its own fibrous capsule is approached. A little fat and connective tissue nearest the kidney move with it up and down. The large excursus of the kidney, therefore (six, eight inches or more), is not obtained by a naked kidney sliding in a closed sac; nor is it a kidney plus fatty capsule sliding on a naked parietal wall. Its slippery mobility is due to the pulling out, overstretching and enlarging of connective tissue meshes midway within the thickness of the fatty capsule, until the tissues there slide loosely in all directions on themselves like dartos tissue.

Now some methods have aimed to fix the kidney by cutting away the fatty capsule directly and stitching the kidney to the parietes. Others involve tearing a buttonhole through the fat to the kidney and delivering the organ like a button through its fatty capsule and through the wound on the back, after which the fat is cut away as much as possible, the kidney returned and sutured. Both these methods by cutting it away fail to utilize an important natural ally, namely, the cushion of fat which is needed inside of and below the organ.

AUTHOR'S TECHNIC.

The method which I have adopted with satisfaction in a number of operations is this: The kidney is delivered endwise through a hole torn in its capsule and brought out of the wound on the back. The process of cleanly tearing off the fatty capsule from the organ around to the vessels is completed. The kidney then projects through an opening in the outer portion of the fatty capsule, while the inner portion, partly turned inside out, is brought up close to the outer by the tension on the pelvis and vessels. In order to prevent what would otherwise occur, the replacing of the kidney into its old loose bed as soon as it is put back within the wound, two chromicized catgut mattress sutures are introduced below each pole of the kidney into the fatty capsule in such a way as to close the opening or buttonhole out of which the kidney came. These sutures are not attached to the parietes. If now an attempt be made to put the kidney inside the abdomen again, it will be found that it will not go. There is no place or space for it. A space is made (most conveniently before delivering the kidney) by the fingers or a blunt curved instrument peeling off the connective tissue and fat from the muscular and fascial structures of the wall of the abdomen, especially above the wound, and into this new bed the kidney is made to go. It will now be observed that even without suturing the organ is held definitely in place and will not slide up or down as it would do were it replaced without closing the opening out of which it originally was extracted.

Sutures are now introduced. The particular method adopted by me is that of forming several downward loops of chromicized catgut passing in and out of the fibrous capsule and escaping the stroma of the organ. This was the form of loop suture which was experimentally shown by Brödel to have the greatest holding power. Care should be taken to form a bed sufficiently large back of the fat, as some pressure, possibly not harmless, would otherwise be made on the kidney in reducing it.

Avoiding the nerve trunks, the wound is closed by deep catgut and half deep wormgut, leaving a small cigarette superficial gauze drain for two days. Experience in several cases extending over more than one year has shown the method to be successful in keeping up the organ and to be free from bad consequences. Among the advantages of the method is the holding of the organ up and back by means independent of sutures and the supply of at least some support on the abdominal side.

1831 Chestnut Street.

* Read before the Medical Society of the State of Pennsylvania, Bedford Springs, Pa., Sept. 12, 1906.

OIL OF TANSY POISONING.

E. H. MUSSON, M.D.
NORBORNE, MO.

The advertisements of tansy pills and pennyroyal pills are less in evidence now than in former years, perhaps, but there still lingers among the laity a widespread belief in the abortifacient and emmenagogue properties of the substances in question.

No doubt serious poisoning from these drugs is more common than is generally suspected and it might be well to give publicity to their baneful effects, as has been done recently with methyl alcohol and acetanilid.

I wish to add the report of another case of poisoning by oil of tansy following those which appeared in THE JOURNAL, August 18 and September 22, this year.

Patient.—Mrs. E. S., aged 22, the mother of two children, the younger aged 9 months.

History.—According to the patient's statements, she suffered greatly at the menstrual periods and desired to bring on the flow four or five days before it was due, in order to recover from it in time to attend a religious meeting. At 10 p. m., September 22, she took about half a teaspoonful of oil of tansy, which had been obtained from a drugstore.

Symptoms.—A few minutes after taking it she felt a strange

sensation in the head and was seized with a convulsion, and became unconscious. I reached her at 10:45 p. m., while she was in the second convulsion. This was severe, prolonged, and epileptiform in character. The tongue was bitten and much mucus collected in the throat. After the convulsion the face was flushed, the pupils were moderately dilated, and reacted to light. The respirations were shallow, slightly irregular, and more rapid than normal. The pulse was full, regular and 110 to the minute. She was completely unconscious.

Treatment and Result.—Apomorphin, ⅛ gr., and morphin sulphate, ¼ gr., were given hypodermically. Another severe convulsion soon occurred, followed by free emesis, the vomitus smelling strongly of tansy. No more convulsions occurred. As soon as swallowing was possible strong coffee was given, and at 1 a. m. consciousness began to return. Recovery was uneventful, save for great weakness, which, notwithstanding stimulative treatment, persisted for two or three days.

The desired emenagogue effect did not occur.

A CASE OF INFANTILE SCURVY.

FRANK VAN DER BOGERT, M.D.
SCHENECTADY, N. Y.

I feel that I should apologize for presenting the report of a single case of a disease which can hardly be considered one of extreme rarity; yet this case has been of especial interest to me in view of its late diagnosis, coexisting conditions and etiology.

The patient was a boy of 19 months.

Family History.—The parents were well advanced in years at the time of his birth, the father being 54 and the mother nearly 41. The mother had borne two other children, one a boy now living and apparently well at 17 years of age, the other a girl, who died at the age of 2 months. There was an interval of about 13 years between the births of the above mentioned children and that of the patient under consideration.

Personal History.—He was apparently healthy at birth. He was nursed for two or three weeks, when the nursing had to be discontinued on account of the failure of the supply of milk. He was then put on a cream and water mixture, the proportions of which I am unable to give, for about two months. After this he was given Mellin's food, prepared according to the directions on the package for infants of his age. He remained perfectly well up to the holidays of 1905, when he was about 13 months old. At this time he was circumcised by the physician who attended the mother in confinement. So far as I can learn the circumcision was done simply to relieve the local condition and for cleanliness. Very shortly thereafter the child began to fail, and apparently lost the use of his limbs. He became fearful of everyone, and there was decided general tenderness of the body surface. He continued to fail and inasmuch as the prepuce had become adherent in healing after the operation, a second operation (circumcision) was performed with a view to relieving the reflex nervous symptoms due to the local irritation.

Examination.—The fear and other nervous symptoms seemed steadily to increase, and the patient was referred to me on April 1, 1905. At this time the child was so afraid of me, screaming with fright when I entered the room, that it was almost impossible to make an examination. The skin was extremely tender, and seemed especially so about the genitals, due probably to the fact that these parts were the seat of operation. There was paralysis of the lower extremities with decided muscular atrophy. The appetite was poor and the bowels were constipated. The gums, especially in the neighborhood of the central incisors, were inflamed, swollen and ecchymotic, and bled freely at times. The mouth was tender, and this interfered with the taking of food. (This condition of the gums was present, I learn, even as early as one month before the first operation, in November, 1905).

Treatment.—After deciding on the diagnosis of infantile scurvy, I took the child off the Mellin's food, to the prolonged use of which I attributed in great part the condition, and put him on a cream and water mixture with sugar of milk, on which he steadily improved. It was difficult, however, to induce him to take the mixture in sufficient quantity, and the improvement was not rapid enough to please the family, who had great confidence in the Mellin's food. At their request I put him back on the food for one day, but immediately changed to a diet of plain cow's milk, with beef juice and orange juice. From that time on the child gained steadily. His weight increased. The condition of the gums improved, and the paralysis of the extremities was relieved, the limbs becoming normal in appearance, and the muscles less flabby.

The most interesting point in the case to me was the attributing of the origin of the nervous symptoms to reflex irritation of the foreskin.

THE USE OF A SMALL MIRROR IN STUDYING THE APEX BEAT.

ROBERT L. PITFIELD, M.D.
PHILADELPHIA.

Small mirrors have been affixed to galvanometers and the delicately moving parts of other instruments, and by means of beams of light thrown on the mirrors very fine movements may be detected and analyzed. A plate filled with mercury on which a beam of light is thrown, has been employed to detect the movements of the earth during earthquakes. By means of a small mirror pressed over the apex beat I have been able to demonstrate the movements of the apex of the heart in a case of Stokes-Adams disease. The movements were greatly amplified and it was easily possible with the beam of light to note the two kinds of impulses at the apex. In Stokes-Adams disease it has been found that the auricles and ventricles do not beat synchronously. A condition of heart block is brought about through disease of the bundle of His which conveys the contracting impulse, originating in the auricle, to the ventricle, and instead of a cardiac cycle consisting of an auricular beat and then a ventricular beat, we find that there are frequently from two to four more auricular beats than ventricular ones. The ratio often being one to two and a half or one to three and a half, so that we have an auricular pulse as an instance, of 72 to a ventricular one of 20.

Phenomena of this sort may be demonstrated by taking pulse tracings of the apex beat or of the carotid and jugular pulse combined. Such tracings in this disease show a number of minor curves followed by a full high curve, three or four times as large as the minor curves, then several more minor ones and then a large one again. The minor curves in the cardiogram are produced by the auricular contractions, the full large curves are caused by the ventricular contractions.

In order to demonstrate the phenomena in Stokes-Adams disease, I placed the patient in a dorsal position on a table near a window, and after exposing his chest to bright sunlight, I pressed a one-inch laryngeal mirror over the apex. I found each cardiac movement caused the beam of light reflected from the mirror to the wall, four feet away, to move. The ventricular beat caused the spot of light to move from four to six inches, while the minor auricular contraction caused the spot of light to move only from one and a half to two inches.

The varying length of the excursion of the light beam was most marked. By fastening bits of mirror to the bulbous jugularis under similar conditions the auricular beat is shown in this way. Any apex phenomena, irregular or galloping rhythm may be studied in the same way. This method would not have any very great use in physical diagnosis, but it seems an excellent way to demonstrate the phenomena to students.

New and Non-Official Remedies

THE FOLLOWING ARTICLES HAVE BEEN TENTATIVELY ACCEPTED BY THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR INCLUSION IN THE PROPOSED ANNUAL, "NEW AND NON-OFFICIAL REMEDIES." THEIR ACCEPTANCE HAS BEEN BASED LARGELY ON EVIDENCE SUPPLIED BY THE MANUFACTURER OR HIS AGENT, BUT TO SOME EXTENT ON INVESTIGATION MADE BY OR UNDER THE DIRECTION OF THE COUNCIL. CRITICISMS AND CORRECTIONS ARE ASKED FOR TO AID IN THE REVISION OF THE MATTER BEFORE FINAL ACCEPTANCE AND PUBLICATION IN BOOK FORM.

THE COUNCIL DESIRES PHYSICIANS TO UNDERSTAND THAT THE ACCEPTANCE OF AN ARTICLE DOES NOT NECESSARILY MEAN A RECOMMENDATION, BUT THAT SO FAR AS KNOWN IT COMPLIES WITH THE RULES ADOPTED BY THE COUNCIL.

W. A. PUCKNER, SECRETARY.

(*Continued from page 1831.*)

SUBLAMINE.

MERCURIC SULPHATE-ETHYLENEDIAMINE.

Sublamine, $3HgSO_4.8C_2H_4(NH_2)_2$, is a compound of three molecules of mercuric sulphate with eight molecules of ethylenediamine (which see).

It forms white needles, readily soluble in water and in 10 parts of glycerin, sparingly soluble in alcohol. It has an alkaline reaction; it contains about 43 per cent. of mercury. It does not precipitate albumin from its solutions.

It is incompatible with sodium chloride and should not be exposed to the air.

Actions and Uses.—Sublamine is a disinfectant, similar to mercuric chloride, over which it has the advantage of being non-irritating, more penetrating and readily soluble.

It is recommended as a substitute for mercuric chloride for hand disinfection, as well as in dermatology, gynecology, ophthalmology and otology.

Dosage.—It is used in 1:1,000 solution for skin disinfection and in 1:5,000 to 1:10,000 solutions for irrigations of the bladder, etc. It may be used in syphilis by injection into the gluteal muscles of a 3 or 4 per cent. solution.

Manufactured by Chemische Fabrik auf Actien, vorm. E. Schering, Berlin (Schering & Glatz, New York), U. S. patent No. 726,125. U. S. trademark No. 37,736.

SULPHONAL.

A name applied to Sulphonmethanum, U. S. P.

Manufactured by Farbenfabriken, vorm. Friedr. Bayer & Co., Elberfeld, Germany (Continental Color & Chemical Co., New York). U. S. patent No. 391,875. (Expired).

SUPRARENAL ALKALOID.

The active alkaloid of the suprarenal (epirenal or adrenal) glands.

The alkaloid shows a slightly alkaline reaction to moistened red litmus paper. It is with difficulty soluble in cold water, more readily in hot water. The colorless aqueous solution of the alkaloid is easily oxidized on contact with the air, becoming pink, then red, and eventually brown. The alkaloid is easily soluble in acids forming salts, of which the hydrochloride is readily soluble; it is also soluble in the fixed alkalies, but not in ammonium hydroxide or in solutions of the alkaline carbonates. The following reactions are the most characteristic: The addition of ferric chloride to a solution of the alkaloid produces a beautiful emerald green color which by careful addition of caustic alkali becomes purple, and then carmine red. Strong acid prevents the reaction with ferric chloride, limiting the change of color to a dirty yellowish-green. The alkaloid reduces silver salts and gold chloride very energetically, and the liquid turns red. A drop of 1:10,000 solution, instilled into the eye, will, within a few seconds produce a pallor of the conjunctiva.

Its incompatibilities are the same as those of other alkaloids. Its solutions should be kept tightly stoppered and protected from the light.

Actions and Uses.—Suprarenal alkaloid acts peripherally on a variety of structures, probably by stimulating the sympathetic nerve endings. Its most important therapeutic actions consist in a constriction of the blood vessels, with consequent high rise of blood pressure; a stimulation of the vagus center with slowing of the heart, and a direct stimulant and tonic effect on the heart muscle, similar to digitalis. Large doses also cause glycosuria; continued administration of large doses leads to atheroma. The effect of a single dose is very fleeting. It is not irritant. The effects are seen on local application and intravenous and intramuscular injection. When given to animals, by mouth or hypodermically, moderate doses have almost no action.

Dilute watery solutions rapidly lose their strength, the deterioration being accompanied by a reddish or brownish discoloration.

The alkaloid is used mainly locally for its vasoconstrictor action, in hemorrhage, and in catarrhal and congestive conditions. It is said to cut short the asthmatic paroxysm (being used by spraying the larynx and by hypodermic injections). Intravenous injections are effective in shock and anesthesia accidents (care being taken not to give an overdose). It has also been recommended in heart disease, Addison's disease, etc., but opinions are divided as to the benefits to be expected from oral administration.

TANNIGEN.

DIACETYLTANNIN. ACIDUM TANNICUM DIACETYLICUM.

Tannigen, $C_{14}H_8(C_2H_3O)_2O_9 = C_{18}H_{14}O_{11}$, is the acetic acid ester of tannin.

It is prepared by heating tannin and acetic anhydride, in molecular proportions, in the presence of glacial acetic acid in a flask under a reflux condenser, pouring the product of the reaction into water, washing the precipitate produced with warm water, drying and powdering.

It is a light-gray, almost odorless and tasteless powder, which undergoes no change when heated alone, even to 180° C. (356° F.), but softens when heated in water at 50° C. (122° F.). It is practically insoluble in cold water, scarcely soluble in hot water, but soluble in alcohol, and also in solutions of borax, sodium phosphate, sodium carbonate, lime, etc., being reprecipitated from these solutions by acids. It is rapidly saponified by boiling sodium or potassium hydroxide solutions, or gradually in the cold, into acetic and gallic acids, while ammonia produces acetic and tannic acids.

Its aqueous solutions produce with ferric salts the blue-violet color characteristic of tannic acid. A slightly alkaline solution in sodium phosphate exhibits all the characteristics of an astringent and precipitates albumin, but these properties are destroyed by borax or more alkali.

It is incompatible with alkalies and with salts of iron; it should not be exposed to heat or moisture.

Actions and Uses.—Tannigen passes unchanged into the intestine, where it becomes effective as an astringent in contact with the alkaline juice. It is said to be free from irritant action.

It is recommended in acute diarrheal affections, such as acute intestinal catarrhs, cholera morbus, cholera infantum and dysentery; it has also been used with reported success for the diarrhea of typhoid fever and intestinal tuberculosis.

Dosage.—0.2 to 0.7 Gm. (3 to 10 grains) four times per day, dry on the tongue followed by a swallow of water; or mixed with food, avoiding warm or alkaline liquids.

Manufactured by Farbenfabriken, vorm. Friedr. Bayer & Co., Elberfeld, Germany (Continental Color & Chemical Co., New York). U. S. patent No. 533,718. U. S. trademark No. 17,668.

(*To be continued.*)

Naming of Carbon Compounds.—Just as the names of basic elements end in -ium, thus sodium, potassium, calcium, and the basic group $(NH_4)'$, called ammonium, so in the naming of organic compounds the ending denotes basic compounds. It has been proposed to give this ending to the vegetable bases or alkaloids, thus morphium sulphate, atropium chlorid, etc.—*Pharm. Rev.*, August, 1906.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

103 Dearborn Avenue . . . . Chicago, Ill.

Cable Address . . . "Medic, Chicago"

Subscription price.....Five dollars per annum in advance

[*For other information see second page following reading matter.*]

SATURDAY, DECEMBER 8, 1906.

PUERPERAL FEVER AND THE MONUMENT TO SEMMELWEIS.

The work of Semmelweis in connection with the prevention of puerperal fever, a work to which thousands of mothers owe their lives and freedom from what was formerly a veritable plague, has been honored by the erection of a monument[1] at Budapest. This tribute to one who is perhaps the most renowned representative of the movement which secured the modern aseptic methods of midwifery gives occasion to review the history of this discovery and to note how singularly its growth was hindered by misapprehension and ignorance. It affords opportunity also to call attention to the advanced condition of American medicine and medical literature at a period to which we are somewhat inclined to look back as belonging to the dark ages. Great discoveries are usually the culmination of a long series of observations and theorizing which prepare the way for the discovery and appreciation of the truth and which are either lost sight of or underestimated in the award of praise to the one who makes the final announcement.[2]

During the first half of the nineteenth century two theories of the nature of puerperal fever held the thought of medical men, and, although the advocates of both theories may have been found in all countries, the miasmatic theory was widespread on the continent of Europe, while in England and America many advocates of the theory of contagion were to be found. In 1795 Gordon of Aberdeen[3] had distinctly expressed the view that the disease was infectious. In 1814 Armstrong formulated the statement that wherever puerperal fever appeared it was usually confined to the practice of a single obstetrician. The connection of puerperal fever with erysipelas, under which term the English pathologists of that day included practically all the septic diseases, was recognized by English authors during the first half of the last century. The number of communications on this subject is very large and includes a considerable number of American authors. Paley of Halifax in 1839 reported a striking series of cases in which he recognized that the contagion was carried from a case of gangrenous inflammation of the scrotum. In 1845 Blackman of Edinburgh recognized the possibility of the examining physician conveying the virus on his finger. The danger of transmission of the disease from bodies dead of septic disease was distinctly recognized in England and America as early as 1845, and the only particular in which Semmelweis made an advance on the English teaching was in emphasizing the danger of putrid matter in general without reference to its source in a previous septic case. In consequence of the ubiquity of pyogenic organisms, this idea led to safer practice, but in view of what we know of the relations of putrefaction to disease the English doctrine of specificity was more nearly right.

In consequence of the advanced state of English medical thought the theory and practice of Semmelweis received recognition and support in England at a time when little but opposition and contempt was accorded it on the continent. Methods of prevention had already been formulated, including avoidance of autopsies, thorough washing, change of clothing and abstinence from practice. Simpson, in the discussion of Arneth's paper in 1851, describing the methods used in the Vienna Hospital, stated that for years he had used cyanid of potassium as a disinfectant for the fingers.

One name in America—that of Holmes—is pre-eminent in the history of this subject. So far as dates go, he can rightly be given the priority over Semmelweis, having published his essay in 1843, but he lacked the opportunity for a demonstration of originality. His task was merely the presentation of facts that lay ready to his hand, but which he was able to weld by the hammer of his logic and the fire of his eloquence into that inimitable essay so well fitted to carry conviction and to arouse to action.

One very instructive lesson is impressed by the opposition of prominent men to this doctrine, supported by so convincing an array of facts to which they opposed nothing but negation and theory. It is to be hoped that never again will a beneficent discovery meet the reception which was accorded to both Holmes and Semmelweis for their devotion to a truth which was theoretically or practically unpalatable to the authorities who had failed to see and to apply it.

The question has been raised: Why should not America honor Holmes as Hungary has honored Semmelweis? Holmes, it is true, presented only arguments drawn from literature, while Semmelweis added the demonstration of clinical facts, showing that prevention was possible. It is not probable that Semmelweis had seen the communication of Holmes, but that was due to an undue neglect of American literature, and it is fitting that we should honor the leaders of thought as well as those who demonstrate truth by experience. Such a monument might recognize the work of his predecessors and show to the world that America is not forgetful of the honorable record of the medicine of her earlier days.

1. A picture of the monument is given in the Foreign News Department, page 1930.

2. For an account of the predecessors of Semmelweis see Wiener klin. Wochschr., Sept. 27, 1906.

3. Oliver Wendell Holmes: Essay on "Puerperal Fever as a Private Pestilence," Boston, 1855, originally printed as an article on the "Contagiousness of Puerperal Fever," in the New England Quarterly Journal, 1843. This essay contains many references to previous observations.

INSURANCE EXAMINATION FEES.

In another column[1] is printed the preliminary report of the committee appointed by the House of Delegates at the Boston session of the American Medical Association to inquire into the insurance examination fee question. The committee, after making a statement of facts, has wisely referred the matter to state and county societies for action. Thus the question as to whether a determined fight shall be made against the dictatorial policy of the insurance corporations must be decided in each state. Quite a number of state societies and many county societies have taken definite action and their members are refusing to accept the reduced fee.

It is to be hoped that each state society, at its next meeting, will face the problem fairly and squarely and advise its component county branches as to what policy they should adopt. If only a few counties in a state enter into this fight, it is not to be expected that they will be able to win out, but if all, or a great majority, of the counties act together, then success will certainly follow. That the house of delegates of each state society may discuss the matter understandingly, its members must appreciate the various phases of the problem and know the wishes of those they represent. For this reason, if for no other, each county society should discuss this question thoroughly, not only so as to advise its delegates to the state body, but to decide whether any action shall be taken before the state society meets.

While we think that a positive stand should be taken against the dictatorial policy of the insurance companies regarding examination fees, believing that the physician has at least as much right to say what his services are worth as have the insurance companies to say what they will pay for his services, nevertheless, before taking action, the matter should be well considered in all its phases. Shall there be a graded fee or shall the same charge be made for examining an applicant for $1,000 as for a $5,000 policy? If so, what shall be the minimum fee, and what for each additional thousand? These and other questions should be considered carefully. It must be remembered that this stand will mean sacrifice on the part of some; and undoubtedly it will be a long struggle. One fact must be emphasized: resolutions do not win battles. If anything is to be accomplished, the coöperation of practically all physicians in a county must be obtained; the signature of each must be secured to the agreement and, while there will be some selfish ones who think they will gain by refusing to act with their fellows, tact, perseverance and moral suasion will finally win over all who are worth winning. Harsh measures should not be adopted, and no physician should be barred from or in any way penalized regarding his membership in the county society, even if he does prefer to side with the insurance corporations rather than with his fellow members.

In some counties, especially where there is no large town, it will be comparatively easy to get every man in line. In such instances, however, the companies may be expected to secure physicians from outside the county, and for a while they will succeed in finding plenty who will be willing to do the work, but this will be expensive for the companies and they will not keep it up. Further, they will not be able to get the better class of physicians, and the others they will not want. In large cities it will be a difficult matter, for a while at least, to get all in line. This is especially true of those who are practically making a living out of insurance examinations.

The question at issue is purely a financial and commercial one. This must be remembered by those who fear that to take it up is to sacrifice the high ideals and the altruistic principles that govern the physician as an individual and the medical profession as a body. The question of life insurance examination has nothing to do with the treatment of the sick, with the relationship of the physician to his patient, nor with ethics as it relates purely to medicine and medical practice. It is simply and only a business proposition, just as much so as the employment by a syndicate of an expert mineralogist to examine a mine and report on its probable value as an investment. Insurance companies employ physicians as experts to give their opinion as to whether or not the applicant is likely to live out his expectancy; in other words, whether the issuance of a policy to the applicant will be a paying investment to the company.

Back of it all, however, and underlying the question, there is something more than dollars and cents. Combinations of men and capital are organized into companies solely for financial gain. As a business proposition, they need the services of physicians. These corporations, acting alone or in combination with other similar corporations, dictate what they will pay for these services, and the physician, acting independently and by himself, is powerless. A price is put on his services by those who want them, and he has nothing to say. He usually takes the sum offered rather than nothing.

Fundamental to it all, therefore, is the question: Shall physicians continue to act individually and humbly accept what is offered them, or shall they unite and be in a position to demand what is due them?

1. Insurance Fee Department, page 1937.

IMPROVEMENT IN FOOTBALL PATHOLOGY.

In the football season just closed there has been a decided improvement in the pathologic aspects of the game. Football has not yet become a nursery amusement, but at least it has not claimed as many victims as during last season. The record for 1905 was 22 deaths, with 96 serious injuries, while in 1906 the fatalities from football numbered 3, with only 54 injuries and many of these trifling. It seems that the important changes in the rules, made to eliminate many of the dangers, have been successful to a considerable degree. As there has been a growing demand for this improve-

ment for several years, it seems too bad that the football rules committee could not sooner have seen its way to make the changes which have proved so beneficial.

It has been claimed that changes in the game in the direction of greater safety would lead to a diminution of public interest in the sport. Apparently it was not realized that interest scarcely affords adequate compensation for the loss of a score or more of lives in a season's play. The present year's experience shows, however, that the more open game not only has not detracted from the interest of spectators, but has added to it. It must be conceded that the ball and the play have been followed with much more interest than before.

It would seem, therefore, that it only remains for the rules committee to modify the present game further in the direction already begun, and the result will be the elimination even of the sad accidents which have marred the present year's record. It must not be thought that serious injuries did not occur in addition to the three fatal accidents. Some of these were even more numerous than last year. The broken collar bones increased from seven last year to nine during the present season. There were eight broken legs this year, against six last year. Broken ankles were reported twice in each year. There were seven twisted knees in 1906, against five in 1905. All of these show that the game still has a rough character which may become dangerous and for which much can be done.

President Roosevelt is to be congratulated on this very noteworthy improvement. It was his vigorous protest and personal intervention which, more than anything else, brought the football rules committee to its senses. Football can not be made a parlor game. We fully agree with the President's remark that he has no sympathy whatever with the overwrought sentimentality which would keep a young man in cotton-wool. On the other hand, as remarked by the *Independent,* "there is still less reason for sympathy with the overwrought brutality which puts a young man in sterilized cotton." If as decided an improvement takes place in the season of 1907, there will be little room for complaint left. Surely where so much good has been accomplished there will be every encouragement still further to ameliorate conditions, and no one will welcome such an amelioration more than The Journal, which has for several years pointed out the fatalities and urged the necessity for radical changes in the rules such as have fortunately come and now need only some extension to be completed satisfactorily.

TAINTED MONEY.

Our London correspondent refers to a recent peculiar bequest to the Barnardo Homes which is likely to give the trustees or administrators some troublesome consideration—assuming, as we must, that they are upright, conscientious men. It appears that a man owning a large number of shares in two "patent-medicine" concerns bequeathed them to the Barnardo Homes under condition that they should not be sold, but should be made the foundation of a new English limited liability company devoted to the sale of the nostrums. It would require a rather extraordinary casuist to justify the acceptance of such a bequest. It is not always practicable to exclude the possibility of unworthy methods in the acquirement of money that is given for benevolent purposes and we can allow much latitude in some cases. Here, however, it is a condition that the evil measures shall be perpetuated and that the Homes shall become practically a direct partner in fraud. The *British Medical Journal* says: "Dr. Barnardo's Homes have hitherto led a perfectly blameless existence under the egis both of medicine and religion." Dr. Barnardo is understood to have been thoroughly ethical in his methods and, figuratively, would no doubt turn in his grave should his successors yield to the temptation thus put before them. There seems to us to be no question as to the course they should pursue, though they could doubtless find plenty of precedents of benevolent or even religious institutions supported by the profits of disreputable and vicious methods. The instance alluded to by our British contemporary, of the temperance advocate who was bequeathed a cellar full of wines and who escaped from his dilemma by passing on the bequest to his eventual heir, is not a good parallel. The British nobleman who destroyed the contents of his wine cellar on his conversion to temperance views made a more consistent and morally commendable precedent. The rejection of this bequest by the Barnardo administrators will be an excellent example for others to follow in such cases. In this country we have recently been having a toning up of conscience in business and political matters which we trust will have its permanent good results. A similar movement, we believe, would be an excellent thing in Great Britain, and there could hardly be a better opportunity for one of its first manifestations.

DIAGNOSIS AT SIGHT.

A correspondent sends us a circular of a work sold by subscription to physicians, which, according to its opening sentences, enables the physician to "instantly determine the underlying factor in all diseases without asking a question." Appended is a list of physicians who have bought the book and express their appreciation of its teachings. We presume that if it claimed the ability to diagnose a disease from a lock of hair sent by mail it could get an equal number of testimonials. At least one seems about as rational a possibility as the other. We do not object to physicians getting information from all sources, but one would think that sensible men would rather do it on the quiet from such a source and not send their names to be utilized by the advertiser. It would seem preferable to be considered what is called an "easy mark" by some exploiting individual (in fact, the average physician is inclined to think he is from the advertisements and prospectuses he receives) than to publish the fact over one's own signature in the exploiter's circulars. There is some excuse in biting at a tempting bait, but apparently there are some fishes that will bite a bare

hook. However, if a man wishes to advertise himself as a physician who is rendered especially joyful by information how to diagnose all kinds of diseases at sight it should not seriously concern us. It is merely a matter of taste.

CONTRACT PRACTICE.

The insurance examination question, discussed elsewhere, is related very closely to that of contract practice. At various times during the last few years we have called attention to the fact that the "battle of the clubs" of our English brethren will have to be fought in this country at some time, and that the sooner we commence the fight the easier it will be won. Gradually and surely this evil is spreading, and in some localities has already produced most disastrous conditions—conditions that are as harmful to the public as they are ruinous to the profession. If we mistake not, in another ten years there will be scarcely a community in the country in which our profession will not be feeling this blight, i. e., if something is not done to check it. It is not the legitimate contract practice that is to be feared (for there is a form of contract practice that is legitimate, as, for instance, the contract to attend injured workmen—but not in sickness nor their families—employed in a mill or factory), but the organizations that are gotten up for the purpose of buying a physician's services at wholesale and selling them at retail. There is no doubt about the viciousness of this form of contract practice, whether it be in the case of a fraternal order or connected with an organization created solely for the purpose of supplying a physician's services at a minimum fee; and this should be fought vigorously. Contract practice is one of the most serious evils immediately threatening the medical profession of this country.

IOWA AGAINST CHARLATANS.

According to a recent decision of the Supreme Court, any one who professes to treat diseases in Iowa must have had a course of medical study sufficient to justify his assuming the responsibility in matters so important to life and health. The decision was in the case of the state against J. C. Wilhite, who seemed to have more diplomas than anything else, having, it is alleged, secured one diploma by two months' study, another by a few months' correspondence course and another by a three months' course at a "neurological college." The court remarks that "no argument is required to demonstrate that his preparation was utterly inadequate and that his pretensions savored of the charlatan and impostor." The court specifically denies any intention in this decision to limit the practice of medicine to any particular system or mode of treatment. The decision simply emphasizes that the design of the state law on the subject is that "every one, before he shall undertake to prevent, cure or alleviate disease and pain as an occupation, shall have some knowledge of the nature of disease, its origin, its anatomic and physiologic features, its causative relations and the preparation and action of drugs. Experience has shown that this is necessary for the protection of the people against fraud and empiricism. No one is thereby deprived of the opportunity to exploit his 'system.' All that is exacted is that, before undertaking to do so by applying it to the functions of life, he shall be possessed of that degree of knowledge and skill required by the statute and evidenced by a certificate from the proper officers of the state." This decision, a full abstract of which appears in our Medicolegal Department this week, is an important one and will have a tendency to check the form of quackery referred to.

PHENACETIN (ACETPHENETIDIN) VS. ACETANILID.

It is interesting to trace the influence of medical fashion and similar factors on the estimation in which the various synthetic analgesics are held by the medical profession. Acetanilid, the most widely known of these agents, has met condemnation chiefly because it has been most indiscriminately employed, not only by the medical profession but also by the lay public. It was one of the first to be freed from the restrictions of the patent laws and, on account of its cheapness, rapidly rose in professional and public esteem. In consequence, however, of some fatalities and of the evil done by its indiscriminate and habitual use, it passed under the ban and phenacetin took its place to a large extent in the armamentarium of the careful physician. The extensive use of acetanilid in proprietary mixtures and popular headache powders and the fatalities following such use tended to increase its ill repute among physicians. How far the fact that phenacetin was still a patented and proprietary article has shielded it from condemnation as a toxic agent can not be stated, but undoubtedly less has been heard of its dangers than would have been the case had it stood alone without the protection which goes with proprietary articles. Phenacetin is reputed to be much safer than acetanilid, but how well founded this opinion is can not be determined until it shall have been used as extensively and as recklessly as the cheaper and better known drug. It is the opinion of pharmacologists that, except for the difference in dose needed to produce the effect, the actions of the two drugs are identical. While the toxic dose is much larger for phenacetin than for acetanilid, the amount necessary to produce the desired therapeutic effect is also proportionately larger. This being the case, caution regarding the use of phenacetin is as appropriate as in the case of acetanilid. There is reason for the legal regulation of the sale of phenacetin as well as of acetanilid. The ill repute of acetanilid has secured its mention by name in the Pure Food and Drugs Law, while phenacetin can be included only by implication as one of the derivatives of acetanilid. There has been some question whether phenacetin can be so classed. The commission appointed to draft rules and regulations governing the administration of the law decided that phenacetin belongs among the derivatives of acetanilid and that its name must appear on the labels of medicines or foods which contain it. The decision of the commission appears not to be final and the question is still undecided. It has been surmised that the manufacturers of analgesic proprietaries were about to seek to escape the odium which now attaches to acetanilid and the necessity of publishing the fact of its presence in their remedies by substituting phenacetin for it. Whether this will be extensively done remains to be seen. It is stated on good

authority that the proprietors of some nostrums heretofore containing acetanilid and advertised to the medical profession have already made this change. Thus, they think, they may be saved the disgrace of having to confess openly the real character of their mixtures. In view of the possibility of such a movement it would be much to be regretted if phenacetin should escape the operation of the law. It is to be hoped that the decision of the commission will be sustained and that the proper labeling of mixtures containing this drug will prevent its becoming as great a menace to the public health as acetanilid has been. We have used the name "phenacetin" because it is best known under this title; this name, however, is controlled; the official title given it is acetphenetidin.

Medical News

CONNECTICUT.

Professorship Endowed.—Announcement is made of a gift of $50.000 to endow a chair of pathology in Yale University, Medical Department, in memory of the late Dr. John Slade Ely of New Haven.

October Morbidity and Mortality.—During October there were reported to the State Board of Health 41 cases of measles in 13 towns; 74 cases of scarlet fever in 29 towns; one case of cerebrospinal fever; 235 cases of diphtheria in 39 towns; 64 cases of whooping cough in 15 towns; 135 cases of typhoid fever in 46 towns, and 37 cases of consumption in 19 towns. The total deaths for the month were 1,273, equivalent to an annual death rate per 1,000 of 15.2. Infectious diseases caused 525 deaths or 17.6 per cent. of the total mortality. The chief death causes were: Diseases of the nervous system, 156; consumption, 133; heart disease, 124; pneumonia, 85; accidents and violence, 77; diarrheal diseases, 71; diphtheria, 36; bronchitis, 30; typhoid fever, 25, and whooping cough, 23.

DELAWARE.

Correction in State Board Date.—The December meeting of the Delaware State Board of Examiners will be held December 11 and not Deeember 6, as was erroneously stated in The Journal, November 24. The December meeting always begins on the second Tuesday of the month.

ILLINOIS.

Did Not Report Case.—Dr. Louise Miller, Moline, was fined $5 and costs, November 22, for violation of a health ordinance of Moline, which provides that physicians must report cases of contagious diseases within 24 hours after their discovery.

Epidemic Diseases.—Three cases of diphtheria are reported in Colfax. Schools have been closed and church services and other public meetings have been interdicted.——Diphtheria is reported to be increasing in Metamora.——The epidemic of scarlet fever at Moline is reported to be abating.

Embalming Fluid.—The Coroners' Association of Illinois, at the next session of the legislature, will enter opposition to the use of embalming fluids containing strychnin and arsenic, as the use of these drugs has, it is claimed, on many occasions, interfered with the determination of the cause of death.

Personal.—Dr. Philip H. Oyler, Mount Pulaski, has retired from practice on account of ill health and has been succeeded by Dr. Henry M. Van Hook.——Dr. Joseph H. Firestone, Freeport, returned from Europe, November 18.

Chicago.

Sir James Grant in Chicago.—Sir James Grant, Ottawa, was the guest of the Illinois St. Andrews' Society, at its sixty-first anniversary, December 1.

Communicable Diseases.—At the end of November the records of the health department showed that 13 cases of diphtheria and 579 cases of scarlet fever have been reported, generally distributed over the city.

Coroner's Cases.—During November 349 cases were investigated by the coroner's office. Of these 110 were natural deaths; 25 were due to suicide; 28 to railway accidents; 17 to asphyxiation; 14 to street-car accidents, and 10 to homicide. Of the 25 cases of suicide, 13 were the result of despondency and 4 to temporary insanity. Of the suicides 14 were due to gunshot wounds, 4 to asphyxiation, 5 to poisoning, one to hanging and one victim cut his throat.

For Charity.—The address of Senator Tillman is reported to have netted $2,000 for the benefit of the Chicago Union Hospital.——On Thanksgiving evening the members of the Royal League subscribed $2,000 toward the maintenance of the sanatorium of that organization at Black Mountain, N. C.

Mortality of the Week.—The department of health reports 571 deaths during the week ended December 1, 6 less than for the previous week and 88 more than for the corresponding week of 1905. Pneumonia led the death causes with 82; then followed consumption, with 66; heart diseases, with 62; violence (including suicide), with 45; nephritis, with 38; nervous diseases, with 27; diphtheria, with 25; cancer, with 23; acute intestinal diseases, with 22; scarlet fever, with 17, and apoplexy and bronchitis, each with 14.

Personal.—Dr. Joseph Zeisler arrived in New York from Europe, November 30, much improved in health.——Dr. Charles J. Whalen, health commissioner of Chicago, spoke before the Steel Club, Joliet, November 15, on "The Influence of Sanitation on Mortality."——Dr. Alexander Hugh Ferguson was decorated with the Order of Christ by Count de Saint Eulalia, the Portuguese consul at New York, at a complimentary dinner, November 27.——Dr. Louis L. McArthur has been chosen to represent the Illinois branch of the National Red Cross at the annual convention in Washington, D. C.

November Mortality.—During November, 1906, 2,386 deaths were reported, 53 more than for October, and 321 more than for November, 1905, the respective annual death rates per 1,000 being 14.17, 13.40 and 12.62. Pneumonia, as usual, led the death causes with 350, followed by consumption with 253; heart disease, with 226; violence (including suicide), with 176; nephritis, with 174; acute intestinal diseases, with 122, and cancer, with 110. During the month 80 deaths were reported from diphtheria, 51 from scarlet fever, 39 from typhoid fever, 18 from whooping cough, and 8 each from measles and influenza.

Lack of Medical Inspection.—The department of health ascribes the relatively high November mortality to abnormal weather conditions, a higher temperature than normal and a lower degree of sunshine than normal, together with a lack of medical school inspection. To the lack of medical school inspeetion is attributed the lion's share of the 113 per cent. increase in contagious diseases, and especially in diphtheria and scarlet fever. Spread of infection is largely due to the ignorance or carelessness of the parents who send their children back to school too soon after recovery from a mild attack of one of these diseases; even some physicians appear to be ignorant of the fact that children recovering from an attack of scarlet fever and apparently well, may convey the disease to others, and that nothing but a school medical inspection corps can keep all children recovering from the mild forms of these diseases from entering the schools, with a possibility of infecting others.

KENTUCKY.

Abuse of Ambulance.—The Louisville city ambulance has been forbidden to make a run unless the patient is to be brought to the city hospital. It is claimed by the board of safety that the city has been greatly imposed on by calls from outside sources for the transportation of patients when the patients have been abundantly able to pay for a private ambulance.

For Better Milk.—Vigorous prosecution of the violators of the milk ordinance has been undertaken in Louisville by the State Pure Food Department, through Mr. R. M. Allen of Lexington, its secretary. About 50 cases have been prepared for the courts under every phase of the city ordinance regulating the sale of milk, the State Board of Health law regarding the hygienic condition of the dairies, and the state pure food law. The prosecution aimed particularly at the feeding of swill to milk cows, which is a great menace to health around Louisville.——The Owensboro board of health has also taken steps to protect its citizens against impure milk, warrants having been taken out against dairymen for supplying milk deficient in butter fat and for not maintaining dairies in hygienic condition.

MARYLAND.

New Hospital.—The Hotel Norris, Easton, has been leased by the directors of the Emergency Hospital for five years. The building was occupied early this month. The staff consists of three physicians appointed by the board of directors.

Crusade Against Illegal Practitioners.—The State Board of Medical Examiners is making an effort to drive from the state all who are practicing without a certificate from the board,

and up to this time ten illegal practitioners have been indicted by the grand jury. Evidence against these individuals has been secured by the directors of the board. Among those indicted are "regulars," spiritualists, astrologers, herb doctors and one railway surgeon, who failed to pass his examination.

Baltimore.

Atkinson Estate.—The personal estate of the late Dr. Isaac Edmondson Atkinson, is valued at $75,000, of which his wife is made the sole heir during her life.

For the Extermination of Mosquitoes.—The city council has appropriated $10,000, to be used for the extermination of mosquitoes. The crusade will begin January 1, under the direction of the health department.

Janet in Baltimore.—Prof. Pierre Janet, of the University of France, has delivered three lectures in the Johns Hopkins University on "Mind and Medicine." During his stay in Baltimore he was the guest of Drs. W. S. Thayer and Lewellys F. Barker.

Donation of Books.—The Johns Hopkins Medical School has received two valuable additions to its library, aggregating 1,880 volumes, donated by Mr. William A. Marburg and Francis M. Jenks of Baltimore. One of the additions is the old Warrington Dispensary collection, of Liverpool, recommended by Professor Osler. It is said to contain works in many languages, many of which are of the sixteenth, seventeenth and eighteenth centuries and are valuable for historical reasons. The second collection is the Friedrich Ahefeld Library, from Marburg, Germany.

MASSACHUSETTS.

Beriberi in Boston.—The steamer *Foxley*, which arrived at Boston, November 23, with a number of cases of beriberi on board, has been thoroughly cleaned and fumigated and the sick men sent to the hospital on Galloupe's Island.

Law Defective.—The new state law for the inspection of meats proves to be defective in that the dealers may themselves buy and apply stamps of approval, counterfeits of the official stamps of the cattle bureau, and that no penalty is attached to such acts.

Wholesale Poisoning.—Sixty cases of gastroenteritis, with one death thus far, are the result of some food eaten at a Jewish wedding in Springfield, November 20. The autopsy showed acute inflammation of the stomach and intestines, probably caused by ptomains.

Hospital Car.—The Boston & Maine Railroad Company has put in commission, with headquarters at Boston, a new hospital car. Among the special features are easy springs, spacious bed, nurses' quarters and cabinet, kitchen, independent heating and lighting and wide folding side doors.

Infant Asylum Report.—The Massachusetts Infant Asylum reports that it cared for 68 babies during the past year. This home for babies in Jamaica Plain has developed under the lead of Dr. Charles P. Putnam into a well-equipped hospital with a medical staff, trained nurses and nursery maids.

Sentenced for Criminal Malpractice.—Mrs. Sarah A. Houghton, New Bedford, is reported to have been found guilty of criminial malpractice in the Bristol County Supreme Court, November 19, and to have been sentenced to imprisonment for five and a half years in the Woman's Prison, Sherburne.

Pasteur Boulevard.—Avenue Louis Pasteur is to be the name of the new boulevard which is to give a suitable approach to the new Harvard Medical School. The street is to run almost directly east from the Quadrangle into the Fens, and is made possible by the generosity of Major Henry L. Higginson, who will give the city land which cost him approximately $65,000. The expense to the city will not be more than $25,000.

Psycho-Therapeutics.—As suggested in a JOURNAL editorial recently, Emmanuel Church, Boston, has organized a class to study mental cures. This church also maintains a tuberculosis class. The new class will meet once a week to study, confer and consult. Dr. Richard C. Cabot spoke at the first meeting, held November 17, and affirmed that many of the ailments which afflict mankind may be benefited by psycho-therapeutics.

Diphtheria.—The schools of South Hadley Falls have been closed on account of diphtheria, which has assumed serious proportions throughout Worcester County during the past few weeks.——Diphtheria is reported to be prevalent in Waltham. Most of the cases appear between Friday and Monday, when the schools are not in session.——More than 50 cases of diphtheria have been reported in Lowell, mostly among the students of the grammar and high schools.

Concerts at Hospitals and Asylums.—Under the direction of Dr. John Dixwell of the Hospital Music Fund, concerts will begin December 2 at the Massachusetts Infant Asylum, December 9 at Cambridge Hospital, December 12 at Massachusetts Charitable Eye and Ear Infirmary, December 16 at Cambridge Home for Aged People and Avon Home for Children, December 23 at Holy Ghost Hospital for Incurables, December 25 at Massachusetts Homeopathic Hospital, and December 30 at Carney Hospital.

Bequests.—By the will of Charles Merriam of Boston many hospitals will benefit, notably those for children: Massachusetts General Hospital, $5,000; Massachusetts Charitable Eye and Ear Infirmary, $5,000; Children's Hospital, $2,500; Thomas Morgan Rotch, Jr., Memorial Hospital for Infants, $1,000; Children's Island Sanitarium, $1,000; Perkins Institution for Blind, $1,000; Industrial School for Crippled and Deformed Children, $1,000; Sunnyside Day Nursery, $1,000; Convalescent Home for Children's Hospital, $1,000; Boston Lying-in Hospital, $1,000; Free Hospital for Women, $1,000, and Sharon Sanatorium, $1,000.

Personal.—Dr. John J. Duggan, Milford, has resigned as a member of the board of education.——Dr. Francis J. Keeny has been appointed dermatologist of the Boston health department at a salary of $4,000.——Drs. Francis Shaw, Michl W. White, L. K. Raymond, Walter L. Bond, Warren D. Ruston, Herbert Cholerton and Robert F. Gibson have been appointed medical inspectors of Somerville.——Dr. Henry V. McLaughlin, Brookline, has completed 25 years of active service as a medical attendant at the St. John's Ecclesiastical Seminary, Brighton. ——Dr. John P. Brown, superintendent of the Taunton Insane Hospital, has resigned, to take effect November 15. Dr. Arthur V. Goss, who has been a resident physician of the hospital for a number of years, has been appointed his successor.

Health Report.—There were reported to the Boston board of health for the 10 weeks ended November 24, 2,059 deaths, as against 1,905 for the same period last year, and equivalent to an annual death rate of 17.82 per 1,000. Four hundred and seventy cases of diphtheria were reported, with 23 deaths; 216 of scarlet fever, with 3 deaths; 433 of typhoid fever, with 41 deaths; 31 of measles, with one death; 382 of tuberculosis, with 196 deaths. There died from pneumonia 220, from whooping cough 12, from heart disease 198, from bronchitis 44, and from marasmus 67. Of these 428 were under one year old, 512 under 5, and 500 over 60 years old. The noteworthy features of the report are a decrease of a rather large number of cases of typhoid fever, from 71 in the first week to 16 in the last week, and the presence in the city of a considerable number of cases of diphtheria of mild type.

MINNESOTA.

Will Build Hospital.—T. Kloss, St. Peter, and his brother, J. Kloss, of Superior, Wis., are erecting a hospital and sanitarium in St. Peter, at a cost of about $10,000.

Contribution.—S. B. Johnson of St. Paul has contributed $12,000 toward the building of a medical training school and hospital at Manila, P. I., the hospital to be a memorial to Mrs. Johnson.

Personal.—Dr. F. A. Kiehle, Preston, sailed for Europe November 17.——Dr. Richard M. Burke has been appointed assistant at the Coleraine Hospital.——Dr. Thomas H. Wimer, Marshall, has been confined to his room for more than two weeks with malignant pustule.——Dr. Hamilton H. Wilcox, Albert Lea, has accepted the position of surgeon-in-chief of the Soldiers' Home, Hot Springs, S. D.

Circulars on Tuberculosis.—The Minnesota State Board of Health has issued a series of circulars relating to tuberculosis, the first of which is issued to physicians, the second to the patient; the third is on the care of the sick room of the tuberculous, to be distributed by physicians to tuberculous patients and others; the fourth is addressed to the general public, the fifth to those interested in schools, and the sixth gives a concise statement of methods of disinfection.

Society Meetings.—The Central Minnesota Medical Association held its annual meeting in Mora, November 21, and elected the following officers: President, Dr. Henry P. Bacon, Milaca; vice-president, Dr. William S. Titus, Mora, and secretary-treasurer, Dr. Arthur J. Lewis, Mora.——At the annual meeting of the Interurban Academy of Medicine, held in Superior, November 21, Dr. Alexander J. Braden, Duluth, was elected president; Dr. H. Jefferson O'Brien, Superior, Wis., vice-president; Dr. Edward L. Tuohy, Duluth, secretary-treasurer, and Dr. Charles H. Mason, Superior, Wis., censor.

Communicable Diseases.—Several cases of typhoid fever are reported in the Shipman Hospital.——About 200 cases of ty-

phoid fever are reported in Hibbing.——During October 150 cases of diphtheria were reported in Minneapolis, 7 of which proved fatal.——At the City Isolation Hospital, Virginia, there are 4 smallpox patients, all from the lumber camps north of the city.——Smallpox is reported to have appeared in mild form at Starbuck, where three families are quarantined.——Smallpox is reported in the lumber camp on the Drummond branch near Britton gravel pit, and at the La Faye camp near London.——St. Cloud is reported to be suffering from an epidemic of typhoid fever.——The quarantine established by the board of health at Spring Valley has been raised by the secretary of the board, and permission has been given to resume schools, church services and other gatherings.

NORTH CAROLINA.

Diphtheria.—Diphtheria is reported to be epidemic in several parts of Lenoir. The La Grange graded schools were closed by the health officer on this account last week.

Smallpox Situation.—No improvement is reported in the smallpox situation in Wake County. More than forty cases are said to be under treatment in the pesthouse and the disease is not confined as is usually the case, to negroes.

Medical Members of the Legislature.—As a result of the recent election, the state legislature shows in its membership the following medical men: Drs. James W. McNeil, Hope Mill, Cumberland County; Mark B. Pitt, Old Sparta, Edgecomb County; James R. Gordon, Jamestown, Guilford County, and J. M. Chandler, Dillsboro, Jackson County.

Personal.—Dr. Alice E. Johnson, Southern Pines, has moved to Asheville.——Dr. R. DuVal Jones, New Bern, has been commissioned assistant surgeon in the Naval Reserve of North Carolina.——Dr. Charles L. Minor, Asheville, has returned from Chicago.——Dr. Willard P. Whittington, Asheville, is spending a few weeks in Rochester, Minn.——Dr. George G. Thomas, Wilmington, chief surgeon of the Atlantic Coast Lines, is critically ill at his home with pneumonia.

Councilor District Meeting.—Pursuant to the call of Dr. James A. Burroughs, councilor for the district, a meeting of the Tenth District Medical Society was held at Asheville, November 5. A constitution and by-laws was adopted and the following officers were elected: President, Dr. James A. Burroughs, Ashville; vice-presidents, Drs. J. Howell Way, Waynesville; William R. Kirk, Hendersonville and R. J. Orr, Andrews, and secretary, Dr. Gaillard S. Tennent, Asheville. The next meeting will be held in Asheville, April 17, 1907. Dr. Thomas E. Anderson, Statesville, councilor for the ninth district, was present at the meeting. In the evening a joint session with the Buncombe County Medical Society was held, after which both societies were entertained at a banquet at the home of Dr. Burroughs.

NEW YORK.

Sanitarium Name Changed.—The Loomis Sanitarium for Consumptives has changed its name and hereafter will be known as the Loomis Sanitarium.

Centennial of Society.—The Medical Society of the County of Herkimer celebrated the one hundredth year of its incorporation November 20, at Herkimer, with a meeting and banquet presided over by Dr. Lucien L. Brainerd, Little Falls, as toastmaster.

Railway Surgeons Meet.—The annual meeting of the New York and New England Association of Railway Surgeons was held at the Academy of Medicine November 14. Dr. H. T. Dana, Cortland, was elected president; Dr. George Chaffee, Brooklyn, secretary and Dr. James K. Stockwell, Oswego, treasurer.

Medical Society Commends Candidate.—The Physicians Association of the city of Oswego, at a special meeting October 26, passed resolutions approving the action of the Hon. T. D. Lewis, candidate for state treasurer, in opposing a bill which tended to lower the standard of medical education introduced in the state legislature, and pledging itself to further the election of Assemblyman Lewis for state senator.

Milkmen Protest.—The milkmen of Rochester, through their official organization, have asked that the enforcement of the milk ordinances be transferred from the health officer to the commissioner of public safety. This criticism of Dr. George W. Goller, the health officer, should be considered a compliment, as the records show that during the last nine years 1,000 children under five years of age, died during the months of July and August, most of whom undoubtedly were victims of contaminated or impure milk. During the nine years previous to that period, more than 2,000 children under five years of age, died. This shows a saving of one thousand lives since the licensing and the regulation of the milk business has been in the hands of the milk bureau.

Personal.—Dr. Archer D. Babcock, Syracuse, has been appointed a member of the Board of Managers of the State Custodial Asylum, Rome.——Dr. David A. Morrison, Buffalo, has been elected president of Lincoln Hospital, in that city.——Dr. S. L. Higgins, assistant surgeon at the State Soldier's Home Hospital, Bath, has resigned to enter the medical department of the United States Navy.——Dr. Earl G. Danser, Buffalo, medical examiner, is seriously ill from septicemia, due to an autopsy wound. ——Dr. and Mrs. Theodore M. Leonard, Buffalo, sailed for Europe, November 27.——Dr. Christopher Patterson, for more than half a century a practitioner of Avoca, celebrated his eighty-ninth birthday anniversary, November 22.——Dr. James A. Lewis, West Seneca, who has been seriously ill with pneumonia, is reported to be convalescent.

New York City.

Hospital Opening.—The Woman's Hospital in the State of New York was formally opened December 5 and 6. This institution is located at 109th St. and Amsterdam Avenue.

Pneumonia Increasing.—The Bureau of Vital Statistics report that deaths from pneumonia increased from 96 in the week ended November 17 to 146 for the week ended November 24.

New Hospital.—The Jewish Hospital, Brooklyn, will be dedicated December 9 and opened the following day for reception of patients. The hospital represents an outlay of about $350,000. Dr. Jacob Fuhs will be physician-in-chief and Dr. Beekman Delatour, surgeon-in-chief.

Physicians Released.—Drs. Fred A. Deal and James H. Dunseith, arrested in connection with the death of Mrs. Jennie Garty, who died under ether during an operation, were exonerated October 23, by the coroner's jury which agreed that the woman's death could not have been foreseen or prevented.

Resolutions Regarding Dr. Otis.—At a joint meeting of the faculty of the New York School of Clinical Medicine and the trustees of the West Side German Dispensary, October 31, resolutions were adopted setting forth the loss sustained by these institutions in the death of Dr. William K. Otis and tendering sympathy to his bereaved family.

Contagious Diseases.—There were reported to the Sanitary bureau for the week ended November 24, 307 cases of tuberculosis with 158 deaths; 298 cases of diphtheria with 43 deaths; 119 cases of scarlet fever with 7 deaths; 115 cases of typhoid fever with 20 deaths; 112 cases of measles with 5 deaths; 86 cases of whooping cough with 4 deaths; 9 cases of cerebrospinal meningitis with 14 deaths; 79 cases of varicella and 2 cases of smallpox, a total of 1,127 cases and 251 deaths.

Personal.—Dr. William J. O'Sullivan, assistant corporation counsel for three years, has resigned.——The following have been appointed to the house staff of the German Hospital in place of the staff resigned November 13. Dr. W. N. Adkins, house surgeon; Dr. A. C. Holzmann, assistant surgeon and ambulance physician; Dr. M. B. Helperin, house physician and Dr. A. E. Baker, assistant house physician.——Dr. Walter Lester Carr, president of the New York County Medical Society, has been ill with typhoid fever for the past five weeks but is now convalescing.——Dr. and Mrs. Edward K. Dunham sailed for Naples on the *Cedric* November 29.——Dr. and Mrs. D. G. Campbell sailed on the *Carpathia* for the Mediterranean, November 29.

Special Society Meeting.—A special meeting of the New York Neurological Society was held on Nov. 28 at the Academy of Medicine, on which occasion Dr. H. S. Frenkel of Heiden, Switzerland, read a paper on "The Mechanical Treatment of Nervous Diseases," and Prof. Pierre Janet of Paris made an address in French on "Disturbances of Vision in Hysterical Patients, Produced by Exaggeration of Binocular Association." Dr. Frenkel concluded that there was danger lest the optimistic ideas, at least of European physicians in regard to this new method of treatment, might lead neurologists aside from the ways that were successfully pursued by internal medicine, and which may bring us to a knowledge of the course of disease, and thus to a causal instead of symptomatic treatment. Neurology must not be contented with dazzling instillations of mechanical and electrical appliances for symptomatic treatment, but must take an important part in the research of the causes of the diseases with which it has to deal.

OHIO.

Hospital Approved.—The Ministerial Association of Cleveland, at Berea, November 1, endorsed the decision of the Northern Ohio Conference to establish a Methodist Hospital in Cleveland.

PENNSYLVANIA.

Quarantine Physicians.—Dr. Henry Horning has resigned as state quarantine physician at the Marcus Hook station, to take effect December 1. Dr. Joseph L. McCool will perform the duties of quarantine physician until Dr. Horning's successor is appointed.

Vaccination Rules.—Dr. Samuel G. Dixon, state health commissioner, in a statement regarding the state vaccination law, said that after three unsuccessful attempts to vacinate a child, the pupil shall be permitted to attend the public schools. The question of the failure of repeated attempts of vaccination of school children was placed by the Supreme Court in the hands of the State Bureau of Health for decision, and the above course has been adopted. Considering the subject further, Dr. Dixon said:

> When the cases that we received inquiry about were within the limits of a borough or city having a board of health of its own, we suggested that after two unsuccessful attempts to vaccinate a child the third attempt be made by or in the presence of the physician of the board of health. If this attempt failed, then the physician of the board, acting in his official capacity, should authorize the admission of the child.
>
> Taking advantage of the spirit of this part of the Supreme Court's opinion, we have also endeavored to deal with the cases of children where there was reason to believe that the child's physical condition did not make vaccination at the present time advisable. The city and borough health boards can act in such cases. Where there are no health boards the county medical inspectors are clothed with authority.

Personal.—Dr. Otto T. Freer, Chicago, was the guest of honor at a luncheon November 27, given by Dr. Chevalier Jackson, Pittsburg, after which Dr. Freer held a clinic in the Pittsburg Eye and Ear Hospital, demonstrating the submucous resection of deflection of the nasal septum.——Dr. Howard F. Pyfer, Norristown, sailed on the *Caronia* for Liverpool, December 1.——Dr. Francis P. Moylan, Scranton, is suffering from an infected wound of the hand.——Dr. John H. Vastine, Shamokin, was thrown from his buggy in a runaway accident, November 20, breaking his leg at the ankle.——Dr. Merton E. Marvin, Luzerne, was the victim of a gunshot accident, November 22, which may result in the loss of one of his eyes.——Dr. Harry W. Tittle, New Florence, fractured his left leg in a fall from his horse, November 21.——Dr. R. Bruce Gamble, Meadville, is in Pittsburg, taking the Pasteur treatment for suspected rabies.——Dr. Fuller Hogsett, Allegheny, who has been ill with typhoid fever, is reported to be convalescent.——Dr. William J. Rush, Allentown, was struck by a trolley car, November 4, and sustained severe contusions of the legs and face.——Dr. Charles E. Born, Johnstown, is ill with pneumonia. ——Dr. Frank Keagy, Altoona, who has been seriously ill at Atlantic City, is reported to be convalescent.——Dr. Cornelius Bartholomew, Allentown, was attacked by a burglar in his office and painfully injured, November 28.

Philadelphia.

Milk Station Removed.—The Restoration distributing station of the Philadelphia Modified Milk Society has been removed to the Woman's Hospital, 2157 North College Avenue. It will now be known as the Woman's Hospital station.

Personal.—Dr. William J. Mayo of Rochester, Minn., delivered the Mütter lecture on surgical pathology before the College of Physicians of this city, December 4. His subject was, "The Principles Underlying Surgery of the Stomach and Associated Viscera." Dr. Mayo was entertained at dinner at the Rittenhouse Club by Dr. John H. Musser.——Dr. A. M. Porteous sailed for Europe, November 26.

Hospital Donations.—November 29, Thanksgiving Day, was observed as the annual donation day by many hospitals throughout the city. At the German Hospital the value of the donation in cash and goods reached the highest mark. At St. Agnes' Hospital the clothing, provisions and money donated was very gratifying to the Sisters of the Order of St. Francis, who conduct the institution. They received $2,129 in donations and $952 was realized by the Ladies' Coöperative Guild of the hospital. The Jefferson Maternity Hospital was also bountifully favored on its annual donation day and received a substantial supply of groceries, clothing and linen, and several hundred dollars in cash.

Health Report.—The total number of deaths reported for the week ended December 1 aggregated 446. This is a decrease of 76 from the number reported in the previous week and a decrease of 17 from that reported in the corresponding week of last year. The principal causes of death were: Typhoid fever, 19; measles, 3; scarlet fever, 3; pertussis, 3; diphtheria, 9; consumption, 52; cancer, 19; apoplexy, 15; heart disease, 46; acute respiratory disease, 66; enteritis, 19; hepatic cirrhosis, 7; appendicitis, 4; Bright's disease, 54; accidents, 22, and marasmus, 7. There were 287 cases of contagious disease reported, with 30 deaths, as compared with 323 cases and 37 deaths reported in the preceding week.

Typhoid and Filtered Water.—Typhoid fever, while showing a general increase throughout the city during the past month, has increased so greatly in West Philadelphia as to give the health officials concern as to the origin of infection. Since November 1, 47 new cases of typhoid fever have been reported from West Philadelphia, which, according to the filtration bureau's records, has been using filtered water exclusively since November 5. The bureau of health's reports show that coincident with the extension of the filtered water area in West Philadelphia came the increase of typhoid fever. Within the filtered water area, which has a population of 41,000, 15 cases of typhoid fever were reported last year. Within the same district between January 1 and April 25 last, 8 cases were reported. On April 15 filtered water was extended so as to increase the population furnished with filtered water from the Belmont station to about 81,000. The number of typhoid cases reported in the enlarged filtered water district since that time is as follows: To the end of April, 6 cases; May, 14; June, 18; July, 18; August, 13; September, 24; October, 13, or 106 cases in a population of 81,000 in six and one-half months, as compared with 15 cases in a population of 41,000 in 12 months. An investigation will be made by the health authorities to determine the origin of the infection. Director Coplin believes that the increase in typhoid fever in this district may be due to the use of unfiltered water prior to the first week in November, when the general supply to the entire district began. Dr. Abbot, chief of the health bureau, also has the same belief. Complaints of imperfect drainage in the district have been investigated, but no relationship to the prevalence of the disease was established. The same result was reached in the investigation of the milk supply.

WASHINGTON.

War on Tuberculosis.—The Washington Association for the Prevention and Relief of Tuberculosis was organized in Spokane, September 12, with the following objects:

> Dissemination of knowledge concerning the causes, treatment and prevention of tuberculosis.
>
> Investigation of the prevalence of tuberculosis in Washington and the collecting and publishing of useful information.
>
> Securing of proper legislation for the relief and prevention of tuberculosis.
>
> Coöperation with the public authorities (state and local boards of health), the National Association for the Study and prevention of Tuberculosis, medical societies and other organizations in approved measures adopted for the prevention of the disease.
>
> Promotion of the organization and work of local societies in all parts of Washington.
>
> Encouragement of adequate provision for consumptives by the establishment of sanatoria, hospitals and otherwise.
>
> In dealing with the problem of tuberculosis, medical science can not combat alone this terrible scourge. All forces—economic, legislative, sociological, humanitarian—should be enlisted in this crusade and it is the purpose of the newly-formed association to embody and crystallize all possible forms of endeavor in this movement against tuberculosis.

The medical officers of the association are: President, Dr. Clarence A. Smith, Seattle; vice-presidents, Drs. Frank H. Luce, Davenport, Elmer F. Heg, Seattle, and Wilson Johnston, Colfax, and secretary, Dr. William R. M. Kellogg, Seattle.

WISCONSIN.

Personal.—Dr. John C. Boyle, assistant physician at the Milwaukee County Insane Hospital, Wauwautosa, has resigned.——Dr. L. Phillipe Gaillardet, Ingram, has been elected coroner of Rusk County.

District Society Meeting.—The third annual meeting of the Tenth District Medical Society was held in Eau Claire, November 22. Dr. E. S. Hayes, Eau Claire, was elected president, and Dr. Eugene L. Boothby, Hammond, secretary.

Smallpox.—Camps Nos. 4 and 10 of the Foster-Latimer camp, near Melen, have been placed under strict quarantine on account of 9 cases of smallpox which have developed there. The disease is said to have been prevalent for months.

Practiced Without License.—Dr. Jacob Garnstein, Milwaukee, is reported to have been found guilty of practicing medicine without a license and of using the title of "Doctor" illegally. The sentence against him was suspended on payment of costs.

Physician Exonerated.—In the case of Dr. A. Mueller, Milwaukee, charged with malpractice in an attempt to remove a collar button from the esophagus of Bernard Fairman, the jury exonerated Dr. Mueller and said that all proper care had been used in the operation.

Health of the State.—The secretary of the State Board of Health in his report for the third quarter of 1906 says that 192 cases only of tuberculosis were reported to the office in the quarter. He believes that this indicates laxity on the part of physicians in reporting to the local health officer. During the period 202 cases of diphtheria were reported, with 17 deaths; 189 cases of typhoid fever occurred in 35 localities, with 19 deaths, and 132 cases of smallpox. Of the total deaths for the quarter 1,108 were males and 859 females. Heart disease and dropsy caused 270 deaths; consumption, 210; pneumonia, 199; senile debility, 195; diseases of the nervous system, 114, and cancer, 99. The death rate for the quarter was equivalent to an anual death rate per 1,000 of 12.71, which compares favorably with the death rate for the corresponding quarter of 1905, which was 13.2 and the rate for the first quarter of 1906, which was 14.2.

TEXAS.

Epileptic Colony Report.—The report of the State Epileptic Colony at Abilene, made by Dr. John Preston, superintendent, shows that at the opening of the year there was a total of 239 patients in the institution, 137 males and 198 females; during the year there were admitted 89 patients, 63 males and 26 females; there were discharged improved, 14 males and 4 females, and unimproved, 15 males and 2 females, a total of 35; during the year 14 males and 2 females died, a total of 16, and on August 31 there were remaining in the colony, 135 males and 108 females, a total of 243, or an increase of 8 over the preceding year. Dr. Preston recommends, as there are 350 patients on the waiting list, for the accommodation of these and more room for others who will apply, that at least six cottages should be provided, which can be built and equipped for $13,000.

GENERAL.

Sanatorium for Navy.—It is reported that a naval sanatorium for the treatment of tuberculosis is to be established on the old military reservation at Fort Lyon, Colorado. The institution will be conducted on the same lines as the Army Hospital at Fort Bayard, N. M.

The Cuban Yellow Fever Situation.—The report by telegraph concerning yellow fever in Cuba during the week ended December 3 shows that there were four cases in Havana and seven in the provinces, a total of eleven, with two deaths.

LONDON LETTER.

(From Our Regular Correspondent.)

London, Nov. 17, 1906.

Standards of Preliminary Education.

The annual report of the Royal College of Surgeons contains several matters of interest. In conjunction with the Royal College of Physicians the subject of the medical curriculum has been considered and a joint committee appointed to report on the following: 1, To treat chemistry, physics and biology as subjects of preliminary education and to require that an examination in them should be passed before the recognition of the commencement of medical studies; 2, to adopt a first year's curriculum of professional study from the date of passing a preliminary science examination. With regard to these questions the committee was unanimously of opinion: 1, That it is undesirable to treat chemistry, physics and biology as subjects of preliminary education; 2, that it is undesirable to require an examination to be passed in chemistry, physics and biology before the recognition of the commencement of medical studies; and 3, that it is therefore undesirable that the Royal Colleges should approach the universities and other examining bodies with a view to adopting a five years' curriculum of professional study from the date of passing the preliminary science examination. For the first time there appears in the calendar a succinct account of the college endowments, beginning with the Hunterian oration which dates from 1813. In that year Dr. Mathew Baillie and Sir Everard Home, executors of John Hunter, desiring of showing "a lasting respect to the memory of the late Mr. John Hunter" gave to the college 1,664 pounds 3 per cent. consolidated bank annuities "for the endowment of an annual oration to be called the Hunterian oration and to be delivered in the theater of the college on February 14, the birthday of John Hunter by the master or one of the governors for the time being, or such other member of the court of assistants as should be appointed by the master and governors or any two of them, such oration to be expressive of the merits in comparative anatomy, physiology and surgery, not only of John Hunter but also of such persons as should be from time to time deceased whose labors have contributed to the improvement or extension of surgical science." In 1853, after consultation with the representatives of the founders of the trust, it was decided that the oration should in future be delivered biennially instead of annually.

The Declining Birth Rate.

In my letter of August 18 I stated that the birth rate in the second quarter of this year was only in the proportion of 27.5 annually—the lowest rate recorded in any second quarter since civil registration was established. The registrar general now reports a still lower rate, the lowest in any third quarter since civil registration was established. The rate for the quarter was only in the proportion of 26.9 annually. The mean rate in the ten preceding third quarters was 26.8. Curiously, the agricultural districts supply the smallest increase in the population and the manufacturing centers the greatest. The death rate for the quarter is also low—14.9 against an average of 16.2 in the preceding ten third quarters. Infant mortality shows a satisfactory decline: it was only 176 per 100 against an average of 187 in the preceding ten quarters. London's birth rate is 26.5, and compares interestingly with that of Paris, 18.2; of Brussels, 18.1 (the two lowest of the world's capitals); of Trieste, 34.5; of Breslau, 32.4; and of New York, 28.

Profits on Pills for Charity.

Mr. Fullard of Ontario, one of the proprietors of Dr. Williams' pink pills for pale people and bile beans, left an estate valued at $6,500,000. Mr. Fullard has bequeathed to Barnardo's Homes 25 per cent. of the shares of the business, which is to be converted into a joint stock company. It will be gathered from this that the gift has a string to it, for if it be accepted the management of Barnardo's Homes will be in the position of coöperating in the sale of medicines which have been characterized by an English judge as boomed by fraud and impudence. It may here be noted that the British people seem to be becoming almost as voracious of "patent medicines" and nostrums of every description as are their American cousins, and as easily gulled, too, by lying advertisements.

Shop Girls and the Factory Acts.

An important order under the factory acts has been issued. The prohibition concerning the employment of persons under the age of 16 without a certificate of fitness is extended to various classes of workshops, among which is any workshop in which the following processes are carried on: Making, altering, ornamenting, finishing or repairing of wearing apparel by the aid of treadle sewing machines. This order thus includes most, if not all, tailoring, millinery and drapery establishments. Hitherto it has been found in many manufacturing cities that girls who are rejected by the health officers for physical unfitness when they attempt to enter mills promptly secure situations in milliners' or drapers' shops.

FOREIGN.

Preventive Circulars Distributed in Germany.—The German Society for Repression of Venereal Diseases has supplied 1,450 workingmen's sickness insurance societies with copies of its warning circulars for men and for women, to be distributed among their more than 3,000,000 policy-holders. Owing to red tape objections to paying for the circulars by the insurance companies, the preventive society has paid the total expense connected with publication and distribution of the circulars, amounting to more than $2,000. Translations of the circulars were published in The Journal on page 1128 of volume XLVI, 1906.

Cancer Research in France.—Professor Poirier recently addressed the Académie de Médecine at Paris on the curability of cancer in general and especially of cancer of the tongue. He expatiated on the importance of institutions for the special study and treatment of cancer, and related what is being done in other lands in this line. He was given a check for $20,000 at once by Dr. Henri de Rothschild, and others have contributed since, as a nucleus for a cancer research institute. A ways and means committee was appointed and it is proposed to bleed the people by establishing a lottery to raise further funds.

International Medical Association of Mexico.—The International Medical Association of Mexico held its annual meeting in Mexico City, November 14 to 17, which is reported to have been a success in every way. The following officers were elected: President, Dr. H. V. Jackson, Durango; vice-presidents, Drs. S. Ulfelder, Mexico, and G. B. Hyde, Silao; secretary and treasurer, Dr. J. S. Steele, Monterey; censors, Drs. L. H. Barry, Durango; C. E. Husk, Santa Barbara, and A. H. Whatley, Parrall and editors of the *Annual*, Drs. R. D. Robinson and W. R. Jamieson, both of Torreon. The next meeting will be held in Monterey, November, 1907.

Cause of Mediterranean Fever at Malta.—The authorities at the naval dockyard at Malta have issued a circular calling attention to the researches of the Mediterranean fever commission. It has been found that the milk of both cows and goats contains the fever germ in large numbers. People are advised to abstain from the use of fresh milk and to use the canned variety. The military authorities recently forbade the introduction of fresh milk into barracks, with the result that there was a remarkable diminution in the number of fever cases among the troops. A similar result has been obtained in the naval hospital, where goat's milk has been entirely tabooed.

The International Congress for Laryngology and Rhinology in Memory of Tuerck and Czermak.—The fiftieth anniversary of the adoption of the laryngoscope in the clinic and its modification for the purpose is to be celebrated by an international congress and exhibition devoted to laryngology and rhinology, as already announced in these columns. The congress is to be held at Vienna, April 21 to 25, 1908, and Professor von Schrötter will preside. Prof. M. Grossmann, Garnisongasse 10, Vienna ix, is the general secretary. A medal, with portraits of Tuerck and Czermak, will be presented to each member of the congress and can be bought by outsiders for $4. The fee for membership in the congress is $5. English, French and German are the official languages of the congress, and the first official program will be made up from communications received before Dec. 31, 1907.

Personal.—Dr. G. H. F. Nuttal, F.R.S., of Christ College, Cambridge University, has been elected Quick professor of biology in that university. Professor Nuttal, who is an American, has had a very distinguished career. He was born in San Francisco and educated in England, France, Switzerland, the United States and Germany, and holds degrees from the universities of California, Göttingen and Cambridge. Dr. Nuttal was late associate in hygiene in Johns Hopkins University, Baltimore, and held a somewhat similar position in Berlin University. In last Easter term he was appointed to the readership of hygiene in Cambridge University, which he has now resigned. To him has been chiefly due the institution of the Cambridge University examination for the diploma in tropical medicine and hygiene. Dr. Nuttal has published numerous papers relating to original experimental research in bacteriology, parasitology, hygiene and physiology, which have appeared in German, British and American journals. He is also the editor of the *British Journal of Hygiene.*

Housing the Workman in London.—The most difficult problem with which philanthropists and sanitarians in London have to deal is that of the housing of the working poor. Where people are massed together like cattle the results can not but be disastrous, whether regarded from a moral, mental or physical standpoint. The condition of the London poor, so far as house accommodation is concerned, is, on the whole, most unsatisfactory, although in recent years much progress has been made toward a better state of affairs. The London county council has just issued a report showing what is being done by local authorities and others to provide housing accommodation for working classes in Greater London. From this return it would seem that not only has house accommodation greatly increased, but also that this increase is keeping pace with the increase of population. Immense areas covered with insanitary dwellings have been cleared within the past few years, and buildings constructed according to the latest modern standards have been erected for the workingmen of London.

Monument for Servetus.—Miguel Serveto, physician and theologian, 1509-1553, is often mentioned first in the history of the discovery of the circulation of the blood, as he suggested its possibility and argued in favor of its probability nearly a century before Harvey established the truth of the doctrine. Servetus wrote a number of treatises on medicine and theology, attacking settled traditions in both sciences. His attacks on Galen's theories of medicine had no serious results, but his theological works branded him as a heretic, and he was sentenced to be burnt at the stake both by the Roman Catholic inquisition and by the Fathers of the Protestant Church at Geneva. He was burnt in effigy at Vienne, Dauphiné, in France, where he had long resided, and finally fell into the hands of Calvin at Geneva, where his sentence was carried out, although Calvin tried in vain to substitute decapitation for the burning at the stake. Memorials have already been erected to him at Geneva and at Paris, and the town of Vienne is now soliciting subscriptions to erect a monument to his memory in the public square. We learn that subscriptions are being received from many countries. The committee in charge of the fund includes M. Berthélot of Paris, the deans of all the French universities, and others.

Quacks Convicted and Sentenced in Germany.—Mainly by the efforts of the various local medical societies, 48 irregulars in Germany were condemned to imprisonment or fined during the fiscal year 1905-1906. The local medical society, usually acting according to general instructions from the National Antiquackery Society, called the attention of the police to the way in which the regulations were being defied, and secured evidence as to the previous record of the irregulars. The official monthly organ of the Antiquackery Society, *Hygienische Blätter,* tabulates the details of the 48 cases with name, specialty, former occupation and former sentences, method of treatment, accusation, date and general remarks. No. 16 was a magnetopath and hypnotist, formerly a roofer, who had served a term in the penitentiary; he was condemned to another term of a year and a half on account of immoral practices. No. 24 was another magnetopath with a record of numerous previous sentences. He was condemned to six months' imprisonment for a death resulting from over-confidence in his shirt of cotton batting and magnetized water. In his diary was written: "As long as the fools have not vanished from the face of the earth, a shrewd man can always make a good living." No. 12 was a naturopath who treated a corneal ulcer with almond oil until the sight of the eye was lost. His penalty was a year's imprisonment, his tenth sentence. Only 7 of the total number of irregulars convicted were in Berlin, the rest being scattered through 27 towns in all parts of Germany. The severest penalty was imposed at Aachen, where a former scissors grinder, who had assumed a title and made a specialty of female affections, treating them with worthless drugs, was condemned to 18 months in prison, three and a half years in the penitentiary and a fine of $250. A former stonecutter, who treated mammary cancer with drugs internally was condemned at Dresden to 4 months' imprisonment. A naturopath at Hagen was condemned to imprisonment for 5 months for fraudulent practices. He treated cancer, lupus, etc., with a special salve. His appeal to a higher court resulted in a sentence of 1 month's imprisonment and a fine of $250. No. 32 was a homeopath, who was condemned to a year and a half in prison on account of criminal abortion. No. 44 was a naturopath, condemned to 1 month in prison for a "death from negligence," on account of a child who had died of diphtheria under his treatment with bath and gargles alone. Hernia treated with homeopathy was also responsible for another death, and the homeopath was condemned to 3 months' imprisonment. A former factory hand treated patients "according to the seventh book of Moses," for a consideration of $10. In cases of cancer of the tongue he applied a living crab to the region, cancer being the Latin term for crab, and the German word *Krebs,* meaning both cancer and crab. He was sentenced to imprisonment for two and a half weeks. A woman faith curist who treated mammary cancer with drugs and prayer, for a consideration of $36, was sentenced at Munich to one month in prison for fraudulent practices. The widespread activity in trying to dislodge the irregulars is an encouraging sign of the times in Germany. No mention is made in this list of the numerous suits brought against quacks in which they managed to escape condemnation on some legal technicality or from lack of convincing proof. The German courts as a rule seem to be inclined to be remarkably lenient to the irregulars unless overwhelming testimony is produced. The German Antiquackery Society urges all interested in protecting the public against quackism to be on the alert to collect data, both general and individual, that can be used in the campaign against quackery, especially the past records of charlatans.

Monument to Semmelweis.—The celebration in Budapest, Sept. 30, 1906, when the monument to Ignatz P. Semmelweis was unveiled, was mentioned recently in these columns, and is referred to editorially in this issue. This memorial to one of Hungary's greatest sons shows the mother saved to bring up

her child by his discovery in regard to puerperal fever and its prophylaxis (see illustration). The local medical society held a gala meeting the night before, with biographical sketches of Semmelweis. The unveiling of the memorial was preceded by a public meeting in the halls of the university, where addresses were made by representatives from various medical societies and universities at home and abroad, B. Schultze of Jena speaking in the name of the German Gynecologic Association; Chrobak, of the Vienna medical faculty; Schauta, of the Vienna gynecologic clinic; Fibiger as representative of the Copenhagen medical faculty; Pestalozzi in the same capacity from Rome, and Guzzoni from Messina. Herff claimed for Switzerland that the conception as to the true nature of puerperal fever was first accepted and acted on in that country. He appeared as the official delegate from the hospitals of Berne, Geneva, Lausanne, Zurich and Basle, and of the national medical association, and Albert Duka of London brought the greetings of the profession in Great Britain. After the meeting the company proceeded to the house where Semmelweis was born, on which a tablet was placed. The *Wiener klin. Rundschau*

The Monument to Semmelweis at Budapest.

for October 21 gives the main points of the addresses with an illustration of the memorial, here reproduced. It seems that in the two maternity wards in the Vienna public hospital, where Semmelweis was associate physician, medical students were trained in obstetrics in the first ward and only midwives in the second. Patients admitted to the hospital were sent alternately to the first or second ward. The mortality in the first ward was always three to five times that in the second. The death of one of the professors from cadaveric infection gave the clue that solved this problem of the deadliness of the first ward over which Semmelweis had been puzzling for years. His announcements between 1845 and 1855 in regard to the etiology of puerperal fever met with rabid opposition from most of his colleagues, and this embittered his life and his reason finally became unsettled. He was taken to an insane asylum in 1865, where he died in a few days from pyemia resulting from injury of a finger. His widow, children and a sister still survive.

Pharmacology

SULPHO-LYTHIN.

Report of the Council on Pharmacy and Chemistry of the American Medical Association.

The following report was submitted to the Council by the subcommittee which examined Sulpho-Lythin:

To the Council on Pharmacy and Chemistry:—The following report on Sulpho-Lythin is herewith submitted:

Sulpho-Lythin is sold by the Laine Chemical Company, New York. In the literature sent to physicians it is said: "This product, the sulpho-phosphite of sodium and lithium (non-effervescent) is entirely new and is unique in its action."

Chemical analysis of a specimen of Sulpho-Lythin purchased in the open market, indicated its composition to be:

Sodium sulphate, anhydrous	10.51
Disodium hydrogen phosphate, anhydrous	56.67
Sodium thiosulphate, anhydrous	20.78
Sodium chlorid	5.98
Lithium, as citrate	3.12
Sulphur, free	0.16
Moisture	1.53
Loss	1.25

The examination, therefore, shows that Sulpho-Lythin is a mixture consisting mainly of sodium sulphate, sodium phosphate and sodium thiosulphate. The statement that it is a "sulpho-phosphite of sodium and lithium," therefore, is not correct, and a statement that "it is entirely new and is unique in its action" appears unwarranted and misleading. It is, therefore, recommended that the preparation be refused recognition. It is also recommended that an article be prepared for publication calling attention to the exaggerated claims made for Sulpho-Lythin.

The recommendations of the subcommittee were adopted by the Council and in accordance therewith the report is published, with the following comments.

W. A. PUCKNER, Secretary.

According to the above analysis, this wonderful new remedy, "which surgeons of this city (New York) have used . . . after laparotomies . . . with excellent results" is simply a mixture of well-known salts obtainable in any drug store, and which any third-year student knows how to prescribe and even to compound.

Sodium sulphate in the crystallized form is commonly known as Glauber's salt; disodium hydrogen phosphate is ordinary, common, every-day sodium phosphate. We presume every physician knows what Glauber's salts are good for, and that phosphate of soda is an excellent saline laxative, although it has not been known before that it possesses antiseptic properties. Sodium thiosulphate is familiar to physicians as sodium hyposulphite, and to photographers as "hypo," while every one knows, of course, that sodium chlorid is common salt.

Examination and analysis of various specimens of this product demonstrated that its composition is not always the same. Thus analysis of one specimen indicated only 5.12 per cent. of anhydrous sodium sulphate instead of more than 10 per cent. in the first specimen; also this specimen contained 10.46 per cent. of water instead of 1.53 per cent. Apparently, therefore, the manufacturers are not competent to prepare a product of constant composition. Or is it simply that they do not care to do so and believe that anything is good enough for the doctor? That the first is the more probable cause is indicated by the report of one chemist which calls attention to the fact that different portions taken from the same bottle differed widely in composition. The following is taken from his report:

> The analysis shows Sulpho-Lythin is not a definite chemical compound but a mixture of sodium phosphate, sodium thiosulphate and some compound of lithium. That it is only a mixture is shown by the fact that in the examination for thiosulphate when the substance was examined without first being thoroughly mixed, results were obtained varying from approximately 27 per cent. in the first portions taken from a bottle, to 42 per cent. in the last portions of the same bottle.

As a further sign of the ignorance and incompetence of the promoters of this nostrum it is interesting to note that the label on one of the bottles purchased states that it is a "sulphophosphate" instead of a sulphophosphite. Apparently the

gentlemen who presume to instruct us in regard to this remedy do not know the difference between a phosphite and a phosphate. Or do they know the difference, but feel perfectly safe that in our own ignorance we will not note such contradictions?

The attempt to make a "true hepatic stimulant, antizymotic and uric acid eliminant," all in one, out of simple laxative salts, is surely bold enough to excite one's admiration, even if it does not inspire one's faith. Certainly those who have the brazen assurance to offer such a combination to physicians as a new and valuable remedy must have a pretty high opinion of the intelligence and of the credulity of that profession. Some occult and wonderful skill must be used in mixing Glauber's salts, phosphate of soda, etc., to produce a medicine which will do the wonderful things claimed for Sulpho-Lythin by its promoters.

WONDERFUL VIRTUES OF THE NEW COMPOUND.

According to one circular, this simple mixture of salts is a great remedy for:

> Disorders of the Liver, Inflammation of the Gall Bladder and Bile Ducts, Acute Congestion of the Liver, Gall Stones, Intestinal Indigestion, Chronic Constipation, Rheumatic and Gouty Conditions, Diabetes, Nephritis, Acute or Chronic, Bright's Disease, Genito-Urinary Diseases, Miasmatic (Malarial) Fevers, Skin Eruptions, Corpulency or Obesity, Convalescence from Alcoholism and the Treatment of Drug Habits.

In another circular we read:

> "It is not itself a cathartic or even a laxative, but catharsis results from its administration because of the bile that is poured out into the intestinal tract, and the sulphur liberated by its decomposition."

Wonderful chemistry that is able to remove the laxative quality from Glauber's salts! What an advantage this internal manufacture of sulphur and sulphurous gases has over the crude manner in which molasses and brimstone were administered to the pupils of Dotheboys Hall.

> "Sulpho-Lythin is absorbed and passes into the circulation, where it exerts an antifermentative and antitoxic action, restoring and preserving normal alkalinity of the blood and preventing or counteracting septic processes throughout the body. It is also a *solvent for uric acid.*"

Thus the great puzzle of an internal antiseptic is solved and that which generations of pharmacologists have failed to find is discovered by an ingenious layman who now imparts his discovery to the medical profession at so much per bottle. Does he suppose that intelligent physicians still entertain the notion that anything that contains a grain or two of lithium to the dose will act internally as a uric acid solvent?

> "Sulpho-Lythin acts also on the skin, stimulating the perspiratory glands and removing discolorations and eruptions on its surface."

Our amateur pharmacologist has probably applied his knowledge of amateur photography to therapeutics and uses "hypo" to remove eruptions as well as stains.

> "Sulpho-Lythin is particularly effective in all forms of derangement of the liver because it is one of the very few hepatic stimulants, which increases the secretion of bile and causes it to be discharged into the bowels."

What need for universities to erect laboratories for the prosecution of laborious animal experiments in search of biliary stimulants when the discovery has already been made in a New York office building. The grammar of the above quotation indicates the progressive character of our instructors.

> "In the preparation of patients for surgical operations, Sulpho-Lythin is especially valuable because it restores and preserves normal functional activity of the liver, bowels, kidneys and skin, and places the patient in the best possible condition to withstand the shock of the operation and to recuperate therefrom. . . . The length of time required for efficient preparation will depend on the character of the operation and the condition of the individual patients when they come under observation. As a rule, Sulpho-Lythin should be administered for one, two or three weeks prior to the operation to obtain the best result."

Our distinguished surgeons are no doubt proud to honor American commercial enterprise by sitting at the feet of progressive "chemical" (?) companies to receive instruction regarding the manner in which they should prepare their patients for operation.

NOT ADVERTISED TO THE PUBLIC?

This nostrum is not advertised to the public. Oh no! It is put up solely for physicians' use (*sic*). But the physician is repeatedly advised in the advertisements to "order always an original (6 ounce) bottle to prevent substitution." 'Twas ever thus. The physician prescribes as ordered and then wonders why his patients buy "patent medicines." The patient, in this instance, gets plenty of advice as to the use to which he can put the nostrum. "An original (6 ounce) bottle to prevent substitution" has labels on three sides of the bottle.

On one side the patient reads that Sulpho-Lythin is "a true hepatic stimulant, antizymotic, uric acid solvent and eliminant."

On side No. 2 he learns that it is indicated in: "Disorders of the liver, intestinal indigestion, chronic constipation, inflammations of the gall bladder and bile ducts, gallstones, jaundice, rheumatic and gouty conditions, uric acid diathesis, diabetes, albuminuria, malarial fevers, skin eruptions, corpulency, preparation of patients for surgical operations and convalescence therefrom, convalescence from alcoholism and drug habits."

Label No. 3 tells the patient how to use it.

In the language of a wise man, "What fools we mortals be."

We not only allow adventurers to humbug us, but we permit ourselves to be used as agents to humbug the trusting layman.

THE EXPLOITERS OF THE STUFF.

And now, who and what is this Laine Chemical Company? Is it a regular pharmaceutical or chemical company engaged in the business of manufacturing drugs and chemicals? If so, where is its manufacturing establishment and its laboratory? One of the phases connected with this proprietary medicine business is that many of these preparations are foisted on our profession by promoters who have gone into the business as they would go into the business of humbugging people with a "patent medicine," into a scheme for exploiting stock in a salted mine, or into any other get-rich-quick scheme. This is not a reckless statement on our part; we have plenty of evidence to prove it, and we believe that physicians can verify it if they will make a little inquiry into the standing and character of some of the so-called "chemical" or "pharmacal" "companies" whose preparations they have been deluded into prescribing. We can not swear whether or not the Laine Chemical Company is of this character. We have been trying to find out. From one source we learn that the "business was started nearly two years ago for the purpose of putting up a proprietary remedy, but nothing was known in the trade as to the individuals composing the firm. After being in business for some time the firm was incorporated, the certificate of incorporation being dated Albany, N. Y., Jan. 29, 1906. The names given in the certificate were A. C. Aubrey, W. L. Clark and W. L. Sohl." Our informant said that apparently W. L. Sohl was the secretary and manager, but that nothing definite could be learned.

Not having received any satisfactory information from the sources tried, we asked Dr. Robert A. Hatcher, professor of pharmacology in Cornell University Medical School, to make a personal investigation and to learn, if possible, what kind of a concern it is. Under date of July 25 Professor Hatcher writes:

> "I went to the office of the Laine Chemical Co., Room 25, 83 Fulton St., an office building. I finally found the company domiciled in a small room, in which were three girls typewriting. There were also advertising circulars, a number of bottles in a case, and a few cases marked for shipment. There was also present a man, apparently about 35 years of age, in charge. I told him that I had been asked to learn what I could of the Laine Chemical Company, its personnel, etc. He asked me my name and occupation, which I gave, and for whom I was requesting the information. He remarked that he knew 'the whole bunch out there,' meaning THE JOURNAL and its managers, and said that they could get any information they wished by writing to the Laine Chemical Company for it. He further added that THE JOURNAL wanted to 'know a whole lot that is none of its business.' I could get no information whatever from him nor from any other source that was satisfactory. From what I have been able to find out, it would seem that the company is made up of men who know nothing whatever about pharmacy, chemistry or medicine; that the business of this 'chemical company' is selling to physicians the nostrum sulpho-lythin. Whether or not they put up the stuff themselves, or have it put up for them, I could not learn. The City Directory gives 'W. L. Sohl, secretary, 81 Fulton, R. 25, h. 231 W. 131st.'; 'A. C. Aubrey, Lawyer and Notary Public, 35 Nassau St.'; W. L. Clark, Lawyer, 35 Nassau St.' There is also a 'W. L. Clark, Clerk,' business address not given.
>
> "I left the concern with disgust and shame to think that physicians would take therapeutic advice from such a source. Is it not possible to make physicians realize the shamefulness of it all? It is bad enough for a physician to give his patient a concoction the exact composition of which he does not know, and put out by a legitimate pharmaceutical or chemical firm, but to prescribe a nostrum put out by an anonymous company, is certainly inexcusable if not disgraceful. I feel sure that if you can show up a few of the pseudo companies and let physicians know about them, and how they (the physicians) are being duped, there will soon be an end to this infamous business."

After receiving the above letter from Professor Hatcher, we wrote to the Laine Chemical Company as follows:

"Chicago, August 17, 1906.

"*The Laine Chemical Co., New York, N. Y.:*

"*Gentlemen:*—We recently sent a representative to see you for the purpose of obtaining certain information regarding your firm. Our representative writes that he called at your office, that you refused to give him the information requested, and that you stated that you would furnish us the information if we would write to you.

"As you are advertising to physicians a medicinal preparation known as 'Sulpho-Lythin,' and as The Journal of the American Medical Association is the official organ of the American Medical Association and published in the interest of the profession, I hope it will not be considered impertinent to ask for the information called for by the following questions. The information is for use in The Journal, if at any time it should be deemed to the interest of the profession to discuss your product in its columns:

"1. Who are the members of the firm, or corporation, known as the Laine Chemical Co.?

"2. Is either of the members of this firm, or corporation, a registered pharmacist, a chemist, or a physician?

"3. What, if any, other preparation does the Laine Chemical Co. manufacture or sell?

"4. Is 'Sulpho-Lythin' made by the Laine Chemical Co.? If so, where is the laboratory or factory? Please give street and number.

"5. Is 'Sulpho-Lythin' a definite chemical compound, or a mixture? If a chemical compound, what is its chemical formula? If a mixture, what are the ingredients, and the proportion of each ingredient to a given amount of the product?"

When we wrote the above letter we were aware that it was a presumptious thing to do, but nevertheless the information asked for would be willingly furnished by any legitimate pharmaceutical house, and, for that matter, by any business concern, no matter what the business might be. Some might object to furnishing the names of all persons connected financially with the firm, but none would object to giving the names of those in direct and responsible charge. However, in a few days the following letter was received:

"New York, Aug. 21, 1906.

"*Dear Doctor:*—The officers of our company are at present absent on their vacation and immediately on their return we will send to you a full reply to your communication under date of August 17.

"Trusting that this is satisfactory, we are, yours very truly,

"Laine Chemical Co."

After waiting nearly three months—a rather long vacation for the officers to take—the following communication was received:

"New York, Nov. 9, 1906.

"*Dear Doctor:*—Reverting to your communication of August 17, receipt of which was acknowledged under date of August 21, we will state that the Laine Chemical Co.., is a corporation, incorporated under the laws of the State of New York; that Sulpho-Lythin, exploited to the medical profession exclusiveiy, is the only product now manufactured by the Laine Chemicai Co.; that Sulpho-Lythin is manufactured under the immediate supervision of the Laine Chemicai Co. by a regular graduate in pharmacy; and that the active constituents of sulpho-Lythin are combined in a Sulpho-Phosphate of Lithium and Sodium. Very truly yours,

"Laine Chemical Co."

It looks as though each of the above letters is signed by the same individual, and the writing bears a similarity to that of W. S. Sohl; at least, his signatures to letters which were written to physicians and druggists and forwarded by them to us, bear an extremely marked similarity to the writing of one who signed the letters quoted, all of which make it appear that "the officers of our company" were taking their vacation in the City of New York. It will be noted that the important questions in our letter of August 17 were not answered.

Possibly we ought to apologize for devoting so much space to such an insignificant nostrum. If any apology is necessary, we offer the following:

Sulpho-Lythin literature carries testimonials written by men of influence and standing in the profession—not many happily—and it is advertised in medical journals supported—only in part, it must be admitted—by educated and thoughtful members of our profession.

Sulpho-Lythin is a sample of hundreds—shall we say thousands—of so-called "ethical proprietaries" that are being used by physicians; it is no worse and no better than most of the others. It illustrates beautifully various phases of the "ethical proprietary." They are not made under responsible and intelligent supervision. The vast majority of them are made, or at least sold (for not a few have their preparations made for them by others, as do many of the "patent medicine" vendors), by men who have absolutely no knowledge of drugs or of medicine, but who not only presume to sell medicines of their own compoundings, but also arrogate to themselves the right to tell physicians how to treat their patients, advice which every physician with any self respect would scorn to accept, did he know who gave it.

Most of these preparations are simple mixtures of well-known drugs that physicians are prescribing every day, and which require as much skill in compounding as can be found in a drug-store bottle washer.

But granting that some of these mixtures may possess good qualities and be convenient, their secret nature and the irresponsibility of their makers give the physician no guarantee that their composition will remain uniform, and that the materials used will be of good quality. If these preparations are to be used, it is evident that some control is necessary by some authority acting in the interests of the medical profession. It ought to be evident by this time that the Council on Pharmacy and Chemistry had an important mission to perform, and that such a body was created none too soon.

Correspondence

The Danger of X-Ray Exposures.

Chicago, Nov. 28, 1906.

To the Editor:—Dr. David L. Edsall's article in The Journal, Nov. 3, 1906, so overstates, in my opinion, the dangers from *x*-ray exposures that it should not go without reply. Dr. Edsall's article begins with several paragraphs devoted to an implied criticism at the tardiness of the recognition of deep-seated effects of *x*-rays and at the purely empirical use of *x*-rays as a therapeutic agent His opening sentence is: "In its relation to medical practice, one of the most remarkable things about the *x*-ray is the tardiness with which there was any realization of its power of producing very marked changes in other tissues than those superficially situated. "X-rays were discovered November, 1895. To cite no other illustration, as long ago as the summer of 1897, W. Stone Scott reviewed the cases in which deep-seated effects were thought to have occurred from *x*-rays without corresponding effect on the overlying tissues. As a matter of fact all through the literature of *x*-rays from the start appears the idea of the possibility of deep-seated *x*-ray effects.

As to the empirical character of the therapeutic use of *x*-rays: A favorite pose of scientific men in criticising new therapeutic agents is that of a superior sort of regret at the empirical character of the knowledge of these agents. Dr. Edsall, without doubt, sincerely, assumes this attitude of criticism towards *x*-rays. He says for example: "With the *x*-ray, on the contrary, the method that has been adopted has been to try its effect for both diagnostic and therapeutic purposes on all manner of conditions, and only gradually, largely by painful experience, to learn that it may have dangerous effects." As a matter of fact this attitude of criticism for empirical therapeutic knowledge is wholly unjustified by the history of therapeutics. If one will except the organic products, like thyroid extract, and the therapeutic sera, like diphtheria antitoxin, he will be hard pushed to give any illustration of therapeutic agents whose value has not been first established empirically. There is one lone brilliant example of the first therapeutic application of a drug on the basis of a previous study of its physiologic properties, and that is the use of amyl nitrate in angina pectoris, suggested by Lauder Brunton. I think Dr. Edsall will have difficulty in finding any other useful therapeutic agents that are not open to the criticism of empiricism which he has brought against *x*-rays. But if the real facts be considered, we find that the physiologic effects of *x*-rays have been studied from the beginning about as carefully as those of any other agent now used in therapeutics. And *x*-rays will nearly furnish another illustration of a therapeutic agent whose use has been based on a previous study of its physiologic effects. Almost as soon as the first *x*-ray burns happened, and that was synchronous with the first use of *x*-rays, the study of the physiologic effects of *x*-rays began. In evidence of this fact reference may be made to the studies of Kibbe in 1897, Gilchrist in 1897, Oudin Barthelemy and Darier in 1897, Unna in 1898 and Scholtz in 1902, to

quote no others. I doubt if any more careful studies of the effect of any therapeutic agent can be produced than the studies of Oudin, Barthelemy and Darier, and of Scholtz on the effects of *x*-rays on tissues. And all these studies were made by 1902, that is, previous to the time when the use of *x*-rays as a therapeutic agent became general. As a result chiefly of the study of the effects of *x*-rays on tissues, Freund in 1900 offered a classification of the rational therapeutic indications for the use of *x*-rays and in 1902, on the basis of Fruend's classification, I made a statement of the therapeutic indications for the use of *x*-rays, which I believe can be well defended at the present time, and which has certainly given one or two operators a basis for rational use of the agent. That classification left out of consideration practically none of our present knowledge except that concerning the effect of *x*-rays on the blood.

I may claim to have been one of the early workers with *x*-rays in therapeutics, and I never made an application of *x*-rays which was not based on indications that were reasonable deductions from the existing knowledge of their physiologic effects, and which was not in accordance with the therapeutic indications which I have published. I treated with *x*-rays the first reported cases of Hodgkin's disease and leukemia. The treatment was undertaken because of the logical indications furnished by a knowledge of the effects of *x*-rays on cells of low resistance, like those of sarcoma, so that even in these conditions the treatment was not blindly empirical. I mention these facts not to claim any particular credit, but to show that the work has always been based on rational indications which may be found by anyone who studies the literature. But this part of my criticism of Dr. Edsall's article is by the way; it is offered in the interest of historical accuracy and to suggest that his sweeping criticism of *x*-rays is not founded on a full consideration of the literature.

As to the dangers from the use of *x*-rays: Contrary to the statement of Dr. Edsall that "the dangers of the *x*-ray have been recognized for only a comparatively short time," I should say that "the dangers of the *x*-ray" have been the ever-present fear of *x*-ray operators since the first *x*-ray burns occurred. This has been chiefly dread of *x*-ray burns, as it should be, but, as the literature from the start will clearly show, it has included the dread of constitutional effects of one sort or another, including the constitutional effects from the development of metabolic toxic products. In spite of this fact, I think there is not a conclusive case in the literature of fatal toxic disturbance from *x*-rays without the occurrence of a severe burn. The nearest to such a case with which I am familiar is the case reported by C. J. White, in which a patient suffering from mycosis fungoides became suddenly ill and died while the cutaneous condition was improving. But the symptoms were septic symptoms in that case and on autopsy the patient was found to have a general sepsis, and, as that is a very common cause of death in mycosis fungoides, it leaves the case inconclusive. In a daily experience with *x*-rays for seven years, I have carefully watched for severe toxic symptoms. They have not occurred. I have seen severe symptoms, apparently toxic, in cases of extensive burns and I have seen mild symptoms, apparently due to the production of toxins, in cases of leukemia and of other diseases in which large masses of pathologic tissue were disappearing under *x*-ray exposures. But such symptoms occur in these cases independent of the use of *x*-rays. On the other hand I have seen great masses of tissue disappear rapidly in leukemia, pseudoleukemia, splenomegaly, sarcoma, mycosis fungoides and carcinoma while the patients were rapidly improving in general health; this indeed has been the usual occurrence in such cases. I do not say that toxemia never occurs in these cases and that no effects on the blood are produced which might possibly be dangerous. I know of the studies of Schirmer, Heineke, Dock, Warthin, Morris, Linser and Helber and others and I know that these changes may occur from extreme exposures. What I say is that these changes are not likely to manifest themselves to any grave degree in reasonable exposures with *x*-rays, meaning by "reasonable," safe as regards the production of *x*-ray burns. I can say that with an experience with *x*-rays extending over seven years and with many exposures daily, I have not seen a single severe case of intoxication or of other constitutional disturbance which was reasonably attributable to *x*-rays.

Dr. Edsall says: "The effect of an ordinary dose (of *x*-rays), may, in fact, be more severe than the effect of a similar dose of any other therapeutic agent with which I am acquainted, and may either be extremely useful clinically or so dangerously violent as to hasten death and perhaps even to cause it. . . ." With my experience with *x*-rays and that of many others, to say nothing of the literature, that statement is incomprehensible to me. If he means by an "ordinary dose" one from which there is no danger of burn to the skin, I am willing to enunciate the opposite proposition, viz., that an "ordinary single exposure is never attended by any danger of constitutional disturbance." I have watched for this closely. Holzknecht in 1903 called attention to an exanthem and a constitutional disturbance which he said occurred in about 1 per cent. of cases of *x*-ray dermatitis. The condition he described as a very definite clinical entity and he thought it was due to the absorption of toxins from the degenerated tissue. If it occurs in 1 per cent. of cases, I ought to have seen it several times. When the statement appeared I reviewed my own cases with that point in my mind and I have had it in mind since, and it has positively never occurred to me.

Dr. Edsall states further: "I have the records of three cases in which, after one exposure, there was a reaction so severe as to make the patient profoundly ill, and in two of these cases death occurred, while the third patient had a narrow escape." He indicates that at least "in one of these cases it was clinically not clearly evident that the *x*-ray exposure produced the severe illness," but he does not report the cases in detail. These cases are incomprehensible to me. In view of the absence of such cases from the literature, in spite of the fact that almost every conceivable accident from *x*-rays has been recorded, and with my personal experience, I can not believe that the results were more than a *post hoc*. It is inconceivable to my mind that any exposure which is safe as regards danger of producing a burn could have such general effects. In this connection reference may be made to the effect of *x*-rays in producing sterility. This result may undoubtedly be produced, but I would call attention to the fact that according to my experience the danger has been greatly exaggerated. I have records of seven women who had numerous *x*-ray exposures previous to or during pregnancy. Some of these patients had as many as 100 exposures. They were all given before this danger was recognized and no special care was taken to protect the ovaries, although they were not directly exposed. These seven patients have all had children within 18 months after stopping *x*-ray exposures.

In the foregoing my wish has not been to minimize the real dangers from the use of *x*-rays. I am keenly alive to the dreadful accidents which may happen from their careless use, but I would maintain as strongly as I know how that the dangers which we have to fear are those arising from burns, and that if we stay within the bounds of safety as regards burns the other dangers can practically be neglected.

WILLIAM ALLEN PUSEY.

America's Neglect of the Nobel Prizes.

WAKEFIELD, NEB., Oct. 29, 1906.

To the Editor:—Referring to your editorial of April 15, 1905, on "Our attitude toward the Nobel prizes," I would like to ask if any effort has as yet been made to secure any of these prizes for American work?

Believing that the expression of jealousy in the news columns of THE JOURNAL, Dec. 25, 1905, page 1966, shows plainly the existence of misconception or lack of knowledge regarding the method of awarding these prizes, I reproduce the following authoritative description of the "Nobel Foundation" under which name this prize-awarding institution is officially known.[1]

"Alfred Nobel bequeathed nearly the whole of his fortune (more than 30 million kronor) to a fund, the interest of which

1. "Sweden, Its People and Its Industry." Historical and statistical handbook. Published by order of the government. Edited by Gustav Sandbörg, First Actuary of the Royal Swedish Bureau of Statistics, Stockholm. Government Printing Office.

shall be annually paid out to those who during the immediate past 'have conferred the greatest benefit on mankind' in certain lines. The interest is to be divided into five equal parts to be allotted as follows: 'One part to the person who shall have made the greatest discovery or invention in the domain of *physics*; one part to the person who shall have made the most important *chemical* discovery or improvement; one part to the person who shall have made the most important discovery in the domain of physiology or *medicine*; one part to the person who shall have produced in the field of *literature* the most distinguished work of an idealistic tendency; and one part to the person who shall have most or best promoted the *fraternity of nations* and the abolition or diminution of standing armies, and the formation and propagation of peace congresses.' The prizes in physics and chemistry are awarded by the Academy of Sciences in Stockholm; in physiology and medicine, by the Caroline Institute in Stockholm; in literature by the Swedish Academy in Stockholm; and for the work of peace by a committee of five persons nominated by the Norwegian Storthing.

"The statutes of the Nobel Foundation, as also special rules concerning the distribution of the prizes, were ratified by the government on June 20, 1900. In accordance with these, the four above mentioned institutions, as distributors of the prizes, shall appoint, for two years at a time, fifteen delegates, the Academy of Sciences electing six, the other awarding bodies each electing three. The delegates, with whom decision rests concerning reports of audit, for two years running appoint four members of the board of the foundation, who shall meet in Stockholm and consist of Swedes; a fifth member, who is chairman of the board, is nominated by government. The board, which from its members shall elect a managing director, administers the funds and other moneys of the foundation, as also other property belonging to the foundation in so far as it is common to the prize-groups. For every Swedish prize-group the due authorities who are to distribute the prizes nominate a so-called Nobel Committee, consisting of three or five persons, who are to give their opinion anent the distribution of the prize. The corresponding deliberations anent the distribution of the peace prize shall be undertaken by the Nobel committee appointed by the Storthing. To be chosen member of a Swedish Nobel Committee, it is not necessary to be a Swedish subject, or that the individual elected be a member of the special institution distributing the prize. In the Norwegian Nobel Committee other than Norwegians may also be members. Where so deemed necessary, the distributors may appoint an expert or specialist to take part as a member in a committee.

"As aids in the necessary preliminaries, as also otherwise to advance the objects of the foundation, the authorities who have to distribute the prizes may establish scientific institutions and other organizations, which shall be called Nobel Institutes. Foreigners, male or female, may be appointed at these institutes. Should the distributors of the prizes consider it advisable, the Nobel Institutes shall all be within the same precincts and similarly organized. The prizes are distributed annually (for the first time in 1901) on the high-day of the foundation, i. e., December 10 (the anniversary of the testator's death).

"To become a candidate for one of these prizes, it is necessary to be proposed in writing by a person competent thereto. (Applications for receiving a prize made by the author himself are not considered.) The right of proposing a candidate for a prize is held both by Swedish and foreign champions of culture in accordance with minute instructions issued by the corporations charged with adjusting the prizes. The proposal of a candidate should be accompanied by those works and other documents that are cited. The prize receiver, if possible, within six months of being awarded the prize on December 10, shall in Stockholm (as regards the prize for peace, in Christiania) give a public lecture on the work having gained the prize. No work shall be given a prize, unless by experience or expert examination it be deemed of such pre-eminent importance as is plainly indicated by the will. Should no work under consideration be deemed worthy of the prize, the money shall be reserved to the following year. As regards what is to be done, if the prize can not then be awarded, see below. Within each prize-group, however, the prize must be awarded at least once in every five-year period. The amount of a prize can be divided between two works. If two or more persons have together produced a work to which a prize is awarded, the prize is given to all participants in common. Every awarding body has a right to decide the respective prize to be conferred also to institutions and associations. From the funds of the donation, at the commencement of its activity, a sufficient sum for premises for the due administration of the foundation is taken, as also for each group of prizes the sum of 300,000 kronor, for the expenses of organizing the Nobel Institutes. From the annual proceeds of the main fund, a tenth part shall be added to the capital; of the remainder, each group shall dispose of one-fifth. The sum will, of course, vary according to rate of interest, etc. At present, each prize-group will annually dispose of an amount of nearly 200,000 kronor. One-fourth of this sum will be set aside for the immediate expenses of awarding the prizes and for the Nobel Institute for the group in question. Thus for each of the five prizes there will be about 140,000 or 150,000 kronor (from $37,000 to $40,000). If a prize can not be awarded for two years consecutively (see above) the amount of the prize shall be added to the main fund. Three-fourths of those taking part in the decision may, however, determine that the sum shall instead be set aside as a special fund for the prize-group in question. The proceeds of such a fund may be used—otherwise than as prizes—to advance those objects ultimately aimed at by the testator."

From the above it is plainly seen that the prize-awarding institutions do not themselves exercise any initiatory action, but merely distribute the prizes to those, who among the duly proposed candidates are, in their opinion, the most worthy.

It seems that by these regulations justice and fairness in the administration of the vast funds and the awarding of the magnificent prizes, which are truly of "an unprecedented magnitude," are most admirably assured. The prize-awarding bodies stand above reproach. In looking over the list of those who have so far been honored with prizes, one is struck by the evident and notable impartiality as regards the nationality of the recipients. The only reason why an American has so far not become a recipient of a prize is probably that no American has as yet been proposed in due form. And until steps are taken duly to present our candidates to the prize-awarding institutions, we can not justly complain, that "the trustees in charge of the awarding of the prizes do not seem to be aware that there is such a continent as America on the globe."

A. E. ENGZELIUS,
Vice Consul of Norway.

The Migratory Needle Story.

MESCALERO, N. M., Nov. 24, 1906.

To the Editor:—In response to the editorial in THE JOURNAL, Nov. 17, 1906, urging that cases presenting the phenomena of migration be reported, the following report is made:

E. S., German, blacksmith, presented himself at my office, April 18, 1906, and showed me a pea-sized tumor on the upper outer aspect of the metacarpophalangeal articulation of the index finger of the right hand. The tumor was slightly tender on pressure, easily movable, and had a hard, gristly feel. He gave as a history that 14 years ago, while working over his anvil a small piece of his hammer flew off and embedded itself in the right side of his neck just under the angle of the jaw. From his description of the bleeding, evidently an artery was severed. It required the services of two physicians and several hours' time to arrest the hemorrhage which must have been deeply situated, as a large scar, caused by the work of the doctors, remains. The piece of steel could not be found. He stated that he believed the tumor on his hand contained that piece of steel and it was curiosity that caused him to come in. On cutting down on the tumor it was found to contain a small piece of steel, about the size and shape of the head of a four-penny cut nail. It was enclosed in a tough capsule, which came out with it.

While this man is an iron worker and is constantly exposed to injuries in which a small piece of metal might penetrate the

skin of his hands, he stated positively that nothing of the kind had occurred to his knowledge. The migration of the piece of steel in this instance can be very easily accounted for by considering that it was transported within the arteries. In the first instance it must have penetrated the facial artery just above the point where it is given off from the external carotid, or else entered directly into the external carotid itself. In either case, the facial artery being nearly vertical at this point, it could have sunk by its sheer weight, against the blood current, down the external carotid and common carotid to the innominate, whence, the subclavian opening out almost horizontally, it could have been swept by the blood current into that artery, thence down the arm through the axillary, brachial and radial and finally entered the dorsalis indicis in which it was carried until the lumen of the vessel became too small for it to go further. Then by the *vis a tergo* and muscular action of the hand, it worked out of the artery and formed the tumor under the skin. The patient said he had noticed it only two or three days before requesting its removal.

IRVING MCNEIL, M.D.

DEKALB, ILL., Nov. 22, 1906.

To the Editor:—Your article on the "Migratory Needle" has just been noted. In one case, to my positive knowledge, a needle lay within the pericardial membrane and parallel to the heart, in a slaughtered beef. I had the specimen in my office for years. In another case the needle had transfixed the apex of the heart of a chicken, which, when killed, showed no sign of interference with the heart or the condition of the fowl. Nearly one-half the length of the needle had passed transversely through the apex of the heart. Reference can be given to those who made the discovery. In both instances the needles had doubtless been swallowed and had penetrated the tissues until they occupied the position as found.

J. M. POSTLE, M.D.

Biographical Cyclopedia of Medical Men.

BALTIMORE, Nov. 28, 1906.

To the Editor:—I am at present engaged in a piece of work which must be a matter of profound interest to every practitioner in the country, and for this reason I turn to THE JOURNAL to secure the coöperation of its readers.

I am preparing a Cyclopedia of American Medical Biography of the worthies who have passed away in this country and in Canada from the earliest times down to the present, including such living practitioners as have retired from active service.

The Cyclopedia will be issued in several volumes, the names being given in alphabetical order. I shall have the coöperation of some of the best men in the country, men who have already made a reputation as students of medical history.

I want in this work to give a full account of the lives, something of the personalities of the medical or surgical activities, and of the writings of all our leading men. I want also to include a brief sketch of the lives of men who have been very prominent in their own locality without, however, having been widely known as writers or original investigators. There are a number of men who have powerfully influenced the trend of medical and surgical thought who have never put a pen to paper to put their work before the profession.

In prosecuting this work, I shall have the aid of men who will take up the country by states, as well as those who will take up the various specialists. I want, in order to further my aim, to get hold of all the biographies that I can lay hands on which have been published in medical journals or elsewhere. I want also photographs, or photographs of pictures of these men.

It is for this reason I write to you, to ask the profession at large, to send me names, personal communications or biographies which they may have on their shelves and can spare, or medical journals with references to biographies. I shall appreciate as a special personal favor any such communications.

The work will take two, perhaps three years, to complete. I will write later and give you the names of my collaborators, and ask for suggestions as to certain neighborhoods which may prove difficult to cover in this way. I will, also, at a still later date, publish a list of the names to be included in the biography, asking for further suggestions, that I may fill in all the gaps. The work is an ambitious one and is to be more elaborate than any which has yet appeared. I purpose to make the biographies anywhere from 10 or 15 lines up to as many pages; in the latter case using freely such biographies as Thacher's published in 1828. I shall be glad if any who are willing to help in this matter will write directly to me at 1418 Eutaw Place, Baltimore.

HOWARD A. KELLY.

Professional Loyalty.

SULLIVAN, MO., Nov. 17, 1906.

To the Editor:—About six months ago Dr. J. P. Dunigan of this place was sued for $30,000 damages for alleged failure to replace a dislocated hip. Trial was postponed once, and last week plaintiff took change of venue to Steelville, where the case will be called probably next month. Every physician in the county, including those subpoenaed by plaintiff, was on the side of the defendant, which caused the following remark from plaintiff's lawyer: This is the first and only place we have ever seen or heard of where all the doctors "stick" together.

O. N. SCHUDDE, M.D.

[The progress of organization in this country is having excellent results in the elimination of jealousy and strife among physicians, and the above is only one example of this fact. Often in the past it has been common for a physician to testify against another, against whom a malpractice suit had been started, even when facts had to be juggled to enable him to do so. Happily, such conditions are now becoming more rare.—ED.]

Cleansing Blood Pipettes.

TOLEDO, OHIO, Nov. 29, 1906.

To the Editor:—In your last issue I read Dr. Benmosche's article describing the use of a camera bulb to cleanse blood pipettes. It may be of some interest to readers of THE JOURNAL to know that an ordinary rubber ear syringe will be more satisfactory for this purpose, and for many it is more easily obtainable. For some time I have been using one for the same purposes as described by Dr. Benmosche and have found that the end of the pipette fits into the rubber "tit" of the bulb ear syringe better, and with less likelihood of leakage of air and fluid, than with any other bulb I have used.

GEORGE H. JONES.

Medical Legislation

Endorses National Health Department and Insurance Fee Campaign.—The Ohio Valley Medical Society has unanimously adopted the following resolutions:

WHEREAS, The search after knowledge, largely among medical men, has, in recent years, brought to light many valuable truths relative to the prevention and cure of disease and the relief of suffering, making it incumbent on the medical profession to provide for the well-being of society, both in time of peace and war; and

WHEREAS, In caring for the soldiers of the United States and protecting the citizens at home from contagious and infectious diseases, during the late Spanish-American War, our experience demonstrated that the medical departments of the Army and of the Navy were handicapped in the great work in hand by superior officers, not that they were opposed to the ideas of the medical department, but that they were either indifferent or did not realize the importance of the undertaking; and

WHEREAS, The American Medical Association has a National Legislative Council, of which Dr. Charles A. L. Reed, Cincinnati, is chairman; now be it

Resolved, That the Ohio Valley Medical Society, in council assembled, endorses the action taken by the National Legislative Council at its session held in the city of Washington, in January last, on the following subjects:

(*a*) The question of a Department of Public Health, with a representative in the Cabinet of the President of the United States.

(*b*) The Army and Navy Reorganization Bill, and such other bills as may present themselves to the National Legislative Body. And be it further

Resolved, That we heartily endorse the action taken by the Kentucky State Medical Association at its meeting in Owensboro, and by other state organizations, and hereby pledge ourselves to resist the efforts of insurance companies to lower the fee for medical examinations, and we pledge our support to the International Policy Holders' Association.

C. Z. AUD,
Member of the National Legislative Council for Kentucky.

Book Notices

FIRST REPORT OF THE CLINIC FOR THE TREATMENT OF COMMUNICABLE PULMONARY DISEASES. Department of Health, City of New York. Thomas Darlington, M.D., Commissioner of Health, and John S. Billings, Jr., M.D., Director. Cloth. Pp. 46.

This report, by Dr. John S. Billings, Jr., is a book of 46 pages, giving the history and arrangements of the clinic as well as the results for the period from its establishment in March 1, 1904, to Jan. 1, 1906. New York was one of the first cities to require reports of tuberculous cases. This was done as regards public institutions in 1894 and in 1895 free examinations of sputum were begun; in that year 511 specimens were examined, while 10 years later, during 1905, 18,639 were examined. A special corps of medical inspectors was organized to visit all patients not under the care of private physicians, at their homes, and to order the disinfection of premises vacated by consumptives. A corps of nurses was provided to visit all living cases requiring such supervision; a municipal sanatorium was opened and finally the municipal clinic was established.

The principal services rendered by such a clinic are: Early diagnosis, intelligent supervision of patients under treatment, continued observation of them at their homes, removal of patients requiring such care to hospitals or sanatoria, provision of an institution to which patients with tuberculosis can be referred, the extension and strengthening of the sanitary control of tuberculosis among the poor by the board of health, and the care of laryngeal cases. *X*-ray examinations and treatment, and laryngeal examinations and treatment are given to suitable cases. Exact directions regarding diet and medicines are given, and the patients are carefully instructed in the care of sputum and other hygienic measures. Milk and eggs are supplied to needy patients through the New York Diet Kitchen Association. From 700 to 1,000 quarts of milk a week are furnished to patients ill with tuberculosis. If the disease is incipient, patients are urged to enter a sanatorium. When patients do not improve, or when it is a hardship for the family to support them, or when the home surroundings are insanitary, or when the patient can not or will not observe the necessary precautions regarding care of the expectoration, they are removed to a hospital.

The number of new cases during the 10 months of 1904 was 2,639, and during the corresponding 10 months of 1905, 3,354. During the whole of 1905 it was 3,815. The majority were foreign-born, but of 1,064 foreign-born only 65 contracted the disease before their arrival in this country. The fact that Russian Jews furnished the largest number of foreign-born tuberculosis patients is probably to be explained by the fact that the tuberculosis propaganda has been very actively carried on among these people. In almost half the cases a diagnosis of pulmonary tuberculosis was made in the absence of tubercle bacilli in the sputum.

Extraordinary care is taken to prevent the spread of the disease in the clinic. The floors, woodwork and furniture are washed daily, and the rooms are disinfected by fumigation with formaldehyd once a week. Thermometers are kept in a solution of carbolic acid and all diagnostic instruments are wiped daily with a similar solution. Physicians' gowns are disinfected once a week.

In conclusion the author expresses the opinion that, while it is difficult to judge of the part played by a single factor in the fight against tuberculosis, the results obtained by this institution are satisfactory and encourage the establishment of similar institutions elsewhere and the continuance of the good work.

A MANUAL OF MEDICAL TREATMENT OR CLINICAL THERAPEUTICS. By I. B. Yeo, M.D., F.R.C.P., Emeritus Professor of Medicine in King's College, London. Fourteenth Edition. Twenty-second Thousand. Vol. I-II. Cloth. Pp. 696 and 818. Price, $5.00 net. Chicago: W. T. Keener & Co., 1906.

This is a revised edition of the author's well-known work with the formulas adapted to the standard of strength of preparations employed in America by Prof. Oscar Oldberg. The work is in two volumes and covers the field of internal medicine from the standpoint of treatment to which the consideration of symptomatology and pathology is made subsidiary. The work is eminently practical and, while from its peculiar plan it can not be regarded as a complete treatise on medicine, it covers a field of the greatest importance to the practitioner. The most evident lack incident to this construction of the work is the neglect of diagnosis which must be regarded as of an importance to the medical man, equal to that of treatment. The subject is conservatively handled and there is no inconsiderate recommendation of untried measures, although this necessitates the occasional absence of reference to modern methods that are of real value. In some cases the various measures are described without apparent attempt to decide between the various plans of treatment, but in many cases a critical judgment is expressed. About half of the first volume is concerned with diseases of the digestive tract. Diseases of the mouth receive due attention but strange to say the teeth and gums are not mentioned. Interstitial gingivitis is perhaps the most frequent disease affecting the mouth of adults and deserving of the serious attention of the physician, but it is not mentioned. The treatment of diseases of the stomach is fairly satisfactory but betrays indications of the inexactness which characterized the study of gastric diseases before the diagnostic use of the stomach tube. Hyperchlorhydria, which affects probably the majority of patients seeking relief from stomach symptoms, is not mentioned as a separate affection. The same is true of gastroptosis unless it be included under dilatation of the stomach. The section on gastrointestinal affections is followed by that on the heart and here we find less to criticise. The cardiac tonics are treated with discrimination, the preference being given to digitalis, the use of which is carefully described. In typhoid fever the author advocates antiseptics giving the preference to his quinin-chlorin mixture. He is favorable to the use of hexamethylenamin (urotropin) to prevent bacilluria, but warns that he has seen it produce considerable bladder irritation and hence does not advise its continuance for as long a time as some have proposed. The treatment advised in the text is supplemented by appending to each chapter a number of prescriptions culled from the works of various authors giving completeness and breadth of view to the subject. On the whole the work gives promise of continuance of the great usefulness to which its wide circulation and repeated editions bear witness.

INFLUENCE OF THE MENSTRUAL FUNCTION ON CERTAIN DISEASES OF THE SKIN. By L. D. BULKLEY, A.M., M.D. Cloth. Pp. 108. Price, $1.00. New York: Rebman Co., 1906.

This work, the author states, is the result of over 10 years' observation and investigation. He considers the influence on skin lesions of each recurrent menstrual period and analyzes a number of cases. He declares that menstruation is only the culmination of "cyclic changes" in the system, and enumerates the changes in the urea, temperature and weight, thyroid and blood, as well as the nervous manifestations shown by many individuals. In regard to eczema, he states that the influence of menstruation is so great that he has kept a special record of these cases. He notes the most plausible theories, namely: 1, The cyclical changes in the general system; 2, autointoxication of genital origin; 3, nervous reflex irritation from congested condition of the uterus and ovaries. In the treatment, he says, all these theories must be taken into consideration. The book is practical and interesting, dealing as it does with a condition which is annoying to many women, but which is given too little attention by the average practitioner.

TOXICOLOGY. The Nature, Effects and Detection of Poisons, with the Diagnosis and Treatment of Poisoning. By C. M. Riley, M.D., Professor of Chemistry and Toxicology in Barnes University, etc. Third Edition. Revised and Enlarged. Cloth. Pp. 215. Price, $1.50 net. Philadelphia: P. Blakiston's Son & Co., 1906.

This volume gives in the compass of about 200 pages the essentials of toxicology as far as the subject interests the ordinary student or practitioner of medicine. The analytic directions include the methods likely to be needed in making the preliminary tests of vomited matter, urine or feces in suspected cases of poisoning. The directions for treatment are clear and embrace the treatment of chronic cases as well as acute.

Insurance Fees and Lodge Practice

COMMITTEE ON INSURANCE.

Preliminary Report.

LETTER OF TRANSMITTAL.

ROCHESTER, MINN., Nov. 28, 1906.

To the Editor:—I have the honor to transmit herewith the unanimous report of the Committee on Insurance. It will be noted that with a single exception this committee is composed of men who have had the honor of being elected president of the American Medical Association; not one of them makes insurance examinations. Therefore, their action must be looked on at least as disinterested and taken with the sole purpose of guarding the rights and interests of the individual member and upholding the honor and dignity of the profession as a whole. The investigations have lasted for months, including conferences with the officers of the leading companies which inaugurated the changes on which the complaints were based, and have been careful, thorough and impartial.

As the report shows, it is the opinion of all of us that the action of the companies was not only unwise, uncalled-for and unjust, but that the statement that it was made necessary by recent legislative acts in New York is not true. The New York Life, the original sinner in this movement against the profession, reduced the fees eleven years ago, and the Mutual and Equitable followed this bad example long before this legislation was passed.

Attention should be called, incidentally, to the fact that the New York Life Insurance Company has now reduced its fee to $2.50 in some localities, a reduction so small that it can only be construed as a direct insult to the medical profession. The fact that the Manhattan Company, one of the best managed of the New York companies, continues to pay a flat fee of $5, and informs me that they will continue to do so, is sufficient to refute the statement of the other New York companies. The Phoenix and the Commonwealth companies, which reduced the fee to $3, are now paying the $5 rate, and they, too, tell me that they shall continue to pay this rate.

I append a list of companies which pay a flat fee of $5 and whose officers assure me in recent letters that there is ample margin from their income to continue to do so. All, or nearly all, of these companies do business in New York, and all of them have not only dealt justly with their medical examiners, but have so managed all of their affairs as to escape scandalous charges. I am confident that the fee can be restored if the profession everywhere will act unitedly, promptly and conservatively.

Members of the committee were assured that some of the companies would be glad to restore the fee if the profession would unite in requesting it, and, in transmitting the report, I have no hesitation in urging county and state societies everywhere to take prompt action with this end in view.

We urge, however, that the will of the majority be not made a test of membership, but that kindness, forbearance and moral suasion be substituted for the old spirit of ostracism and exclusion.

W. J. MAYO, President, American Medical Association.

THE REPORT.

To the Medical Profession of the United States:—At the Boston session of the American Medical Association the undersigned were appointed as a committee to investigate and to report on the insurance-examination question. We were instructed to confer with the insurance companies which had reduced the medical examination fee from $5 to $3 and, if possible, to induce them to return to the original fee. Nothing could be done during the summer, owing to the fact that representatives of the companies, as well as some members of the committee, were absent on their vacations, either in Europe or at other distant points.

At the earliest opportunity after the vacation the matter was taken up with representatives of the Equitable, the Mutual and the New York life insurance companies. The last company, it will be remembered, had reduced its fees eleven years ago, and its officers declined at first to meet us in our official capacity. When this technicality was brushed aside it was found that none of these companies would restore the fee unless all should agree to do so. The New York Life Insurance Company apparently blocked the concerted action, essential to a restoration of the fee to $5, and a compromise proposition, made by us, was also rejected. Therefore, our efforts to influence the companies to restore the fee to a just and proper one have failed.

We were also instructed to make known to the profession, through THE JOURNAL or otherwise, the results of the negotiations with the companies, and to advise what policy should be pursued in the event of failure to have the fee restored. In doing this the following facts should be stated:

First.—The reduction of fees was made by the companies without consultation with their examiners, either collectively or individually.

Second.—The companies insist that they be left to deal with individual physicians and not with the profession as a whole.

Third.—On the other hand, they themselves have practically agreed to stand together in maintaining the reduced, insufficient and, we believe, unjust fee.

Fourth.—The companies claim that physicians' fees were reduced on account of the legislation in New York. The facts do not warrant this statement. The fee was reduced by the New York Life eleven years before the present law in New York was thought of, and by the others before it was proposed. The recent action of the Manhattan, a New York company, restoring the fee to $5, only emphasizes the correctness of our position on this point.

Fifth.—We find that the so-called economic measures instituted by these insurance companies have apparently been chiefly in the medical department, and that the medical department was almost the only one which was not smirched by the past history of extravagance practiced by the officers of the companies.

Sixth.—We believe that the companies can and should continue to pay a minimum fee of $5 for medical examinations, which seems to us to be a reasonable and just remuneration.

These are the facts, and we refer the question to the county and state societies for such action as they may deem wise and proper. We urge, however, that the will of the majority be not made a test of membership, in accordance with the modern idea in the profession that kindness and moral suasion should be substituted for the old methods of ostracism and exclusion in all of our work.

J. H. MUSSER, Chairman,
JOHN A. WYETH,
WM. J. MAYO,
FRANK BILLINGS,
J. N. MCCORMACK.

A PARTIAL LIST OF COMPANIES PAYING THE FLAT FEE OF $5.00.

North Western Mutual Life Insurance Co., Milwaukee.
Mutual Benefit Life Insurance Co., Newark, N. J.
Connecticut Mutual Life Insurance Co., Hartford.
The Manhattan Life Insurance Co., New York.
Ætna Life Insurance Company, Hartford.
The Provident Life and Trust Company, Philadelphia.
Commonwealth Life Insurance Co., Louisville, Ky.
Boston Mutual Life Insurance Company, Boston.
Citizens Life Insurance Company, Louisville, Ky.
New England Mutual Life Insurance Company, Boston.
Massachusetts Mutual Life Co., Springfield, Mass.
National Life Insurance Co., Montpelier, Vt.
Pacific Mutual Life Insurance Company of California, Los Angeles.

Medical and Sanitary Geography of Turkey.—The Constantinople correspondent of the *Lancet* states that the Imperial School of Medicine in Contantinople is about to publish a book containing information regarding the internal conditions and natural features of the country such as the population, climate, rainy seasons, and other meteorologic incidents, endemic maladies, nature and peculiarities of the soil in various districts, lakes and rivers, thermal baths, medicinal springs, etc. This publication will be issued under the direct supervision and editorship of the authorities of the school. The facts will be supplied by the sanitary inspectors and the medical men throughout the country. The book will be illustrated and will contain several maps. Descriptions of certain methods of treatment and of hygiene and prophylactic measures used in different localities will also be noted.

Miscellany

A German View of Specialism.—In the *Münch. medizinische Wochenschrift*, June 19 and 26, 1906, Dr. H. Quincke, Kiel, contributes an interesting discussion on the subject of specialties in medicine. He points out that in a great measure the multiplication of medical specialties is the result of a public demand. What is wanted of a medical man nowadays is the fullest qualifications and with the growth of medical science and with the widening of our knowledge, it becomes more and more difficult to satisfy the public in this regard. The specialist seems to it like a man of higher rank in the profession, a person not of last, but of first resort. Naturally, certain departments of medicine fall into the hands of special praetitioners, such, for example, as major surgery, psychiatry, ophthalmology, the operations in ear disease and diseases of the urinary and genital organs. Besides these, however, there are a multitude of other specialties and Quincke makes a rather formidable classification of them as they seem to be recognizable under the several heads of: 1. Pathologic organ and system specialties which includes those generally recognized as such, surgery, ophthalmology, skin diseases, nervous disorders, etc. 2. Therapeutic specialties. 3. Specialties based on social and personal grounds, such as military surgeons, railroad physicians, corporation physicians, etc. 4. Specialties based on definite extra-medical demands such as medical jurisprudence, medical public officials, insurance examiners, etc. Under each of these categories he discusses their *raison d'être.* All these are independent of the purely research specialists, who may be instructed but are not generally at the public command as praetitioners except so far as they fall under one of the heads referred to above. Between these various types of specialists and the general practitioner there is every possible gradation, but the fuller the specialization, the more focused the abilities to special departments, the more limited and one-sided is the view taken of the specialty. At least such is the tendency. We may classify the specialists also into those who gradually and naturally drift into their special practice and those who take it up deliberately from the beginning, some from special interest in the subject, others to avoid the inconveniences and unpleasantness of general practice. Quincke remarks here that on the whole it takes less study, diligence and natural endowments to make a good specialist than a good practitioner, and yet with the public the specialist is the more highly rated man. The result of this multiplication of specialties and specialists is too often the fact that the patient regards himself as a bundle of special ailments and does not appreciate the necessity of his physician having a broad general view of the medical possibilities in his ease. Quincke also states that the tendency on the part of medical organizations to exclude specialists from general practice is in a measure to be deplored, as it widens the cleft already existing and seems to be the expression of a somewhat unjust leveling idea among physicians; he thinks that it is practicable only in case of the office speeialist like dentists, ophthalmologists and otologists. The question of who shall be regarded as specialists is diseussed at some length by Quincke, and he points out the objections and difficulties in the way of any standard that can be adopted. He doubts the propriety of insisting on absolute limitations as to practice by medical societies and the profession. The question as to instruction in different special departments in medicine is also discussed at some length, and the importance and effects of the various special clinics on general medical instruction are pointed out. There is a tendency, he thinks, in this splitting up of clinical instruction that is not altogether favorable to the best interests of the student and the production of the necessary all-round man. The nervous diseases (excluding psychiatry) and children's (not infants') diseases are specially quoted as instances of what ought not to be separated from the general field of internal medicine.

Relative Mitral Stenosis.—Dmitrenko is convinced that the presystolic, diastolic murmur occurs more frequently in case of mitral incompetency than is generally recognized, even in the absence of absolute stenosis of the left auriculo-ventricular opening. He describes the findings in a case presenting this murmur during life, and yet the mitral valve was found free from stenosis. The patient was a child of 6, and both sides of the heart were enlarged, the organ being twice the normal size, but the lumen of the left auriculo-ventrieular opening was not enlarged to correspond with the abnormal size of the left ventricle, although it was wider than normal. The dilatation of the left ventricle consequently induced a constant relative stenosis, which gave rise to an inorganic murmur of organic origin, if the paradoxical expression may be permitted. The difference of pressure between the two communicating cavities also hastened the blood stream. Various terms have been applied to this condition: spastic mitral stenosis, functional pseudostenosis and relative functional stenosis with aortic insufficiency and myocarditis, but as the same mechanism underlies these various conditions, Dmitrenko urges that they should all be classed as relative mitral stenosis to distinguish them from absolute stenosis. The distinction between organic and inorganic murmurs should be dropped, he says, as a murmur can develop only under certain physical conditions, and the latter can change only with changes in some organ or organs. The diastolic murmur in the case described was characteristic of excessive dilatation of the left ventricle. Dmitrenko's article is published in German in the *Allg. med. Ct.-Ztg.* for October 20.

A German Clergyman on Quacks.—The German popular magazine, *Der Deutsche,* contained in a recent issue an article by a elergyman, Pfarrer E. Grucker, describing the way in which he could follow the trail of certain quacks through many sick rooms in the various parishes he has had in his eharge. The people were not always convinced that the quack's prescription would help them, "but at least," they said, "if it don't help it will do no harm." In one instance leg ulcers were treated with a swallow's nest mixed with pigeon manure and oil, applied on a piece of uncleansed wool taken from between the legs of a living sheep. Felons were treated by tying an angleworm around the finger, "that the worm outside might kill the worm inside causing the trouble." The diagnosis was made by one popular irregular from an article of clothing brought from the sick person, for whom he then prescribed with confidence. Many of the strange, hoeus-pocus performances ordered by the quacks are described as Grucker had occasion to observe their execution. He adds: "But not only in the backwoods villages were the quacks found to be rampant. Even in the great cities there are many dark corners where fortune tellers and charlatans are lurking like spiders waiting for their prey." He dwells also on the pity of it that the poor should waste time and money on such practices while neglecting rational means of certain relief from duly qualified medical men.

Epilepsy of Reflex Origin.—Frey and Fuchs of Vienna presented a report on this subject at the Lisbon Congress which is republished in the *Archives Internat. de Laryngologie,* XXII. No. 2. They found in the literature 92 cases in which epilepsy was ascribed to some affection of the ear, nose or pharynx, and was presumably cured by correction or cure of the affections in question. In their own experience with 112 cases of epilepsy, 30 of the patients had some affection of the ear, nose or pharynx, but the epilepsy did not seem to be influenced by the local treatment except in a very few instances. On the whole, however, they conclude that persons with a predisposition for epilepsy may have this latent condition fanned to a flame by some affection of the nose, ear or throat or foreign body, possibly more readily than by any other peripheral irritation. Relief of the local affection does not cure the predisposition to epilepsy, but it removes the inciting cause and may thus be followed by great improvement. Statistics show that affections of the ear, nose and throat are more liable to induce convulsions in the predisposed than other peripheral irritations. Eynis reports in the *Vrach. Gaz.* this year a further list of cases from his own experience confirming the above conclusions. In one case frequent epileptiform seizures in a man of 50 vanished completely after removal of hardened wax from the ears.

Osler One of the Biggest in the Bunch.—In one of his recent syndicate letters in the Chicago *Record Herald*, Mr. W. E. Curtis, writing from Oxford, has this to say of Dr. Osler: Dr. Osler, who went over from Johns Hopkins last year, is a real "professor" and is recognized as one of the biggest in the bunch. He is regius professor of medicine in Christ Church College, succeeding the late Sir John Burden-Sanderson. The chair was founded by King Henry VIII. All chairs founded by him are known as "regius professorships." Dr. Osler, however, has charge of all the medical instruction at Oxford University and is giving public clinics at the Radclyffe Infirmary, which are attended regularly by every medical student, by the local surgeons, and by several students from the medical colleges in London, who come down especially to witness them. Several enthusiastic disciples have followed him over to Oxford from Johns Hopkins. He has been the hero of the year. He was given a splendid reception; was immediately made a member of everything worth belonging to, and was offered a share in everything that is good. Dr. Osler has just bought himself an attractive home at No. 13 Northam Gardens, on the outskirts of Oxford, and will be settled in a few weeks.

Deficient Provision for the Injured.—Like the insurance companies, railroads are niggardly with their surgeons. At a recent accident on the Pennsylvania Railroad at Paoli, Pa., where seven men were killed while sitting in their train at the station waiting for it to start, the company seemed not to have a physician between Philadelphia and Harrisburg available to send and sent out the command, "Call in the local doctors." To this behest the local doctors responded promptly, yet were never reimbursed for their work of caring for the injured, declared the *Medical Times*. If the Pennsylvania Railroad, which is regarded as the standard, is so niggardly, what of the other lines?

Pulmonary Gangrene Following Submersion.—A. Bergé (*Bull. et Mém. Soc. Méd.*, Paris, May 3, 1906), reports a case of pulmonary gangrene occurring in both lungs, one after the other, in a patient after submersion with suicidal intent, and calls attention to the possibility of septic germs thus penetrating the bronchioles. It is also necessary to consider, he thinks, that the methods employed in resuscitation, together with the shock, mental depression, etc., may have had their share in the production of the conditions. The interest of the case is mainly in its calling attention to this possible accident in persons resuscitated from drowning.

Association News

NEW MEMBERS.

List of new members of the American Medical Association for the month of November, 1906:

ALABAMA.

Cameron, M. B., Eutaw.
Cryer, G. A., Eclectic.
Gewin, Wm. C., Birmingham.
Harris, J. O., Jr., Childersburg.
Hughes, M. P., Gadsden.
Malloy, M. L., Eutaw.
Sugg, T. L., Ensley.
Waldrop, Wm., Bessemer.

ARKANSAS.

Connally, D. W., Rocky.
Southworth, R., Jr., Fayetteville.

CALIFORNIA.

Bush, Camillus, San Francisco.
Cohn, R. D., San Francisco.
Howitt, H. O., San Rafael.
Lewis, A. P., Sutter Creek.
Luton, G. R., Los Alamos.
Marvin, G. D., Agnew.
Muller, C. L., Nevada City.
Newman, Alfred, San Francisco.
Outlaw, J. S., Los Angeles.
Robertson, John, San Francisco.
Stirewalt, H. W., San Francisco.
Sunburnt, Walter, Florlston.
Surryhne, B. F., Modesto.
Thomas, V. C., San Francisco.

COLORADO.

Buck, Wm. E., Pueblo.
Carmody, T. E., Denver
Graves, C. H., Canyon City.
Guthrie, A. B., Denver.
Hurdman, A. G., Denver.
Olmsted, G. K., Denver.
Williams, B. T., Pueblo.

CONNECTICUT.

Isham, O. K., Hartford.
Mead, Kate C. H., Middletown.
Robinson, Joseph, West Cornwall.

DELAWARE.

Burton, H. R., Lewes.
Martin, J. M., Lewes.
Rumford, S. C., Wilmington.

DISTRICT OF COLUMBIA.

Dixon, T. B., Washington.
Egbert, E. H., Washington.

FLORIDA.

Heggie, N. M., Jacksonville.
Phillips, N. R., Graceville.
Powers, W. H., Ocala.

GEORGIA.

Block, E. B., Atlanta.
Mathews, A. J., Thomson.
Moncrieff, J. T., Columbus.
Moorman, Ivy W., Ambrose.
Taylor, N., Wesley.
Weaver, J. Calvin, Thomaston.

IDAHO.

Aspray, Joseph, Moscow.
Harris, F. T., Wallace.
McCalla, L. P., Bolse.
Quigley, F. L., Wardner.

ILLINOIS.

Alvarez, Manuel, Chicago.
Blair, J. W., Harvey.
Earnheart, E. G., Dongola.
Gernsey, H. N., Dover.
Hall, J. W., Chicago.
Hinckle, W. A., Peoria.
McElfresh, C. H., Springfield.
Metz, I. W., Springfield.
Nauth, D. F., Rockford.
Neer, I. E., Edinburg.
Nichols, H. J., Quincy.
Ogram, A. J., Jacksonville.
Sabin, F. A., Anna.
Sheller, W. O., Big Rock.
Toalson, J. J., Peoria.
Weld, J. C., Hospital.
Werner, A. W., Quincy.

INDIANA.

De Hass, T. W., Indianapolis.
Dobbins, A. O., Wheeler.
Graham, O. P., Jeffersonville.
Jobes, Norman E., Indianapolis.
Wood, N. S., Anderson.

INDIAN TERRITORY.

Grubbe, J. O., McAlester.
Madden, C. P., Okra.

IOWA.

Connolly, Wm., Cresco.
de Bey, Albert, Orange City.
Desmond, T. F., Webster City.
Dunkelberg, B. C., Tripoli.
Heles, J. B., Dubuque.
Hull, A. R., New Sharon.
Koch, G. W., Akron.
Jamison, O. P., Weldon.
Little, G. B., Burlington.
Magee, C. H., Burlington.
Mills, E. M., Le Grand.
Moorhead, G. C., Ida Grove.
Peterson, Emma H. S. Ottumwa.
Rogers, C. B., Earlville.
Smith, J. C., Woolstock.
Smith, R. X., Columbia.
Stillman, W. L., Anthon.
Stutsman, Carl, Burlington.
Thornber, A. J., Burlington.
Wall, C. D., Davenport.
Wilson, E. W., Rolfe.

KANSAS.

Breeding, W. R., Marysville.
Campbell, D. W., Atchison.
Cavanaugh, J. J., Walnut.
Johnson, F. T., Cottonwood Falls.
Johnson, W. N., Columbus.
Krugg, A. A., Coffeyville.
Liggett, G. S., Oswego.
Lowdermilk, R. Claude, Galena.
Marcotte, O. F., Clyde.
Masterson, Anna K., Kansas City
Mayer, H. M., Peabody.
McMullen, V., Burlington.
Miller, C. M., Oakley.
Payne, E. B., Ft. Scott.
Petty, C. N., Altamont.
Salisbury, H. T., Burlington.
Sheeler, D. W., Devon.
Smith, F. R., Little Rock.
Smith, N. M., Marion.
Staatz, J. H., Bushton.
Werthner, J., Marion.

KENTUCKY.

Allen, B. G., Somerset.
Broaddus, C. L., Wallonia.
Dink, J. R., Brandenburg.
Griffin, T. R., Somerset.
Means, R. M., Morganfield.

LOUISIANA.

Calhoun, J. C., Mansfield.
Halsey, J. T., New Orleans.
King, H. D., New Orleans.
Knoefel, A. Eugene, Jones.
Pettit, Absolom, New Orleans.
Willis, J. C., Shreveport.

MAINE.

Fickett, J. P., Naples.

MARYLAND.

Follis, R. H., Baltimore.
Harris, E., Cumberland.
Lazenby, Maurice, Baltimore.
O'Neill, F. P., Midland.

MASSACHUSETTS.

Burke, M. F., Natick.
Hayes, J. E., Chesterfield.

MICHIGAN.

Adams, A. W., Bellevue.
Black, D. K., Greenville.
Camelon, T. P., Detroit.
Davis, Clara M., Lansing.
Eades, H. A., Bay City.
Erwin, C. B., Hartland.
Ford, W. D., Detroit.
Garvin, W. C., Millington.
Lowrie, G. B., Detroit.
Scott, J. W., Sandusky.
Sigler, H. F., Pinckney.
Tomlinson, J. W., Deward.
Walker, R. J., Saugatuck.
Yarrington, C. W., Calumet.

MINNESOTA.

Anderson, W. S., Warren.
Burnap, W. L., Pelican Rapids.
Crewe, J. E., Rochester.
Fryberger, W. O., Minneapolis.
Gans, E. M., Eveleth.
Gilkinson, A. J., Osakis.
Law, A. A., Minneapolis.
Morehouse, G. G., Owatonna.
Nelson, L. A., St. Paul.
Schulze, George, Owatonna.
Soper, J. E., Norwood.
Stumm, T. W., St. Paul.

MISSISSIPPI.

Nangle, A. K., Abbott.
Vaughan, J. W., Potts Camp.

MISSOURI.

Bickel, J. T., Winston.
Billings, J. M., Lebanon.
Brown, D. T., Stahl.
Browne, H. H., Coudray.
Carryer, C. H., Unionville.
Carr, B. F., Polo.
Carson, G. W., St. Louis.
Clarke, W. J., Conway.
Charles, J. W., St. Louis.
Chastain, E. N., Butler.
Craig, L. B., Salem.
Ellery, Wm., Lagrange.
Elliott, W. H., Bunceton.
Ely, A. W., Monroe City.
Farnsworth, A. D., Drexel.
Fox, S. D., St. Louis.
Gardner, P. L., Waldron.
Geitz, H. A., St. Louis.
Greiner, Theodore, St. Louis.
Hume, J. Y., Armstrong.
Humphrey, B. F., Hurdland.
Johnson, E. H., St. Louis.
Levy, Aaron, St. Louis.
Lightfoot, Frank, Excelsior Springs.
McCall, T. D. S., Marionville.
McGlasson, F. F., Lewistown.
Mason, W. J., Waaubleau.
Montgomery, E. A., Unionville.
Ozias, C. O., Warrensburg.
Pierce, Don, Newark.
Roberts, J. C., Boynton.
Robertson, J. M., Bunceton.
Rothwell, J. H., Liberty.
Schulz, G. B., Cape Girardeau.
Sevier, R. E., Liberty.
Smith, E. S., Macon.
Spencer, H. N., St. Louis.
Stevenson, F. S., Aurora.
Stone, J. M., Laredo.
Taylor, J. T., Speed.
Thompson, W. S., Armstrong.
Tompkins, Junius, Canton.
Townsend, W. H., Maplewood.
Wilkens, J. A., St. Mary.
Winningham, W. H., Trenton.
Wiseman, L. P., Monticello.
Yater, J. M., Nevada.

MONTANA.

Anthony, T. B., San Coulee.
Bradley, E. I., Virginia City.
Rinehart, J. H., Billings.

NEBRASKA.

Brown, J. M., Friend.
Compton, A. N., Valentine.
Crosby, W. L., Beemer.
Foote, J. S., Omaha.
Hart, R. L., Amherst.
Jenison, A. J., Harvard.
Summers, H. S., West Point.

NEVADA.

West, C. W., Edgemont.
Ingham, S. D., Merchantville.
Sandy, W. C., Trenton.
Underwood, C. F., Newark.

NEW MEXICO.

Bessette, A. E., San Marcial.
Breeding, A. L., Texico.
Markoe, W. W., Fort Stanton.

NEW YORK.

Bastedo, W. A., New York City.
Betts, G. W., Pulaski.
Brady, William, Penn Yan.
Carroll, G. G., Rochester.

Cummins, T. J., Plattsburg.
Diehl, A. E., Buffalo.
Dow, E. L., New York City.
Godson, C. H., New York City.
Godfriend, N., New York City.
Hahn, Leopold, New York City.
Hinkley, Frank, Central Islip.
Houghton, G. H., Albany.
Ives, F. M., New York City.
Joslin, Edward, Whitehall.
Keyes, F. P., Brooklyn.
Loper, A. C., Greenport.
MacKenzie, S. S., Bolivar.
Mills, Adelaida, New York City.
Mooney, G. S., Yonkers.
Qua, Julia K., Amsterdam.
Stern, Maximilium, New York City.
Stetter, Dewitt, New York City.
Van Doren, G. B., Watertown.
Vaughan, H. S., New York City.
Walker, L. A., Rochester.
Wixson, R. H., Niagara Falls.

NORTH CAROLINA.

Ashworth, B. L., Marion.
Barrier, P. A., Mt. Pleasant.
Flippin, S. T., Siloam.
Harrell, S. N., Tarboro.
Linville, A. Y., Winston Salem.
Miles, May S., Greensboro.
Moseley, C. W., No. Wilkesboro.
Myers, J. A., Linwood.
Nalle, B. C., Charlotte.
Reid, R. M., Gastonia.
Taylor, W. S., Mt. Airy.
White, J. W., Wilkesboro.

NORTH DAKOTA.

Boardman, H. P., Oakes.

OHIO.

Bidwell, P. J., Toledo.
Burnham, R. D., Piqua.
Clisby, G. C., Kinsman.
Crotty, Nora, Cincinnati.
Dell, A. J., Middletown.
Englebry, F. E., Vermillion.
Furste, W. L., Cincinnati.
Evans, S. W., Cleveland.
Hausser, Gustav, Cincinnati.
Hawley, C. M., Painesville.
Ingersoll, A. J., Painesvile.
Jordan, A. B., Marblehead.
Keller, W. S., Cincinnati.
Learning, J. H., Vienna.
Lindsay, W. A., Amsterdam.
Marshall, W. C., Dayton.
Metz, J. A., E. Liverpool.
Michael, F. M., Eaton.
Noble, G. E., St. Marys.
Patterson, S. J., New Waterford.
Peppard, D. W., Mansfield.
Pomercne, H. P., Canton.
Root, H. L., Kinsman.
Rowe, J. W., Cincinnati.
Rust, E. G., Cleveland.
Simmons, S. E., Norwalk.
Smith, A. B., Springfield.
Smith, R. W., Spring Valley.
Taylor, W. S., Alliance.
Walte, F. C., Cleveland.
Werk, G. H., Cincinnati.
Wright, L. M., Brookfield.
Zopfi, W. J., Finuay.

OKLAHOMA.

Riley, J. W., Oklahoma City.

OREGON.

Locke, J. K., Portland.
Patterson, C. G., Baker City.

PENNSYLVANIA.

Baker, Jane R., Embreeville.
Bickel, E. F., Shamokin.
Campbell, W. L., New Castle.
Davies, W. R., Scranton.
Douglas, H. R., Newville.
Fletcher, W. W., Williamsport.
Hammer, A. W., Philadelphia.
Hill, C. C., Meadville.
Lathrop, H. B., Springville.
Levering, E. H., Stroudsburg.
Lippert, Frieda E., Philadelphia.
Loewenberg, S. A., Philadelphia.
Mackey, N. C., Waverly.
McConvill, W. T., Honesdale.
Noble, H. C., Waymart.
Spiro, Marcus, Allegheny.
Zeller, C. A., Dalton.

RHODE ISLAND.

Beale, S. M., Hope Valley.

SOUTH CAROLINA.

Coan, W. P., Spartanburg.
Darwin, J. T., Gaffney.
Guignard, J. B., Columbia.
Jackson, O. L. P., Union.
Jones, C. C., Greenville.
Salley, M. T., Orangeburg.
Sexton, W. G., Spartanburg.
Teague, J. H., Laurens.

SOUTH DAKOTA.

Deertz, J. J., Northville.
Sprecher, S., Tripp.
Walsh, J. M., Fort Pierre.

TENNESSEE.

Braun, W. T., Memphis.
Buford, G. G., Memphis.
Drake, C. M., Knoxville.
Drennan, G. T., Bell Buckle.
Fritts, J. S., Harriman.
Lockett, W. R., Knoxville.
Lovell, C. M., Dickson.
McSwain, J. H., Paris.
Newman, A. T., Jellico.
Roberts, J. M., Kingston.
Sanford, J. W., Ripley.

TEXAS.

Blallock, H. F., McGregor.
Burnside, S. H., Wichita Falls.
Hudson, Samuel B., Sanderson.
McMullen, Oscar S., Goliad.
Noster, Alfred H., New Braunfels.
Pollock, A. S., Big Sandy.
Reeves, J. W., Athens.
Stout B. F., San Antonio.
Taylor, G. A., Bettie.
Whiteside, Robert Brown, Durango.
Wilkes, William O., Waco.
Wood, W. E., Elgin.

UTAH.

Flood, Thos. A., Gold Springs.

VIRGINIA.

Carr, Geo. H., Portsmouth.
Hicks, R. I., Warrenton.
Miles, H. M., Wise.

WASHINGTON.

Balabanoff, I. P., Tacoma.
Gunning, J. M., Harrington.
Hartt, S. W., Port Angeles.
Hein, Ernst T., Palouse.
Newman, W. M., Spokane.
Smith, Geo. B., Anacort s.
Wiger, N. N., Seattle.

WEST VIRGINIA.

Banks, McRoe C., Raleigh.
Thomas, W. N., Monongah.
Sutherland, J. H., St. Albans.
Talbott, W. E., Harrisville.

WISCONSIN.

Andrews, Nell, Jr., Oshkosh.
Betz, Jonathan C., Boscobel.
Erlanger, Joseph, Madison.
Lewis, G. A., Tunnel City.
Werner, R. F., Eau Claire.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish name or address will be faithfully observed.

LESSONS IN POLISH.

BUFFALO, N. Y., Nov. 25, 1906.

To the Editor:—In last week's issue a correspondent requests information concerning aids to learning Polish. Permit me to call attention to Holtze's "English-Polish Conversation Book," $1.10, and Holtze s "English-Polish and Polish-English Pocket Vocabulary," $2.20 (half morocco), both sold by Koelling & Klappenbach, 106 Randolph St., Chicago. They also sell several other works, in German, on Polish grammar and conversation. The two abovementioned are also obtainable in German. This firm advertises several hundred English and German grammars, dictionaries, and guides to conversation in many languages, including all the tongues of modern Europe, and even Chinese, Japanese, Native African, etc. Their catalog is sent gratis. O. R. E.

RENGO FOR OBESITY.

PHILADELPHIA, Nov. 21, 1906.

To the Editor:—I enclose, herewith, a sample of an obesity cure, known as "Rengo," and I am writing to ask if you know anything about this preparation. I have a particular interest in ascertaining just what its action may be, as I learned that a person who is very near to me has been taking it without my knowledge, and I am anxious to know whether or not it is of any value in obesity and if it is dangerous. E. C.

ANSWER.—The composition of this nostrum was given in THE JOURNAL, Nov. 17, 1906, page 1628, in the paper by Dr. L. F. Kebler, entitled "Nostrums and Fraudulent Methods of Exploitation."

THE CONTAGIOUSNESS OF DIPHTHERIA.

CLARENDON, ARK., Nov. 21, 1906.

To the Editor:—A peculiar condition exists here concerning which I would like the comment of THE JOURNAL. This is a town of 4,000 population in which there has never been a case of diphtheria diagnosed; nor is there at present any epidemic in its vicinity. On November 6 a child of 2 or 3 years began complaining with the symptoms of croup. It was up during the day, but had croupy spells at night. A physician saw it, November 9 or 10. The condition continued much the same, and the child looked well Monday, November 12. Another physician was called in about this time and a suspicion of diphtheria was entertained, but no exclusion from the sick room was instituted. On the morning of November 14 an injection of antitoxin was given. At about 3 p. m. the same day another physician saw the patient in consultation and pronounced the case to be one of follicular tonsillitis, pharyngitis, laryngitis and pneumonia. He could see no membrane. The child died at about 4 p. m. the same day. A smear from the throat was sent to a bacteriologist, whose report received November 16 confirmed the diagnosis of diphtheria. On November 17 a quarantine was ordered and those of the children that had been directly exposed were ordered to be immunized with antitoxin. Since the incubation period for diphtheria is 2 to 7 days, oftenest 2, how can we reconcile this diagnosis with the exposures and yet no other cases? The room was frequented by adults and children from the beginning of the case to the time of death. The home has 10 or 12 boarders. After the antitoxin was given several children were permitted to kiss the child. As the injection of the serum was not begun until November 17 the children had from 3 to 11 days as an incubation period and none over 15 were injected. It is now November 21 and no cases have occurred, and we are to have another week of quarantine. Is it possible to believe it was diphtheria in spite of the bacteriologic diagnosis? Is there need of a quarantine after the incubation period of 7 days has elapsed since the last possible exposure, unless a new case should develop? A. H. GILBRECH, M.D.

ANSWER.—In the above case the bacteriologic findings from the child's throat, and the clinical history of the case, though brief and imperfect—the pulse and temperature are not even mentioned—lead us to believe the disease in question to be laryngeal diphtheria, resulting, as is often the case, in bronchopneumonia and death. In the beginning of the attack there were "symptoms of croup." The patient grew worse, and, after a period of 11 days, died. On the day of death, it is stated, there was found present: "follicular tonsillitis, pharyngitis, laryngitis and pneumonia." No membrane was seen. Membrane may be present in the larynx and at the same time absent in the pharynx. Antitoxin administered 3 days previous to the time of the examination may have had some influence in removing membrane from the pharynx, if any had formed there. To the clinical evidence there was added the further evidence of the presence in the throat of the diphtheria bacilli. It would be unwise to disregard this evidence. A case of croup, the exciting cause of which is in dispute, growing worse for 11 days, terminating in pneumonia and death, with the diphtheria and bacilli present in the throat, is most likely to be laryngeal diphtheria. It is safe practice to treat all cases of croup as of diphtheritic origin until proved otherwise. An early positive diagnosis can not be made without the use of the microscope. Even a late positive diagnosis can not be made, in many cases, without the aid of the microscope. We should not pretend to make a diagnosis in the acute anginas of the throat without the evidence obtainable by the use of the microscope. The lives of our patients depend on an early diagnosis in cases of diphtheria. The fact that diphtheria is neither endemic nor epidemic in Clarendon, and the further fact that a number of persons who were exposed escaped the disease can be placed against the opinion that the case was diphtheria for what these facts are worth. Clarendon's immunity from diphtheria can easily be broken. Diphtheria germs can find their way to remote parts of the country and be introduced into the houses on fruit, vegetables, groceries and various articles received for use. And then there is the traveler who may be convalescent from diphtheria, but still spitting infection from his throat somewhere to be a menace to someone. Some-

one from Clarendon at some time will visit an infected locality. Because none who were exposed fell victims to the disease does not disprove diphtheria, though we would expect some would contract diphtheria after such an exposure. On the other hand, one member of a family may be sick with diphtheria and all others escape, though living in the same house and constantly exposed. Quarantine, after the premises and persons in the house have been disinfected, need not be kept up longer than the incubative period. Eight days can be regarded as a maximum period for isolation of those exposed to diphtheria. Inasmuch as the diphtheria bacilli may sometimes remain in healthy throats without producing diphtheria, the more scientific and accurate way of terminating a quarantine is to make two or three microscopic examinations of cultures from the throat in two or three consecutive days. The absence of diphtheria bacilli at these examinations should terminate the restrictions.

The Public Service

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service during the week ended November 30, 1906:

SMALLPOX—UNITED STATES.

Georgia: Augusta, Nov. 13-19, 9 cases.
Illinois: Galesburg, Nov. 11-17, 16 cases.
Indiana: South Bend, Nov. 11-17, 6 cases
Missouri: St. Louis, Nov. 11-17, 1 case.
Louisiana: New Orleans, Nov. 11-17, 4 cases.
New York: New York, Nov. 11-17, 1 case.
North Carolina: Greensboro, Nov. 11-17, 3 cases.
Oregon: State, Oct. 1-31, 7 cases.
South Carolina: Greenville, Nov. 11-17, 1 case.
Utah: State, Oct. 1-31, 33 cases.
Wisconsin: Appleton, Nov. 11-17, 1 case; Milwaukee, 2 cases.

SMALLPOX—FOREIGN.

Africa: Cape Town, Oct. 7-13, 4 cases.
Austria: Bohemia, Oct. 12-18, 8 cases; Bukowina, Sept. 30-Oct. 6, 1 case; Galicia, Sept. 30-Oct. 20, 28 cases.
Brazil: Bahia, Oct. 7-27, 15 cases, 1 death; Rio de Janeiro, Oct. 15-21, 4 cases.
Chile: Antofagasta, Oct. 14-24, 5 cases; Coquimbo, Oct. 11-21, 27 cases, 2 deaths.
Egypt: General, June 4-July 1, 14 cases, 20 deaths.
Great Britain: Manchester, Oct. 27-Nov. 3, 3 cases.
India: Calcutta, Oct. 14-20, 1 death; Madras, Oct. 6-26, 1 death.
Italy: General, Nov. 2-8, 3 cases.
Peru: Lima, Oct. 21-27, present.
Russia: Moscow, Oct. 21-27, 3 cases, 1 death; Odessa, Oct. 15-Nov. 3, 16 cases, 2 deaths; St. Petersburg, Oct. 14-27, 6 cases, 1 death.
Spain: Barcelona, Nov. 1-10, 8 deaths; Cadiz, Oct. 1-31, 6 deaths.
Uruguay: Montevideo, Aug. 1-31, 2 deaths.

YELLOW FEVER.

Cuba: Havana, Nov. 21-27, 7 cases, 2 deaths; Santa Clara Province, Rodas, Nov. 18-25, 1 case.
Mexico: Vera Cruz, Nov. 11-14, 1 case, 1 death.

CHOLERA—INSULAR.

Philippine Islands: Manila, Sept. 29-Oct. 13, 16 cases, 15 deaths; Provinces, Sept. 29-Oct. 13, 348, 248.

CHOLERA—FOREIGN.

China: Hankow, Oct. 8-14, 24 deaths; Shanghai, 25 cases.
India: Bombay, Oct. 24-30, 4 deaths; Calcutta, Oct. 14-20, 34 deaths; Madras, Oct. 20-26, 2 deaths; Rangoon, Oct. 14-20, 1 death.

PLAGUE.

Australia: Sydney, Oct. 1, 1 case.
Austria: Trieste, Nov. 8, 1 death.
Brazil: Bahia, Oct. 14-27, 4 cases, 2 deaths; Rio de Janeiro, Oct. 15-21, 19 cases, 4 deaths.
Egypt: Alexandria, Oct. 22-28, 3 cases, 2 deaths; Minieh Province, Oct. 26-28, 5 cases; Garbieh Province, Tanta, Oct. 22-28, 1 case; Port Said, Oct. 22-28, 1 case, 1 death; Suez, 2 cases, 1 death.
India: General: Oct. 14-20, 6,278 cases, 4, 760 deaths; Bombay, Oct. 24-30, 27 deaths; Rangoon, Oct. 16-20, 27 deaths; Calcutta, Oct. 14-20, 7 deaths.

Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ended Nov. 28, 1906:

Wertenbaker, C. P., surgeon, granted leave of absence for three months from December 1.

Blue, Rupert, P. A. surgeon, granted leave of absence for five days from December 1.

von Ezdorf, R. H., P. A. surgeon, leave of absence for fourteen days from November 21, amended so as to be effective November 22.

McCoy, G. W., P. A. surgeon, directed to report to Director of Hygienic Laboratory for temporary duty.

Boggess, J. S., asst.-surgeon, directed to report to board of officers convened to meet at Ellis Island, N. Y., December 10, 1906, for examination for promotion to grade of P. A. surgeon.

Smith, F. C., asst.-surgeon, relieved from duty at Perth Amboy, N. J., and directed to proceed to Fort Stanton, N. M., for duty and assignment to quarters, after Asst.-Surgeon E. H. Mullan has familiarized himself with the service at Perth Amboy.

Mullan, E. H., asst.-surgeon, relieved from duty at Ellis Island, N. Y., and directed to proceed to Perth Amboy, N. J., for instructions relative to quarantine duties at that port.

Goldsborough, B. W., acting asst.-surgeon, granted leave of absence for eight days beginning December 1.

Hume, Lea, acting asst.-surgeon, granted leave of absence for one month from November 27.

Tarbell, B. C., acting asst.-surgeon, granted leave of absence for twenty days from December 1.

Richardson, S. W., pharmacist, relieved from duty at Vineyard Haven, Mass., and directed to proceed to Buffalo, N. Y., for duty.

Hall, L. P., pharmacist, granted leave of absence for seven days from November 21, under Paragraph 210 of the Regulations.

BOARD CONVENED.

A board of medical officers will be convened at Ellis Island, N. Y., on Dec. 10, 1906, for the purpose of examining Asst.-Surgeon J. S. Boggess to determine his fitness for promotion to the grade of P. A. surgeon. Detail for the board, Surgeon P. H. Ballhache, chairman; Surgeon G. W. Stoner; P. A. Surgeon John McMullen, recorder.

Navy Changes.

Changes in the Medical Corps, U. S. Navy, for the week ending Dec. 1, 1906:

Mink, O. J., asst.-surgeon, discharged treatment Naval Hospital, Yokohama, Japan; to home.

Furlong, F. M., surgeon, detailed for special temporary duty during the preliminary trial of the U. S. S. *Vermont*.

Lumsden, G. P., surgeon, to report to the president of the Naval Medical Examining Board, Washington, D. C., for examination preliminary to promotion, on Dec. 4, 1906, and when discharged by the board, await orders.

Higgins, S. L., asst.-surgeon, appointed an assistant surgeon in the Navy from Nov. 12.

Page, J. E., surgeon, detached from duty at the Naval Hospital, Norfolk, Va., and to duty on the U. S. S. *Milwaukee*.

Webb, U. R., P. A. surgeon detached from duty at the Naval Torpedo Station, Newport, R. I., and to duty at the Naval Hospital, San Juan, P. R., as the relief of P. A. Surgeon E. M. Blackwell.

Blackwell, E. M., P. A. surgeon, detached from duty at the Naval Hospital, San Juan, P. R., and to home and wait orders.

Neilson, J. L., P. A. surgeon, to temporary duty at the Naval Torpedo Station, Newport, R. I.

Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending Dec. 1, 1906:

Morris, Samuel J., asst.-surgeon, granted six days' leave of absence to take effect about Nov. 24, 1906.

Skinner, Geo. A., asst.-surgeon, relieved from temporary duty at Fort Snelling, Minn., and to return to Fort William H. Harrison, Mont.

Gregory, J. C., asst.-surgeon, ordered to proceed from San Francisco to Presidio of Monterey, Cal., for temporary duty.

Truby, Albert E., asst.-surgeon, having reported arrival at Newport News, Va., from duty in Cuba, will report in person to Surgeon General of the Army for consultation, and on completion thereof will proceed to join his station, Presidio of San Francisco.

Cowper, H. W., asst.-surgeon, left Havana, Cuba, Nov. 27, 1906, *en route* to Army General Hospital, Washington Barracks, D. C., for treatment.

Reagles, James, contract surgeon, left Fort Keogh, Mont., and arrived at Fort Ontario, N. Y., for duty.

Allen, Ira A., contract surgeon, granted sick leave of absence for one month.

Stuckey, Harrison W., contract surgeon, returned to Fort Snelling, Minn., from leave of absence.

Davis, Oscar F., contract surgeon, left Fort Des Moines, Iowa, on leave of absence for three months.

Slater, Ernest F., contract surgeon, returned to Fort Hancock, N. J., from leave of absence.

Ashburn, James K., contract surgeon, granted an extension of one month to his leave of absence.

Hutson, T. Ogler, contract surgeon, ordered from Fort McPherson, Ga., to Fort Moultrie, S. C., for temporary duty.

Marriages

VIOLA M. FRENCH, M.D., and A. H. DeLane, both of Neillsville, Wis., October 13.

DOUGAL BISSELL, M.D., to Miss Helen Nutting, both of New York City, November 21.

ROBERT L. TEBBITTS, M.D., to Miss Jean Durlacher, both of Laramie, Wyo., November 20.

LEVI SAUNDERS, M.D., to Miss Frances Alla Jackson, both of Lanesville, Mass., November 21.

RONALD TAYLOR ABERCROMBIE, M.D., to Miss Jennie Scott Waters, at Baltimore, November 21.

CHARLES A. COFFIN, M.D., Kewanee, Ill., to Miss Fannie E. Thorp of Guelph, Ont., November 21.

CHARLES C. CRAWFORD, M.D., Cleveland, to Miss Clara Wooley of Bowling Green, Ohio, November 19.

J. HENRY LUDWIG, M.D., Boyerton, Pa., to Miss Edwinna Herbein of Earlville, Pa., November 22.

ROBERT BARKER COFIELD, M.D., Cincinnati, to Miss Myrtle Del Hedrick of Muncie, Ind., October 10.

Herman H. Albers, M.D., Allenton, Wis., to Miss Ina Victoria Illian of Milwaukee, November 21.

William Henry Stratford, M.D., Austin, Chicago, to Miss Marguerite Ray of Chicago, November 21.

John Milton Edwards, M.D., to Miss Clara Elizabeth Gerlick, both of Mankato, Minn., December 5.

James M. Fenton, M.D., to Miss Mary E. Quinlan, both of Baltimore, at Union Hill, N. J., October 30.

Kirk R. Teachnor, M.D., to Miss Elizabeth C. Barger, both of Leesburg, Ohio, at Carrollton, Ky., June 5.

F. W. Seegers, M.D., Collins, Wis., to Miss Mamie Schmeichel of Petersburg, Wis., November 21.

Otto W. Knewitz, M.D., East St. Louis, Ill., to Miss Elizabeth Wildy of New Athens, Ill., November 3.

Alexander J. Williams, M.D., Racine, Wis., to Miss Ruth M. Boyce of Sturgeon Bay, Wis., November 18.

Charles B. Cortright, M.D., Brooklyn, N. Y., to Miss Elsie N. Stewart of Plainfield, N. J., December 1.

John Churchman Geiger, M.D., Huntington, W. Va., to Miss Marcella Mai Lorentz, at Baltimore, November 15.

John C. Miller, M.D., Chalfinbridge, Ill., to Miss Cecil Stoey of Pittsburg, Pa., at Columbus, Ohio, November 14.

Joel B. Woodhull, M.D., North Bennington, Vt., to Miss Eliza M. Remington of Bennington, Vt., November 22.

Horace W. Graves, M.D., Independence, Kan., to Miss Alice Getty, Freeport, Kan., in Kansas City, Kan., in October.

William Guyther Coppage, M.D., Church Hill, Md., to Miss Harriett Glanville Golt, at Centerville, Md., November 21.

Charles G. Andrews, M.D., Pedro Miguel, Canal Zone, to Miss Mary F. Cooke of Anconcita, Canal Zone, November 1.

George Thomas Little, M.D., North Uxbridge, Mass., to Miss Edith Bertha Smith of Worcester, Mass., November 24.

Deaths

Jerome Z. Gerhard, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1868; a member of the American Medical Association; a veteran of the Civil War; a member of the Dauphin County Medical Society; a member of the Medical Society of the State of Pennsylvania and of the American Academy of Medicine; formerly superintendent of the Pennsylvania State Lunatic Hospital, Harrisburg, and one of the foremost alienists of the state, died at his home in Harrisburg, November 20, from meningitis, after an illness of two weeks, aged 64. At a special meeting of the county medical society, resolutions setting forth the loss experienced by the society in the death of Dr. Gerhard, were unanimously adopted.

Florence Greenman Emerson, M.D. Woman's Medical College of the New York Infirmary, New York City, 1896; for a number of years a physician of the Brooklyn Board of Health and school medical inspector; a member of the Kings County Medical Society, died at her home in Brooklyn, November 26, from pneumonia, after an illness of four days.

Peter W. Ray, M.D. Castleton (Vt.) Medical College, 1850; a colored practitioner of Williamsburgh, New York; one of the founders of the Brooklyn College of Pharmacy and the Kings County Pharmaceutical Society, and treasurer of the latter organization for 23 years, died suddenly at his home, November 27, from heart disease, aged 82.

John M. Miller, M.D. New York Homeopathic Medical College and Hospital, New York City, 1869; coroner of the Bronx in the early seventies, and a practitioner of Springfield, O., for more than thirty years, died at his home in that city, from septicemia, due to a carbuncle of the neck, November 25, after a short illness, aged 69.

Marshall Augustus Brown, M.D. Jefferson Medical College, Philadelphia, 1861; a surgeon in the Confederate Service during the Civil War and chief surgeon on the staff of General Price, was found dead in his room in Marshall, Mo., October 30, from disease of the stomach, from which he had suffered for several years, aged 73.

Louis C. Starkel, M.D. Miami Medical College, Cincinnati; one of the founders of the St. Clair County Medical Society and for many years a practitioner in Belleville, Ill.; clerk of St. Clair County in 1873 and 1877; died at his home in Chicago, October 30, from endocarditis, after an illness of one year, aged 67.

Charles Wetton, M.D. Jefferson Medical College, Philadelphia, 1901; visiting physician at the Pilgrim's Home, Camden, N. J., and the Camden City Dispensary; a member of the Camden City and County Medical Society; died from pneumonia, at his home, November 18, after an illness of three weeks, aged 32.

William R. Sutherland, M.D. McGill University, Medical Department, 1879; a member of the American Medical Association, of High Springs, Fla., surgeon to the Atlantic Coast line, died October 4, in the Odd Fellows Sanitarium, Gainesville, from acute nephritis, four days after an operation, aged 55.

Ira N. Fix, M.D. Jefferson Medical College, Philadelphia, 1893; surgeon for the Westinghouse Company, burgess of East Pittsburg, Pa., and justice of the peace, died at the Braddock Hospital, November 22, from injuries received in the wreck of an automobile ambulance three days before, aged 36.

DeWitt C. Clinton, M.D. University of Michigan, Department of Medicine and Surgery, 1871; of Onaway, Mich.; for many years chief surgeon for the Detroit and Mackinac Ry., died in Harper Hospital, Detroit, November 15, from shock after an operation for gastric ulcer, aged 51.

Terrence M. A'Heron, M.D. New York University, New York City, 1873; surgeon for the Central Railroad of New Jersey, and the Delaware, Lackawanna and Western Ry., died at his home in Hampton Junction, N. J., from nephritis, November 15, aged 60.

John Walter, M.D. University of Georgetown, Medical Department, Washington, 1868; one of the founders of the German Orphan Asylum, died at his home in Washington, November 17, after an illness of eight months, three days after the death of his wife.

Joseph Talbot Fry, M.D. University of South Carolina, Medical Department, Columbia, 1856; for several years county judge of Matagorda County, Texas, and twice a member of the state legislature, died at his home in Selma, Ala., October 17, aged 72.

Joseph T. Fellows, M.D. Physio-Medical College of Indiana, Indianapolis, 1889; Barnes Medical College, St. Louis, 1898; a member of the national and state Physio-Medical associations, died at his home in Des Moines, Ia., November 16, aged 70.

Howell D. Harris, M.D. New Orleans School of Medicine, 1861; a Confederate veteran, and for nearly forty years a practitioner of Jackson, Tenn., died at his home in that city, from abscess of the throat, August 7, after an illness of one week.

Thomas Lewis, M.D. College of Physicians and Surgeons, Baltimore, 1881; for many years a practitioner of Coles and Mahanoy City, Pa., died at the residence of his brother-in-law in Harrisburg, Pa., October 9, after a long illness, aged 45.

John Wesley Dailey, M.D. Cincinnati College of Medicine and Surgery, 1864; for many years a practitioner of Salina, Kan., died at Worcester, Mass., October 18, from dilatation of the heart, after a short illness, aged 63.

Charles H. F. Lee, M.D. Miami Medical College, Cincinnati, 1877; a member of the American Medical Association, died at his home in Corvallis, Ore., November 13, from heart disease, after a short illness, aged 53.

William Francis Casavaw, M.D. College of Physicians and Surgeons of Chicago, 1903; was found dead at his home in Overly, N.D., October 23, from poison supposed to have been self-administered, aged 28.

Noah E. Sutton, M.D. State University of Iowa, College of Medicine, Iowa City, 1893; a member of the American Medical Association, died at his home in Trenton, Mo., November 20, from nephritis, aged 40.

William M. Bittinger, M.D. State University of Iowa College of Medicine, Iowa City, 1882; a member of the American Medical Association; died suddenly at his home in Grady, Ark., November 11.

Nathaniel Otis Harris, M.D. New York University, New York City, 1854; died at the home of his son-in-law in Moodus, Conn., October 13, from senile debility, after an illness of three months, aged 83.

Hyatt A. Frost, M.D. Chicago Medical College, 1863; said to have been the oldest practitioner of Wausau, Wis., died at his home in that city, October 26, after an illness of two weeks, aged 78.

D. A. Hurst, M.D. Starling Medical College, Columbus, 1854; Jefferson Medical College, Philadelphia, 1878; formerly of Oskaloosa, Ia., died at Pomona, Cal., October 22, after a protracted illness.

Henry H. Moore, M.D. Indiana Central Medical College, Indianapolis, 1852; said to have been the oldest practitioner of Liberty, Ind., died at his home in that place, November 18, aged 90.

Leonard Francis Nicoll, M.D. College of Physicians and Surgeons in the City of New York, 1903; died at his home in New York City from typhoid fever, November 25, aged 30.

George F. McKinney, M.D. Barnes Medical College, St. Louis, 1904; of Warrensburg, Mo., while making a call in Truesdale, October 29, was struck by a train and instantly killed.

Alvan S. Bailey, M.D. State University of Iowa College of Medicine, Iowa City, 1885; died at his home in Lorimor, Iowa, October 1, from chronic kidney disease, aged 61.

E. T. Owen, M.D. University of Louisville, Medical Department, 1856; one of the oldest practitioners of eastern Arkansas, died at his home in Clarendon, November 23.

James H. Brantley, M.D. Tennessee Medical College, Knoxville, 1892; died in San Antonio, Texas, October 17, from asthma, after an illness of four years, aged 38.

Franklin L. Knapp, M.D. Geneva (N. Y.) Medical College, 1844; formerly of Gasport, N. Y., died at his residence in Mabees, Royalton, November 15, aged 88.

Robert W. Southgate, M.D. Boston University School of Medicine, 1881; was found dead in his room in South Weymouth, Mass., November 22, aged 45.

Asa L. Blanchard, M.D. University of Michigan, Department of Medicine and Surgery, Ann Arbor, 1878; of Northville, Mich., died recently in the south.

Samuel A. Clark, M.D. University of Buffalo, Medical Department, 1883; died at his home in Garrison, Neb., November 14, after a short illness, aged 60.

Frederick L. Pond, M.D. United States Medical College, New York City, 1880; died at his home in Chicago, from heart disease, November 23, aged 71.

Joseph Miller McElhinney, M.D. Eclectic Medical Institute, Cincinnati, died at his home in Newport, Ohio, September 4, from senile debility, aged 82.

Virgil Snoddy, M.D. Medical College of Alabama, Mobile, 1875; died at his home in Knoxville, Ala., November 14, from dropsy, after a long illness.

Francis Percival Cowan, M.D., C.M. Trinity University, Toronto, 1889; died from nephritis in the Western Hospital, Toronto, October 17, aged 40.

Jonas S. Newburgh, M.D. Bellevue Hospital Medical College, New York City, 1884; of Chicago, was killed by a train in that city, November 10.

Spurzheim P. Moore, M.D. University of Buffalo, Medical Department, 1871; died at his home in Munnsville, N. Y., November 18, aged 67.

Jeremiah Behane, M.D. Royal College of Surgeons, Dublin, Ireland, 1894; died at his home in Braddock, Pa., November 22, aged 38.

Sarah DeLoss (Examination, Illinois, 1889); died at her home in Chicago, November 14, aged 64.

Society Proceedings

COMING MEETINGS.

Southern Surg. and Gyn. Assn., Baltimore, Dec. 11-13.
American Association of Anatomists, New York City, Dec. 27-29.

COLLEGE OF PHYSICIANS OF PHILADELPHIA.

Regular Meeting, Nov. 7, 1906.

The President, DR. ARTHUR V. MEIGS, in the Chair.

Points of Interest in Hospital Management.

DR. CHARLES P. NOBLE raised the question whether or not it is best for a hospital to care for both the poor in charity wards and for the rich and those in moderate circumstances in pay wards and private rooms, and alluded to some of the factors which have favored the development of pay wards. Those interested in increasing the financial support of hospitals, he said, look with favor on the plan, but it is doubtful whether money given for the charitable treatment of the poor is properly expended when it is applied to the erection of elaborate buildings for the treatment of the rich, and also whether the greatly increased cost of the maintenance of hospitals of the mixed type does not overbalance the profits arising from the care of pay patients.

Dr. Noble believes that the present tendency on the part of the training schools of hospitals to require nurses to remain in training longer than two years is a mistake. He emphasized the importance of the passage of a state law regulating the status of nurses, and called attention to the fact that an attempt to pass such a law will be made in the next legislature. His personal investigation in hospitals has led to the discovery of certain sources of infection heretofore unappreciated. Among the important factors to be considered are the necessity of segregating septic patients and providing them with separate nurses, efficient regulations for the disinfection of nurses' hands and for the disinfection of all apparatus employed by nurses. Dr. Noble has, with the assistance of the medical staff at the Kensington Hospital for Women, and with the suggestions and criticisms of three different head nurses, compiled a technic which has been used with great satisfaction and been proved to be a great improvement on methods heretofore in vogue.

DR. WHARTON SINKLER referred to the growing tendency to overeducate nurses in medical matters. He considers such instruction suitable for second-year medical students productive of bad results in nursing. An important disadvantage of the lengthened term of training is to make the nurse value her services so highly that none but the wealthy classes can employ her. The lengthening of the course to three years, he said, is an important objection to the new registration act to be introduced at the time of the next legislature.

DR. JOHN K. MITCHELL thought a nurse capable of being trained will acquire that training in two years, and that longer time spent in the school tends rather to unfit her for originality of thought and action.

DR. WILLIAM M. L. COPLIN regards a two-year course quite adequate. The giving of elaborate lectures on medical subjects, he thinks, leads the nurse to assume much more knowledge than she actually possesses. He referred also to the short term training schools, pointing out the menace they are to the public and the demand necessitated by them for some system of registration and examination or control of the nurse training school.

DR. WALTER G. ELMER questioned whether shortening of the three-year course to two years will work out satisfactorily in practice, and pointed out the dependence necessarily placed on the nurse in the absence of the physician. She should be expected to recognize certain conditions not seen by the physician during the short visit and likely to develop during the day. Some degree of medical training is advisable. One of the greatest difficulties presented by the shorter term of training is in the operating room work. Here serious mistakes may occur because of the nurse being in a position for which she has not been properly trained.

The Making of a Museum of Applied Anatomy.

DR. GWILYM G. DAVIS discussed the use of specially made preparations in the teaching of applied anatomy, both in the form of wet preparations for class demonstrations and preserved in a museum. Such preparations, he said, are illustrative of the normal topography of a part, and of the affections to which it is subject. As examples of the former he mentioned the triangles of the neck, the thoracic and abdominal viscera, Scarpa's triangle, popliteal space, also frozen sections; of the latter, joint preparations injected with wax to show their weak points, and skull perforations for cerebral localization. Special preparations are those illustrative of operations, fractures, dislocations, hernias.

The method of making the preparation is the use of formalin and freezing for making sections, also in making ordinary dissections and afterward hardening them. Specimens for demonstration are kept in a modified No. 1 Kaiserling solution. This is made up with acetate of potash and glycerin with some carbolic acid and less formalin. Museum preparations are preserved in flat porcelain basins and covered with alcohol.

Pathology of Adams-Stokes Disease.

DRS. THOMAS G. ASHTON, GEORGE W. NORRIS and R. S. LAVENSON reported a case of Adams-Stokes disease which before death exhibited all the cardinal symptoms of the condition. They were able, by means of tracings coincidently taken from the apex beat, the radial artery, and the jugular vein, to prove that the auricles contract more frequently than the ventricles, that there is, in fact, a condition of complete heart-block. The autopsy revealed a mass infiltrating the auriculo ventricular bundle, which on microscopic examination proved to be a gumma, which completely cut off the muscle fibers in the bundle of His. The pathology of Adams-Stokes disease is thus put on a definite organic basis.

MISSISSIPPI VALLEY MEDICAL ASSOCIATION.

Thirty-second Annual Meeting, held at Hot Springs, Ark., Nov. 6-8, 1906.

(*Concluded from page 1850.*)

Clinical Psychology.

DR. FRANK PARSONS NORBURY, Jacksonville, Ill., said that in all ages man has sought to solve the mysteries of his own ruling mind. The researchers of to-day have translated the science of mind from the terms of the metaphysician with its confusing verbiage to words that signify something by defining the fact of physiologic psychology, psychophysics and clinical psychology. Mind to-day is studied from the basis of the general law laid down by James, namely, that no mental modification ever occurs which is not accompanied or followed by a bodily change. The brain itself does not act (it is a passive organ), but reacts to stimuli through the peripheral sense organs, thus creating a reflex either in the sensory, motor or higher psychical cells. Psychology endeavors to study these reactions.

Speculative psychology has no place in the modern new psychology. Physiologic psychology, aided by the coördinate science of physics, has overcome the dissatisfaction growing out of introspective psychology. It has raised the physiologic unit, as stated by Mercier, namely, that a nervous process which, when transmitted to muscles, issues in a movement and is accompanied by a mental state, to the highest power, as shown in conduct. Conduct is the criterion of soundness or unsoundness of mind. It is the product of innate character, of environment, of experience, and numerous other modifying conditions.

Refined methods of analysis apply in the study of sensation, of perception, of memory, of thought, of feeling, and of the disorders of the will reveal mind in its constitution. In analytical study it is necessary to note negative as well as positive results. These methods apply to the borderline anomalous mental states, i. e., the neurasthenic, the psychosthenic, the hysteric, the epileptic, which enable us to define their full clinical significance. We should follow the clinical methods of Janet in studying these varied mental anomalies.

Heredity is not considered in these studies with the same degree of insistence as that advocated by Morel.

Therapeutic methods resolve themselves into the personality of the physician, his consideration, patience and earnestness; his ability to take a broad educational view of the whole subject and apply wholesome, helpful methods both in the physical and mental considerations. In no place in our therapeutic art do we find a greater call for the highest application of educational means and methods than in the treatment of nervous disorders, as found in the psychoneuroses. The educational growth of character is imperative. Moral education precedes mastership in every act, because the training which mastery involves reacts on character, gives it steadiness and solidity.

Educational methods alone will not give the results; we must build up, overcome the bodily fatigue, intellectual and emotional. This requires fat and blood, strength and equipoise. The connection between sane living and sound work is a psychologic and physiologic necessity.

Surgical Principles and Theories.

DR. F. F. LAWRENCE, Columbus, Ohio, said: Surgery is either an art founded on exact science, or it is a gigantic fake founded on empiricism. Every science is and must be founded on principles which are as enduring as truth. Every principle, every truth, must be preceded by theory, which is only another word for ideal. To make theories or ideals conform to truth and exemplify a scientific proposition is to convert that theory or ideal into a fact. To sacrifice on the altar of personal vanity or ambition one jot or tittle of the truth or science is to sacrifice the entire principle. Empiricism has been the foundation of quackery from the earliest days, and to encourage, practice or teach any of our surgical methods empirically is to justify and father quackery. It is unreasonable to expect that any man can put into practice a scientific principle if he knows not a thing about any of those sciences on which surgery rests. The human body must be viewed as a machine; its surgical or medical repair to be based on the idea of the province of a thorough mechanism. There is no part of the body which is not constructed on a true philosophy, and its repair requires a knowledge of natural philosophy. All the other "ologies" and "osophies" are useful only in determining the need and character of repair, hence any surgical effort that is not philosophic is unsurgical. Teaching of the principles on which the treatment of a surgical case is based should be the most attractive as well as the most important part of our efforts. To acomplish this methods of teaching and practice must be consistent, and both can be revised with benefit. Traumatism should be given the consideration due its importance as a factor in infection. Fads and fancies should not command the respect of the profession, and non-essentials should not be given prominence in teaching. Surgery should be taught as an art which rests o exact or scientific principles, hence one in which philosophy is equally important with pathology, and anatomy of greater import than the microscope, although the latter is a necessary adjunct. A man may be a good physician but a poor surgeon. The converse, however, is not true, for a man can not be a surgeon who is not a good physician; hence a special qualification is advantageous. Hospital construction and hospital management should be consistent with the teachings of hygiene, the segregation of patients, isolation of infected cases, space per bed, and all minor details to be worked out by men trained in sanitary science instead of by architects and other laymen. Endowments for the working out and proving of surgical principles and honors to the workers may be worthy serious consideration. The one great principle, that a surgical condition is always surgical, should be constantly emphasized to the end that *dernier resort* operations may cease to be the bane of the profession and the boon of the undertaker.

Present Operative Necessities for Cure of Tuberculous Orchitis.

DR. CHARLES E. BARNETT, Fort Wayne, Ind., in summing up said that: 1. To be sure of a cure, all that is infected with tuberculosis must be removed. 2. Primary invasion statistics are so variable that the operator should consider his testicular tuberculosis as primary unless other foci are found that disprove the supposition. 3. The modes of infection are so many that the surgeon should be on his guard constantly. This is especially true in infection during the act of cohabitation. 4. The desexation bugbear should be entirely removed from the patient's mind and instead hope should be given him for a continuation of his copulative power. 5. Injections of paraffin in producing artificial testes are good from a cosmetic standpoint, and also from the great satisfaction they give the patient. They are entirely devoid of danger when properly done. 6. Operations, when indicated, should be immediate, followed by prophylactic and hygienic treatment until the maximum improvement is gained.

The author gives the operative technic used by him in double orchovasectomy, and shows how comparatively easy it is to extract the vas deferens from along its course even down to the ejaculatory duct region. He reported two cases to illustrate the postoperative benefit gained. One of them was injected with paraffin according to the Gersuny method of small quantities at a time, with frequent sittings. The artificial testes were, from the standpoint of size, location and permanency, all that could be desired.

Head Injuries.

DR. WILLIAM BRITT BURNS, Memphis, Tenn., reported three cases of head injuries which had a bearing especially on injuries of the middle meningeal artery.

Non-Lithogenous Obstruction of Biliary Tract.

DR. A. H. CORDIER, Kansas City, Mo., said there is a class of cases presenting an obscure train of symptoms pointing to the vicinity of the gall bladder and biliary ducts as their source. For instance, a vague sense of uneasiness, occasionally painful spells lasting a few minutes, with attacks of indigestion and painful flatulency. At the operation no stones are found, no stricture of the ducts is discovered, no visible changes in the gall bladder are discernible; in fact, nothing is detected except a few adhesions between the cystic duct and common duct or duodenum. A separation of these adhesions, with a liberation of the bound-down ducts and viscus from the constantly nagging, distended stomach and intestines will, as a rule, bring relief to the patient.

If an obstruction is located in the cystic duct, and the gall bladder escapes, the usual contraction due to the presence of a cholecystitis, this viscus may continue to manufacture mucus, and, if infected, as it usually is, a muco-purulent distension takes place, and a pyriform retention cyst is produced, usually detectable below the border of the liver in emaciated patients. In this condition jaundice is absent and the patient has fever and gastrointestinal disturbances. These cases are especially liable to recurring attacks of fever, as the absence of bile in the gall bladder robs Nature of one of the most efficient inhibiting bactericidal fluids. These are fit cases for a cholecystectomy, as drainage of the gall bladder is too uncertain in its curative effects, the opening either refusing to close, or if it does close, the symptoms are renewed.

Where the complete obstruction of the duct is the outcome of a long impacted stone resulting in a cancer, the diagnosis of the latter is extremely difficult before operation. Cancerous obstruction occurs most frequently in the lower portion of the common duct. This is likewise the location of most lithogenous obstructions.

In determining the existence of an obstruction, its location, extent, character and time of operating, he has for 14 years resorted to hydrostatic pressure, by introducing through an aspirating needle into the gall bladder a saline solution from a moderate height, or if this viscus has been opened, the nozzle of an irrigating syringe, or if the common duct has been opened, by irrigating directly into the duct. In cases where the duct is embedded in a mass of adhesions and has lost its identity, it can be made to stand out distinctly by water pressure introduced through the gall bladder, provided the cystic duct is patent. By this same process the patency of the duct, after removal of one or more stones, can be determined, as he has on several occasions run rather a large quantity of saline solution directly into the duodenum through the gall bladder, cystic and common duct. As a means of determining the security of the duct stitching, where the opening in this canal is closed by suture, this method is invaluable, as disappearing stones and other débris can thus be washed out of the biliary tract.

The following papers were also read and discussed: "Gallstones, Report of Two Cases," by Dr. J. H. Barnett, Pikeville, Tenn.; "Pruritus of the Anal Region," by Dr. Bernard Asman, Louisville, Ky.; "Diagnosis and Treatment of Brain Traumatisms," by Dr. John N. Sluss, Indianapolis, Ind.; "Asthma with Mixed Infection Following Repeated Attacks of La Grippe," by Dr. Wm. F. Waugh, Chicago; "Some Medical Notes on Frontal Sinusitis," by Dr. A. E. Prince, Springfield, Ill.; "The True Cause of Functional Neuroses," by Dr. G. G. Buford, Memphis, Tenn.; "A Possible Explanation of the Formation of Drug Habits," by Dr. H. A. Rodebaugh, Columbus, Ohio; "Specific Treatment of Pulmonary Tuberculosis," by Dr. E. G. Epler, Fort Smith, Ark.; "Report of Cases of Probable Maternal Impressions," by Dr. J. Madison Walton, Memphis, Tenn.; "Some Clinical Observations on Tuberculosis," by Dr. Wm. Porter, St. Louis, Mo.; "Eye Findings in Arterio-Sclerosis," by Dr. Geo. F. Suker, Chicago; "Remarks on Combined Degeneration of the Spinal Cord," by Dr. Hugh T. Patrick, Chicago; "The Entoning of the Psychic Neurons in Neurotherapy and in General Therapeutics," by Dr. C. H. Hughes, St. Louis, Mo.; "Yellow Fever and Mosquitoes in New Orleans in 1905," by Dr. Quitman Kohnke, New Orleans, La.; "Operations for Pyothorax," by Dr. Spencer Graves, St. Louis, Mo.; "What to Do in the Presence of Obscure and Persistent Abdominal Symptoms," by Dr. H. H. Grant, Louisville, Ky.; "Etiology, Pathology and Operative Treatment of Deformities of the Face and Mouth Due to Malrelations of the Face and Jaws," by Dr. V. P. Blair, St. Louis, Mo.; "Successful Obliteration of Hemangioma Cavernosum of the Upper Lip," by Dr. Francis Reder, St. Louis, Mo.; "Typhoid Fever," by Dr. J. H. C. Cook, Hattiesburg, Miss.

CHICAGO MEDICAL SOCIETY.

Regular Meeting, held Nov. 7, 1906.

DR. A. BELCHAM KEYES in the Chair.

DR. CARL BECK reported two cases, one of septic thrombophlebitis and the other of atresia ani vesicalis.

Leprosy.

DRS. E. A. FISCHKIN and E. C. SEUFERT reported jointly a case of leprosy.

The patient, aged 26, a fruit peddler, came from the Baltic provinces, near Riga, Russia, from a district where leprosy is endemic. He has been in the United States 12 years, having lived in Chicago all this time. His illness dates from April, 1905, up to which time he was healthy. On questioning he admitted having had some itching eruption on the arms and legs at the age of 14, just before coming to America. It lasted three or four months.

The patient looked very anemic; his pulse was weak, but there were no abnormal conditions of the heart; no murmurs; spleen and liver not enlarged; no adenopathy. A blood examination showed hemoglobin 95 per cent; 5,200,000 reds to 10,000 whites. A differential count showed normal conditions. There were no plaques or ulcerations in the mouth, and the patient did not show any visible signs of rhinitis and apparently no excessive salivary secretion. The eruption was mainly tubercular in character and covered most of the unexposed parts of his body. The face was almost free of leprous manifestations. The regions most affected are the extremities, the extensor surfaces of the arms and the outside of the thighs. The arms were dotted with tubercles the size of a lentil to half a cherry. Most of them rounded, of soft consistence and a dark, coppery brown color. The larger ones are covered with slightly exfoliating thin scales. A few of the largest were deeply furrowed and looked almost lobulated. The smaller ones are flat, looked almost like syphilitic papules, but less hemispherical, very smooth and shiny on the surface, and showed a deep varnished or glazed color as if they were covered with oil. The lower extremities are affected in like manner, though localized more on the upper than on the lower leg. On the upper parts of the legs there were streaks of gyrated bands of infiltration running over the cristæ osis ilei to the back.

The nates are covered with groups of characteristic tubercles. Above them in the lumbar region were large circinar infiltrations connected by somewhat irregular gyrate streaks and running out over the cristæ osis ilei to the anterior parts. The abdomen was for a long time free of manifestations showing only a group of small tubercles near the umbilicus. But toward the end of the patient's stay under treatment there appeared suddenly a number of large brown, somewhat raised, diffused areas of erythema leprosum or leprous roseola, which looked somewhat like a syphilitic roseola, the spots being much larger, two to three inches in diameter, more mahogany brown in color and infiltrated. Microscopic examination of an excised nodule showed large numbers of "lepra cells" and lepra bacilli.

Prevalence of Leprosy in North America and the Policy to be Pursued with Regard to It.

DR. WILLIAM ALLEN PUSEY said that there is a focus of leprosy in Tracadia, New Brunswick; a few cases among Norwegian and Icelandic settlers in the central Northwest, and sporadic cases are found among immigrants on rare occasions in any part of the United States. The important foci of leprosy in the United States are on the Pacific Coast, where it has been introduced by the Chinese, in Louisiana and in Key West. In both of the latter districts it has been introduced from Spanish America. A very few cases originating in the United States outside of subtropical districts have been recorded. The only focus of leprosy which seems to be of importance as re-

gards danger of spread of the disease is that in Louisiana. There the favorable influence which is afforded by climate makes the development of leprosy not an uncommon occurrence. Leaving out of consideration Louisiana, and taking all facts into consideration, Dr. Pusey said it may be assumed that there is practically no danger from the presence of a sporadic leper in any part of the United States.

In districts like Louisiana where leprosy is active every effort should be made to segregate the leper as completely as possible; to that end public asylums of refuge for them should be provided, as has been done in Louisiana. These should be made as agreeable places of residence for the sufferers as possible, if for no other reason, in order that lepers may willingly accept these asylums. This does not demand a very high standard of comfort, for the outside world is not a very cheerful place of residence for a leper in an advanced stage of the disease. Dr. Pusey stated that such treatment as is accorded lepers commonly is a reflection on common intelligence, to say nothing of humanity. If, for example, the reports which describe the lazaretto or prison for lepers in San Francisco, are true, the place is a disgrace to California. Whether anything more should be done than provide a place of asylum for lepers depends on the district. In Louisiana it is highly desirable to segregate the lepers. In Minnesota, where the population is vigorous, living conditions good, and the climate favorable, nothing more is necessary than to keep patients under reasonable surveillance and see that they do not live in squalor and dirt, in close contact with other persons. But even in such a district public help should be extended to the victim as fully as possible, and a place of refuge furnished them when they will accept it.

What shall be done with the sporadic leper, that occasionally appears in any of the non-leprous districts of the United States? He should be treated like any other patient suffering from an infectious disease of very slow course and of the lowest degree of contagiousness. There is no reason why he should not be admitted into a general hospital or treated outside, provided the same precautions are taken that should be carried out with tuberculosis.

DISCUSSION.

DR. MAXIMILIAN HERZOG said that in Manila there has existed for about two centuries a Catholic hospital which has always contained a number of lepers. During the time he was in Manila there were 200 or 300 cases there. The American government has set aside an island on which have been erected a number of buildings, and it is intended to segregate all the lepers there. It is estimated that there are between 10,000 and 30,000 lepers in the Philippines. It is claimed by the Filpinos that leprosy is the gift of the Japanese. During the feuds of the tribes the Japanese sold some of their slaves or prisoners as slaves into the Philippines, and some Japanese admiral once invaded the Philippines, so that leprosy is said to have been imported into the islands by the Japanese.

He believes it is a mistake to put the incubation period of leprosy at 14 to 16 years, because the disease begins very insidiously and may exist for a number of years before it is discovered. As to the bacillus itself, most of the bacilli which he has seen are granular in appearance, and it has been said that such bacilli are probably degenerated bacilli. He referred to some experiments which he made to cultivate the lepra bacillus. There have been from time to time claims made that some one has succeeded in cultivating the lepra bacillus. Some three years ago Surgeon-Major Rost, in the Indian service of the British army, claimed that he had not only succeeded in cultivating the lepra bacillus, but that he had succeeded in preparing a toxin or antiserum, called leprolin,, which, when injected into lepers, would bring about rapid amelioration and a cure. Dr. Herzog obtained some of that material and used it in the hospital in Manila, with the result that he had two postmortems from tetanus.

A Frenchman working in the Pasteur Institute devised a method by which he claimed he could get cultures of the lepra bacillus. The speaker tried this method and found that he could get a first generation. The medium is a somewhat complicated agar. The agar is melted and about one-tenth of the bulk of the yellow of an egg is added and the mixture shaken. When the medium has solidified it is inoculated from a young lesion in some of the deeper layers, removing the upper layers, and after about ten days there sometimes is a slight growth. In this growth he found bacilli which stained uniformly, showing that the granular bacilli are probably dead.

In view of the fact that animal experiments have proven unsuccessful for a long time, and that the father-in-law of Hansen inoculated himself and 197 other persons with leprosy and never produced a case of the disease, it appears to him that the chance of producing leprosy in lower animals by inoculation is very small. He has tried the same thing, but failed. He procured specimens of leprosy and implanted a piece with lots of bacilli in it into a collodion sac and placed that into the peritoneal cavity of a monkey and other animals. He left it there for six weeks, took it out, divided it into two pieces, put one piece aside and examined one piece to see whether there were any lepra bacilli there, and planted the other piece into a monkey, but nothing came of it. The monkey never developed leprosy.

As to Dr. Pusey's paper, he agrees with him that leprosy is not an infectious or contagious disease. He knew men in Manila who lived among lepers for years without contracting the disease. Once in a while an individual becomes leprous, but it is true that in families not all the members become infected. Formerly it was believed that leprosy was an inherited disease. Now we believe the opposite, and he thinks that there is no case on record occurring in a child under 5 years of age. He has seen a case where a married man did not become leprous. His wife, while pregnant, was discovered to have leprosy. She was treated with the *x*-rays with apparently fair results. During delivery the woman died. He secured the placenta, secured many sections, but failed to find any lepra bacilli. Dr. Herzog believes that leprosy has a tendency to decrease and finally die out when the hygiene of the country becomes better.

DR. DAVID LIEBERTHAL has seen many cases of leprosy. He studies these cases very carefully because he was born near the center of leprosy in Russia. He agreed with Dr. Pusey in regard to the unnecessary excitement that is brought about when a leper appears. He called attention to a very common method of diagnosis of cases of tubercular leprosy. If one is always fortunate enough to have a case for a few days, so that he can cut out a section of the skin and make microscopic sections, well and good; but there are other instances where the practitioner sees the leper only once. If the case is of the tubercular variety, he prepares one of the nodules surgically, takes a coarse needle, pierces the nodule, wipes off the first blood which comes out, catches the next drop on a slide, and stains that with carbofuchsin or Ziehl-Nielsen, and within a short time one can have a specimen and will see groups of lepra bacilli. This method was described by Zchernogorouff in 1896, and he has had the opportunity to try it in one of his cases and found it to be valuable.

DR. OLIVER S. ORMSBY referred to a case he reported about two and a half years ago, saying it was undoubtedly an indigenous case. It occurred in a Norwegian whose father, in all probability, contracted the disease in Norway. His patient was born in Iowa, was raised in Nebraska, and surely contracted the disease in this country. It was of the severely tubercular type.

As to the incubation period, he saw a woman this summer who has been in this country 24 years. She has lived in Illinois all of that time, and was absolutely well until about five years ago, when she was taken slightly ill. About three years ago she developed typical tubercular leprosy. Evidently the incubation period in that case was 24 years.

As to the demonstration of the organism in the tubercular leper, they have been able in the office of Dr. J. N. Hyde in the last five years to demonstrate it in the nasal secretion of every case on its first appearance in the office, and also from the nodules. They have treated two cases in Dr. Hyde's office with the *x*-rays, and the only benefit obtained was to relieve the nodules in the area treated. There has been no general benefit obtained after the individual nodules treated with the *x*-rays were removed.

Section Discussions

SYMPOSIUM ON THE DUTY OF THE PROFESSION TO WOMANKIND.

(*Concluded from page 1896.*)

DISCUSSION

DR. JOHN HUNTER, Toronto, Ont., said that he was impressed by the thought that we must educate the people up to a consciousness of their own responsibility in this matter. In no other country in the world are the laws more strictly administered than in Canada; and yet the Canadians have the same trouble. Merely placing of a law on the statute books, or trying to enforce it, will not eliminate this trouble. As an illustration, Dr. Hunter related an instance from his experience. A short time ago he was invited to address a home of refuge in which there were 75 young women, sent there on account of some crime committed, all due to immoral life. He spoke there one afternoon and very little attention was paid to what he said—on a purely religious topic. He asked the matron the next time if he might be allowed to speak on some of his own experiences as a physician, and she said: "Certainly, Doctor, we would be very glad to hear from you." A band of teachers—the most cultured young women of Toronto, were sitting behind him. He knew that the 75 young women had to listen, they could not leave, because they were in prison; but he waited to hear from the other young women, after he had plainly described the two great scourges, gonorrhea and syphilis, to those 75 young girls. He declared that he never saw an audience listen so attentively as they did. From that day to this he has been receiving letters from these young girls as they were dismissed when their term was up, telling him that if doctors would speak out in that way many women would be kept out of prison. That address changed their whole lives. On his way home that day some of the teachers shook hands with him and said: "Why don't you doctors often talk as you did to-day? We girls know practically nothing about these things; and if doctors would talk more as you did to-day you would save thousands of the young women of this and other cities." Dr. Hunter urged physicians to use every possible opportunity and not to be afraid of public criticism. He thinks that physicians could say a great deal more to the public; in any case they could talk to their patients and friends; and Dr. Hunter thinks that is the better way of solving this great problem.

DR. C. H. COOK, Natick, Mass., in reference to the statement that physicians are often-times responsible for teaching young men that sexual relations, even before marriage, are necessary to health, said that whenever a man consults him and makes that claim, he tells him that if the sexual relation is necessary to health, or physiologically necessary, it can not then be morally wrong; neither can it be wrong for the woman who ministers to that need. He said that, granting, for the sake of illustration or argument, that such relation is necessary to health, God Almighty did not make anything that was necessary and at the same time, morally wrong; neither did the Almighty make anything that was physiologically necessary for a man and, therefore, not morally wrong, and, at the same time, wrong for the woman who ministers to that need. He thinks that physicians should press that home on everyone who makes such a claim, be he physician or layman. Although men claim liberty for themselves, Dr. Cook said that he has yet to meet the man who will grant that liberty to his wife, his daughter, or his sister.

DR. GEORGE FRANK BUTLER, Chicago, expressed a wish that all contributions to this Section could be published in the newspapers, or published in reprints and sent to the laity. The public must know these things; and they will not know them if the papers are printed only in medical journals. Physicians must bring influence to bear on the postal authorities at Washington, to allow such subjects brought to the attention of laymen, and especially young people. Venereal diseases, he said, are very prevalent, and indirectly are doing an immense amount of harm. The indirect results are perhaps more pronounced than the direct results. Physicians are now taking action regarding the prevention of tuberculosis, and they should take an equal interest in the prevention of venereal diseases. Dr. Butler thinks that Dr. Cumston stopped too short. Dr. Butler thinks that he wanted to convey the impression that venereal diseases from a physician's standpoint, are no more disgusting than measles, or scarlet fever. A man who has contracted any disease is worthy of consideration and treatment, honest treatment; and if physicians and the people are educated to that fact, young men will not go to the drug stores for medicine for the treatment of gonorrhea and syphilis, but will consult reputable physicians. The man who has contracted a venereal disease is unfortunate, it is true. Perhaps he has not innocently acquired this disease, but in any case, physicians should give him due consideration.

DR. E. E. MUNGER, Spencer, Iowa, expressed his regret that many speakers did not mention the advertisements in the press of this country that guarantee to cure all these venereal diseases in from seven to thirty days, and which send those men, who suppose themselves cured, out to carry infection to the innocent. It is no worse, Dr. Munger said, to mention these matters in the newspapers and to educate the people along the lines of truth than to publish columns of advertisements that are misleading. Dr. Munger declared that he knows of no greater mission that can be undertaken by any man or organization of men than the education of the ignorant and the protection of the innocent. The genesis of all the evils which are just now occupying the attention of the profession lies in the ignorance and the credulity of the people, and in the contemptible charlatanry which is met on every hand. Preventive medicine, for which there are such great possibilities, needs, more than anything else, the support of the people, the rich and the poor, the high and the low. As a partial remedy, he urged the advisability of the American Medical Association considering the establishment of a "Bureau of Education of the American Medical Association," for the dissemination through the newspapers and by other means, of such knowledge and advice as will better enable the people of the country to act intelligently in matters pertaining to their own health and lives, thereby making it possible for them to be able to assist the medical profession in their campaign against disease and in their efforts to prevent disease and relieve suffering and prolong human life. Organized as the American Medical Association now is, he said that such a bureau would be in affiliation with each state and county society; and there could be such a division and sub-division of the labor, incident to the writing, editing and distribution of articles for publication as would make an aggressive, systematic campaign of education both possible and practicable. All other organizations interested in the welfare of society could also be affiliated with this bureau. The members of the medical profession, on whom has ever been enjoined the performance of so many arduous duties toward the community, will never have discharged their full duty until they have educated the people to that degree of medical intelligence which shall, at least, cause them to suspect fraud and deceit. There is no other branch of human activity, he said, about which people are so woefully ignorant, as about the honorable practice of medicine and surgery in relation to themselves. How, he asked, are we to educate the people.

DR. ALBERT H. BURR, Chicago, stated that he is in accord with the sentiment in favor of public education. He believes in physicians taking the public into their confidence and facing this matter in the open. He thinks that we should give instruction in the public schools to boys and girls at the age of puberty, concerning physiologic and hygienic facts relating to the organs of generation. He characterized some opposition against legislation as being radically wrong. He stated that he has heard it said over and over again that "laws do not correct these things," "you can not legislate morals into the people," etc. There is a certain sense in which that is true; but there is another sense in which it is absolutely false, and if we acted on that principle we should wipe out the whole fundamental decalogue. The whole front page of a daily paper in any city will show that the decalogue is violated from

"A to Z." Men and women will stand up in front of the most terrible punishments that man can inflict, and deliberately commit every known crime. No law absolutely suppresses crime. There is, however, an educational factor in every just law that is placed on the statute books, whether that law is properly enforced by the officials or not. The public eventually becomes educated up to its standard. That man who stole, that man who murdered, that man who bore false witness, that man who committed adultery, has had "Thou shalt not" pounded into him from the beginning. No man, unless he is an imbecile, is so ignorant that he does not know the fundamental principles of the ten commandments; and yet our prisons are full of men and women who violate them every day; but these commandments certainly prevent crime to a great degree; and so a statute placed on the law-books of every state that establishes quarantine in front of the marriage-license window, says to every candidate: "If you propose matrimony you must pass through the gate with a health certificate, before you can take out your license." In that way, Dr. Burr said, laws operate as potent, educational factors. He agreed with Dr. Dührssen on the one hand, that it will not protect in all cases. One can not catch them all; but there are thousands and thousands of men and some women, who enter the marriage relation in the acute stage of venereal diseases, who could be restrained. They have passed out of physicians' offices knowing that they were not cured and have entered the marriage relation. If they have reached a condition of latency in which it is difficult for the physician to discover their disease, the probabilities are comparatively slight that they may cause a harm to others. Good sanitary inspection will cut out most of these. To enact those sanitary laws is infinitely better than to have no preventive laws. People will come to know of these things and to respect the laws, and the marriage contract will have some barriers that will protect the healthy from existing contagions.

DR. J. HENRY CARSTENS, Detroit, took the stand that education will do a great deal in the prevention of these diseases. It does not prevent them entirely; because the men who are the most educated and who are the most thoroughly posted on these dangers will deliberately go and expose themselves to them. Not only knowledge is required, but back of it some moral principles. The public has been educated in reference to the danger of the contagion of tuberculosis; the poor fellow who has it has trouble in getting a position, and, if it is known, he is discharged because others are afraid of catching it. If the public is educated in the same way in regard to venereal diseases, the man who has a venereal disease will have just as much trouble, and he will be careful to see that he is cured. A woman will be careful whom she marries. In Detroit was held the first public meeting in this country on the subject. Ministers and teachers and the public in general were invited and all those points were discussed publicly. Dr. Carstens thinks that if this were done all over the country a great deal of good would be accomplished.

DR. HENRY O. MARCY, Boston, said that a young man from one of the best families, having been carefully reared by one of the best mothers, consulted him and said: "I am engaged to a beautiful young girl. My intimate friend, a beloved companion for years, says that I have no right to go to the marriage bed until I shall prove my manhood." So he came to Dr. Marcy for advice. Dr. Marcy declared that he labored with that young man, and was never more faithful in the discharge of a duty. The young man gave him his sacred promise. When Dr. Marcy returned from his summer vacation, the young man went to him and said: "That persuasive friend took me against my judgment where I should not have gone; and see!" The man had lost an eye from gonorrhea. Of course, he had lost his sweetheart. He is now a single man with ambition crushed out of him. He had fine opportunities; and it was over-persuasion of a man of the world (as he is called) that led him into this single experience with such frightful result.

DR. DANIEL T. NELSON, Chicago, stated his belief that the majority of the girls who fall, do so because of want of instruction. He said that even physicians fail to instruct their own children as they should before puberty; they have left it for the teacher, the Sunday school teacher, the pastor, and these, in turn, have left it to some one else, and as a consequence the children get their education along this line on the street. Education in this subject must be commenced in the family; it is the parents' business to teach their children. But many children have no parents, or none who can teach. The state educates the children, because of its theory that the children will not be educated unless the state takes hold of it. General taxation pays for that education. Should it not be alike in this, Dr. Nelson asks? Hygiene and physiology are taught in the schools. True, but in school-books sexual physiology is entirely obliterated, perhaps with few exceptions. Dr. Nelson said that in all the text-books that he has ever seen that have been used in the colleges and in the high schools and even in the lower schools, this matter of physiology of generation has been left out. The late Philip D. Armour once said: "Educate the children, and let the old sinners go." This is what must be done in this matter. The old sinners will soon pass away; but the children must be educated. A beginning should be made in the primary schools, not telling them where babies come from, necessarily; for they are babies themselves, and they do not care where they came from. Teach them how the plants grow, how generation takes place in plants. If they know enough, if they are sufficiently mature, teach them how birds increase. Show them the little birds and teach them that. Then if they are older, go on, as from the kindergarten to the high school; teach how animals procreate. When you come to the higher, human race, teach them the whole truth and nothing but the truth. If this plan were carried out Dr. Nelson declared that there would be very few cases of pregnancy in high schools and boarding schools, which are the disgrace to-day of some of them.

DR. W. D. CALVIN, Fort Wayne, Ind., said that in his city the medical society some time ago arranged to have articles written for the daily papers, but not signed. The signature was omitted to prevent the criticism of advertising. These articles have been on the subject of hygiene, infection and many things concerning which the public have little or false knowledge. The articles have been effective. The knowledge that the people previously had on these subjects in Fort Wayne, as in other cities, has been given to them by the advertising charlatan; and the "patent-medicine" literature. Dr. Calvin thinks that local societies can do a great deal in instructing the laity on these and other topics in this way. Each physician can do something. It has fallen to his lot in the past to give a few talks to women teachers in the high schools and in the grammar schools on physiology. In these talks he took occasion to give one on the subject of propagation of species. One of the members (a very sensible young woman), asked that they be given more instruction on this topic, that they wished to communicate these facts to their students and to others whom they felt to be in great need of this kind of instruction. Consequently, some of the principals of the ward schools are now keeping the girls at one time, and at other times the boys, and giving them such instruction as they can, in the hope that their students may avoid the mistakes so frequently made at that period of life. Physicians also may have an influence with ministers. Dr. Calvin is well acquainted with one minister and does not hesitate to tell him wherein he can instruct the people and not preach to them so much as teach them along certain lines. Since doing so, Dr. Calvin has noted that in various sermons he has touched on these things, in a way that has not been repulsive, that has not been looked on as preaching, so much as teaching. Women physicians, Dr. Calvin said, can have a special influence in the schools. They can talk to the girls. He does not think that there can possibly be any criticism of any woman practitioner who gives students instruction along these lines. If there is, it is unworthy of notice. This work is one that is certainly justifiable. It is work without compensation and for the benefit of those students. No man can instruct these girls in the high schools and in the ward schools so well as can the woman physician. Dr. Calvin thinks that this is one of her special duties, because she can teach these girls better than men can, and it is work that will continue to grow. He believes most

heartily in the education of the people on this subject; and thinks that there is no reason why physicians should hesitate in any way to speak on these subjects, so long as we speak on them in ways that are beneficial to mankind.

DR. W. F. ROBIE, Baldwinville, Mass., declared that it seems to him that what the medical profession needs and what suffering humanity needs, is that this subject should be reduced to concrete form. We need to know just what to teach young men and young women in these subjects, and Dr. Robie said that he does not know just what to teach, though he has been going over the literature thoroughly for the last ten years. On certain general points all are pretty well agreed, but no scheme has yet been advanced, no method of teaching has yet been brought forward, that has proven efficacious in every particular. Dr. Robie said that at Clark University he is making studies of individual cases looking to determine what is proper sex hygiene for the young man and the young woman as well as for the adult married or single man, and the adult married or single woman. The method that he has attempted to follow is to take physicians, lawyers, ministers, and successful business men and teachers who have followed some correct method, or who have survived and prospered in spite of an incorrect one; and in those cases, so far as he has been able, he has obtained a detailed sex history from the first beginning of the sexual instinct. This, he said, is a difficult problem and perhaps we are not prepared for it as yet; but he has been surprised up to this time, in the freedom with which men, successful men, have communicated to him their inmost thoughts and feelings of sex. He believes that this is the only way to get at a correct philosophy of the sexual life; that is, by examining into the principle which has carried men and women through the storm and stress of early years to a successful business or professional career. Physicians have been too reticent about this matter. Dr. Robie agreed with Dr. Howard that it is a duty which every physician should impose on himself, to see that the young women in his care are instructed in these matters, while the young men should be instructed by their fathers, as well as by the physician.

DR. J. T. SEARCY, Tuscaloosa, Ala., said that there is one method of teaching this subject that he endorses. It is Nature's way of doing it. Recently he was interested in a young woman attending school and studying biology. It was very easy for her to approach the subject of sex when studying the amebas and protozoa. It was not hard for her to go a step farther and see how in higher multicellular organisms, smaller parts, as cells, were detached and continued their formations of life into the next generation. Then it was easy to go a little higher and see how other still more highly organized individuals could asexually continue themselves into the next generation, by a detached genetic cell; and then, a step further, how there could be what is called parthenogenesis—sometimes, the carrying forward, even after sex was established, a development into the next generation of the cell that the female provides, without coalescence with a cell of the male. And then when she approached firmly established sex differentiation, and found out that the genetic cells were so habituated in their ways, that they could not go into the next generation without coalescence with the cell of the other sex, it was more easy to understand the subject; and, going higher, among the mammals, and up to man, it was easy for the teacher to tell the girl that her developing organs are made to care for the coalesced cell of the next generation, during gestation, and after parturition, during lactation, until the coalesced product of two lines of descent is able to care for itself. There is no mystery attached to this method of approaching the subject of sex. The female everywhere means the specialized individual that cares principally for the coalesced product of the two ancestral lines, during its early growth.

DR. EDWARD L. KEYES, JR., New York, said that it was impossible to cover every side of the question; and that he had hoped to concentrate his paper on one point, from which no one would dissent. The proper way for each physician to do is to affiliate with some one of the many societies springing up all over the country for the discussion of just these subjects. Dr. Keyes stated that he is the secretary of the American Society of Sanitary and Moral Prophylaxis, which has existed in New York, and that has given meetings for about a year before the meeting mentioned, was held in Detroit. The society, he said, has been carried on almost solely by the energetic and untiring efforts of Dr. Prince A. Morrow. The members are endeavoring to discuss such matters and are also endeavoring to circulate literature. They find nobody knows anything about this subject; that everybody can talk, everybody can read papers and not succeed in saying anything; the difficulty is to come right down to what one would tell his own child. Dr. Keyes thinks that the discussion of these matters with parents of families is very essential to the development of our own ideas. The society has gotten out several pamphlets and that is a beginning of what they are trying to do. They hope to get out a lot more, and Dr. Keyes hopes that there will be many societies that will imitate or improve on their methods. He advised talking among one another, talking to patients, to parents of families, and to ministers, and getting the idea of sex education spread abroad so far as we can by practical, individual work. The propaganda is very hard to spread, Dr. Keyes said, at least in his section of the country, against the almost universal disapproval, except on the part of public educators and members of the medical profession.

DISCUSSION

ON THE PAPERS OF DRS. DENNY AND WATSON.

(*Concluded from page 1911.*)

DR. S. M. HAMILL, Philadelphia, asked Dr. Denny whether the babies were fed on breast milk exclusively, or if this was only a part of their nourishment. The use of small quantities of breast milk in the manner indicated by Dr. Denny, is a measure which should be of much value in the feeding of delicate infants. The cause of the benefit derived is exceedingly interesting. The results obtained in determining the relative bactericidal action of the blood of infants fed at the breast or by human milk and those fed on cow's milk are very impressive. Dr. Hamill is not sure that the greater bactericidal power of the blood of breast-fed infants is dependent directly on something contained in the mother's milk and transmitted in that definite form to the child. The results gained by the addition of mother's milk to the ordinary cow-milk mixture are akin to those obtained in the work of Edsall and Miller in the addition of bean flour to milk mixtures. In the majority of their cases of infantile atrophy, which had been either losing persistently or not gaining, there was an immediate gain in weight on the addition of bean flour to the milk mixture. The bean flour added representing only sufficient vegetable proteid to make up for the animal proteid displayed by the bean flour mixture.

The interpretation put on these results was that they were dependent either on the appropriation of the vegetable proteid, or, more likely, on the stimulation of the proteid digestion in such a way as to enable the child to appropriate more satisfactorily the proteid of the cow's milk. It seems to Dr. Hamill that the addition of the mother's milk to these mixtures may act in a somewhat similar way, and that, by stimulating some of the processes within the body it may bring about an increased bactericidal action in the blood without necessarily transmitting to the child such bactericidal properties.

DR. W. L. HOLT, Bunker Hill, Tenn., said that the fact that the percentage of syphilis in infants is so high shows that there must be a great many more cases than are reported, and the mortality in France of hereditary syphilis shows how common it must be in this country. It seems to him that wet nursing is so extremely dangerous a practice that it ought to be discontinued.

DR. H. MCCLANAHAN, Omaha, said that Dr. Denny's paper recalled a case under his care in which a small amount of breast milk for two or three days enabled the child to pass the

critieal point in an illness. He is fully convinced of its value. In the foundling institution in Omaha all the babies are bottle-fed. They are not permitted to be adopted until after they are three months of age, the idea being that probably in the first three months of life they will manifest any evidence of hereditary syphilis that may be present. He does not think Dr. Watson meant to say that every foundling should be deprived of wet nursing because some infants have hereditary syphilis. No infant should be deprived of anything conducive to its health.

DR. T. W. KILMER, New York City, said that breast milk, of course, is the ideal baby's milk and he is confident he has saved many infant's lives by its use. He believes that it is a mistake to feed babies exaet quantities of milk for different ages. A certain baby can digest just so much food and there is no use in making a baby thin by carrying around more food than it needs. The mortality of foundling institutions mentioned by Dr. Watson seems to Dr. Kilmer to be very high. The majority of the infants in the New York institutions are not breast-fed but the mortality is not nearly so high. Dr. Kilmer considers it a crime to send a baby into a family without a knowledge of its history. Whether it is artificially or breast-fed there is always danger. He agreed with Dr. McClanahan that babies should be kept under observation three or four months to note whether they have any symptoms of congenital syphilis. They should only be bottle-fed after that shows itself. If some such scheme should be adopted by all large cities it would be a great improvement.

DR. GEORGE N. ACKER, Washington, D. C., said that to a certain extent, he thinks Dr. Watson is right in believing that the city should be sued for criminal negligence, but that does not indieate that wet-nursing should be abandoned. In St. Ann's Foundling Asylum, in Washington, the results are better than shown by the mortality mentioned by Dr. Watson. Children should not be plaeed out unless they have been carefully examined, and then the child should be subsequently examined at intervals. An artificial nipple through which the child nurses, is a commendable plan to adopt. Wet-nursing is the only thing for the child in many eases, and breast milk should be used so far as possible during the summer months in combination with the feeding. In reference to Dr. Denny's statement, that he allows the wet-nurse to nurse two children, Dr. Acker said that the milk differs; the first child would get very poor milk and the second child would get very rich milk.

DR. ISAAC A. ABT, Chicago, believes that everyone agrees that breast feeding or partial breast feeding is not only the best prophylaetic against marasmus and infant morbidity in general, but the best food for the treatment of marasmus and other diseases of nutrition. There can be no doubt that it is the physician's duty to save every one of these foundlings that can possibly be saved. If they come as patients, they should receive the best benefit of the medical art. Whether or not large institutions should be maintained as foundling asylums, or whether children should be farmed out in private families, are questions open to discussion but difficult to deeide and extremely difficult to deal with in a practical way. After all, it is a shame that in these institutions, year after year, the mortality varies from 90 to 100 per cent. The foundling and infant asylums as they are conducted now are subject to great criticism. The air space in most institutions is deficient; the nursing facilities are inadequate, and the system of artificial feeding very often lacks expert medical supervision. So far as wet-nursing is concerned, it is the only life-saving plan in a large number of cases. Of course, it is deplorable that such an accident should ever occur, as is reported from Baltimore, though with careful medical supervision such accidents should be very rare. Dr. Abt does not think that the practice of wet-nursing in foundling asylums should altogether be condemned. It seems better to ask better medical supervision, better feeding and hygiene, and in all a more scientific management of these institutions.

DR. THOMAS MORGAN ROTCH, Boston, said that the number of babies whose lives have been saved by breast feeding is so enormous, that if possible, all should be fed in this way. Human milk is exceedingly valuable in infantile atrophy and should be tried more frequently than is usual. He agreed with Dr. Watson that many of these babies are infectious. The practice of wet-nursing these foundlings should be carried out only under the strictest supervision and with the exercise of the greatest care to safeguard the wet-nurse.

DR. FRANCIS P. DENNY, Brookline, Mass., referred to Dr. Watson's statement that Boston is carrying on the practice of nursing foundlings and declares that he knows of no institution in Boston where that is done. Dr. Denny thinks that if some charitable institution, preferably a hospital, under medical supervision, would keep at least a registry of wet-nurses whose antecedents are well known, it would be of great benefit. Such an institution, using every precaution, in desperate cases might furnish human milk on short notice. In reply to Dr. Acker's criticism of feeding two children on the same breast, Dr. Denny said that the mother's own child probably took four or five ounces at a nursing and the two sick babies took probably not over an ounce apiece. Granted that the one child got better milk than the other, still it would make no difference in his practice, because breast milk is a luxury, and whether a little better or a little poorer it matters not, so long as one secures human milk for the sick child and can so save its life.

DR. WILLIAM T. WATSON, Baltimore, said he should put Dr. Denny's suggestions into practice. In his own paper he spoke only of foundlings. In the case reported the baby appeared well when it went to the family. It should be remembered that syphilization of innocent women is inherent in the practice of wet-nursing foundlings. It can not be prevented by the most rigid inspection. Infections are due to the practice and not to carelessness of individuals. The baby for two or three months may appear to be perfectly healthy. Syphilitic infection can take place from the most minute lesions on the baby's mouth and into the most minute lesions on the woman's breast. If the dangers of this method of feeding are fairly stated to the wet-nurse the practice will immediately die out.

Medical Education and State Boards of Registration

COMING EXAMINATIONS.

OHIO State Board of Medical Registration and Examination, Columbus, December 11-13. Secretary, Dr. Geo. H. Matson, Columbus.

IOWA State Board of Medical Examiners, Office of State Board of Health, Des Moines, December 11-13. Secretary, Dr. J. F. Kennedy, Des Moines.

VIRGINIA Medical Examining Board, Richmond, December 11-14. Secretary, Dr. R. S. Martin, Stuart.

MARYLAND Board of Medical Examiners, 847 N. Eutaw St., Baltimore, December 12. Secretary, Dr. J. McP. Scott, Hagerstown.

CALIFORNIA State Board of Medical Examiners, San Francisco, December 18. Secretary, Dr. Chas. L. Tisdale, Alameda.

OKLAHOMA Board of Medical Examiners, Guthrie, December 26. Secretary, Dr. J. W. Baker, Enid.

Kentucky August Report.—Dr. J. N. McCormack, secretary of the State Board of Health of Kentucky, reports the written examination held at Louisville, Aug. 1, 1906. The percentage required to pass was 70, and not less than 60 in any branch. The total number of candidates examined was 12, of whom 9 passed and 3 failed. The following colleges were represented:

College.	Year Grad.	Per Cent.
PASSED.		
Kentucky School of Med.	(1906)	72, 72, 73, 76, 76.5, 83.5
Hospital Coll. of Med., Louisville	(1906)	72.5, 80.5
Louisville Med. Coll.	(1906)	96
FAILED.		
Kentucky School of Med.	(1906)*	
Hospital Coll. of Med., Louisville	(1906)*	
University of Tennessee	(1905)*	

* Percentage not given.

Massachusetts September Report.—Dr. Edwin B. Harvey, secretary of the Board of Registration in Medicine, reports the written examination held at Boston, September 11-12, 1906. The number of subjects examined in was 12; total number of questions asked, 60; percentage required to pass, 70. The total number of candidates examined was 74, of whom 45 passed, including 6 non-graduates, 2 of whom were

osteopaths, and 29 failed, including 16 non-graduates, 3 of whom were osteopaths. The following colleges were represented:

College.	Year Grad.	Per Cent.
PASSED.		
Georgetown University	(1906)	70.6
Illinois Med. Coll.	(1902)	70.1
Rush Med. Coll.	(1905)	80.6
Medical School of Maine	(1903) 74.5;	(1906) 76.1
Baltimore Med. Coll.	(1906)	70, 70, 70, 71.5
Johns Hopkins Med. School (1904) 81.5; (1905) 70.8, 76.1, 78.5; (1906) 80.7.		
Boston University	(1904) 72.5, 79.1;	(1906) 73.5
Harvard Med. School (1903) 72.8; (1906) 71.8, 74, 77.7, 84.5, 86.6		
Tufts Coll. Med. School	(1906)	70, 71.3, 73.7, 74.1, 74.3
College of P. & S., Boston	(1906)	70, 74.6
Dartmouth Med. Coll.	(1905)	75.8
Bellevue Hosp. Med. Coll.	(1878)	74.1
Cornell University	(1906)	81.8
College of P. & S., New York	(1895) 73.1;	(1906) 70.
Jefferson Med. Coll.	(1905)	74.6
University of Vermont	(1906)	70.
Queen's University, Kingston, Ontario	(1905)	79.6
University of Naples, Italy	(1904)	70.
FAILED.		
Baltimore University	(1905) 67.6;	(1906) 60.8, 66.8
Baltimore Med. Coll.	(1905) 64.1;	(1906) 67.3
Maryland Med. Coll.	(1906)	63.
College of P. & S., Baltimore	(1906)	65.6
College of P. & S., Boston	(1905) 58;	(1906) 62.
Eclectic Med. Coll., New York	(1906)	62.3
University of Vermont	(1898)	66.3
Laval University, Quebec	(1904) 51.8;	(1906) 58.3

Oklahoma September Report.—Dr. J. W. Baker, secretary of the Territorial Board of Medical Examiners, reports the written examination held at Guthrie, Sept. 25, 1906. The number of subjects examined in was 9; total number of questions asked, 90; percentage required to pass, 66.2 in each branch. The total number of candidates examined was 33, of whom 22 passed and 11 failed. The following colleges were represented:

College.	Year Grad.	Per Cent.
PASSED.		
College of P. & S., Chicago	(1903) 85;	(1906) 85.
Bennett Med. Coll.	(1906)	83.
University of Kansas	(1906)	78.
Hospital Coll of Med., Louisville	(1906)	74, 74.2
Louisville Med. Coll.	(1906)	92.3
University of Louisville	(1905) 75;	(1893) 69.3
University of Michigan, Homeo. Dept.	(1906)	72.
University Med. Coll., Kansas City	(1896) 69.2	(1898) 82.
St. Louis University (Marion-Sims-Beaumont Med. Coll.) 88; (1905) 70.		(1897)
University of Missouri	(1906)	88.2
Ensworth Central Med. Coll.	(1906)	74.
Washington University, St. Louis	(1904) 76;	(1906) 78.
University of Pennsylvania	(1905)	73.2
University of Nashville	(1901) 69.2;	(1906) 68.
Meharry Med. Coll.	(1906)	71.
FAILED.		
Denver & Gross Coll. of Med.	(1906)	61.
Illinois Med. Coll.	(1906)	65.
Kentucky School of Med.	(1892)	58.
University of Louisville	(1895) 63;	(1876) 65.
University of Kansas	(1906)	68.
University Med. Coll., Kansas City	(1900)	58.
Barnes Med. Coll.	(1904)	55.
St. Louis Univ. (Marion-Sims-Beaumont Med. Coll.)	(1906)	54.
Eclectic Med. Inst., Cincinnati	(1872)	60.
Hospital Med. Coll., Evansville, Ind.*	(1883)	47.

* This college became extinct in 1886.

Arizona October Report.—Dr. Aneil Martin, secretary of the Arizona Board of Medical Examiners, reports the written examination held at Phoenix, October 1 and 2, 1906. The number of subjects examined in was 9; total number of questions asked, 90; percentage required to pass, 75. The total number of candidates examined was 8, of whom 6 passed and 2 failed. The following colleges were represented:

College.	Year Grad.	Per Cent.
PASSED.		
University of Southern California	(1905)	83.5
Tulane University	(1901)	75.3
Johns Hopkins Med. School	(1905)	81.2
University of Michigan	(1900)	78.
Dartmouth Med. Coll.	(1864)*	
College of P. & S., New York	(1904)	76.
FAILED.		
College of P. & S., St. Louis	(1904)	65.
Med. Coll. of South Carolina	(1893)	59.

* Percentage not given.

Colorado October Report.—Dr. S. D. VanMeter, secretary of the Colorado State Board of Medical Examiners, reports that 48 applicants were licensed at the meeting held at Denver, October 2, 1906. All applicants were submitted to an oral examination; sixteen were required to take a supplementary written examination, but 3 did not comply. Of the 13 who took the written examination, 10 passed and 3 are held in abeyance until the next meeting of the board. One who failed at the July meeting is reported here. The following colleges were represented:

REGISTERED WITHOUT SUPPLEMENTARY WRITTEN EXAMINATION.

College	Year Grad.
Gross Med. Coll.	(1901)
Denver & Gross Coll. of Med.	(1906)
Howard University	(1901)
Hahnemann Med. Coll., Chicago	(1892)
Rush Med. Coll.	(1883), (1894)
Northwestern University	(1904)
College of P. & S., Chicago	(1895), (1898)
Drake University, Des Moines	(1903)
Keokuk Med. Coll.	(1877), (1892)
University of Iowa	(1877), (1899)
Kentucky School of Med.	(1897)
College of P. & S., Baltimore	(1891)
Washington University, St. Louis	(1899)
Hahnemann Med. Coll., Kansas City	(1906)
Missouri Med. Coll.	(1875), (1897), (1898)
Kansas City Med. Coll.	(1895)
St. Louis University (Marion-Sims-Beaumont Med. Coll.) (1894), (1895), (1896).	
Albany Med. Coll.	(1897)
University of the City of New York	(1886)
University of Buffalo	(1888)
Western Reserve University, Cleveland	(1899)
Medical College of Ohio	(1882), (2, 1897)
Starling Med. Coll., Columbus	(1889)
Jefferson Med. Coll.	(1906)
Western Pennsylvania Med. Coll.	(1891)
Hahnemann Med. Coll., Philadelphia	(1895)
Meharry Med. Coll.	(1905)
Western University, London, Ont.	(1899)

PASSED SUPPLEMENTARY WRITTEN EXAMINATION.

College.	Year Grad.	Per Cent.
PASSED.		
Denver & Gross Coll. of Med.	(1906)	77.5
Northwestern University	(1906)	72.6, 74.
Rush Med. Coll.	(1901)	71.8
College of P. & S., Chicago	(1905) 74.8;	(1906) 77.1
Hospital Coll. of Med., Louisville	(1904) 80.6;	(1906) 70.
Barnes Med. Coll., St. Louis	(1905)	72.2
Ensworth Central Med. Coll.	(1906)	71.7

DID NOT TAKE SUPPLEMENTARY WRITTEN EXAMINATION.

College of P. & S., Indianapolis	(1905)
Louisville Med. Coll.	(1879)
Tulane University	(1906)

FAILED AT SUPPLEMENTARY WRITTEN EXAMINATION.

Ohio Med. University	(1902)	46.3

Florida October Report.—Dr. J. D. Fernandez, secretary of the Regular Board of Medical Examiners of Florida, reports the written examination held at Jacksonville, Oct. 17-18, 1906. The number of subjects examined in was 7; total number of questions asked, 70; percentage required to pass, 75. The total number of candidates examined was 32, of whom 30 passed and 2 failed. Six applicants withdrew from the examination. The following colleges were represented:

College.	Year Grad.	Per Cent.
PASSED.		
Medical Coll. of Alabama	(1906)	85
University of Georgia	(1899)	83
Atlanta School of Med.	(1906)	82.1, 83
College of P. and S., Chicago	(1905)	76
University of Louisville	(1893) 81.7;	(1906) 95.1
University of Kentucky	(1905)	81.1
Kentucky School of Med.	(1894)	87.2
University of Louisiana	(1868)	75.1
Tulane University	(1906)	90.7, 94.4
University of Maryland	(1894) 75;	(1899) 80.1
College of P. and S., Baltimore	(1906)	83
Johns Hopkins Med. School	(1900)	95.7
University of Michigan	(1906)	88.2
Barnes Med. Coll.,	(1894) 84;	(1903) 81.1
Cincinnati Coll. of Med. and Surg.	(1874) 75;	1880) 91.1
Medical Coll. of Ohio	(1874)	75, 75.4
University of Pennsylvania	(1904) 93.4;	(1906) 91
Medical Coll. of South Carolina	(1903)	90.1
Meharry Med. Coll.	(1906)	85, 85.1
University of Havanna, Cuba	(1880)	81
University of Palermo, Italy	(1898)	76.1
FAILED.		
Meharry Med. Coll.	(1905)	64*
* Third failure.		
University of the South	(1901)	61.4

Rhode Island October Report.—Dr. Gardner T. Swarts, secretary of the Rhode Island State Board of Health, reports the written examination held at Providence, Oct. 4-5, 1906. The number of subjects examined in was 7; total number of questions asked, 70; percentage required to pass, 75. The total number of candidates examined was 22, of whom 14 passed and 8 failed, including one undergraduate. The following colleges were represented:

College.	Year Grad.	Per Cent.
PASSED.		
Kentucky School of Med.	(1904)	75.
Medical School of Maine	(1900)	75.
Johns Hopkins Med. School	(1905)	80.1, 83.6
Tufts Coll. Med. School	(1906)	82.6, 84.4
Harvard University	(1904) 80.3;	(1906) 82.9, 86.1, 87.2

College of P. & S., New York.....(1877) 75.
Jefferson Med. Coll.....(1906) 88.6
Laval University, Quebec.....(1905) 78.2
University of Naples, Italy.....(1900) 75.

FAILED.

Baltimore University .....(1904) 65.9
Maryland Med. Coll.....(1906) 68.5
Laval University ....(1904) 71.4; (1905) 69.5, 69.9; (1906) 73.2
University of Naples, Italy.....(1899) 72.9

Minnesota October Report.—Dr. W. S. Fullerton, secretary of the Minnesota State Board of Medical Examiners, reports the written examination held at St. Paul, Oct. 2-4, 1906. The number of subjects examined in was 15; total number of questions asked, 90; percentage required to pass, 75. The total number of candidates examined was 24, of whom 17 passed and 7 failed. One candidate withdrew from the examination. Thirteen reciprocal licenses were granted. The following colleges were represented:

Colleges.	Year of Graduation.	Medicine.	Surgery.	Obst., Gyn.	Mat. Medica.	Anat., Hist.	Physiology.	Chem., Tox., and Urinalysis.	Path., Bact.	Prev. Med. and Med. Juris.	General Average.
Harvard University	1904	81	80	93	82	88	96	82	87	81	85.5
University of Minnesota ..	1906	77	65	70	62	64	98	87	93	78	77.1
University of Minnesota..	1906	76	75	73	76	72	89	75	71	76	75.8
University of Minnesota..	1906	86	80	80	85	88	87	85	79	76	82.8
University of Minnesota ..	1905	79	70	85	67	68	82	75	75	75	75.
University of Minnesota..	1906	82	75	90	71	92	86	75	75	75	80.1
Unnversity of Minnesota..	1906	73	77	70	78	75	97	73	79	75	78.1
University of Minnesota ..	1906	83	74	88	87	89	91	77	76	77	82.3
University of Minnesota ..	1906	75	83	77	80	90	75	78	77	79	79.3
University of Minnesota..	1906	86	75	87	78	88	80	65	71	75	78.3
Hamline University	1905	85	70	85	66	74	81	95	77	77	78.8
Hamline Universlty	1906	75	83	83	78	89	78	70	75	75	78.
Hamline Universlty	1905	75	78	71	78	80	78	75	75	70	76.
Hamline University	1906	75	81	77	72	75	75	75	75	74	75.4
Jefferson Med. Coll.....	1897	75	78	77	75	85	75	75	89	75	78.2
Laval Univ., Montreal....	1906	81	90	82	83	85	94	80	80	74	83.4
Univ. of Paris, France...	1894	86	88	88	85	80	86	87	85	85	85.5
FAILED.											
Coll. of P. and S., Chicago.	1906	82	26	80	69	70	75	78	79	75	70.4
Ft. Wayne Med. Coll.	1895	75	70	65	58	57	78	75	71	74	69.3
Hamline University	1906	75	60	82	60	91	85	78	87	75	77.*
Hamline University	1906	70	37	81	59	68	76	75	75	73	68.2
Hamline University	1906	75	70	74	68	66	75	86	86	76	75.†
Eclectic Med. Inst., Cincin.	1899	50	39	63	76	28	75	75	34	73	57.
Jefferson Med. Coll	1906	71	85	67	65	55	78	85	75	67	70.8

* Conditioned in Materia Medica and Surgery.
† Conditioned in Materia Medica and Anatomy.

LICENSED THROUGH RECIPROCITY.

College.	Year Grad.	Reciprocity with.
Colorado School of Med. .....(1903)		Wisconsin.
George Washington University .....(1895)		Maryland.
College of P. and S., Chicago (2,1904)	(1905)	Illinois.
College of P. and S., Chicago.....(1903)	(1906)	Wisconsin.
Rush Med. Coll. .....(1904)		Illinois.
University of Iowa.....(1896)		Iowa.
College of P. and S., Cleveland.....(1905)		Ohio.
Milwaukee Med. Coll. .....(1906)		Wisconsin.
Queen's University, Kingston, Ont. .....(1895)		Illinois.

Montana October Report.—Dr. W. C. Riddell, secretary of the Board of Medical Examiners of Montana, reports the written examination held at Helena, Oct. 2-3, 1906. The number of subjects examined in was 10; total number of questions asked, 50; percentage required to pass, 75. The total number of candidates examined was 22, of whom 10 passed and 12 failed. The following colleges were represented:

PASSED. College.	Year Grad.	Per Cent.
College of P. & S., Chicago.....(1902) 75, 75.2;	(1906)	75.
University of Michigan.....(1904)		78.8, 81.3
University of Minnesota.....(1905)		75.5
St. Louis University (Marion-Sims-Beaumont Med. Coll.) .....(1905)		82.3
University Coll. of Med., Richmond, Va.....(1905)		81.1
McGill University, Montreal.....(1902)		76.
Alexanders University, Helsingfors, Finland.....(1896)		75.3
FAILED.		
Hahnemann Med. Coll., San Francisco.....(1900)		61.3
Northwestern University .....(1906)		71.3
Hahnemann Med. Coll., Chicago.....(1905)		61.2
Indiana Med. Coll.....(1905)		67.7
Louisville Med. Coll.....(1904)		65.7
College of P. & S., Baltimore.....(1891)		62.6
University of Maryland.....(1901)		66.9
Creighton Med. Coll.....(1900) 58.6;	(1906)	64.6
University of Wooster*.....(1871)		68.9
University of Vermont.....(1895)		63.2
McGill University, Montreal.....(1889)		66.4

* In 1896 merged with Cleveland College of Physicians and Surgeons to form the Medical Department of the Ohio Wesleyan University.

Therapeutics

Acute Nephritis.

The causes of death from acute nephritis, according to A. Gordon Gullan, are numerous. In children it usually results from some inflammatory complication of the lungs or pleura followed by uremia; in adults uremia is the more common cause, and then dropsy and its results. Secondary inflammations of the serous cavities, notably pericarditis and peritonitis, may be the cause of fatal termination, and then pneumonia and pleurisy may result fatally, especially in adults. Heart failure from general changes in the heart, producing the large left heart, may serve as a cause of death.

The indications for the treatment of acute nephritis, according to Gullan, are: First, to secure rest for the inflamed organ and thus to lessen the tendency to an increase of the inflammation. Second, to counteract the dangers which result from interference with the excretory action of the kidney by stimulating other organs to action, namely, the skin and bowels. Third, to relieve the hyperemia of the kidneys if possible.

The patient should be kept in bed, between blankets and clothed in woolen nightgowns, and should not be allowed to get out of bed under any circumstances.

DIET.

The diet should be such as to throw as little work on the diseased organs as possible, and to meet this requirement, milk, he states, is the best food. For an adult in bed the amount given in the twenty-four hours should be 50 ounces. Four ounces may be given every two hours, and it should be taken warm. If milk is objected to, or causes nausea or dyspepsia, dilute with water, soda water or potash water.

If necessary, buttermilk or skimmed milk may be substituted, although not so nutritious. This diet must be kept up until far into the stage of convalescence, with a gradual return to the normal diet, by adding first a little carbohydrate such as milk pudding, followed by bread and butter, and then a little fish. Nitrogenous food must be avoided if we wish to relieve the kidney from work. If the urine is scanty and very acid, the following may be added to each feeding of milk:

℞. Sodii bicarb.
Potassii citratis, āā.....gr. x
Aquæ .....f℥i 30 | 65

M. Sig.: To be added to each quantity of milk.

To counteract the dangers which result from the interference with the excretory action of the kidneys, Gullan recommends (*a*) purgatives, and (*b*) diaphoretics.

The best purgatives are the hydragogues, which act, he states, by reducing the renal hyperemia, lowering the blood pressure, relieving the edema and removing from the circulation some of the toxic constituents. Therefore, a good action from the bowels should be obtained twice a day, and for this purpose Gullan recommends the following combinations:

℞. Pulv. jalapæ co.....3i 4|

Sig.: To be taken at one dose at bedtime. Or:

℞. Magnesii sulphatis
Sodii sulphatis, āā.....3iii-iv 12-15
Aquæ .....f℥i 30|

M. Sig.: Take at one dose the first thing in the morning.

He further states that mercurials should rarely be used. Among the diaphoretics he recommends jaborandi in doses of minims xxx to xl (2.-2.65) of the tincture, or minims v to x (.30-.65) of the liquid extract. The liquor ammonia acetate in doses of 3ii to vi (8.-25.), or potassium citrate are also of value. He lauds one preparation especially in this connection and that is sodium benzoate, giving it in doses of gr. x to xx (.65-1.30) from the start. He classifies it as a diaphoretic diuretic, and more especially as a disinfectant to the renal tubules. He also thinks that it possesses the property of converting the urates into less irritating and more easily excreted compounds. He favors the following combination:

℞. Tinct. jaborandi.....m. xxx 2
Sodii benzoatis.....gr. xv 1
Aquæ chloroformi .....f℥i 30|

M. Sig.: To be taken at one dose and such dose repeated every four hours.

In case diaphoresis does not follow this treatment he recommends hot air baths or the warm pack, and then in case of failure, the administration of pilocarpin gr. 1/10 (.006) is recommended hypodermically, which may be increased to gr. 1/6 (.01) or more. Pilocarpin, however, must be given with care when there are evidences of lung complications and when uremia is present. Digitalis or other stimulating diuretics should be avoided during an attack of acute nephritis except in cardiac failure.

To relieve the hyperemia of the kidney, besides the methods already stated, Gullan recommends that counterirritation be applied to the loins. This, he states, is especially beneficial in the early stages of acute nephritis, especially in cases accompanied by suppression of urine. He applies this counterirritation (1) by means of mustard poultices, (2) by dry cupping, (3) by wet cupping. He prefers the dry cupping, which should be applied over both kidneys and followed by hot poultices. He prefers cups the size of an ordinary teacup or glass. Wet cupping is carried out by the application of leeches.

If, in spite of the treatment outlined, symptoms persist such as headache, restlessness and insomnia, the use of bromids and chloral are of great service and can be given with safety if the tension of the pulse remains good. He, however, advises against the use of morphin and opium in all cases of acute nephritis, as they are not easily excreted by the diseased kidneys and thus produce a toxic effect, and are liable to be followed by suppression and uremia. Hyoscine is a safe hypnotic, given in doses of gr. 1/200 to gr. 1/100 (.0003-.0006). When the anasarca is extreme he recommends several small punctures to afford drainage or the introduction of the Southey tubes through the skin. Exudates in the serous cavities may have to be removed by means of tapping, which is not infrequently followed by a marked increase in the flow of urine. During convalescence the anemia must be corrected by the administration of iron, which must be given with care and at the same time avoiding the astringent preparations.

UREMIA.

If symptoms of uremia develop the condition must be vigorously combated by means of free purgation, free diaphoresis and counterirritation over the loins. If coma and convulsions arise the bowels must be moved by placing a drop of croton oil on the base of the tongue, and by producing sweating by the administration of pilocarpin hypodermically, and the application of hot bottles and blankets locally and hot mustard plasters to the loins. The inhalation of chloroform is of value in giving relief in those cases in which asthma or convulsions are present. He emphasizes the importance of prolonged treatment in the tedious cases of acute nephritis.

Mixtures for Infants.

The following formulas, for children under three months of age, are from Grünbaum's "Pharmacopeia for Infants":

Mistura calcii lactatis:

℞. Calcii lactatis.....gr. iii | 20
Aquæ anethi dil. q. s. ad.....f3i 4
M. Sig.: To be given at one dose.

Mistura carminitiva:

℞. Sodii bicarbonatis.....gr. i | 06
Spiritus ammon. arom.....m. ss | 03
Glycerini .....m. iv | 25
Aquæ menth. pip.....f3i 4
M. Sig.: To be given at one dose.

Mistura carminitiva cum hyoscyamo:

℞. Sodii bicarb.....gr. i | 06
Tinct. card. co.....m. iii | 20
Tinct. hyoscyami.....m. i | 06
Aquæ anethi q. s. ad.....f3i 4
M. Sig.: To be given at one dose.

Mistura cascaræ sagradæ:

℞. Ext. cascaræ sagradæ liq.....m. ii | 12
Syrupi zingiberis.....m. i | 06
Aquæ anethi q. s. ad.....f3i 4
M. Sig.: To be given at one dose.

Mistura cascaræ cum stillingia:

℞. Ext. cascaræ sagradæ liq.....m. i | 06
Ext. stillingiæ liq.....m. v | 30
Aquæ anethi q. s. ad.....f3i 4
M. Sig.: To be given at one dose.

Mistura catechu et cretæ:

℞. Tinct. catechu.....m. ii | 12
Spiritus ammon. arom.
Spiritus chloroformi, āā.....m. i | 06
Misturæ cretæ q. s. ad.....f3i 4
M. Sig.: To be given at one dose.

Mistura cinchona:

℞. Tinct. cinchonæ co.....m. vi | 35
Syrupi .....m. v | 30
Aquæ q. s. ad.....f3i 4
M. Sig.: To be given at one dose.

Mistura cretæ astringens:

℞. Pulv. cretæ arom.....gr. ii | 12
Aquæ camphoræ
Tinct. catechu, āā.....m. ii | 12
Misturæ cretæ.....m. xx 1 | 30
Aquæ q. s. ad.....f3i 4
M. Sig.: To be given at one dose.

Mistura cretæ cum hematoxylo:

℞. Misturæ cretæ 3ss 2
Tinct. catechu.....m. i | 06
Decoct. hematoxyli q. s. ad.....f3i 4
M. Sig.: To be given at one dose.

Mistura ferri hypophosphitis:

℞. Sol. ferri hypophos. co.....m. v | 30
Syrupi .....m. x | 65
Aquæ q. s. ad.....f3i 4
M. Sig.: To be given at one dose.

Mistura ferri infantibus:

℞. Sol. ferri (dialyzed).....m. iii | 20
Syrupi .....m. x | 65
Aquæ f3i 4
M. Sig.: To be given at one dose.

Mistura ferri iodidi:

℞. Potassii iodidi
Ferri et ammon. citratis, āā.....gr. ss | 02
Syrupi .....m. x | 65
Aquæ q. s. ad.....f3i 4
M. Sig.: To be given at one dose.

Mistura ferri laxans:

℞. Magnesii sulphatis.....gr. i | 06
Acidi sulphurici dil.....m. 1/4 | 015
Ferri sulphatis.....gr. 1/10 | 006
Syrupi simp.....m. x | 65
Aquæ menth. pip q. s. ad.....f3i 4
M. Sig.: To be given at one dose.

Mistura gentianæ alkalina:

℞. Sodii bicarb.....gr. i | 06
Infus. gentianæ co.....3ss 2
Aquæ menth. pip. q. s. ad.....f3i 4
M. Sig.: To be given at one dose.

Mistura gentianæ cum rheo:

℞. Sodii bicarb.....gr. ss | 03
Tinct. gentianæ co.....m. i | 06
Infusi rhei.....m. x | 65
Spiritus chloroformi.....m. ss | 03
Aquæ menth. pip. q. s. ad.....f3i 4
M. Sig.: To be given at one dose.

Medicolegal

Practicing Medicine—"Doctor of Neurology and Ophthalmology"—Design of Law—Medical Dictionaries as Evidence.

The Supreme Court of Iowa, in the case of State vs. Wilhite, holds sufficient, and affirms a judgment of conviction on, an indictment which, though inartistically drawn, charged, in substance, that the defendant did wilfully and unlawfully practice medicine and publicly profess to cure and heal the diseases and ailments to which the flesh is heir by means of a certain system, a more particular description of the peculiar and mysterious workings of which was to the grand jury unknown; that he advertised in a certain newspaper that by said system he could cure and heal tubereulosis and cause the same to be cured, as also that he was a "doctor of neurology and ophthalmology," with an office at a certain place and certain office hours; that he maintained such office and had placed

near the entrance thereto an advertisement sign containing the words, "Dr. Wilhite, Neurologist," by means of which advertisement he solicited persons to meet him at his office to participate in the beneficent results arising from treatment under his said system; that he did then and there undertake to cure and heal diseases and ailments, but did not have a certificate or license from the proper authorities so to practice, nor did he file with the county recorder such certificate to practice, and had never applied therefor.

The evidence, the court says, established the defendant's guilt. True, he modestly ascribed to Nature the healing of all diseases, and merely claimed to discover and remove the causes so as to give Nature a chance. To accomplish this he proposed to "stop the leaks in the nervous system and repair the damages done by methodical rest and dietetics." In a long screed criticising the treatment of disease by physicians generally, published in a local paper, he announced himself "the master mechanic of the human body," adding: "The system I practice is taught in but one school in the world, and I am a graduate of that school;" and proceeded: "If your organs are not all working properly call on a master who will remove the cause. If there is a leak of power he stops it. If there is a pressure on some of the shaftings (or nerves), causing a hot box (or pain), he removes it. If the right fuel has not been used, he orders the right kind, and if the fireman does not know how to fire, he teaches him or her the business." And, after quoting a letter said to have been received from a patient, he said: "I do not claim to be a specialist on tuberculosis any more than a great many (in fact, almost all) so-called diseases that the medical men and other specialists have not been able to do much for in the way of curing. This system gives a permanent cure. We prefer those who have tried other systems. In that way we prove the system I practice is the best because we get good results. We do not care much what your troubles are if you want to get well and stay well. Dr. J. C. Wilhite, 526½ Central Avenue Fort Dodge, Iowa." This was a public profession to cure and heal. State vs. Heath, 125 Iowa 585. Publishing his card as "doctor of neurology and ophthalmology" was also a public profession that he was a physician, and this with the assumption of duties as such, by advising patients how to care for themselves so that Nature might effect a cure, constituted practicing medicine within the meaning of the statute. See O'Neil vs. State, 3 L. R. A. (new series) 762 and note.

Continuing, the court says that the defendant complained that if he be adjudged guilty there were others equally so, and many were enumerated who, as counsel seemed to think, must come beneath the ban of the law. But it will be time enough to determine each case when it reaches the court, and should some escape it may afford the accused some consolation to reflect that also at the fall of the tower of Siloam those who escaped were quite as great sinners as the 18 who were crushed beneath its walls. At any rate, the zeal of the prosecutor was not misdirected in this case. The "doctor" left the farm in 1902, and after studying at the "Northern College of Ophthalmology and Otology" two months, was awarded the degree of "doctor of optics." He then pursued a correspondence course in the sams school during the summers of 1902 and 1903 and became entitled to a diploma on the payment of $10. Thereafter he took a "regular course" of three months at the "McCormick Neurological College" and became a "doctor of neurology" March 1, 1905. Aside from this he has read several articles in the magazines and a couple of works on the eye. No argument is required to demonstrate that his preparation was utterly inadequate, and that his pretensions savored of the charlatan and impostor. Even though familiar with his alleged "system," he could not have been reasonably proficient in those subjects essential to the appreciation of physical conditions to be affected by treatment.

The design of the law is not to render any mode of treatment whatsoever unlawful but that every one before he shall undertake to prevent, cure or alleviate diseases and pain as an occupation shall have some knowledge of the nature of disease, its origin, its anatomic and physiologic features, its causative relations and of the preparation and action of drugs. Experience has shown that this is necessary for the protection of the people against fraud and empiricism. No one is thereby deprived of the opportunity to exploit his "system." All that is exacted is that before undertaking to do so by applying it to the functions of life he shall be possessed of that degree of knowledge and skill required by the statute of all and evidenced by a certificate from the proper officers of the state.

The considerations urged in this case against the constitutionality of the statutes were pressed on the court's attention when State vs. Heath, 125 Iowa 585, was decided. See also State vs. Blair, 112 Iowa 466. The court is not inclined to reconsider the conclusions reached in these decisions.

A physician having testified that Dunglison's Medical Dictionary, revised edition, is accepted by the medical profession as authority in the definition of words, and thereupon the definitions of "anatomy," "neurology," "ophthalmology," "pathology" and "physiology" contained therein having been introduced in evidence, over objection, the court holds that, even though the court might have taken judicial notice of the meaning of these words, it was not error to receive a standard medical dictionary in evidence as an aid to the memory and understanding of the court. Bixby vs. Railway Co., 105 Iowa 293, and like cases are not in point. They hold that medical works, treating of the symptoms and cure of disease, are not admissible; not that standard authorities may not be received as proof of the meaning of medical terms.

SOME MASSACHUSETTS LEGISLATION OF 1906.

Prohibits Placing of Offal, Etc., in Milk Cans.

Chapter 116 of the Acts of Massachusetts of 1906 provides for the punishment by a fine of whoever, by himself or his servant, or as the servant of another, having custody of a milk can, measure or other vessel used as a container for milk destined for sale, places or causes or permits to be placed therein any offal, swill, kerosene, vegetable matter or any article other than milk, skimmed milk, buttermilk, cream, or water or other agent used for cleansing said can, measure or other vessel.

Provides for Compensation of Quarantined Wage-Earners.

Chapter 225 of the Acts of Massachusetts of 1906 amends section 42 of chapter 75 of the Revised Laws of that state by adding thereto a provision that when the board of health of a city or town shall deem it necessary in the interest of the public health to require a resident wage-earner to remain within the house or place where he is, or otherwise to interfere with the following of his employment, he shall receive from such city or town during the period of his restraint compensation to the extent of three-fourths of his regular wages, provided, however, that the amount so received shall not exceed $2 for each working day.

Removal to Hospitals of Prisoners for Treatment.

Chapter 302 of the Acts of Massachusetts of 1906 provides that whenever the physician of any prison certifies that a person held therein for trial or sentence, except for a capital crime, requires medical treatment that can not safely or properly be given in such prison, the prison commissioners may temporarily place such person in a hospital. Whenever it appears that a female under sentence in any prison is about to give birth to a child during her term of imprisonment, the physician of the prison where she is held shall send to the prison commissioners a certificate of her condition; and said commissioners shall thereon order her removal to a hospital. A prisoner so removed shall be kept in such hospital until the physician thereof shall certify to said commissioners that she may safely be removed. Any prisoner placed in a hospital in accordance with this act shall, during his absence from prison, be considered as in the custody of the officer having charge thereof, and the time of confinement in said hospital shall be considered a part of the term of sentence.

Labeling Proprietary Drugs and Foods—Cocain, Etc.

Chapter 386 of the Acts of Massachusetts of 1906 provides that on every package, bottle or other receptacle holding any proprietary or "patent medicine," or any proprietary or patent

food preparation, which contains alcohol to an amount in excess of the amount shown to be necessary by the United States Pharmacopeia or the National Formulary as a solvent or preservative of the active constituents of the drugs contained therein, shall be marked or inscribed a statement of the percentage of alcohol by volume contained therein.

Every package, bottle or other receptacle holding any proprietary or "patent medicine" or any proprietary or patent food preparation shall bear a label containing a statement of the quantity of any opium, morphin, heroin or chloral-hydrate contained therein, provided that the package contains more than 2 grains of opium, or more than ¼ grain of morphin, or more than 1/16 grain of heroin, or more than 8 grains of chloral hydrate in one fluid ounce, or, if a solid preparation, in one avoirdupois ounce.

It shall be unlawful for any person to sell, or to expose or offer for sale, or to give or exchange, any patent or proprietary medicine or article containing cocain or any of its salts, or alpha or beta eucain or any synthetic substitute of the aforesaid. It shall be unlawful for any person to sell, or to expose or offer for sale, or to give or exchange any cocain or alpha or beta eucain or any synthetic substitute of the aforesaid, or any preparation containing the same, or any salts or compounds thereof, except on the written prescription of a physician, dentist or veterinary surgeon registered under the laws of the commonwealth; the original of which prescription shall be retained by the druggist filling the same and shall not again be filled. The provisions of this paragraph shall not apply to sales at wholesale, made to retail druggists or dental depots, nor to sales made to physicians, dentists or regularly incorporated hospitals.

Current Medical Literature

AMERICAN.

Tities marked with an asterisk (*) are abstracted below:

Medical Record, New York.

November 24.

1 *One Hundred Consecutive Laparotomies with Some Generai Observations, and a Special Reference to Appendicitis. V. F. Marshail and E. W. Quick, Appieton, Wis.
2 *Treatment of Cancer of the Larynx by Subcutaneous Injection of Pancreatic Extract (Trypsin). C. C. Rice, New York.
3 *Treatment of Enlargement of Prostate. J. Pedersen, New York.
4 *Mental Symptoms Due to Disease of Nasai Accessory Sinuses. J. A. Stucky, Lexington, Ky.
5 Diagnostic Vaiue of the Cystoscope and Ureterai Catheter. J. E. Cannaday, Paint Creek, W. Va?

1. **One Hundred Consecutive Laparotomies.**—Marshall and Quick give the mortality as 2 per cent. There were 18 cases of chronic appendicitis. Some patients were operated on after a single attack in which local tenderness persisted; several were operated on after the second attack, and a few after a dozen or more attacks. The writers do not advise operation after a single attack has subsided, but they invariably advise it after the second. They do not consider any case helpless or any patient too ill to stand an operation so long as the radial pulse can be felt.

2. **Pancreatic Extract in Cancer of Larynx.**—The hypodermic solution used by Rice in this case contained the trypsin enzyme in its natural association with the other gland constituents, notably the amylopsin. This solution was obtained from the fresh gland under rigid aspetic methods. It was a 60 per cent. glycerin extract, sterilized by filtration under pressure, and taken up in vacuum into glass ampullæ and then immediately sealed. The patient whose history Rice reports, was a man 70 years old. He was treated by injections of pancreatic extract, together with the internal use of a similar preparation. This was administered in 3 gr. capsules, three times a day. There was evidently a distinct ameliorating effect by this treatment on the growth, which was considered to be carcinoma. As the patient was obliged to leave this country for a short time, the more permanent results can not yet be reported. Other cases, four in number, have been treated in the same manner. One of these was successful.

3. **Treatment of Prostatic Enlargement.**—Pedersen says that in the present state of knowledge he does not believe that it is possible to say absolutely when surgical intervention should be advised. More detailed, descriptive and searching statistics, especially as to end results, on both the conservative and the radical sides are needed. The exclusive advocacy of one operation is unwarranted. Various factors should influence the physician in his treatment of these cases. Pedersen believes that the teaching which advises surgical intervention as soon as catheter life fails, comes nearest to being correct. He believes in discriminate intervention as against indiscriminate operating.

4. **Mental Symptoms Due to Disease of Nasal Accessory Sinuses.**—Stucky shows by the reports of various cases that acute or chronic disease of the nasal accessory sinuses often gives rise to serious forms of mental disturbance. The cases which he has especially observed gave every evidence of chronicity. In these cases the ethmoid cells were extensively involved. The mental symptoms were very marked. Insomnia, mental depression, indifference to conditions or surroundings, morbid suspicions, morbid fears and suicidal inclination are among the symptoms described. As to their cause, toxin-producing bacteria in the gastrointestinal tract combined with the sepsis from pus absorption, the influence of which acts on the cortical cells and nerve fibers of the brain, are probably the chief agents causing the mental disturbance.

New York Medical Journal.

November 24.

6 *Prevention of Epididymitis. W. T. Belfield, Chicago.
7 Present Status of Serotherapy in Surgical Affections. C. A. Powers, Denver.
8 Submucous Resection of the Nasal Septum, and the Merits of Oblique Incisions in Correcting Septal Deviations. T. R. French, Brookiyn.
9 Etioiogy of Gastric Ulcer. M. R. Barker, Chicago.
10 Address on Tuberculosis Dispensaries and the Coördination of Measures Against Tuberculosis. R. W. Phiiip, Edinburgh, Scotland.
11 *Insanity of Adolescence. C. C. Beling, Morris Plains, N. J.
12 *A Hemolytic Agent, Probably a Member of the Purin Group, Obtained from the Urine in a Case of Pernicious Anemia. G. W. McCaskey, Fort Wayne, Ind.
13 Antrum of Highmore and Its Infections. C. Graef, New York.
14 Facts from Coroner's Cases. P. F. O'Hanion, New York.

6. **Prevention of Epididymitis.**—The operation performed by Belfield does not occlude the vas, a statement based on experimental observations on dogs, and clinical observations on a patient (one of four mentioned) who possessed only one testicle, the other having been removed some years earlier. This man's semen, examined at intervals for six months after the operation, always contained abundant spermatozoa. The operation is performed as follows: The vas is held by the fingers against the skin of the scrotum near the median line, while a half-curved needle is passed through the skin under the vas. A half-inch incision exposes the vas; a transverse or longitudinal incision into the vas opens its canal. The blunted needle (curved) of a hypodermic syringe can be passed into this minute canal, and a watery solution of any chosen agent injected; this liquid traverses the vas and ampulla, and enters into the seminal vesicle. A fine silkworm-gut suture is passed into the lumen of the canal at each extremity of the incision and out through the wall of the vas a quarter inch or more distant; one suture end is then passed through the skin and the two ends tied loosely outside. This suture, entering the lumen of the proximal end, serves to guide the needle when daily injections are to be made. When complete transverse section of the vas is made, the suture arrangement is identical with that described for the fistula formation. When the incision into the vas is longitudinal, an additional suture (catgut) is passed through the edges and tied loosely above the skin. This operation is done under local anesthesia in the office, the patient walking away at its conclusion and losing no time from his vocation. When restoration of the canal is desired, the silkworm suture is tightened so as to oppose the cut ends; when the wound is healed the suture is removed. Restoration of the lumen of an occluded vas is accomplished by excising the occluded portion and suturing the divided ends in the same way; the

lumen of the vas is maintained during healing by the thread within it.

11. Insanity.—Beling emphasizes the great necessity for a more thorough knowledge of insanity by the general practitioner; the marked and prompt curability of insanity in its incipiency; the extreme susceptibility of insanity to prevention.

12. Hemolytic Agent Obtained from Urine in Pernicious Anemia.—McCaskey claims that in a case of typical pernicious anemia there was, first, an extraordinarily large amount of the xanthin bases, or at least of bodies resembling them by being precipitable by silver nitrate; and second, that these bodies removed from the urine of that case, and held in a 0.05 per cent. solution made isotonic for blood exerted a positive but slow destructive effect *in vitro* on normal erythrocytes. In view of these facts, he concludes that these chemical bodies, whatever their precise nature may be, were the probable agents in the causation of the anemia in this case.

Boston Medical and Surgical Journal.
November 22.

15 Major Symptoms of Hysteria. P. Janet, Paris, France.
16 *Cause of So-called Habitual Lateral Curvature of the Spine. M. Böhm, Boston.
17 Exploratory Puncture of the Pericardium. G. G. Sears, Boston.

16. Habitual Lateral Curvature of Spine.—Bohm says that anatomic studies teach that certain pathologic forms of numerical variation of the spine may cause certain kinds of lateral deformities. The *x*-rays show that corresponding clinical types of habitual lateral curvature in the great majority of cases show the variation expected at the seat of the primary curve. Habitual scoliosis manifests itself at the very time at which physiologic growth and changes allow the appearance of curves, based on a varying development. The different affection of the two sides of the spine in habitual lateral curvature corresponds with the peculiar relation of the right and left sides of the spine to the numerical variation. Based on these arguments and on the fact that in 16 out of 20 cases of so-called habitual scoliosis those pathologic types of variation were found at the primary seat of the deformity present, Bohm believes the following statement to be justified: "That developmental error of the human body occurring in embryonic life, which has its morphologic expression in the so-called numerical variation of the spine, causes under certain circumstances those idiopathic lateral deformities of the spine which manifest themselves in the first half of the second decade of life and which hitherto have been considered as affections acquired in postnatal life owing to purely functional or functional-osteopathic conditions. It seems to be the etiologic factor of habitual lateral curvature, better now to be called delayed congenital scoliosis or scoliosis congenitalis tarda."

Lancet-Clinic, Cincinnati.
November 24.

18 Phlyctenular Conjunctivitis. M. Behrman, Covington, Ky.

St. Louis Medical Review.
November 17.

19 *Future of the Medical Profession. J. H. Carstens, Detroit, Mich.
20 *Clinical Psychology. F. P. Norbury, Jacksonville, Ill.
21 *Surgical Principles and Theories. F. F. Lawrence, Columbus, Ohio.
22 Pyelitis in Infancy. H. E. Tuley, Louisville, Ky.
23 Pathologic and Clinical Diagnosis of Sarcoma. (To be continued.) M. G. Seelig, St. Louis.

19.—See THE JOURNAL, Nov. 17, 1906, page 1674.

20-21.—See THE JOURNAL, Dec. 8, 1906, page 1944.

Washington Medical Annals.
November.

24 The Walter Reed U. S. Army General Hospital, District of Columbia. W. C. Borden, U. S. Army.
25 The Hospital, A Proper Place for the Delivery and Management of the Puerpera. N. P. Barnes, Washington, D. C.
26 Review of Ophthalmology. H. A. Polkinhorn, Washington, D. C.
27 Glossitis, Study of Literature from 1816 to 1906. A. B. Bennett, Jr., Washington, D. C.
28 Study of Mitral Stenosis. T. A. Claytor, Washington, D. C.
29 *Case of Splenectomy. J. T. Kelley, Washington, D. C.
30 Interscapulothoracic Amputation for Sarcoma of Arm. E. M. Hasbrouck, Washington, D. C.
31 Case of Ectopic Pregnancy. J. T. Kelley, Washington, D. C.
32 Two Cases of Calculous Pyonephrosis with Nephrectomy. F. R. Hagner and S. Ruffin, Washington, D. C.

29. Splenectomy.—Kelley reports the case of a woman, aged 35, a resident of a malarious part of Virginia, whose spleen was about three times the normal size and adherent to the bladder by very dense adhesions and to the uterus by smaller ones. There were also numerous adhesions to the omentum and intestines. On separating the spleen from the bladder, the denuded surface of the latter bled very profusely, requiring a good deal of suturing to control the bleeding. The pedicle of the tumor, which was twisted on its axis, was about two and one-half inches wide, one inch thick and four inches long, after the organ had been released from its position in the pelvis. It was clamped, cut through and the spleen removed. The pedicle was ligated with No. 3 catgut in three places, and sewed over at the cut surface. The rectal temperature was as high as 101 F. for five days, and the patient was very nervous. Again, during the third week, it rose to 101 F., for four days, but fell to normal on the administration of large doses of quinin. During the first two weeks there were night sweats; except for these the recovery was uninterrupted.

Journal of the Kansas Medical Society, Lawrence.
November.

33 The Case of Joseph Huff. A. Haggart, Ottawa, Kansas.
34 Life Insurance Examination Fees. V. E. Lawrence, Ottawa.
35 Cardiac Inadequacy. W. E. McVey, Topeka, Kan.
36 Prevention and Treatment of Puerperal Sepsis. J. D. Clark, Wichita.
37 Gastric Ulcer and Its Medical Treatment. F. B. Lyon, Wichita.
38 Carcinoma of the Stomach. B. M. Barnett, Rosedale.
39 *Abnormalities of the Urine and Their Significance. R. C. Harner, Green.
40 *Some Kitchen Tests to Detect Adulteration in Common Foods. Professor Bailey.

39. Abnormalities of Urine.—Harner summarizes his paper as follows: 1. Albuminuria may or may not mean a nephritis, and the mere presence of albumin in a single specimen is not sufficient to condemn a patient as afflicted with an incurable Bright's disease. 2. Glycosuria usually, but not always, signifies diabetes mellitus, which, so far as known, is a disease of the pancreas. 3. Indicanuria is indicative of intestinal indigestion or the presence of putrid pus in any part of the body. 4. The total solids excreted daily afford a measure of the eliminative ability of the kidneys; while the specific gravity of a single specimen is only a fair index and should be considered only a step toward the finding of the total solids. 5. Uric acid and its class with our present lack of accurate knowledge is of little clinical importance.

40. Kitchen Tests to Detect Adulteration in Common Foods.—This is an extract from Professor Bailey's article in the September Bulletin of the Kansas State Board of Health.

Journal of Cutaneous Diseases, New York.
November.

41 Lymphangioma Circumscriptum. S. Pollitzer, New York.
42 *Histopathology and the Theory of Drug Eruptions. M. F. Engman and W. H. Mook, St. Louis.
43 *Case of Actinomycosis. J. Zeisler, Chicago.
44 *Histopathology of Paraffin Prosthesis. M. L. Heidingsfeld, Cincinnati, Ohio.
45 Mylasis Dermatosa. A. Strauch, Chicago.

42. Histopathology of Drug Eruptions.—The results of Engman and Mook's observations on iodin and bromin eruptions may be stated as follows: 1. The local eruptive phenomena are prone to occur at points of previous inflammation; about comedones, acne lesions, seborrheic lesions, scars, traumata, scratches, etc. 2. Traumata, pressure and quick changes of temperature may precipitate an eruption in tissues charged with the drug. 3. Idiosyncrasy or susceptibility may be admitted as it is in other toxic conditions. 4. The glands or follicles of the skin take no active or specific part in the production of the lesions, and when they are involved, it is secondarily and passively to inflammatory changes about the vessels and in the connective tissue. 5. The gross histologic changes in the skin consist in different degrees of inflammation, from slight changes about the vessels to destructive abscess formation and progressive death of tissue. 6. The minute histologic changes are: (a) Increase of connective tissue cells about the vessels. (b) Appearance of lymphoid-

like cells about the vessels. (c) Addition to these cells of of trifold leucocytes with granular appearance of collagen and vacuolation of fixed connective tissue cells. (d) Local increase of all the phenomena and the formation of an abscess. 7. The first and second conditions are found in the normal skin with iodid eruption. 8. The stages three and four, or the addition of leucocytes and degenerative changes, are induced by local disturbance of normal equilibrium between the iodin combined in the serum and the tissues. 9. This disturbance of equilibrium may be induced by various factors, and when it does occur the resultant product acts as a toxin, which in its turn causes tissue irritation and the production of various local inflammatory symptoms, the type of symptoms and the eruption being dependent on the character of the individual's reaction to the inflammation thus produced, as in any other toxic condition.

43. **Case of Actinomycosis.**—Zeisler calls attention to the mode of infection through the chewing of grass while golfing.

44. **Pathology of Paraffin Prosthesis.**—Heidingsfeld says that the histologic changes of paraffin prosthesis indicate that the paraffin is slowly removed and gradually replaced by fibroconnective tissue. Its removal is effected by phagocytosis, by means of successful invasion of inflammatory leucocytes, and their successive degenerations. The prosthesis acts as a foreign body by its mere presence, and becomes promptly encapsulated with newly formed fibroconnective tissue. It stimulates the surrounding tissue to proliferation and adenomatous changes, resembling those of early malignancy. The segregation of the encapsulated paraffin in rounded cavities gives the condition a characteristic Swiss-cheese like appearance, and the successive degenerations of invading phagocytes, corresponding with the duration of the process and the size of encapsulated paraffin, are areas of flattened, nonnucleated cells, giant cells and fibroconnective tissue. These areas are separated by an areola of fibroconnective tissue, which gives to the whole prosthetic area an alveolar-like structure. Its analogy to tuberculosis is marked. The paraffin, like the bacilli, acts as a foreign body, incites a leucocytic invasion, which undergoes degeneration and caseation. This in turn excites another invasion, with the formation of a large number of giant cells from the agglutination of the cell bodies and the preservation of the nuclei. The final goal of each is a complete fibrosis. The disappearance of the paraffin by oxidation or by its movement in solid form along lymph channels is improbable and not confirmed by histologic or physiologic facts. The histologic appearances also fail to furnish any special reason for the crystalline character of the paraffin favoring leucocytic invasion.

University of Pennsylvania Medical Bulletin, Philadelphia.
November.

46 Perinephritis as a Cause of Symptoms Simulating Those of Stone in the Kidney? J. Tyson, Philadelphia.
47 Cryptogenetic Streptococcus Infection with Persistent Cutaneous Eruption, Enlargement of the Lymphatic Glands and Fever Suggesting Syphilis. A. Stengel, J. W. White and J. S. Evans, Philadelphia.
48 *Character of the Thrombi and Necrosis of the Liver, Produced by the Intravenous Injection of Ether. L. Loeb, Philadelphia.
49 *Nucleus Test in Pancreatic Disease. J. D. Steele, Philadelphia.
50 Nitrogen Evolved from Alkaline Sodium Hypobromite Solutions. J. Marshall and L. A. Ryan, Philadelphia.

48. **Character of Thrombi and Necrosis of Liver.**—The experiments conducted by Loeb show that intravenous injection of ether causes the production of fibrin thrombi. Ether acts by the destruction of cellular elements of the blood (red blood corpuscles, whether other cells are affected is uncertain). Substances are set free which convert fibrinogen into fibrin. These substances are in many respects similar to the tissue coagulins found in other cells, but it is by no means certain that they are identical with those substances. The formation of small leucocytic thrombi found sometimes after injection of ether is probably a secondary process following necrotic changes in the tissues. These necroses represent in part at least a direct action of the ether on the tissues. Following the toxic action of ether on the cells, autolytic changes take place in all probability and produce the morphologic appearances described above.

49. **Nucleus Test in Pancreatic Disease.**—Steele is of the opinion that the nucleus test is probably a rough indication of the presence or absence of pancreatic secretion, but a case of achylia, to which he refers, and the result of his preliminary experiments on dogs suggest that the relation between the nuclei of muscle cells and pancreatic digestion may not be specific, and that persistence of nuclei may be the result of general lowering of all digestive power quite as much as a sign of insufficiency by the pancreas alone.

The Ophthalmic Record, Chicago.
October.

51 *Unilateral Rotary Nystagmus. A. Duane, New York.
52 High Hypermetropia. T. B. Schneldeman, Philadelphia.
53 Instrument with which Powder May Be Introduced Readily Into the Interior of the Eye. M. D. Stevenson, Akron, Ohio.
54 Syphon Eye Compress. O. A. Griffin, Ann Arbor, Mich.
55 *Case of Retinitis Albuminurica Gravidarum. M. V. Ball, Warren, Pa.
56 Spontaneous Dislocation of Both Crystalline Lenses in Two Members of the Same Family. A. A. Hubbell, Buffalo, N. Y.
57 *Black Cataract. S. W. Smith, Denison, Texas.
58 Treatment of Acute Suppurative Dacryocystitis. L. M. Francis, Buffalo, N. Y.
59 *Punctate Forms of Retinitis. H. Gradle, Chicago.
60 Dionin in Diseases of the Eye. R. W. Rutherford, Chatham, Ontario, Canada.
61 Punctate or Hyaline Opacities of the Posterior Lens Capsule. W. F. Mittendorf, New York.
62 Gifford's Lid Symptoms in Graves' Disease. G. L. Strader, Cheyenne, Wyoming.
63 Cataract Extraction with Preliminary Capsulotomy. H. E. Smith, Norwich, N. Y.
64 A Tangent Plane for Accurately Mapping Scotomata and the Fields of Fixation and Single Vision and for Indicating the Precise Position of Double Images in Paralysis. A. Duane, New York.

51. **Unilateral Rotary Nystagmus.**—The symptoms in Duane's case were: (a) Apparent oscillating movement of objects looked at. This is frequently present in acquired nystagmus and particularly in the unilateral form. (b) A peculiar oscillating diplopia. This could occur only in a unilateral or at least in an asymmetrical nystagmus. (c) The fact that the patient herself could see her own eye oscillate when she looked in a glass. In the present case the refraction was fully corrected. Convergence exercises seemed indicated on account of the convergence insufficiency, and it was thought that systematic practice with the stereoscope would, especially in a case of unilateral nystagmus, facilitate the restitution of a perfectly coördinated movement.

55. **Retinitis Albuminuria Gravidarum.**—Ball's patient, aged 15, presented herself with the following history: In March, one month previous, she had an acute illness, diagnosed as appendicitis, from which she recovered without an operation. Since then, however, she suffered from severe headaches, had attacks of vomiting and the eyesight became so diminished that she could walk with difficulty. The ophthalmoscope showed a marked hemorrhagic retinitis in both eyes. A specimen of urine examined gave ready reaction for albumin. There seemed to be no outward indication of pregnancy. On May 1 she complained of pain in the abdomen, and a few days later had a bloody discharge. An examination developed an impending miscarriage, and on May 15 a horribly macerated and putrid fetus about four months of age was taken from her. Recovery was uneventful.

57. **Black Cataract.**—Smith extracted a black cataract from a woman, aged 71. During the fall of 1895 she stepped into the back yard during a thunderstorm and was momentarily stunned by a flash of lightning, from which she soon seemingly recovered, but that night she was stricken with hemiplegia, involving the right side. The remainder of the fall and succeeding winter she was confined to bed, helpless. With the coming of spring she gradually recovered the use of her limbs, and at present there is not the slightest indication that she ever had paralysis, save in the eye. With the disappearance of the paralysis she noticed that the vision in the right eye was growing dim; this condition grew worse as the years passed. She had a high degree of myopia in left eye, and vision for large objects only in the right eye. By no combination of lenses could Smith get more than a black pupil with a faintly luminous reflex like a faint light shining through a smudge of black coal smoke. Not until he used oblique il-

lumination supplemented by the old catoptric test could he determine the nature of the trouble.

After two years he extracted the cataract by the simple method through an incision involving nearly one-half of the cornea. An absolutely clear pupil was secured, but when the usual test for vision was made the patient could only see objects held on the temporal side. As soon as it was safe the fundus was examined and progressive optic atrophy already complete as to the temporal side was found; in other respects the fundus was normal. Two months after the operation the patient could read small print with a minus 10 sphere in nasal field, but nothing in the temporal sphere with any correction. The fundus was visible only with high power minus lens in the ophthalmoscope.

59. **Punctate Forms of Retinitis.**—Gradle's paper is based on the study of eight personal observations, five cases communicated by other Chicago physicians, and all the cases recorded in the literature.

Journal of the Arkansas Medical Society, Little Rock.
October 15.

65 Acute Toxemias of Pregnancy. H. C. Dunavant, Osceola.
66 *Case of Uncontrollable Vomiting in Pregnancy Necessitating Interference. J. W. Meek, Camden, Ark.

66. **Uncontrollable Vomiting in Pregnancy.**—The only food which Meek's patient could retain and which at once allayed the vomiting was dry toast and popcorn. Three days previously the cervix had been dilated thoroughly, although the uterus was not emptied.

Western Medical Review, Lincoln, Neb.
October 15.

67 Factors which Have Contributed to Better Results in Gynecology and Obstetrics. P. Findley, Omaha.
68 *Some Little Known Peculiarities of the Teeth in Hereditary Syphilis. H. Gifford, Omaha.
69 Dynamic Effects of Antipneumococcic Sera in Pneumonia. J. S. Welch, Lincoln, Neb.

68. **Teeth in Hereditary Syphilis.**—Gifford states that in examining the teeth for signs of hereditary syphilis, attention should be directed not only to the central incisors but in proper cases to the following dental peculiarities: (1) Peg-shaped lower permanent incisors; (2) sharply tusked permanent canines; (3) blunt tusked or pegged temporary canines; (4) high, vaulted, imperfectly developed hard palate, preventing the incisors from coming together even when they are of normal size; (5) the tuberculated first molar of Darier; (6) the sloped molar.

Denver Medical Times.
November.

70 Some of the Medicines Used in the Treatment of Gonorrhea. M. H. Sears, Denver.
71 Treatment of Acute Gonorrhea. A. E. Smith, Denver.
72 Treatment of Acute Gonorrhea in the Male. E. Friedman, Denver.
73 Treatment of Acute Gonorrhea. L. V. Howard, Denver.
74 Id. F. E. Estes, Denver.
75 *Physician's Use of Proprietary Medicines. C. F. Andrew, Longmont, Colo.
76 The Country Doctor. B. B. Slick, Ridgway.
77 Alypin; a New Local Anesthetic. C. E. Cooper, Denver.
78 Laboratory Diagnosis for the Practitioner. J. C. Todd, Denver.

75. **Physician's Use of Proprietary Medicines.**—Andrew discusses this question under four heads, as follows: (1) The principal cause for the indiscriminate usage of proprietary nostrums by the profession. (2) The physician and his relation to the pharmacists. (3) Ethical proprietary remedies. (4) The solution of this difficult question. He says let each state board of health be a critic for the profession of the state of all advertisements for "patent" and proprietary medicines to be found in state medical papers and journals, and report the same to all state and county societies and to the Committee on Medical Legislation of the American Medical Association. The nomenclature of all proprietary remedies according to the U. S. Pharmacopeia will do much to solve the problem. Physicians and pharmacists should refuse to handle the proprietary remedies that bear a trade-mark name. Physicians should stop receiving pay for testimonials.

Utah Medical Journal.
November.

79 Prevention and Treatment of Puerperal Fever. J. M. Henry, Payson, Utah.

St. Paul Medical Journal.
November.

80 *Pyloric Stenosis in Infants. W. R. Ramsey, St. Paul.
81 *Structure and Functions of the Thyroid and Parathyroid Glands. D. H. Lando, St. Paul.
82 Ablation and Atrophy of the Thyroid and Parathyroid Glands. T. W. Stumm, St. Paul.
83 *Exophthalmic Goiter. H. Sneve, St. Paul.
84 *Surgical Treatment of Goiter. J. S. Gilfillan, St. Paul.

80. **Pyloric Stenosis in Infants.**—Ramsey reviews the clinical history of 115 cases of stenosis of the pylorus, 55 of which were treated medically (and all of these terminated fatally), and 60 surgically, and reports two cases seen personally. Operation was refused in both instances. The patients died.

81. **Thyroids and Parathyroids.**—Lando summarizes the functions of both the thyroid and parathyroid in the present status of our knowledge as follows: 1. The thyroid gland alone is not essential to life. 2. The thyroid gland produces an internal secretion characterized by its content in iodin. 3. This secretion in itself poisonous is further decomposed before being absorbed by the blood vessels and lymphatics, and these decomposition products are necessary for the proper functions of the tissues. 4. Excision or atrophy of this organ results in loss of this secretion and consequent malnutrition. 5. Overproduction of this secretion leads to an autointoxication. 6. The parathyroids are even more essential than the thyroids and their insufficiency alone produces the symptoms of tetany. 7. The thyroids can in part replace the action of the parathyroids, but not for any length of time; however, the reverse is more compatible with life, and lastly, only by the combined functions of both structures is perfect health possible.

83. **Exophthalmic Goiter.**—The prime object of Sneve's paper is to support the proposition that exophthalmic goiter is a vasomotor neurosis, and that notwithstanding advances in the knowledge of the physiology and pathology of the thyroid, it has not been possible to connect the gland causally with this disease, and we still have merely the purely theoretical assumption advanced by Moebius and others that a hypersecretion of the gland is responsible for this complexus of symptoms. What little is known of the physiology of the sympathetic system supports the contention that the disease is really an affection of the sympathetic system, at least the disease finds its expression through it.

84. **Treatment of Goiter.**—Gilfillan says that although the opinion of a man of Kocher's experience and ability is a weighty argument in favor of surgical treatment, statistics are unreliable, and improvement is a relative term, depending at times on the enthusiasm, possibly on the veracity, of the observer, and it is still impossible to feel that the problem has been definitely solved.

Journal Missouri State Medical Association, St. Louis.
November.

85 *Unusual Retroperitoneal Tumor in the Mesocolon Simulating Impacted Fibroid of the Uterus. W. B. Dorsett, St. Louis.
86 Present Status of Psychotherapy. D. Greene-Wilson, Kansas City.
87 Bronchopneumonia. T. O. Davis, Maitland, Mo.
88 Malaria. T. C. Allen, Bernie, Mo.
89 Tubercular Arthritis. J. H. Tanquary, St. Louis.
90 Some Phenomena of Tubercular Infection. W. Porter, St. Louis.
91 *Spina Bifida. J. D. Sera, Bland, Mo.
92 Treatment of Appendicitis Other Than Surgical. W. S. Allee, Olean, Mo.

85. **Unusual Retroperitoneal Tumor in Mesocolon.**—Dorsett's patient, a woman, aged 48, complained of pain in the gastric region radiating into the left thigh, and constant nausea accompanied by vomiting, which sometimes gave temporary relief. This had lasted in a more or less degree for eleven years. In spite of this most distressing symptom she was fairly well nourished. During this long period of illness she suffered with a heavy dragging sensation in the abdomen and back. On exposing the abdomen, with the patient in the recumbent posture, abdominal palpation was made. This revealed a fairly well-defined mass at the brim of the pelvis. Bimanual palpation revealed a somewhat fixed mass in the pelvis and a crowding down of the pelvic viscera. This mass

could not be dislodged from the pelvis by pressure exercised from below in the proper axes of the pelvis. When the abdomen was opened a rather flat mass was seen lying at the brim of the pelvis, closing off the pelvic cavity from the general abdominal cavity. Along the brim of the pelvis, anteriorly, could be seen bowel, which on careful examination proved to be a part of the transverse colon. This bowel encircled the anterior border of the tumor. It was only with some difficulty that it could be dislodged, as its posterior border was under the promontory of the sacrum and its anterior border was wedged in behind the pubic bone. The whole mass was crowding the small intestines into the pelvis. Superimposed on the tumor was a coil of colon from each side, and above this again was the stomach. After a careful inspection it proved to be postperitoneal in origin and lay between the layers of the transverse mesocolon.

91. **Spina Bifida.**—Seba reports three cases. One patient, was operated on when only three hours old and made a good recovery. Another did not receive any surgical treatment and died when about two years old. In the case of the third patient, a girl about 12 years old, the sack or tumor gradually drained itself, became atrophied, and folds and nodules appeared, to some extent resembling the convolutions of the brain.

Texas State Journal of Medicine, Fort Worth.
November.

93 Mental Defectives—Their Treatment and Training. E. M. Barrett, Austin, Texas.
94 Abortion, Its Diagnosis and Treatment. J. A. Rawlings, El Paso.
95 Ectopic Gestation. J. G. Sherrill, Louisville, Ky.
96 *Puerperal Infection—From a General Practitioner's Standpoint. G. M. Hackler, Dallas.

96. **Puerperal Infection.**—Hackler concludes that the liability to puerperal infection will be materially lessened by observing the following: (1) The maintenance of asepsis by the obstetrician and nurse, before, after and during delivery; (2) the restriction of vaginal examinations within the narrowest limits possible; (3) the omission of vaginal douches, except in certain rare cases, in which cases sterile water or salt solution should be used; (4) administration of small doses of ergot, three times daily, to secure better contractions and involution of the uterus, thereby occluding to a greater degree the uterine lymphatics; (5) immediate repair of all perineal lacerations extending deeper than the mucosa, which might otherwise offer foci for infection.

Interstate Medical Journal, St. Louis, Mo.
November.

97 *Diseases of the Kidneys as Indications for the Interruption of Pregnancy. H. Schwarz, St. Louis.
98 *Tuberculosis as an Indication for the Interruption of Pregnancy. L. M. Warfield, St. Louis.
99 *Indications for the Interruption of Pregnancy in Reference to Heart Diseases. W. H. Vogt, St. Louis.
100 *Hyperemesis as an Indication for the Interruption of Pregnancy. B. W. Moore, St. Louis.
101 *Ethics and Laws Regarding the Interruption of Pregnancy. F. J. Taussig, St. Louis.

97 to 101. See abstract in THE JOURNAL, Oct. 27, 1906, page 1398.

Indiana Medical Journal, Indianapolis.
November.

102 Prophylaxis of Diabetes and the Clinical Determination of the Glycolytic Functions. G. W. McCaskey, Fort Wayne, Ind.
103 Physical Examination in Hypertrophy of Prostate. E. L. Keyes, Jr., New York City.
104 Phenomena of Life.
105 Irrigation and Drainage of the Seminal Duct and Vesicle Through the Vas Deferens. W. T. Belfield, Chicago.

Texas Medical News, Austin.
November.

106 Adrenalin Chlorid in the Treatment of Rattlesnake Bite. A. D. Ferguson, Dallas.

The Medical Standard, Chicago.
November.

107 German Gynecology. L. Waite, Chicago.
108 Notes from Nothnagels' Clinic. H. B. Hassin, Chicago.
109 Head Sections, with a Superior Method of Illustrating Anatomic and Surgical Subjects. E. E. Clark, Danville, Ill.
110 Interstitial Nephritis. G. W. Finley, Brazil, Ind.
111 Practical *X*-ray Therapy. N. M. Eberhart, Chicago.
112 The Appetite Cure. N. H. Buskett, Coffeyville, Kan.

Central States Medical Monitor, Indianapolis.
November.

113 Acute Retention of Urine Treated by Immediate Progressive Dilatation. G. Link, Indianapolis.
114 Practical Anesthesia. J. W. Wiltshire, Bloomington.
115 Cold Air as a Therapeutic Agent. G. D. Lind, Richmond, W. Va.
116 Exuberant Granulations. J. H. Ford, Indianapolis.

Montreal Medical Journal.
November.

117 The Year's Work—Address of the President of the Montreal Medico-Chirurgical Society, Oct. 5, 1906. F. R. England, Montreal.
118 Two Cases of Tubal Pregnancy. A. L. Smith, Montreal.
119 Teaching of Anatomy in Universities and Medical Schools. A. Robinson, Montreal.
120 Relation of Gynecology to the Work of the General Practitioner. A. H. F. Barbour, Edinburgh, Scotland.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal.
November 10.

1 *Insanity of Childbirth. A. Rigden.
2 Ethyl Chlorid as a General Anesthetic in Conjunction with Ether. G. W. B. Daniell.
3 *Case of Quinin Hemoglobinuria or Blackwater Fever. A. D. Ketchen.
4 *Tetanus in Two Brothers; Subdural and Subcutaneous Injections of Serum; Recovery. J. Adam.
5 *Improved Methods for Recognition of Blood and Seminal Stains. E. H. Hankin.
6 *Enlargement of the Prostate and Its Treatment. G. A. Bingham and C. B. Shuttleworth.
6½ *Enucleation of the Prostate. J. L. Thomas.
7 Posture as an Aid in Surgery. M. MacLaren.
8 Fracture Dislocation of the Spine. A. B. Welford.
9 *Operative Treatment of Irreducible Luxation of the Semilunar Cartilages of the Knee Joint. J. Bell.
10 Case of Extensive Tuberculous Ulceration of the Small Intestines. F. J. Shepherd.
11 Splenectomy and Banti's Disease. G. E. Armstrong.
12 *Surgical Treatment of Chronic Colitis. I. Olmsted.
13 One Hundred Consecutive Cases of Appendix Operation. H. W. Carson.
14 *Treatment of Congenital Clubfoot. B. E. McKenzie.
15 Surgical Relations of the Parathyroid Glands. W. G. MacCallum.
16 Intestinal Obstruction With or Following Disease of the Vermiform Appendix. N. A. Powell.
17 *Surgical Treatment of Ascites Secondary to Vascular Cirrhosis of the Liver. S. White, H. G. Turner and J. Stewart.
18 *Surgical Treatment of Duodenal Ulcer. W. J. Mayo and G. C. Franklin.
19 Acute Septic Peritonitis. C. J. Bond and H. Howitt.

1. **Insanity of Childbirth.**—Rigden concludes that puerperal insanity is typically an acute mania, any one of the so-called causes of insanity, for example, fright, shock, undue worry, or a neurotic inheritance will render the patient liable to an attack. He does not think the theory that sepsis is invariably present can be sustained, though a considerable proportion of cases are undoubtedly septic. The prognosis is favorable, and, with a good family history, and in the absence of septic poisoning, Rigden says that recovery may be anticipated within six months, and subsequent attacks are not greatly to be feared. Special symptoms must be dealt with as they arise, but the essence of treatment consists in an abundance of bland and nutritious food and competent nursing.

3. **Quinin Hemoglobinuria.**—The point of interest in Ketchen's case was that blackwater fever invariably followed the administration of quinin, often in very small doses, in a patient with chronic malarial poisoning, but who had been free from blackwater fever or malaria for 14 months.

4. **Tetanus.**—The two cases reported by Adam present a curious contrast. The first, the younger brother, of slight build, had a number of severe and dirty wounds, presented no tetanic symptoms till the tenth day, and had a severe attack. The second had a trivial injury, yet although he developed tetanic symptoms within 70, if not 60, hours, he had a much less severe illness than his brother—that is, the severity of the illness was related to the severity of the injury, and therefore probably rather to the quantity of the poison than to its virulence.

5. **Recognition of Blood and Seminal Stains.**—In dealing with almost insoluble seminal stains, Hawkins attempted to take advantage of the known solvent action of potassium cyanid on proteid matter. He found that spermatozoa were rap-

idly disintegrated under the action of this reagent, unless they were first hardened by immersion in boiling water. The suspected seminal stain is first placed for a minute in boiling water. It is allowed to cool. It is then placed for two minutes in a 2 per cent. solution of potassium cyanid. It is then rapidly washed in distilled water, placed on a glass slide, teased up and scraped, and larger pieces of the cloth are removed. The film on the slide is dried at air temperature; it is then fixed by heating, stained with gentian violet, and examined. This treatment gave distinctly better results than methods previously used, but was not quite satisfactory in that the tails of the spermatozoa were not always adequately stained. Better results may be obtained as follows: 1. The suspected stain is boiled for two minutes in a watery solution containing tannin 0.5 per cent., and sulphuric acid 1 per 1,000. 2. The stain is washed for two minutes in a solution made by adding one part of saturated ammonia solution to 400 of water. 3. It is then transferred for two minutes to a 2 per cent. solution of potassium cyanid. 4. It is then rapidly washed in distilled water, scraped and teased up on a glass slide, dried, fixed by heat, and stained.

6. **Treatment of Enlarged Prostate.**—Bingham states that statistics favor the perineal route. Dr. Watson's table shows a mortality of 6.2 per cent. for the perineal route and 11.3 per cent. for the suprapubic method. More recently Tenney and Chase have made a very careful compilation of more than 1,000 cases with a similar result. In 1905 Mayo, who uses the perineal route, operated on 63 cases, with 7 deaths.

6½. **Enucleation of Prostate.**—Thomas' personal experience is limited to 31 cases, 29 suprapubic and 2 perineal. He concludes that in enucleation of the prostate there is no choice between the suprapubic and the perineal routes so far as the incidence of mortality is concerned. The suprapubic and the perineal routes are sometimes followed by disappointing results, such as stricture of the urethra, fistula (urinary or recto-perineal), interference with the sexual functions, while the prospects of complete recoveries are about 14 per cent. in favor of the suprapubic route. Enucleation of the prostate in bad septic cases should be done in two stages. The suprapubic route is more suitable for tumors of the middle lobe, for removal of calculi and the control of hemorrhage when they coexist. The suprapubie route is unsuitable for surgeons with short fingers or with flexible, thin nails. There is no justification from postmortem evidence of cases in which the prostate had been removed that the whole prostate has ever been removed. Anatomically, it is not possible to remove the prostate in one mass without also removing with it the prostatic urethra.

9. **Irreducible Luxation of Semilunar Cartilages of Knee Joint.**—Bell reports four cases of irreducible luxation of semilunar cartilages of knee joint in which operation was done through a free anterior opening of the joint by transpatellar incision. The joint was laid open freely, just as for suture of a freshly fractured patella. In each of these four cases there was a condition of cartilage which necessitated removal. The operation was simple and precise, and recovery was uneventful and not unduly prolonged, and the final functional result was entirely satisfactory. The advantages claimed for this procedure are: Greater ease and accuracy in the removal of the torn and displaced cartilages; less manipulation and, therefore, less injury to the joint structures; less risk of infection; a better functional result; and, in general, a better control of all stages of the treatment, with a convalescence only slightly prolonged on account of the necessity for obtaining bony union of the patella.

12. **Surgical Treatment of Chronic Colitis.**—Olmsted reports four cases, in two of which a colostomy was done with a good result following. In the two remaining cases only the appendix was removed, with an almost immediate recovery.

14. **Treatment of Congenital Clubfoot.**—McKenzie summarizes his paper as follows: 1. The prognosis in ordinary, nonparalytic clubfoot is good. 2. The ideal time for active treatment of the surgeon is early in the second year. 3. The deformity of the foot *per se* should be fully corrected; afterward the relation of the foot to the leg. 4. Cutting, other than a subcutaneous section of the tendons, ligaments and fascia is seldom or never required. Manipulative replacement and retention by fixed dressings are sufficient. 5. After-treatment consists in a retentive high brace and a properly constructed leather day boot. 6. The open incision and removal of bone are unnecessary and harmful. 7. The radical operations interfere materiallly with the natural growth and development of the foot. 8. Restrictive methods, either by dressings or apparatus, should be employed as little as possible. 9. Persistent manipulation improves function and development. 10. Operative treatment must be thorough. No part of the correction of the deformity should be left in the hope that mechanical means will complete the work. 11. In persons under 15 years of age congenital clubfoot may be so perfectly cured as to give practically perfection of form and function. 12. In adults perfection of form may be secured. Function is sometimes impaired owing to the fixity of habits hitherto acquired. 13. The time required for active surgical treatment need not be more than three months. 14. Age is no bar to successful treatment. Eminently satisfactory results may be obtained in adult life. Even in the case of adults the more heroic methods of operation in many cases are not called for.

17. **Surgical Treatment of Ascites.**—White's paper is a most excellent and thorough discussion of this subject, embracing a complete review of 227 published cases and a report of four additional cases.

18. **Surgical Treatment of Duodenal Ulcer.**—Of a total of 188 duodenal cases reported by Mayo 175 patients were operated on for chronic ulcer, with 2 deaths; 10 for acute perforation, with 4 deaths; and 3 for repeated acute hemorrhages, with one death. Between Jan. 9, 1904, and June 5, 1906, 134 patients were operated on. Of these 103 were traced as to their present condition; 93 were cured, or so greatly improved as to consider themselves practically well; 8 were unimproved, some improved but had relapsed, and only 2 were reported worse. In 7 cases only the ulcer could not be demonstrated without opening the intestinal cavity, although in the thick-walled stomach 13 in the 100 could not be shown from the exterior of the gastric wall. Gastrojejunostomy, he states, is the operation of choice for chronic duodenal ulcer; it diverts the irritating material and permits of permanent healing. In performing gastrojejunostomy the Mayos practice, whenever possible, the posterior no-loop method. In a few cases they have directly excised duodenal ulcers with plastic closure or end-to-end union. In an experience of 1,112 duodenal and gastric operations, only twice have they seen primary cancer of the duodenum, once developing on an ulcer base. For recurring acute hemorrhages they have twice excised ulcers and once opened the duodenum and sutured the bleeding point in the mucosa. For acute duodenal perforation they sutured transversely and instituted pelvic drainage, the patient being maintained in a nearly sitting posture for several days. In 3 out of 10 cases of acute perforation they made a gastrojejunostomy at the same time.

The Lancet, London.

November 10.

20 *Rectal Alimentation. S. J. Sharkey.
21 Adolescent or Late Rickets. H. H. Clutton.
22 *Stokes-Adams Disease and Cardiac Arrhythmia. J. Hay and S. A. Moore.
23 Determinations of the Amount of Physiologically Active Hydrochloric Acid in the Stomachs of Normal Mice and of Mice Suffering from Cancer Experimentally Produced. S. M. Copeman and H. W. Hake.
24 Erythema Autumnale. Harvest Rash, or Prurigo du Rouget. J. C. Thresh.
25 Treatment of Laryngeal Tuberculosis. H. Barwell.
26 *Is Sulphate of Soda a True Intestinal Antiseptic? J. Maberly.
27 Spirilla of the Mouth. K. W. Goadby.
28 Case of Sclerema Neonatorum. R. Waterhouse.
29 Needs of the Body on Sunday. H. Handford.

20. **Rectal Alimentation.**—Sharkey believes that sugar, peptones and pulverized casein are the best constituents for use in rectal alimentation.

22. **Stokes-Adams Disease.**—In this communication Hay and Moore record a case of Stokes-Adams disease in its second stage—that is, in the stage of syncopal, apoplectiform, or epileptiform seizures. These seizures were of all grades of sever-

ity and tended to occur in groups with periods of comparative comfort intervening. The advent of seizures was usually indicated by definite prodromal symptoms. The necropsy revealed partial obliteration of the auriculoventricular bundle; this would cause a persistent depression of conductivity. An analysis of numerous tracings revealed marked variations in conductivity, all grades from normal conduction to complete heart-block being in evidence at one or another time. This suggests influences in addition to the organic lesion. Such influences were probably nervous in character and affected conductivity either directly through the vagus or indirectly by altering the auricular frequency.

26. **Is Sulphate of Soda a True Intestinal Antiseptic?**—Maberly claims that sulphate of soda has an action over and above that of a mere aperient and liver stimulant, one which points strongly in the direction of its being an intestinal antiseptic.

Journal of Tropical Medicine, London.

November 1.

30 Note on a Leucocytozoon Found in Mus Rattus in the Punjaub. J. R. Adie.
31 Occurrence and Habits of Some Species of Human Biting Flies Belonging to the Families Tahanide and Muscide (Glossina), from the West Coast of Africa. G. C. Dudgeon.
32 Some of the More Obvious Disease Conditions Seen on the Line of the Projected Lobito-Katanga Railway. F. C. Wellman.
33 Two Cases of Fronto-Nasal Cephalocele. A. Robertson.

The Dublin Journal of Medical Science.

October.

34 Clinical Pictures of Children's Disease. (To be continued). W. L. Symes.
35 Use and Abuse of Alcohol. (To be continued). R. J. Kinkead.

Calcutta Medical Journal.

September.

36 Toxic Principles of the Fruits of Luffa Egyptiaca Mill (Bitter Variety). C. L. B. Bahadur.
37 Hematemesis in Cholelithiasis. M. Mitra.
38 *Raw Meat Juice in Malassimilation in Children. I. Mallick.

38. **Raw Meat Juice in Malassimilation.**—Mallick emphasizes the extreme importance of a proteid diet in the healthy development of children. Raw meat juice when well prepared, free from fat and given fresh, is tolerated with the greatest ease and yields the best result, while egg albumin, white or yellow, is rather more difficult to digest in the beginning. If, however, we judiciously persist in giving egg either alone or mixed with milk, or administer raw meat juice for a few days before commencing egg, even egg albumin is well tolerated and causes marked improvement. It has the advantage of being very simple and cheap and easily manageable, whereas meat juice is expensive and much more difficult to prepare or to keep. The yolk is richer and heavier than the white of egg, because it contains a large percentage of fat (48 per cent.). Soup or broth has much less effect in increasing the weight, but keeps up strength and enriches the blood. After the power of digestion is re-established, more fat should be added cautiously; the gain in weight is considerably increased by so doing. Yolk of egg is useful in this way, as it also contains fat. Cleanliness and sterilization of food are very important.

Bulletin de l'Académie de Médecine, Paris.

39 (Year LXX, No. 35.) Transformation of Cancer into Connective Tissue Under the Influence of Cancroin.—Transformation du cancer en tissu conjonctif sous l'influence de la cancroine. A. Adamkiewicz.
40 *Miliary Fever and Rats.—La suette miliare et le rat des champs. Chantemesse, Marchoux and Haury.

40. **Miliary Fever and Rats.**—Chantemesse advances a number of arguments to support the unproved hypothesis that field rats are responsible for the transmission of miliary fever and for the epidemics. Among these arguments are the fact that miliary fever is never observed in cities; the absence of direct contagion; the fact that the regions affected in some recent large epidemics were always and exclusively those which had been ravaged by field rats during the last few years while other regions, free from rats, escaped; the fact that the epidemics broke out after an unusually wet season which had driven the rats from their haunts to seek shelter in the houses, and, finally, by the fact that the persons affected all showed evidences of flea bites and attributed the unprecedented swarms of fleas to the invasion of homes by the rodents. Still another argument was the rapidity with which the disease spread. One person would be taken one day, the next there would be 10, and by the third day 40 or 50. In 45 days the disease spread like a prairie fire over three provinces, affecting 6,000 individuals, almost the entire population taking to bed at once.

Presse Médicale, Paris.

41 (XIV, No. 85.) *La claudication intermittente de la moelle (originating in the spinal cord). P. Sollier.
42 La signification des sulfo-éthers urinaires. H. Labbé and G. Vitry.
43 (No. 86.) Examination of the Liver.—Examen du foie. M. Letulle.
44 Hygiène de la lumière (of light in dwellings). A. A. Rey.
45 (No. 87.) Inondation péritonéale au cours de l'avortement tubaire (tubal abortion). L. Bazy.
46 Quelques préparations à base d'hammamelis virginica. A. Martinet.

41. **Spinal Intermittent Claudication.**—Sollier describes a case of intermittent claudication due to defective circulation in part of the spinal cord. The syndrome was described by Dejerine in contrast to Charcot's intermittent claudication from peripheral arteritis in the legs. The process occurring in the spinal cord has more serious results than in the leg. It is a rare affection, Dejerine having encountered only 3 new cases, since his first description, reported last April in the *Revue Neurologique*. The process is undoubtedly, he states, of a syphilitic nature, although the patients may deny infection, and mercurial treatment should always be instituted at once and pushed. The pulse in the arteries of the legs is normal, and there are no vasomotor disturbances as in the peripheral form. The knee jerk and tendon reflex are exaggerated, especially after walking, and spinal trepidation and Babinski's sign may be observed, with disturbances in the bladder and sexual functions. In Sollier's case the patient was a man of 54 with syphilitic antecedents. The first symptoms were sudden weakness in the arms and slight diplopia, subsiding after two months, but returning the year after with great lassitude. The man took a course of mercurial inunctions and conditions were restored to normal for two more years, when the symptoms reappeared in exaggerated form and were again dispelled by mercurial treatment, but returned again and became chronic, the arms and legs feeling weak and as if they weighed each a hundred pounds. There were symptoms of typical intermittent claudication, the legs were subjectively chilly to the knees and the gait was like that of an automaton; the patient finally became nearly helpless. Under repeated and intensive mercurial treatment the condition has been much ameliorated and the man can now walk and get about, with frequent stops to recuperate. The improvement has been gradual, but is so marked that he will probably escape the impending spasmodic paraplegia. The parallelism of the ocular troubles and the fact that the arms were affected with the legs shows that the process affected more than merely the dorsal and dorso-lumbar regions of the cerebro-spinal axis cylinder, in which this case differs from those previously reported. This may also serve to differentiate the spinal from the peripheral form. Grasset has recently called attention to the syndrome of intermittent claudication from a lesion in the posterior spinal cord.

Semaine Médicale, Paris.

47 (XXVI, No. 44.) Appendicite ou fièvre typhoide? F. Lejars.

Berliner klinische Wochenschrift.

48 (LXIII, No. 42.) *Failures in Tendon Transplantation.—Misserfolge der Sehnenüberpflanzung. O. Vulpius.
49 *Zur Früh-Diagnose des syphilitischen Primär-Affektes. F. Danziger.
50 *Zur Serum-Behandlung der Syphilis. C. S. Engel.
51 "Die Silber-Spirochæte." C. Levaditi (Paris).
52 Construction and Equipment of Modern Operating Rooms.—Moderne Operationsräume. M. Martens.
53 (No. 43.) *Methämoglobin-Vergiftung durch Sesamöl (intoxication with sesame oil). E. Rautenberg.
54 Ueber Wärme-Wirkung bei Finsen-Behandlung. H. Jansen (Copenhagen).
55 Zur Cytologie des gonorrhoischen Eiters (pus). H. L. Posner.
56 Externe oder interne Operation der Nebenhöhleneiterungen (suppurative sinusitis). M. Halle. (Concluded.)
57 (No. 44.) *Ueber das Marmorek-Serum in der Therapie der chirurgischen Tuberkulosen. A. Hoffa.
58 *Ein einfacher Kunstgriff zur Erzeugung des Knie-Phänomenoms. G. Krönig.
59 Ueber die diagnostische Bedeutung der Spirochæta pallida. E. Hoffmann.

60 Ueber ein Toxolecithid des Bienengiftes (bee poison). J. Morgenroth and U. Carpi.
61 *Eine neue Reaktion auf freie Salzsäure im Mageninhalte (free acid in stomach content). F. Simon.
62 Zur hydrotherapeutischen Behandlung der Tabes dorsalis. A. Laqueur.

48. **Indications and Technic for Tendon Transplantation.**—From his extensive experience Vulpius has learned a number of lessons in regard to tendon transplantation. Dangers threaten it from beginning to end, he remarks, but caution, perseverance and increasing experience have rendered it possible to count on successful results in the great majority of cases. The more circumscribed the paralysis the better the outcome. The condition of the non-paralyzed muscle is also of the greatest importance, and he now refrains from transplantation if the muscle is of dubious strength and integrity. He reviews the various causes for failure under different conditions, and declares that it usually depends on the after-treatment whether the full harvest is reaped or not. Peripheral, lax and spastic paralysis can all be benefited by tendon transplantation, and good results may be obtained even in progressive atrophy of the muscles.

49. **Early Diagnosis of Syphilis.**—The discovery of the pale spirochete in the primary lesion enables the early diagnosis of syphilis before any other clinical manifestations develop.

50. **Serum Treatment of Syphilis.**—Engel injects rabbits with serum from syphilitics and then injects the prepared serum into syphilitic patients. He reports his experiences in three cases, which he thinks justify further experiments in this line.

53. **Intoxication with Sesame Oil.**—Rautenberg describes a seventh case of serious symptoms after intestinal injection of sesame oil. The spectrum showed methemoglobin in the blood; this appeared also in the urine. The symptoms included loss of consciousness, occasional arrest of the respiration and pulmonary edema, requiring the most vigorous measures. He ascribes the trouble to adulteration of the oil.

57. **Marmorek's Serum in Surgical Tuberculosis.**—Hoffa has used the serum in 40 cases and found rectal injection a most convenient mode of administration, while the serum proved as effectual by this as by other routes. His experience confirms its absolute harmlessness and its frequent specific curative influence on the course of a surgical tuberculous process. From 5 to 10 c.c. were injected into the rectum daily and the effect was promptly evident. In one case a fistula which had persisted unmodified by treatment for two years, closed after the third subcutaneous injection of the serum, but opened again as the serum was suspended, and then permanently healed under 14 rectal injections. The particulars of 11 ambulant cases are tabulated.

58. **Aid in Eliciting Knee Phenomenon.**—Krönig tells his patients to draw a deep breath and to look at the ceiling at the word "now." As they do this he tests the knee jerk, and in hundreds of tests has never found this simple measure to divert attention fail.

61. **Reaction to Free Hydrochloric Acid in Stomach Content.**—Simon describes a test for free acid which is accurate enough for all practical purposes and is extremely simple and convenient. As much dry pulverized guaiac resin as can be taken up on the point of a knife is dissolved in 5 c.c. of a mixture of one part spirit of nitrous ether in four parts alcohol, and the mixture is poured on top of 5 c.c. of filtered stomach content. A gray ring forms at the zone of contact which, in the presence of free hydrochlorie acid, turns blue. If the amount present is very small the color reaction is more of a greenish tint. Stomach content giving only a very faint response to the Günzburg reaction showed up well in this new reaction.

Deutsche medizinische Wochenschrift, Berlin and Leipsic.

63 (XXXII, No. 42.) *Behandlung des Furunkels, Karbunkels und der Phlegmone. Enderlen (Basle). Clinical lecture.
64 *Zur Kenntnis des Carcinoms. Ribbert (Bonn).
65 *Diagnostische Bedeutung des Blutgehalts und der Lymphocytose im Liquor cerebrospinalis (zugleich ein Beitrag zur Kasuistik der basalen Hirn-Aneurysmen). J. Obm.
66 *Ueber unsere Kenntnisse von den Erkrankungen des Blutes (affections of blood). M. Mosse.
67 Further Proofs of the Permanent, Deep Action of Hot Water-Alcohol Disinfection of the Hands.—Dauernde Tiefenwirkung der Heisswasser-Alkohol-Hände-Disinfection. F. Alfeld (Marburg).
68 *Zur Kasuistik der Blausäurevergiftung (hydrocyanic acid intoxication). Tintemann.
69 Removal of Detached Head.—Zur Entfernung des im Uterus zuruckgehaltenen Kopfes nach Abreissen des Rumpfes. Borgnis.
70 *Bilioser Typhus. F. Ehrlich.

63. **Treatment of Furuncles, Carbuncles and Phlegmons.**—Enderlen says that treatment should avoid the slightest pressure on a furuncle, as this tends to drive the germs deeper into the tissues or to spread them. He has found Bier's suction therapy a great aid in treatment. It is likely, he says, to abort an incipient process by the hyperemia induced, and it aids in the evacuation of pus and necrotic masses. The bulb should be compressed only enough to have the cupping glass hold firm, and suction should be applied very slowly and gradually. He covers the focus and vicinity with a thick layer of salve to prevent infection of the latter. The suction treatment is appplied daily for about 45 minutes, applying the cupping vessels for five minutes and then resting for three minutes. The salve is then cleaned away with ether or benzine and an aseptic dressing applied. He continues the suction treatment until the lesion is completely healed. His experience with yeast internally has been conflicting. Bier has reported good results in treatment of carbuncles with suction, but others have been less fortunate. Enderlen removes the infiltrated tissues after a crucial incision; the necrotic masses are expelled under tamponing with iodoform gauze, after which the lesion heals under a salve. He advises against poultices for phlegmons as a waste of time. It is impossible to check the proliferation of the bacteria in these cases, and disinfectants and the actual cautery are alike useless. Incision, evacuation and tamponing are the main reliance, aside from the Bier technic.

64. **Cancer.**—Ribbert believes that metastasis, after a cancer has been developing for some time, is due not so much to the lowering of the resisting powers of the organism by the accumulating toxins from the neoplasm as to the fact that the tissues have become accustomed to the toxins and cease to oppose resistance to them, and thus allow the cancerous growth to proceed unhindered. The organism becomes gradually accustomed to the presence of the tumor, and hence there is no immunization with a spontaneous tumor. The only prospect for inducing immunization artificially, he declares, lies in suddenly overwhelming the organism with large amounts of the toxins, which would induce an energetic production of antitoxins, before the organism had had time to become accustomed to such quantities of toxins. Sticker has recently called attention to the fact that an organism in which an implanted tumor is growing is protected against further implantation, but loses this protection after the implanted tumor has been extirpated, new implantations resulting positively. This shows, Ribbert argues, that the immunity conferred by the implanted tumor is transient and is induced by substances which are rapidly expelled from the body after the removal of the focus. Assuming that the products of cancer metabolism to which the organism becomes accustomed, in case of cancer, are transient in their effects, and are likewise rapidly expelled from the body after extirpation of the primary focus, then it follows that after extirpation is the moment when cancer products might be effectually used to induce immunity as a protection against recurrences and metastases. It seems probable that those products which are derived from carcinomata of the same variety would be effectual for the purpose. If this assumption is correct, he adds, then it might prove advantageous to reinject the products of the very cancer that was extirpated to serve for the subsequent immunization.

65. **Blood and Lymphocytosis in Cerebrospinal Fluid.**—Ohm reviews the field of cytology of the cerebrospinal fluid, and describes a case in which the presence of blood differentiated a basilar intracranial aneurism. In other cases the lymphocytosis of the cerebrospinal fluid revealed incipient tabes.

66. **Blood Diseases.**—Mosse recognizes two great varieties, the circumscribed and the diffuse affections of the blood-forming apparatus. The circumscribed form is the myeloma, and we can speak of an erythrocytoma, a lymphocytoma or a myelocytoma. The diffuse form includes five varieties; the diffuse

increase in the bone marrow elements which produces the syndrome of polycythemia with cyanosis and enlargement of the spleen, and the embryonal type of blood formation producing the syndrome of pernicious anemia. The third variety is characterized by an increase in the entire myeloid part of the bone marrow with corresponding changes in the cells with granulations, manifested clinically as myelogenic or myeloid leukemia. The fourth form is that of hyperplasia of the lymphatic part of the bone marrow, involving also all those organs in which lymphocytes are normally encountered. This produces the clinical picture of lymphatic leukemia and pseudoleukemia. There is, further, the condition known as aplasia of the bone marrow. In regard to treatment, he urges the great importance of repose in anemia and chlorosis, absolute repose in bed for a week. In pernicious anemia, hygienic-dietetic measures and administration of hydrochloric acid, according to Grawitz, should be employed. The necessity for following Grawitz' directions is the more urgent, as he has saved where others lose their patients. Roentgen treatment is indispensable when indicated. Rosenstern has lately demonstrated that the rays have a directly destructive action on the points where the white blood corpuscles are produced, which reduces the production of these cells and improves the clinical picture in leukemia. If the red cells show injury or reduction in numbers, this is a sign of too intensive radiation.

68. **Hydrocyanic Acid Intoxication.**—A chemistry student dropped a reagent glass containing some hydrocyanic acid, and in stooping to pick up the glass he inhaled the fumes of the acid for a moment. Besides the usual symptoms of intoxication, vertigo, motor unrest, headache, small filiform pulse—128—and enlargement of the right heart with cyanosis, the urine showed numerous tube casts and considerable albuminuria, and the temperature was 38.3 C. These symptoms persisted for a week, the albuminuria finally vanishing by the ninth day.

70. **Biliary Typhoid Fever.**—Ehrlich describes a case of unmistakable typhoid infection in whch the characterstic lesions were localized in the biliary passages and secondarily in the liver, with the intestines intact. The case is chronicled as septic typhoid cholangitis.

Münchener medizinische Wochenschrift.

71 (LIII, No. 39.) Ueber isolierte apraktische Agraphie. K. Heilbronner.
72 *Ueber perniziöse Anämie und Leukämie. G. Kelling (Dresden).
73 Spontane und postoperative Implantations-Tumoren. A. Sticker.
74 *Transplantation menschlicher Ovarien. H. Cramer.
75 Ueber das Chlorom des Schädels (of skull). C. Pfeiffer.
76 Action of Mercury-Quartz-Glass-Lamp.—Wirkung der Quecksilberquarzglaslampe. E. Schreiber and H. German (Magdeburg).
77 *Early and Prophylactic Action of Stasis Hyperemia on Infected Wounds.—Ueber die frühzeitige und proph. Wirkung der Stauungshyperämie auf infizierte Wunden. E. Joseph. (Concluded.)
78 Choice of Mineral Water for Digestive and Metabolic Disturbances.—Indikationen für die Auswahl von Mineralwässern zu Trinkkuren bei Verdauungskrankheiten und Stoffwechselstörungen. W. Fleiner. (Concluded.)
79 Zur Eröffnung des Institutes für experimentelle Krebsforschung in Heidelberg (cancer research). Voelcker.
80 (No. 40.) *Therapeutische Versuche zur Heilung von Krebsgeschwülstan durch die Methode der Anästhesierung (cure of cancer by anesthetization). G. Spiess.
81 Typhoid-Bile-Tubes for Bacteriologic Examination of Blood—Verwendung der Typhusgalleröhre zur Blutkultur. H. Kayser.
82 Ueber die Sesam-Beine der Metatarsophalangeal-Gelenke. A. Stieda.
83 Zur Lehre vom Pulsus alternans. Hornung.
84 Pulsus alternans mit partieller alternierender Herztätigkeit (with partially alternating heart action). G. Galli.
85 *Ineffectual Courses of Mineral Waters in Gastric Affections.—Ueber erfolglose Mineralwassertrinkkuren bei Magenkrankheiten. E. Agéron.
86 *Influence of Suction Hyperemia on the Healthy Eye and on the Course of Eye Affections.—Einfluss der Saughyperämie, etc. Hoppe.
87 Ein Narkosen-Apparat mit Dosierungs-Vorrichtung. G. Schubert.
88 Fusshalter zur Fixierung des Fusses bei Verbandanlegung (foot-holder in applying dressings). W. Burk (Frankfurt a. M.).
89 Eine neue waschbare Bauchbinde (washable abdominal support). H. Maas (Heidelberg).
90 Forceps to Hold Uterus in Abdominal Operations.—Uterushaltezange. Prüsmann (Dresden).
91 Ein Apparat zur Entnahme kleiner Blutmengen (to obtain small quantities of blood). O. A. Wieck (Haiensee).
92 Gesichtsschutz-Maske (to protect the face). Breitung (Eisenach).
93 Individual Care of Patients at Health Resorts.—Vorschläge zur praktischen Durchführung einer individuellen Verpflegung in Badeorten. H. Silbergleit (Kissingen).

72. **Relations Between Pernicious Anemia, Leukemia and Cancer.**—Kelling points out the close resemblances between malignant tumors and pernicious anemia anl leukemia, not only from the pathologic-anatomic point of view, but also from the biologic. All three are favorably influenced by arsenic and the Roentgen rays, and as instances are known in which an intercurrent erysipelas has had a favorable influence on malignant tumors, so also the same has been observed in pernicious anemia and in leukemia. A further argument in favor of the etiologic connection between them is the similarity of the reaction to the precipitin and the hemolytic tests of the blood serum of patients with cancer and with pernicious anemia and leukemia. They all give the same specific reaction. Kelling's views in regard to the origin of malignant disease from inoculation with embryonal cells from another species have been duly chronicled in these columns. This is his seventh communication on the cancer question. One of the facts cited is the death from pernicious anemia of a large dog after inoculation with heterogenous embryonal cells. He calls attention to the frequency with which the malignant blood diseases develop after some affection entailing ulcerative processes in the digestive tract, such as typhoid, tuberculosis, diarrhea, syphilis or gastric ulcer. Embryonal cells, he states, may be ingested in the food in the form of raw eggs, raw meat, raw sausage or the like, and these embryonal cells from another species pass through the ulcerative process into the lymphatics and thence into the bone marrow, where they are liable to proliferate and to induce the clinical picture of pernicious anemia or leukemia.

74. **Transplantation of Human Ovaries.**—Cramer reports two cases of atrophied or missing ovaries in which he transplanted ovaries removed at the moment from patients with osteomalacia. In one case the results seemed to indicate that the implanted ovary had restored the lacking ovarian function, but in the other case the implanted ovary was absorbed in the course of ten weeks. He describes his technic in detail. In the successful case he placed the slit ovary on the slit atrophied ovary of the patient in such a way that stroma was in contact with stroma, doing this on both sides. This technic guarantees best, he thinks, the nourishment and growth of the implanted ovaries. In this case the uterus increased three inches in length, the symptoms of the premature menopause subsided, and what was supposed to be menstruation occurred once or twice, and then an abortion occurred with swelling of the breasts and discharge of colostrum. The patient was a woman of 23 who had not menstruated since a forceps delivery of a dead child two years before. The uterus was very small, and the ovaries were small, hard and atrophied.

77. **Artificially Induced Hyperemia as Prophylactic for Infected Wounds.**—In this communication from Bier's clinic at Bonn, the value of the early and prophylactic use of Bier's stasis hyperemia is extolled. It is destined, Joseph thinks, to a prominent place in the surgery of injuries threatened with infection or which have recently become infected. A number of examples are related, and the statement made that the experiences with stasis hyperemia and the results of research on immunity and other natural curative methods all combine to establish the law that when injury occurs the body does not spontaneously collect all the defensive weapons and forces which it has at its disposal, and that it is possible to aid it in this task and artificially to summon its varied forces to the spot to aid in repelling the invasion of infection. The nourishing effect of the stasis hyperemia is of great importance for healing and for the course of severe injuries with crushed tissues offering opportunities for bacterial proliferation. The constricting rubber band is from 1 to 1.5 mm. wide for a child, up to 2.5 mm. for a man's arm. The constriction should always relieve, never increase, the pain in the part. The limb looks hot, red and swollen, and there is frequently fever, but the patients have no pains; they sleep quietly and have a good appetite, and make no complaints except an occasional remark in regard to the heat. The fever differs in every respect from the fever of suppuration, and Bier regards it as an additional defensive reaction on the part of the body.

80. Treatment of Cancers by Anesthetization.—Spiess found that malignant tumors in mice were favorably influenced by exclusion of the reflex hyperemia induced by the irritation of the growth, that is, by anesthetization. He used various anesthetics for the purpose, the aim being to arrest the sensory irritation, and hence the reflex hyperemia. He found that when the tumors were of slow growth and the anesthetic was injected early, the tumor actually healed under the influence of the anesthetization. After these successful results the method was given a trial in 11 clinical cases. Benefit seemed to be apparent, but the cancers were all in such an advanced stage that little could be expected from any treatment. Czerny is now giving this method a thorough trial at his new Cancer Research Institute.

85. Stomach Disturbances Not Benefited by Course of Mineral Waters.—Agéron points out that when a stomach is enlarged or in a condition of relaxation or atony, ingestion of large amount of fluids only aggravates the condition. When a course of mineral waters is being taken, the patient should be instructed to lie down at once after drinking the water, and to turn on his right side, to relieve the stomach and favor evacuation of the fluid. The amount of water allowed should also be regulated to suit the individual case.

86. Suction Hyperemia in Treatment of Eye Affections.—Hoppe has applied a Bier-Klapp suction vessel to the eye in various inflammatory conditions and states that, applied with care, it can not do harm, while the therapeutic influence is very beneficial in appropriate cases, associated with or in the place of other measures.

Virchow's Archiv, Berlin.

Last indexed, page 1774.

94 (185, No. 1.) Formation of Elastic Fibers.—Die Bildung der elastischen Faser. S. Fuss.
95 Importance of Elastic Tissue in Heart for Diastole.—Das elastische Gewebe im Herzen und seine Bedeutung für die Diastole. Fahr.
96 Zur Kenntnis der Osteoarthropathie hypertrophiante pneumique. Krüger.
97 Ueber Cysten-Bildung der Niere und abführenden Harnwege (cyst formation in kidneys and afferent urinary passages). G. Herxheimer.
98 Lymphomatose der Speichel- und Thränen-Drüsen (of salivary and lachrymal glands). S. Minelli (Strasburg).
99 Zur Kenntnis des anatomischen Befundes der Lysol-Vergiftung (anatomic findings in lysol poisoning). Kathe (Halle).
100 Comparative Research on Thrombosis.—Vergleichende Untersuchungen über die Thrombose. L. Loeb (Philadelphia).
101 (No. 2.) Geschwülste der Herzklappen (tumors of heart valves). W. S. Djewitzky (Moscow).
102 *Triple Stain for Tissues.—Eine neue und leicht auszuführende dreifache Farbung für Zellen and Gewebsschnitte nach Flemmings Dreifach-Behandlung. V. Bonney (London).
103 2 Fälle von Dünndarm-Atresie (of small intestine). P. Karpa.
104 Divertikel-Bildung bei Appendicitis. R. Schweizer.
105 Changes in Rabbit Kidney After Ligation of Renal Vein for 2 Hours.—Veränderungen der Niere des Kaninchens, etc. F. Pawlicki.
106 Zur Kenntnis der gliomatösen Neubildungen des Gehirns mit bes. Berücksichtigung der ependymären Gliome (of brain). K. Hildebrandt.

102. Triple Stain for Cell and Tissue.—Bonney's stain differentiates the cells, nuclei, etc., with remarkable distinctness. The technic is simple and consists in the following: 1. Fixation of the sections of tissue in a mixture of one part glacial acetic acid to two parts absolute alcohol. The tissue is left in this mixture for from 5 to 15 minutes, according to the size of the piece. Formaldehyd can not be used. 2. The sections are then embedded and fastened as by the usual methods. 3. They are placed for one hour in a saturated aqueous solution of saffranin. 4. They are rinsed in water. 5. They are transferred for 15 minutes to a saturated aqueous solution of methyl violet. 6. The object glass outside of the part occupied by the section is rinsed and wiped dry. 7. The object glass is then flooded with the following mixture, applied from a dropper: To 20 c.c. of acetone is added a saturated aqueous solution of orange G, a drop at a time, until the flocculent precipitate which appears at first becomes dissolved again as more drops of the aqueous solution are added. The solution is then filtered. When poured on the section the latter is lost to sight under the stain. 8. The stain is soaked up with blotting paper, and the solution is again applied to the piece of tissue, until the cloudiness over the section disappears and the section becomes visible again. 9. As soon as the section assumes a brownish pink tint it is rinsed for a few seconds in acetone and then placed in xylol twice renewed, and examined under the microscope to see if more orange-acetone is needed, and is then embedded in balsam. This modification of Flemming's stain shows all the chromatin, nuclei and chromosomes a deep violet; the achromatic parts of the fission figures are pale pink, the protoplasm is pink and the interstitial tissue pale yellow. The most important factor in the stain is the orange-acetone solution. If it acts too long the specimen turns yellow all over; if not long enough the specimen looks spotty.

Grèce Médicale, Syra, Greece.

Last indexed XLVI, page 1656.

107 (VIII, Nos. 7-8.) La manière d'agir du fer médicamenteux (mode of action of iron in therapeutics). C. Caiewras.
108 (Nos. 11-12.) *Sur les accidents paralytiques survenant au cours du traitement antirabique. P. S. Pampoukis (Athens).
109 (Nos. 13-14.) Experimental Leucocyte Reaction to Acute Arsenic Intoxication.—Les réactions leucocytosiques dans l'empoisonnement aigu par l'arsènic. A. Mavroyannis.
110 *Relations Between Malarial Fever and Infectious Diseases.—Les rapports des fièvres palustres avec les maladies infectieuses. A. Doxiades (Bulgaria).
111 *Contagiosité des fièvres palustres. C. Varlamidis, Rosakis and Tsamalis.
112 (No. 15-16.) *Causes d' insuccès de la méthode Pasteur antirabique. P. S. Pampoukis.

108. Paralytic Accidents Observed Under Pasteur Treatment of Hydrophobia.—Pampoukis has observed two cases of paralysis occurring under Pasteur treatment after the bite of a supposed rabid animal. One patient was a girl of 11 and the other a physician of 55, and both recovered in the course of a few weeks. Nitsch asserts that the rabic virus loses its virulence by passage through rabbits, and he proved it by inoculating himself with 2 c.c. of fixed virus from a rabbit that had just succumbed to the disease. He felt no ill effects from this experience. For these and other reasons Pampoukis thinks that it is impossible to incriminate the rabic virus in the production of the paralysis, but that it is due to the rabic toxin in the emulsions, which acts like diphtheria toxin in inducing paralysis. Remlinger has induced experimental paralysis by injecting the filtrate of rabic brains, and the animals succumbed to the paralysis, but it was impossible to inoculate other animals with rabies from them. In studying the cases on record it will be seen that the paralysis always developed after some shock to the system. A cold bath, a cold douche, cold applications or the like, or an acute infection, such as grippe, preceded the paralysis in too many instances for it to have been merely a coincidence.

110. Relations Between Malaria and Other Infections.—Doxiades affirms from extensive experience and observation that malarial infection does not exclude other infection nor other infections malaria, but on the contrary, they induce a predisposition. Each infection preserves its characteristics, not much modified by the existence of the other. Persons debilitated or convalescing and residing in a malarial country, he says, should take quinin systematically as a tonic and prophylactic against superposed malarial infection.

111. Malaria in Greece.—Varlamidis states that it is impossible to reconcile the exclusive mosquito theory in regard to the transmission of malaria with the facts observed in Greece during the last year. Epidemics of malaria were observed in dry, mountainous districts, where there are no mosquitoes. As a rule, however, his experience and that of the other physicians of Thessaly, demonstrate that malarial fevers are more prevalent after rainy seasons and in marshy localities, with a very hot summer and much evaporation. He is convinced that the malarial parasite is able to breed and develop outside of man and the mosquito, possibly in muddy, marshy soil, where it may lie latent for a long time. A predisposition is necessary for malarial infection, and overwork, excesses, climatic vicissitudes, basement dwellings, etc., are conditions favoring it. Rosakis ascribes to flies and other insects as well as the mosquito the transmission of malarial parasites. He knows of several mountainous villages where mosquitoes are unknown and yet malaria is prevalent in all the forms and types of intermittent fever. In several villages of Megalopolis malarial infection follows drinking water from

a certain well, according to tradition and present day experience. When the people drink this water the spleen begins to enlarge and they have fever, while the symptoms vanish when they refrain from the use of this water. Unhealthy emanations, he is convinced, are also a factor in the etiology of malaria. Tsamalis practices in a very malarial region in a southern province, and he also doubts whether mosquitoes alone are responsible for the transmission of the disease. He has frequently noticed the simultaneous appearance of numbers of cases of fevers during the summer, two or three days after heavy rains, even in villages almost entirely free from mosquitoes. He declares that it seems probable that the simultaneous cases are the result of the influence of certain emanations containing the products of putrefaction of vegetable matters and the germs of malaria. Another argument is the sensation of discomfort and suffocation experienced by even a healthy person coming for the first time into the heavy air of a marshy district. A third argument is the serious epidemic of malaria that broke out almost simultaneously in the villages along the Pamissa River when its bed was being lowered. No unusual numbers of mosquitoes were noticed at the time. [Ronald Ross has lately been studying the prevalence and types of malaria in Greece, and recently delivered an address on the subject before the Oxford Medical Society (England). As we have previously stated in these columns, about 6,000 persons die annually in Greece of malaria out of a population of nearly 2,500,000, while nearly 1,000,000 cases of malaria are observed each year. Agricultural poverty accompanies the malarial cachexia, and Ross appealed to lovers of Greece to aid the Antimalarial League of Greece with funds and sympathy. Professor Kardamatis of Athens is secretary of the league. The Liverpool School of Tropical Medicine has already started a subscription for the purpose, and is distributing a circular describing the aims proposed by the Greek league in its campaign against malaria.—ED.]

112. **Causes of Failures in Pasteur Treatment of Hydrophobia.**—Pampoukis observed that getting chilled is frequently followed by development of hydrophobia in persons who are taking or have just completed a course of Pasteur treatment. While the cells of the organism are engaged in the struggle against the hydrophobia germs, everything tending to depress the organism and lower the vitality should be carefully guarded against. He relates a number of examples to show the serious influence of getting chilled, exposure to a storm, a cold douche, a chill from sleeping out of doors or the like, being followed by typical hydrophobia when previously the patients had been free from any symptoms. The precautions against getting chilled should be kept up for three months at least after the course of treatment, with abundance of nourishing food and avoidance of everything tending to lower the vitality.

Gazzetta degli Ospedali, Milan.

113 (XXVII, No. 108.) *Sulla terapia specifica della tubercolosi. E. Maragliano.
114 Effect of Grip on Circulatory Apparatus.—Modificazioni determinate nell' apparecchio cardio-vascolare dalla tossi-infezione grippale. G. Ghedini and S. Livierato.
115 *Nuovo mezzo di disinfezione degli ambienti (disinfection with sulphur and lead nitrate). A. Gasparini.
116 (No. 111.) Calcolosi epatica e lesione dei paragangli. E. De Renzi.
117 Priorità a proposito delle aggressine e dei vaccini aggressinici. I. Bandi.
118 La prognosi del morbo di Littie. C. Ortali.
119 Diagnosi differenziale fra meningite tubercolare e meningite cerebro-spinale epidemica. W. Chiodi.
120 Sulla stasi alla Bier. M. Ferrari.
121 Le vie d' accesso nella chirurgia del testicolo e delle vie spermatiche (means of access). E. Pasqui-Mangeli.
122 (No. 114.) Action of Radium on Virus of Rabies.—Sopra alcune condizione necessarie per aversi la scomposizione in vitro del virus rabido con mezzo del radio. G. Tizzoni and A. Bongiovanni.
123 Relations Between Typhoid and Paratyphoid Bacteria.—Rapporti fra i batterii tifo e tifosimili. S. Livierato.
124 Trombo pedunculato del cuore in via di organizzazione (organized thrombus in heart). C. Bassoni.
125 La circoncisione nella cura del fimosi e delle ulceri veneree. L. Nelli.

113. **Specific Treatment of Tuberculosis.**—Maragliano reviews his 11 years of work in this line since he announced in August, 1895, that he had succeeded in immunizing animals against tuberculosis, and that animals thus immunized produced specific defensive materials which could be transferred to the organism of other animals and to man, conferring defensive powers on them. He thus claims priority for the specific treatment of tuberculosis, and states that he has been diligently at work ever since 1892 collecting clinical material and evidence to confirm his assertions. The organism, he says, opposes to the invasion of the tubercle bacillus three barriers: That formed by the tissues in which the bacilli locate; that of the surrounding tissues, and that of the organism as a whole. The anti-tuberculous materials are likewise threefold, the antitoxin, the agglutinating material and the bacteriolysin. If the organism is incapable of producing these substances there is no curative action, but when the participation of the organism can be counted on, the injection of even a small amount of these substances starts their production on a large scale. This specific treatment of tuberculosis, therefore, is a natural therapy, as it confers on the organism the natural means of defense. It is not a remedy in the true sense of the word. Maragliano uses the serum of the blood and an extract of the leucocytes of immunized animals, also the milk and the meat of immunized animals and the eggs of immunized hens. The defensive substances can be introduced into the organism in various ways, but the subcutaneous route is the most effectual with the smallest doses. The gastrointestinal route is equally effectual, but it requires larger doses. He immunizes the animals with an aqueous solution of the bacillary protoplasm plus the toxins secreted by the bacilli in the culture medium, and prefers goats for the purpose. He has long insisted on the folly of applying conclusions from animals to man. The conditions differ to such an extent that there can be no comparison between them. He reports remarkable success in the treatment of tuberculous processes in joints and glands with local injections of the antituberculous antitoxin or bacteriolysin, as he calls it, supplemented by general treatment with the same. Good results were also obtained in cases of tuberculous processes in the pleura and peritoneum, although the general organism had to be depended on more in this case. The conditions are more complex in case of tuberculous processes in the lungs, as these are "open" processes, generally with secondary infection, not pure tuberculous, as in the other cases. The specific treatment is only partly specific for these processes, attacking only one out of the several factors of the lesion. If the process could be discovered in an early stage, before secondary inflammation, then the specific treatment would enter on its rights. He has succeeded in completely curing hundreds of cases of tuberculosis of the lungs in which the first and second barriers mentioned above were still intact, holding the process in check and localizing it in the lungs, without phenomena of toxemia. These cures are complete and permanent, some of his patients having been cured for 12 and 13 years. Such results, he declares, can be counted on in every case in which the affection is diagnosed in its early stage. Spontaneous cures in such cases are possible, but they are not the rule as with the specific treatment, without modification of the patient's mode of life. If the patient's blood does not contain the defensive materials in sufficient amount, their production is stimulated by the specific treatment and the process heals. In a more advanced stage the result depends on the possible participation of the organism. The fever is easily conquered if it is due to tuberculous toxemia; the temperature returns to normal by very gradual stages, a tenth of a degree at a time. The sweats, etc., subside, but the focal symptoms long persist, owing to the presence of streptococci, staphylococci or diplococci, which reduces the resisting power of the tissues. The specific treatment relieves the tuberculous factors in the lesion, but is powerless against the others, and against the injury from the tissues becoming necrotic under the polymicrobian invasion. He has recently introduced the bacteriolysin directly into the focus, injecting it through the chest wall. In many cases the results, he states, were remarkable. In whatever way the bacteriolysin is introduced, it is always perfectly harmless. About 20,000 patients have been treated by this method, and he tabulates his statistics in the periods 1895-1900 and 1900-1905, restricting them to the patients he has had under prolonged

personal care. When physicians learn to make the distinction between pure tuberculosis and pulmonary affections with complex and advanced infection, he remarks, most important progress will have been realized. His work in the line of vaccination of infants of consumptive parents has also given satisfactory results. These children all present the defensive substances in their blood, and their general condition is good. They are vaccinated in the arm at three points; each inoculation results in the production of a small indurated pustule with a slight rise in temperature and swelling of adjacent glands, all the symptoms subsiding in two or three days. The vaccination material is ordinary human tubercle bacilli of exalted virulence, killed before inoculation. This communication was presented at a recent French medical congress, and Maragliano added details showing that von Behring had merely followed in his footsteps in his work on specific treatment and prophylaxis of tuberculosis in man and animals.

115. **Sulphur and Lead Nitrate for Disinfection of Rooms.**—Gasparini reports very effectual tests with disinfection of rooms by the fumes of a mixture of sulphur and lead nitrate. The mixture is shaped into small cones, which are placed touching each other, and when one is lighted, the whole is soon in combustion. The fumes of 4 cones killed all ordinary germs and 12 cones killed anthrax spores in his tests in a small room.

Norsk Magazin f. Laegevidenskaben, Christiania.

Last indexed, page 1520.

126 (LXVII, No. 6.) *Lysbehandling (phototherapy). I. C. Holm.
127 *Om feber ved sarkom (fever). P. Bull.
128 Success of Morphin in Acute Edema of the Lungs.—Akut lunge-ødem behandlet med morfin. C. J. Ellefsen.
129 Syfilis-infektion fra lig (from the cadaver). E. H. Hansteen.
130 (No. 7.) Spirochæta pallida. Id.
131 Examination of the Heart.—Vedkommende undersøgelse af hjertet. Harbitz.
132 2 tilfælde af Morbus Addisonii. K. Andersen.
133 Etiology of Tumors.—Om svulsternes aarsager. P. Bull.
134 (No. 8.) Lokalanæsthesi. O. Borchgrevink.
135 4 nye tilfælde af Prostatectomia perinæalis. A. Bødtker.
136 Om multiple karcinomer. A. Tanberg.
137 (No. 9.) *Elendommelig hjernelæsion (brain lesion). F. Harbitz.
138 Lysolforgiftning (lysol intoxication). Id.
139 Cancer pylori med udbredte metastaser til bensystemet forløbende klinisk som en Anæmia gravis. H. Thue.
140 Om pylorusstenose hos spædbarn (stenosis of pylorus in infants). T. Frølich.
141 Et tilfælde af multiple tyndtarm-divertikler (in small intestine). O. Berner.
142 3 tilfælde af kraurosis vulvæ. Vedeler.

126. **Treatment with Light.**—Holm states that he has applied phototherapy in 350 cases during the last four years and has had very gratifying results. In 265 cases the treatment was required for chronic rheumatism, uric arthritis, chlorosis or anemia. He has found the action of red light particularly effectual in cutaneous affections, such as the eruption of smallpox, sunburn and psoriasis. The red light seems to have a specific action in inducing sweating. The chemical rays have a stimulating action on the nervous system and the metabolism. The ultraviolet rays have further a bactericidal effect, while the other chemical rays merely check the development of bacteria. The chemical rays dilate the peripheral blood vessels and induce inflammation in the skin and pigmentation. Applying treatment on these principles he has cured inveterate sciatica, gout, chronic rheumatism, etc., as he shows by several instances related in detail. One patient was a man of 42 who had suffered from recurring sciatica for seventeen years, rebellious to all kinds of treatment and frequently compelling him to stay in bed. He was treated with Holm's "combined light bath," temperature up to 65 C., with following douche, alternating every other day with a local light bath along the course of the sciatic nerve. Five weeks of treatment seem to have entirely cured the tendency to sciatica. The "combined bath" applies light and warmth, and is followed by massage and exercises. Two 1,000 candle-power arc lights, with reflector, but no glass shade, are arranged in a small chamber, 4 by 6 feet, heated to any desired temperature. The patient sits or reclines, with the electric light focusing on the diseased part for from ten to twenty minutes. This is followed by massage or other mechanical measures, after which the patient takes a cooling douche, graduated to the temperature and length of the bath, and lies down for an hour afterward. This combination has proved especially effectual in chronic rheumatism, arthritis, sciatica and lumbago. Holm uses also a full bath with incandescent and arc lights representing 5,000 candle power and a local light bath for the part affected, which can be applied in the bed, but the combined bath described above has the most powerful effect on the metabolism, although it requires an unweakened heart and resistant nerves. He is convinced that only the rays that are absorbed have any action on the different tissues.

127. **Fever with Sarcoma.**—Bull has observed a fever accompanying sarcoma in 14 out of 20 cases. The fever was of no decided type and was encountered more frequently in the young. The duration of the affection and the histologic stage have no influence on the fever. It seems to be more an expression of metastasis in general, without reference to any special organ involved.

137. **Brain Lesion from Impact of Umbrella Tip.**—Late at night a young man collided with an umbrella carried by a companion, and the tip of the umbrella entered his nose with great force. He spent two hours searching for a physician. Medical treatment was limited to arresting the slight hemorrhage and applying a compressing bandage over the eye, as the patient complained of transient blindness in the eye on the injured side, and the eyeball protruded somewhat. No appreciable lesions could be discovered, and the patient felt no special disturbances except headache. Fever developed in a few days with somnolency, stiff neck, vomiting and radiating pains, and the patient died within two weeks of the accident, exhibiting cyanosis and rapid respiration toward the last. Rhinologic examination had been negative, but autopsy revealed that the tip of the umbrella had penetrated entirely through the frontal lobe on entering the nose, and had passed into the interior of the brain. The distance from the nostril to the end of the lesion was nearly 12 cm. The absence of serious symptoms during the first few days is the remarkable feature of the case, Harbitz remarks.

NEW PATENTS.

Recent patents of interest to physicians, etc.:

834042. Surgical sewing instrument. Peter Behr, Hanover, Germany.
834184. Inhaler. Yancey Q. Caldwell, Paris, Tenn.
834185. Air-pressure supply apparatus for atomizers. Charles E. Campbell, Akron, Ohio.
834047. Surgical implement for amputation of the rectum. Charles G. Crumrine, Detroit.
834205. Crutch. E. X. Jones, Atlanta, Ga.
834209. Therapeutic apparatus. Ernst Kromayer, Berlin, Germany.
833849. Catamenial garment. Sarah G. Schiff, New York.
833759. Surgical instrument. John D. Sourwine, Brazil, Ind.
834257. Apparatus for making nitric acid. Oscar H. U. Brunler, Leipsic-Gohlis, Germany.
834259. Artificial ear-drum. John B. Campbell, New York.
834261. Vaccine injector. Clarence S. Chambers, Sidney, Neb.
834712. Truss. Fordham Crater, Parsons, Kan.
834460. Machine for producing threads from collodion and recovering the solvents of nitrocellulose or cellulose. Maurice Denis, Mons, Belgium.
834477. Invalid-bed. Nick W. Kline, Longbeach, Cal.
834830. Emulsion and producing it. Karl Mann, Zurich, Switzerland.
834683. Combined tweezers and blackhead-remover. Henry H. Severin, Springfield, Mass.
835428. Artificial leg. James Hogan, Emison, Ind.
835108. Crutch. Park S. Hovis, Butler, Pa.
835431. Projector for pathological work. Henry A. Hughes, St. Louis.
834987. Joint for artificial limbs. George W. Leirmann, Cleveland, Ohio.
835075. Apparatus for fresh-air treatment. Samuel H. Mahaffy, St. Louis.
834926. Vibro-meter. Edward McGarvey, Youngstown, Ohio.
835035. Physical exercise apparatus. John H. Rigbey, Liverpool, England.
835083. Woven surgical bandage. Ernst Strahl, Hamburg, Germany.
835771. Manufacturing alkaline bicarbonates. Johann G. Behrens, Bremen, Germany.
835496. Vaginal syringe. Wm. H. Brandon, Kokomo, Ind.
835496. Syringe. Samuel H. Chubb, New York.
835501. Making acetates. Harry O. Chute, Cleveland, Ohio.
835882. Atomizer. Anton C. Eggers, New York.
835622. Movement-cure apparatus. John H. Kellogg, Battle Creek, Mich.
835980. Finger-bandage. Blahomraf Paroubek, Plainfield, N. J.

The Journal of the American Medical Association

Published under the Auspices of the Board of Trustees.

VOL. XLVII. CHICAGO, ILLINOIS, DECEMBER 15, 1906. No. 24.

Original Articles

SUDDEN PARALYSIS OF PHARYNX.

ARTIFICIAL FEEDING FOR FOUR YEARS.*

S. WEIR MITCHELL, M.D.

PHILADELPHIA.

Rarely a single case is so interesting or so illustrative as to make it worth while to report it. The case I now contribute is, however, so extraordinary that I feel it to be a duty to put it on record.

History.—Mrs. E. S., aged 27, married, of entire health and good personal and family history, had had measles, chicken-pox, whooping-cough in childhood; later, several attacks of mild tonsillitis. At 17, it is said that she had a "typho-malarial" fever. None of these left any trace behind them. As to temperament, patient is of a rather quiet, sensible, unemotional nature. About eighteen months after her marriage, on May 18, 1901, she had a healthy confinement at the eighth month, without complications. Between this time and July 21, she declares that her health was absolutely perfect.

Present Illness.—She went to bed the night of July 21, without sign of trouble, and awakened in the night with a chill and sore throat. By 7 in the morning she could not swallow. Her temperature had risen to 102. From that day to this she has never swallowed by volition a particle of food, having been entirely fed by tube. On July 23 there was high temperature, reaching 104 to 106 in the evening, with much pain and great swelling of the neck on the outside, and considerable inflammation of the pharynx, palatal arch and tonsils. All effort at deglutition gave intense pain and the food choked her and was driven up into the posterior nares. She was seen at this time by a most competent physician, who declared there were no visible signs of diphtheria and no abscess in the tonsils. Within the next forty-eight hours a new set of symptoms appeared. The left leg and arm were felt by her to be cold and were also more cold to the touch than the limbs on the other side. There was marked ptosis of the left eyelid and the face was slightly drawn to the right. She is of the impression that her right side was at that time weaker than the left. Within the first thirty-six hours of the attack she coughed up pus and blood in what she described as large quantities. Dr. Ashby believed them to have come from an abscess which was not in the tonsil. This flow lasted three days and then rather suddenly disappeared. About this time occurred a painful swelling of the left wrist, which lasted three weeks, while also there was much pain in the muscles generally, with soreness but no swelling.

Dr. Banner's Notes.—Dr. Banner, Greensboro, Pa., has these notes of her condition on July 28: Acute tonsillitis and pharyngitis were still present. Her temperature was then 101.5, pulse 88, but he could discover no membranous deposit. Sore throat and abnormal temperature and the pharyngeal paralysis remained. On Aug. 5, 1901, she was carried to Baltimore and taken to the Johns Hopkins Hospital, her temperature being still as high as 102. A somewhat doubtful diagnosis of diphtheria was made. It was said that two or three small white patches were found on the left pillar of the fauces, and that culture showed a few diphtheritic bacilli. At this time she is said to have had anesthesia of the right leg. The knee-jerk reflex was described as absent on the right and left and the ankle jerks were said to be active. She is said to have been free from pain on the third and fourth day after she entered the hospital, and with the exception of the pharyngeal palsy which forbade voluntary deglutition, had no other throat symptoms.

Dr. Mackenzie's Report.—Patient left the hospital September 1 and went home. Returning the next year she was then seen by Dr. Friedenwald, who used various treatments, and finally consulted Dr. Mackenzie, whose account I quote, dated April, 1902:

"On her return she consulted Dr. Julius Friedenwald of this city, under whose careful observation she was for a long time, with various treatments and a full course of potassium iodid. This treatment extended over many weeks and was without result. Finally, baffled in his search for a cause for the paralysis, he brought her to me in consultation. Apart from the paralysis I found absolutely nothing abnormal in the wind-pipe, pharynx, nasal passages, and head sinuses. Deglutition was impossible and she had to be fed through a tube, which was introduced without the slightest trouble (encountering no obstruction) straight to the stomach. At that time there was no suspicion or semblance of a swelling or growth in the esophagus. Whatever the cause, the paralysis was the solitary outward and visible sign. In the vault of the nasal pharynx was a mass of hypertrophied lymphoid tissue, the falsely called adenoid growth, of sufficient size to interfere somewhat with the passage of air through the nasal pharynx. I told Dr. Friedenwald that while I attached no importance to this growth as an etiologic factor in the case, I would nevertheless remove it and see what would happen. This I did April 28, 1902, with cutting forceps, under local cocain anesthesia, completing the operation on the following two days (April 29 and 30, 1902). The macroscopic appearance of the exterior of the growth and the cut surface before and after operation was perfectly typical. No microscopic examination was made. The mass was easily removed, and the wound healed well and quickly. Five days after the operation patient left, for the seashore, I think. It is needless to say that the removal of the tumor had no effect whatsoever on the paralytic conditions. I did not see her again until about a month later (June), when the conditions were unchanged. Having abandoned the idea of a purely neurotic origin of the paralysis, the Eden to which, after excluding everything else, we had turned as a sort of convenient refuge for acknowledged ignorance, having not located the cause and having done nothing for her of any avail, we advised her to go home, watch the developments, and report to us as soon as anything happened for better or worse."

The idea of hysterical palsy had been considered and abandoned after electricity, hypnotism and various drugs had failed to improve her condition. She finally returned home again with the advice given in the quotation from Dr. Mackenzie's letter. During the first year after this abandonment of treatment she fell off 36 pounds in weight. Her teeth, previously sound, crumbled like chalk. In a year she lost all the upper set, and in eighteen months all the lower set, and she now wears a false denture.

Dr. Mitchell's Notes.—In May, 1905, patient saw Dr. John K. Mitchell, and later I examined her. It was now four years from the date of the first onset. The general health is very

* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

good, and there is no perceptible defect in any organ except as concerns deglutition. She weighs 86 pounds, is 5 feet 1 inch in height, and appears to be a rather slight but healthy woman. There is no trouble with the blood or with any of the secretions. Her functions are punctually performed. She feeds herself with a tube carried a little past the level of the larynx, and when milk and eggs and soup are poured through this tube they reach the stomach without further difficulty. She is quiet, patient, and unemotional. Dynamometer registers right 47, left 45. She is easily tired, but is fully restored by sleep, which is good and sufficient. Her station is normal, with the eyes open or shut. Reflexes: Right knee jerk, zero, and cannot be reinforced by motion or sensation; left knee jerk capricious, at times active, and is reinforcible. Ankle jerks, right and left, are absent as well as the plantar reflexes right and left. There is no Babinski reflex. The early acquired left ptosis is better, but is not absent, and is worse whenever she is fatigued. The upper part of the left face acts less quickly and less well than the right. The fifth nerve territory of the face and eye is normal, as are also the senses of sight, hearing, smell and taste. The condition of sensation in the legs is interesting.

On the right leg there were three small island spaces on which sense of touch, pain, heat and cold was normal; one was on the posterior aspect of mid-thigh, one in the middle of the calf posteriorly, and one surrounds the instep like a band, but extends somewhat further toward the toes and toward the heel on the outer aspect of the foot than on the inner one. On the outer aspect of this leg there was total anesthesia just above the knee in a space some three inches in extent. Except the areas mentioned in which touch was normal, the rest of the leg was insensitive to pain, but perfectly normal to touch. On the inner side of the leg touch was normally felt in the whole leg, but pain sense was only present in the small islands already spoken of. This condition persisted all through the spring of 1905, but had changed very much toward the normal in the autumn on her return. The left leg is apparently normal. The right leg is still described as feeling colder than the left. This is not perceptible to the touch. There is no disturbance of sensibility in the right arm. Heat and cold are felt tardily on the entire right side of the body, and sensibility to cold is lessened.

Throat Examination by Dr. Seiss.—Examination of the throat exhibits conditions very well described in a letter from Dr. Seiss, parts of which I quote:

"Inspection showed a fair pharyngeal region and an anemic mucous membrane; no gross lesions. The larynx was marvelously easy of examination; with an ordinary gas light I got an excellent view of the bronchial openings, and could study the larynx at leisure. The region showed little on inspection but atrophy and anemia, a singularly normal membrane for a tube-fed patient, in whom more or less traumatic laryngitis is generally present. Palpation with finger and probe gave the most interesting results. The entire pharyngeal region was more or less anesthetic, and never in my thirty years of practice have I been able to so handle a living throat. There was, however, no motor paralysis of the palate; it contracted of its own accord freely. There appears to be both motor and sensory paralysis of the pharyngeal constrictor. The whole larynx seemed void of sensation. I dented the arytenoid region and epiglottic folds with a probe and rubbed the cords, and only by hooking the end of the probe under a cord was coughing produced. But there was no motor laryngeal paralysis, the cords approximating perfectly. I have no idea of the pathology of this case, but as a working basis it seems to be an extreme case of diphtheritic paralysis, with remarkable 'hysterical' sensory symptom, perhaps brought about by the anxiety and suffering due to the organic lesions."

Further Notes by Dr. Mitchell.—My own notes add these facts: Extent of common sensibility all through the region of the throat which could be touched is not as readily defined as it can be on the skin, but touch was felt everywhere and rightly indicated as to place in the mouth, pharynx, and palatal areas. These organs were somewhat sensitive to the prick of a needle. Either they had lost reflex sensibility, or there was a loss of power in the muscles to respond to impressions which usually would have called the muscle into violent action. So entirely absent was the reflex activity of the throat that it was easy to examine it with the finger over the usually sensitive pharyngeal surfaces. Nothing more singular can be imagined than the effect produced on one in making this examination with such unusual freedom. Dr. Seiss has more accurately defined the limits of this lessened sensibility or absence of reflex action. Not even saliva is swallowed. It collects in the mouth and is then allowed to drain out on a handkerchief, but apparently little or none of it passes down the throat; and when we know that for four years the digestion has been almost absolutely perfect, the absence of saliva, which is presumed to render essential service in this function, becomes extremely interesting. The response to electricity in the muscles of the throat was unsatisfactory. On the left side there was no response to faradic electricity; on the right side the palatal muscles and the uvula responded to strong faradic currents. I ought to add that the tongue had perfect mobility.

After some fruitless treatment patient returned home, with accurate directions as to diet, exercise, and the like, and on Nov. 14, 1905, returned to our care. She had gained in the interval 23 pounds, was strong, and had a good color. There was still no reflex action in the upper larynx. The parts could be fingered as before without causing spasms or nausea. There was no pharyngeal deglutition.

Dr. Boyer's Report.—Dr. Boyer now reports as follows of the muscular responses to electricity: "The muscles of the uvula respond to both the galvanic and the faradic currents much better than they did a year ago. The examinations of the two sides are exactly alike. There is no reaction of degeneration in any of the muscles at this time, the negative closing current giving a better response than the positive closing current in the tongue muscles, the muscles that elevate the uvula, and in the constrictors of the throat. Nov. 17, 1905."

In the latest examination of the throat just before patient left us in the month of April, it was found that at the limit of the observer's power to explore the pharynx there was a firm growth in the middle line projecting forward from the anterior face of the pharynx. It was very difficult to reach and might easily have escaped observation; in fact, must have done so.

On her return a careful examination of this growth was made. The tumor was about an inch wide at the level of the arytenoid cartilages. Its extent below was undetermined until an *x*-ray picture not only revealed how dense was this structure, but also the extent to which it extended down the canal behind the pharyngeal mucous membrane. It was possible to carry a finger behind the larynx so as to feel that there was scarcely any room between it and this smooth, hard, rounded mass which projected from the anterior surface of the pharynx. The vertebræ seemed to be normal, the head movements free and painless. The mass described was slightly tender on pressure and too hard to penetrate with an exploring needle. It seemed to be of the firmness of dense cartilage, and that its structure is somewhat of that nature was shown by the depth of shade which appeared in the *x*-ray pictures. The reflexes are generally better. The knee-jerk is present on the left side, but is feeble, though reinforcible. On the right side the knee reflex is obtainable only at every fourth or fifth blow of the hammer. What is most strange is that it is not reinforcible. The ankle jerk is not present on either side. There is still no plantar reflex and no Babinski reflex. There is far less sense of subjective cold on the right side, and the legs are in a nearly normal state as concerns sensation, the areas of peculiar sensation having lessened and in some places disappeared. Menstruation is regular and has always been so since her first attack. I may add that the inertness of the pharyngeal muscles is as before, and the tube feeding a constant sad necessity.

It is clear to me that early in this case there was an abscess between the vertebra and the anterior wall of the pharynx. The suddenness of the formation, the violence of the onset, the absence of any premonitory trouble, and the abrupt and complete palsy of the pharyngeal muscles which seize on and deliver the bolus to the still active esophagus are all remarkable and difficult to explain. The date of the origin of the tumor is doubtful. It was too dense to have been of rapid growth. It could hardly have escaped Dr. Mackenzie, and was probably of a gradual and later formation; nor can it be used to explain the paralysis. There was no sufficient evidence of diphtheria, and had there been it could not explain the paralysis, which is never an initial phenomenon of diphtheria. The early advent, the completeness and the changeless permanence of the palsy enable us to dismiss this malady as the cause.

We must of need fall back on some toxic cause as the parent of the local palsy, but whether this fell directly on the postpharyngeal plexus or, through the sequent abscess, damaged it I am unable to decide. Nor can I explain why this dense growth arose, as seems likely, from the site of the abscess. The great soreness of the muscles elsewhere and the inflammation of the wrist add to the probabilities of an acute toxic cause, primarily local.

The alarming sense of loss of power to swallow must have told emotionally even on a woman as enduring and full of patient courage. Whether this alone or the toxic blow may account for her hysterical symptoms, ptosis, analgesia, retarded sensation, I can not say. I have seen few cases in which the problems presented were more difficult of solution.

No treatment was of value in the local disorder, but it was plain that the last year of care as to the nature and amount of diet had resulted in some increase of sensibility in the throat, but in no gain of power to swallow food. Only one therapeutic means seemed to be of any value. A skilful masseuse was able to use friction of the growth for a few minutes twice a day. This resulted in slowly increasing sensibility of the parts, but in no other change. An operation was, of course, considered, but not only had we doubts as to its competence to insure return of power, but it involved difficulties of a nature to cause the most daring surgeon to hesitate.

DISCUSSION.

DR. P. C. KNAPP, Boston, said that the case is so extraordinary and so unparalleled that really nothing can be said in the way of discussion, except to add a few words in support of Dr. Mitchell's interpretation of it. It must originally have been an acute toxic infectious process, localized chiefly in the throat. From Dr. Mitchell's history of the case, it would seem extremely probable that there were no nervous symptoms elsewhere, which could fairly be said to have contributed to this condition. The theory of postdiphtheritic paralysis is hardly tenable, the symptoms having developed immediately after, but there was possibly involvement of the post-pharyngeal plexus.

DR. CHARLES L. DANA, New York City, suggested a possible explanation of this case on the supposition that it was originally a case of polioencephalitis, which comes on most often after alcoholism, but which also follows grippe and other infections. Dr. Dana has seen cases which came on with paralysis of the throat, and in which there was a polioencephalitis, somewhat diffuse in character, and not confined entirely to the nuclear regions. Of course, it is difficult to explain such cases, without reading and going over the history again, but this has occurred to him as a possible explanation of the case.

MYASTHENIA GRAVIS.*

C. EUGENE RIGGS, A.M., M.D.
Professor of Nervous and Mental Diseases, University of Minnesota.
ST. PAUL, MINN.

Myasthenia gravis is a comparatively rare disease and is especially so when associated with an ophthalmoplegia. Its chief feature is a generalized weakness of the muscles with a susceptibility to their speedy exhaustion and a rapid return to their previous condition after a brief interval of rest. Either normal functioning or artificial stimulation will produce the characteristic muscular enfeeblement. There is no wasting, no reaction of degeneration.

While myasthenia is usually general, it may affect especially the lips, the palate, the pharynx, the muscles of mastication and those of the eyeball; in fact, it was the bulbar weakness which first attracted attention and gave rise to the name, asthenic bulbar paralysis.

CASE REPORTS.

The cases I am about to describe illustrate the two phases of the disease, the one purely bulbar, the other with ophthalmoplegia and associated bulbar and general muscular weakness.

CASE 1.—Mr. H. was referred to me by Dr. Owen, of Anaconda, Mont.

History.—Patient, aged 37, was a German, a stationary engineer, and married; his parents are living and well, the father being 64 years of age, the mother 61. Three brothers and three sisters are living and in good health; one sister died in infancy. The patient was a healthy child, suffering only from the usual diseases of childhood. He had scarlet fever at 14 years, measles the year following, also had mumps, with an associated orchitis. Six years previous to my seeing him he had an attack of typhoid fever. There was no specific history; no enlarged epitrochlear, post-cervical, or inguinal glands, no history of tuberculosis.

Three weeks previous to the present illness he complained of pain in the back of the head, which was worse at night; this lasted one week. With this exception he was perfectly well until March 31, 1902, when he had an attack of diplopia, preceding by five or six days the onset of the disease. A weakness of the entire motor nervous system ensued; there was inability to whistle, to swallow, and to raise the left arm; the lower face became paretic, also the tongue and the frontales. The muscular weakness did not become generalized until about seven days after the left arm was first affected. The only sensory symptom was pain over the entire head.

Examination.—At the time of my first examination, June 25, 1902, there was pain in the spine and occiput. The facial aspect was striking. There was double ptosis, left worse than right; all eye movements were greatly lessened; the eyes could not be moved upward and but partially downward, the outward movement was only about three-fourths normal; the internal recti were markedly affected, the left more than the right. The eyelids could be closed, but the orbicularis palpebrarum was very weak; reaction to light and accommodation sluggish; convergence impaired. The ophthalmoplegia was very pronounced. Unfortunately careful measurements of ocular muscular defects were not made at this time. The face presented an unnatural mask-like appearance. The inability to smile was particularly noticeable; when trying to do so he could only raise the upper lip, there was no outward movement of the angle of the mouth. Gowers happily terms this inability to laugh the "nasal" or "levator smile." He suggests that this may be a characteristic feature of the disease, although it has not been emphasized by others. The effort to laugh appears mirthless, forced, and wholly artificial.

The masseter and temporal muscles were paretic, pteragoids normal, neck muscles weak; head would drop backward at

* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

times; he could not chew, could swallow liquids, but solids would stick in the throat. If, while lying on the back, he were to converse for a short time, the lower jaw would drop down and tongue fall back in the mouth; he would have to support the jaw with the hand. There was paresis of the soft palate, more marked on the left side. Speech was nasal, especially when tired. Raising the head three or four times in succession from the pillow caused complete exhaustion.

Temperature was normal, pulse from 52 to 64,urine: specific gravity 1,030, color normal, reaction acid, slightly cloudy, sediment none, albumin none, sugar none. Sensibility was normal, organic reflexes normal; of the deep reflexes, right knee-jerk slightly more pronounced than normal, left exaggerated; no ankle clonus; no Babinski; superficial reflexes: plantar slight in both feet, cremasteric exaggerated, abdominal, dorso-lumbar, intrascapular absent; gluteal exaggerated, epigastric present.

The legs became quickly exhausted after flexing and extending them a few times. It was only with great effort that the thighs could be flexed on the abdomen. The myasthenic reaction was well marked in both thighs and legs. Dynamometer 14 degrees in both hands. Coördination of movement normal; wrist-jerks and triceps reflex, exaggerated; the deltoids were markedly paretic, patient could not raise the arms more than one-fourth the distance to the horizontal position and after a few attempts could not raise them at all. The left arm was weaker than the right. After flexing the forearm on the arm 25 times, further ability to do so was lost. When the wrist was dorsiflexed the fingers could not be extended. Capillary circulation was poor. Sleep for a month and a half after the inception of the disease was bad. At the time of the examination only fair. Intelligence good, disposition cheerful. There was vertigo if the patient attempted to rise. He felt stronger in the morning but toward evening grew weaker so that he could scarcely feed himself. His weight was 220 pounds.

Dr. J. W. Chamberlin's Examination.—Early in September the patient was examined by Dr. J. W. Chamberlin, to whose courtesy I am indebted for the following report: Ptosis of both eyes; interference with muscular movements of the eyeballs, especially when turning the left eye toward the temporal side, the movement was restricted and diplopia followed. Pupils semi-dilated, reaction to light and accommodation very sluggish. Some convergence, more marked in left than right eye on looking upward. No diplopia except when looking strongly to the left. A second examination, October 16, showed great improvement in the eye condition with practical disappearance of the ophthalmoplegia.

Mr. H. returned home Oct. 18, 1902, greatly improved. He could then walk about 60 feet without very great fatigue; when he first came to St. Paul he could only take a step or two with the greatest difficulty. Except for the improved eye condition the myasthenic state was the same in character though less in degree as when first examined. The nasal smile had disappeared but the face was still greatly lacking in expression.

H.'s symptoms were exceptionally typical and clearly exemplified the clinical features of this disease. The pain in the back of the head three weeks before the diplopia is undoubtedly a prodromal symptom. I have been able to find a record of seven cases in addition to my own in which there was pain in the head and occiput. In one of Erb's cases this pain in the occiput with stiffness and weakness in the nape of the neck was present during the year previous to the attack. The bulbar involvement in H. is characteristic. The external ocular muscles were first affected; this has occurred in 15 out of 51 cases (Oppenheim.) There was double ptosis, left more than right and at first constant. The patient would try to overcome this by throwing back his head, a weakness of the frontales making this necessary. The ophthalmoplegia externa was marked. There was great difficulty in mastication, so that his diet was limited to liquid and soft foods, a condition which much improved before he returned home. There was weakness of the muscles of the mouth. The face in its expression resembled that of a general paretic. There were no fibrillary contractions, no dyspnea, muscle sense was unimpaired, no tenderness of muscles, no sensory disturbances aside from the pain in the occiput and the head and the lumbar region; of this latter he complained a great deal.

CASE 2.—Referred to me by my friend, Dr. J. C. Clark, Stillwater, Minn.

History.—A., aged 35, Swede, married, laborer, whose father died aged 54, and whose mother still lives, 73 years of age; has four brother and one sister. The sister is hysterical; one brother is insane. As a child patient was healthy aside from an attack of pleurisy in his ninth year. Nine years ago a weakness developed in both legs, the right first; it lasted about three weeks. A. was able to walk but could not flex or extend foot or leg normally. Patient drank at this time and for several years used both whisky and beer. After the disappearance of this paresis he was perfectly well until February, 1902, when he contracted a severe cold (grippe). He was lumbering at the time and stayed in camp for five days after which he resumed work. At this time he first observed weakness of the lips; they seemed stiff, he could not move them as usual, could not expectorate. This condition was present only in the evening; in the morning he was apparently all right. The trouble was transient. In the latter part of June, 1902, he again noticed weakness of the lips which was associated with difficulty in swallowing, noticeable only in the evening. There was temporary diplopia. A. continued to work until too weak to do so; this weakness was not the result of muscular myasthenia but of inanition. He complained of a good deal of pain in the top and back of the head, there was also vertigo.

Examination.—When he came under my observation Dec. 31, 1902, I found that he could move the frontales but slightly; there was double ptosis, absolute paralysis of both orbicularis palpebrarum muscles, the nasolabial fold was obliterated, the nasal smile was present, reaction to light and accommodation was apparently normal, the fundus normal except that both optic papillæ were hyperemic; there was no papillitis, simply red; could not touch the roof of the mouth with tongue and was unable to protrude it after having done so a few times. The tongue was flabby and appeared slightly atrophied. Speech was nasal and unintelligible to one not accustomed to it. Soft palate was paralyzed, right side more than left, fluids regurgitating through the nose. He had very great difficulty in getting rid of the saliva and tenacious mucus which constantly accumulated in his mouth. He drank by throwing back his head, holding shut his lips, and allowing the fluid to run down his throat. While he was able to masticate his food, it soon tired him; he could always swallow better in the morning. His face was expressionless; his temperature was 99.4, pulse 90. Organic reflexes were normal, sensibility normal.

Patient was much emaciated; when well he weighed 154 pounds, at the time of my examination his weight was 110 pounds. Knee-jerks were markedly sluggish, the left becoming rapidly exhausted; no ankle clonus; plantar, abdominal, dorso-lumbar, gluteal reflexes normal; cremasteric, epigastric, intrascapular absent. He could walk about half a mile before becoming exhausted. Dynamometer showed right hand 27 degrees; left, 26. After closing and opening his hand 35 or 40 times he found it difficult to do so longer; the myasthenic reaction was present in both biceps.

CASE 3.—Professor Y., Northfield, Minn., was referred to me in September, 1903, by Dr. Haldor Sneve under whose care he was.

History.—Professor Y. was 45 years of age. Parents living and both over 70. One brother and two sisters living and well. There was no syphilitic taint but the family history showed one remote case of tuberculosis. At the age of 14 patient suffered from an attack of articular rheumatism. In 1901 he had a severe pneumonia. I regarded the case as a typical myasthenia gravis, in which opinion Dr. Sneve and I did not agree, he believing it to be an acute bulbar palsy. There were 18 cases of scarlet fever in the professor's school. He had a high fever for a few days but this was not accompanied by a rash and in a very short time he was able to resume work. He attended personally to the disinfection of the rooms occupied by these patients and he complained very much of the irri-

tation of the mucous membrane caused by the formaldehyd vapor. He first noticed a feeling as though something had gotten into his eye just after he had finished fumigating. Early in April, 1903, diplopia became apparent and in about a month ptosis of the left upper eyelid was observed. In June, he complained of weakness of the left arm, the third and fourth fingers of the left hand became weak. In July there was ptosis of the right upper eyelid, while at the same time the left began to improve. Not only was the right eye affected at this time, but there was also involvement of the right arm. In August his face and jaws were attacked; mastication was difficult; he could not chew meat; at the same time both legs simultaneously became weak and his feet felt heavy.

Examination.—His face was mask-like in appearance and the nasal smile was well marked. He complained of difficulty in swallowing, could not whistle, could protrude his tongue several times in succession after which he was powerless to do so. The neck muscles were weak, the frontales were involved. Ophthalmoplegia externa was marked, there being practically no outward or inward movements of the eyes, although there was slight motion upward and downward. If he talked for three minutes his speech became thick and he was understood with difficulty. Light gymnastic movements of either arms or legs exhausted him, the arms tiring more quickly than the legs. He could walk a mile with comfort. Dynamometer showed: right hand, 13 degrees; left, 11; after a few attempts the markings registered were: right hand, 5 degrees; left, 5; knee-jerks and superficial reflexes were normal; there was no Babinski; sensation was normal; there was no muscular atrophy. He experienced great difficulty in undressing; had to be assisted. After the complete evolution of the disease he could swallow only liquid food and much of this would be regurgitated through the nostrils.

Subsequent History.—He was greatly annoyed by the accumulation of mucus in the throat which, at times, threatened to choke him. His mind was perfectly clear. The pulse ranged from 74 to 90; temperature was normal. He did not complain of embarrassed respiration; sleep was poor, averaging during the latter part of his illness about four hours nightly. The myasthenic reaction was present in the left arm. Toward the last if he remained in bed and was quiet he was very comfortable, yet he found himself very weak after getting up; he was able to walk across the room and to sit up about two hours daily. November 18 he had a serious sinking spell accompanied by tachycardia and dyspnea which seemed for a time as though it would prove fatal. December 14 he had a similar attack followed by sweating. The drooling of the saliva was a very annoying symptom toward the close; rather than attempt to swallow he would lower the head for hours, allowing the saliva to run from his mouth. He was always better after a night's rest, and it was found expedient to feed him early in the day. The myasthenia was always most marked at night. The remissions so characteristic of this disease were well defined. Involvement of the pneumogastric was the immediate cause of death.

I am greatly indebted to Dr. W. E. Hunt, Northfield, who saw the patient frequently previous to his death, for the final history, as well as many minute details with which I was unfamiliar.

STATISTICAL EVIDENCE.

H. was 37, A. 35 and Y. 45 years of age. This disease occurs most frequently between the twentieth and thirtieth years, the youngest patient whose case as authentically reported was a child of 8 (Taylor), the oldest, a man of 71 years (Hingston and Stoddard). According to Taylor, statistical evidence shows that the sexes are affected about equally. On the contrary, Hun arrives at an entirely different conclusion; from the tabulated cases he finds that it occurs about twice as often in the female as in the male.

ETIOLOGY.

In H. there was no apparent cause; A. developed the first symptom shortly following an attack of grippe; Y. was badly debilitated at the time of the scarlet fever outbreak and, as we have seen, he suffered from what seems to have been an atypical form of this disease; also for two months he was both anxious and overworked. Anxiety, apprehension, and excessive physical strain may well be regarded as etiologic factors, but there has been such a variety of causes enumerated by different writers to account for the genesis of myasthenia gravis as to make it very clear that its true etiology is yet unknown.

SYMPTOMATOLOGY.

Ptosis was the first symptom to appear in the patients H. and Y.; it is present in about 75 per cent. of all cases. At first it is usually unilateral as in Y., then it becomes bilateral and more marked on one side; after a night's sleep it may entirely disappear but it soon becomes apparent after rising and by night is again very noticeable (Frank). All three patients suffered from double ptosis and weakness of the frontales; this was most evident in H. who had to throw back his head in order to see. It is interesting to observe that ophthalmoplegia externa was present in two of these patients, H. and Y., and the nasal smile in all three. Gowers particularly emphasizes these two features; the former has been noted by a number of observers, the latter by him alone. I believe some neurologists still call in question this latter symptom.

Rapid muscle tiring with an associated paresis is the feature of asthenic bulbar palsy. Cold and emotion greatly increase the myasthenia, also women affected with this disease are worse during their menstrual periods (Taylor). This muscular weakness is subject to great variations. As already stated, if, when in a recumbent position, H. conversed for a few moments, his lower jaw would drop and his tongue would fall back in his mouth. After raising his head a few times in succession from the pillow, complete exhaustion of the neck muscles ensued. Speech rapidly became nasal and the slightest exertion quickly exhausted both arms and legs. In A. the muscle tiring and weakness was essentially bulbar. An attempt at conversation for three minutes by Y. made his speech thick and almost unintelligible. After a few efforts to protrude his tongue future trials were useless. The muscles of deglutition and mastication were exhausted on the slightest functioning. There was some improvement in both the ptosis and diplopia after the complete development of the disease. As is usual in these patients, Y. was always better after a night's rest, but even when at his best, early in the morning, there was an evident myasthenia of the affected muscles. I have thus rapidly enumerated and grouped the salient features already detailed in the histories of these three cases so as to present as graphically as possible the muscle tiring and paresis which are the characteristic symptoms of myasthenia gravis.

The myasthenic reaction is a distinctive and very important symptom. It was present in all three of my cases, and although it is in no sense pathognomonic, yet its presence is of real significance and a very material aid in diagnosis. While this reaction works no serious change in the normal nerve and muscle formula, yet it does cause a quantitative alteration in the electrical response, as much stronger currents are required to produce the desired reaction. It is variable in its manifestations, being present at one time and absent at another; moreover, only some of the affected muscles reveal it. After the muscle has been exhausted by faradism then by voluntary contractions it has been observed to react readily to galvanism. The myasthenic reaction is simply

the tetanizing of the muscle by faradism; after a rest it again readily responds to the same stimulus. The galvanic current has no such effect.

In H. the onset of the disease was rapid, the diplopia preceding the myasthenia less than a week; in Y. the diplopia was followed by ptosis in two weeks, the muscular weakness becoming evident about two months later; in A. there was an interval of four months between the appearance of the first symptoms, which were transient, and the real inception of the disease. The development of myasthenia gravis is usually gradual, although exceptionally death may occur within a few weeks. According to the last report I had from H. which was about a year after leaving the hospital, his condition remained practically unchanged. As to A. I have been unable to learn anything concerning him since my examination, from the severity of the bulbar symptoms I should infer that he could have lived but a very short time. Y.'s illness lasted about a year. Seven recoveries are reported in the tabulated cases, the life expectancy varying from one to three years (Hun).

DIFFERENTIAL DIAGNOSIS.

The real nature of the disease is apparent at a glance if the myasthenic symptom-complex is fully developed. It is the atypical cases which cause so much difficulty in diagnosis. The differentiation from nuclear ophthalmoplegia, pseudobulbar paralysis and polioencephalitis can usually be made if one keeps in mind the rapid tiring, the myasthenic reaction, the absence of atrophy, the paresis affecting muscles supplied by motor nerves, both spinal and bulbar, and the variation in the intensity of the symptoms. The greatest danger is the mistaking of asthenic bulbar paralysis for hysteria. When one remembers that not infrequently in its incipient stage multiple cerebrospinal sclerosis has been taken for hysteria, it is not surprising that myasthenia gravis should be so regarded, especially if the case presents the symptoms described by Dr. C. W. Burr as occurring in one of his myasthenic patients, namely, "contraction of the fields of vision, partial reversals of the red and blue fields, and later color confusion." In the absence of definite lesions of the nervous system Oppenheim's appellation of "lethal neurosis" is especially happy. The most significant and constant pathologic lesions are either an enlarged or diseased thymus gland and lymphoid infiltration of the muscles. Burr has reported two cases in which there was a diseased thymus and in one of which there was also the lymphoid infiltration. Hun reports a case of lymphosarcoma of the thymus with similar muscular infiltration. Foreign writers report a much larger number of similar pathological findings.

CONCLUSIONS.

The symptomatology of myasthenia gravis is best explained by supposing the presence in the blood of a toxin affecting the function of the lower motor neuron. Dr. James Taylor suggests that this toxic substance is produced by an enlarged or modified thymus or by an abnormal lymphoid tissue infiltration throughout the body and muscles as well, and that in myasthenia we are dealing with a disease in a certain sense the converse of myxedema. Thus far no treatment has been found efficacious but in H., who was under my care for months at the hospital, I found the most efficient agents to be strychnia, gentle massage and galvanism. No rational therapy can be pursued until we discover a substance that will antagonize this poison which is being constantly thrown into the blood.

FARADIZATION OF THE MOTOR CORTEX IN THE HUMAN BRAIN.

JAMES HENDRIE LLOYD, M.D.
Neurologist to the Philadelphia Hospital.
PHILADELPHIA.

It can not be doubted that the exact localization of the various functions of the cortex of the human brain is a subject of first importance in neurology, and that much still remains to be done to place this subject in the domain of pure science. It is a subject, moreover, which is attended with limited opportunities and many difficulties; and the duty is, therefore, incumbent on us to seize every rare oportunity that offers, and to put on record every isolated case that has been observed with care and precision. I have, therefore, no apology to make for basing this paper on the record of one case, although a second case which presented itself will also be referred to, and an explanation given of the fact that at the last moment I was disappointed in the opportunity of faradizing the cortex in the patient after an osteoplastic flap had been successfully made.

This subject has always had special interest for me, for I was among the earliest observers in this field in America. The case which Dr. Deaver and I[1] recorded in 1888 was one of Jacksonian epilepsy, in which trephining and excision of portions of the motor cortex were performed, and the motor cortex was explored by faradic stimulation as well as could be done in a comparatively small trephine opening. In that case very definite responses were secured by stimulating what is rather vaguely called the Rolandic area, and these results were apparently closely in accord with the experiments of Ferrier and others on the brains of monkeys. About the same time two other cases were recorded in Philadelphia, one by Keen and the other by Mills and Hearn. The early history of this clinico-experimental work, especially in America, has recently been rewritten by Dr. Mills[2] and need not be considered here in great detail. It is sufficient to say that that early work, as now viewed at a distance, suffers somewhat from a defecive method, a method which was inevitable and inseparable from the time. These cases were instances of mere trephining, and subsequent enlarging by the rongeur, and as a consequence great difficulty was met in accurately recognizing the parts of the cortex exposed. This difficulty was fully recognized and stated in the paper by Lloyd and Deaver.[1] The general results, however, were valuable; that is to say, the reactions were in accord with the general view then held of cortical localization; but they lacked sufficient exactness, due to the difficulty just stated. The view held at that time was that the motor centers were located both in front of and behind the fissure of Rolando, and these observations through small trephine wounds were thought to support that view. I am free now to say, as I said then, that no one present at those operations could be absolutely sure in his mind which one of the exposed fissures was the fissure of Rolando. Moreover, according to my recollection, the bipolar method was used, and this method permits too wide a diffusion of the current for exact observation. This detail in technic is of great importance.

Within the last few years this subject of motor localization has received new light from the work especially of Grünbum and Sherrington.[3] In their experiments on

1. Amer. Jour. Med. Scl., November, 1888.
2. Univ. of Penn. Med. Bull., July-August, 1905.
3. Proc. Royal Soc., vol. lxlx, 1902, p. 206; also vol. lxxll, 1904, p. 152.

the higher apes these observers have made out a good case for the limitation of the motor cortex to the precentral convolution and its continuation into the paracentral lobule, and so exact and scientific is their method that it stands as a challenge for us to square our observations with theirs, or to give our reasons for differing with them.

METHODS OF DETERMINING THE MOTOR CORTEX.

There are three methods of determining the motor cortex in the human brain, namely, the pathologic, the histologic, and the experimental.

1. Pathologic.—The pathologic or clinical method is open to many criticisms, which are familiar to all. This method depends on the exact study of pathologic lesions in the brain. But, unfortunately, Nature does not often perform for us such precise experiments with disease as could be wished, and the localizing value of pathologic lesions is, therefore, often uncertain and liable to grave misinterpretation. Nevertheless, we are much dependent on such lesions, and no one will deny that they have done much to establish or to confirm our knowledge of cortical centers. No one, therefore, who has even an elementary knowledge of this subject will decry this pathologic method; all I mean to say here is that it is inferior

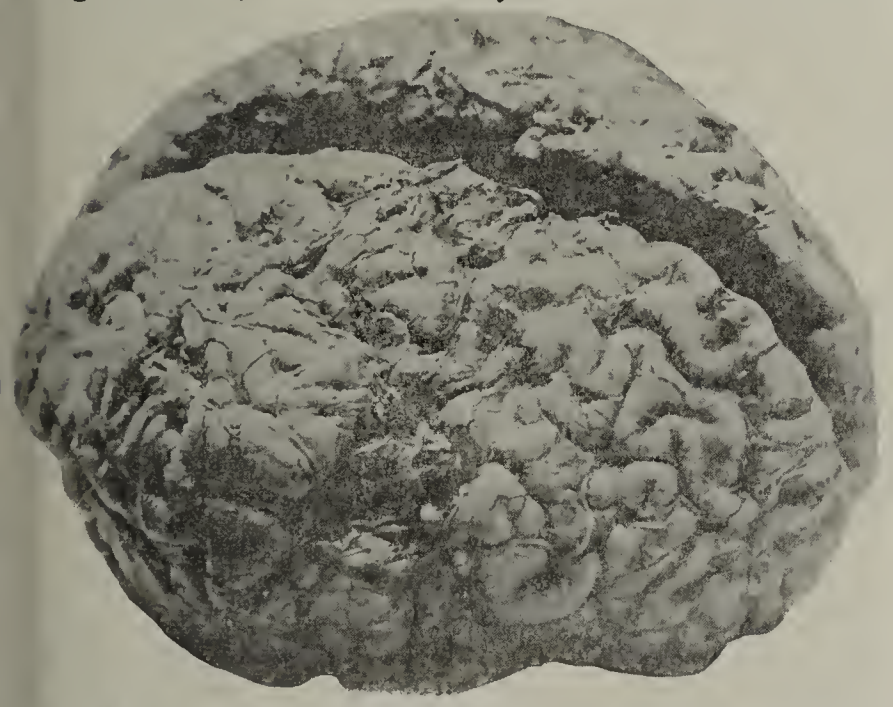


Fig. 1.—A case illustrating sensorimotor localization by pathologic lesion in the human brain. The patient had had hemiplegia without anesthesia. The lesion is located largely in front of the fissure of Rolando. The brain as photographed is somewhat tilted toward the spectator.

to the experimental method, when this latter can be employed. I have at present a brain (Fig. 1) recently removed, in which there is an area of softening apparently sharply limited behind by the Rolandic fissure to the precentral gyrus and adjacent parts of the frontal lobe, but its value is impaired by two things: First, it is impossible to say that the subcortical softening is confined to the motor fibers in the centrum ovale; and, second, the clinical notes are somewhat defective, because the patient's mental state was such that accurate tests of sensation were not easily made. Otherwise this case is a beautiful one with which to test this doctrine of motor and sensory localization fore and aft of the Rolandic fissure; and yet it illustrates some of the limitations of the pathologic method. Nevertheless, so far as it goes, it supports the doctrine of the precentral localization of the motor centers, for the patient was completely hemiplegic and apparently had no loss of sensation.

2. Histologic.—The histologic method is not the subject of this paper, but, in view of the important results claimed for it, a brief reference here is desirable. One of its leading exponents at the present time is Dr. Alfred W. Campbell,[4] of England, to whose recent valuable work I am under obligations for some things which I shall say.

In brief, Campbell's work is based on the "retrograde" degeneration which occurs in the giant cells of the motor cortex after a destructive lesion in the neurons of either the first or second order. Retrograde degeneration, originally associated with the name of Gudden, has long been known to occur in a neuron which has been injured. It is the reverse of the well-known Wallerian degeneration, and occurs toward, not away from, the neuron center or cell body, and eventually may include that body. I put on record a striking instance of this in 1893 in a case of syringomyelia,[5] in which the left pyramidal tract was deeply sclerosed above the lesion, and could be traced brainward through and beyond the decussation in the medulla; but no effort was made to trace it to the brain cortex. This was one of the earliest instances of such degeneration put on record in syringomyelia, though it has been noted since in the same disease by Marinesco[6] and possibly by others.

Originally backward degeneration was supposed to be confined to the neuron implicated; thus it was thought that it would not pass from a neuron of the lower to one of the upper order. If, for instance, a peripheral nerve were destroyed, the ganglion cell in the anterior horn in the spinal cord might show a change, but the degeneration would stop there; while if the pyramidal tract or internal capsule were injured a change might in time be looked for in some of the large ganglionic elements in the motor cortex. Marinesco claimed to have found such changes in old cases of lesion of the internal capsule; a condition which is now sometimes called, after him, the *réaction à distance*. Campbell has found some characteristic changes in the motor cortex in cases of amyotrophic lateral sclerosis, and bases some of his claims for motor localization on these observations.

According to Campbell, this retrograde degeneration has been found, however, not to limit itself to the lower order of neurons, but to spring, as it were, across the barrier of the ganglionic cells in the anterior horns of the spinal cord, and thus to travel upward through the neurons of the upper order, and to lead to changes in the giant cells in the motor cortex. This has been found true in old standing cases of amputation of the limbs. Two Italian physicians, Acquisto and Pusateri, working in conjunction, and also Peli, were the first to make this observation. Working on this basis, Campbell also has made some exceedingly important observations, which, if his results are to be accepted (as it seems from their carefulness and accuracy they must be) furnish some very striking histologic proof for the localization of the motor centers.

In brief, Campbell's claims are that the giant cells of Betz are characteristic of the motor cortex; that he has demonstrated that these cells are found only in the precentral convolution and its annex in the paracentral lobule on the mesial aspect of the hemisphere; that, along with a peculiar cell lamination, and an extraordinary wealth of descending fibers, they constitute a motor type of brain cortex; and, finally, that in a series of 6

4. "Histological Studies on the Localization of Cerebral Function," Cambridge, 1905.
5. Trans. Coll. of Phys., Phila., 1893, third series, vol. xv, p. 74.
6. Abst. in Neurol. Centrlbl., 1900, p. 899 (quoted by Campbell, reference No. 4).

cases of long standing amputation of one or other limb (leg or arm) he has clearly demonstrated a degeneration of these cells of Betz, which degeneration is characterized especially by swelling of the cell, a high degree of chromatolysis, a dislocation of the nucleus, and a loss of the dendritic processes. His pictures, drawn accurately from the microscope, support these claims.

It is particularly interesting to note that Campbell's histologic studies seem to support the experimental work of Sherrington and Grünbaum on anthropoid apes. The Betz cells are distributed in the precentral gyrus and its annex in the paracentral lobule; they extend to the very bottom of the Rolandic fissure, which is thus the hindmost limit of the motor cortex; they do not extend over the whole of the exposed surface of the precentral gyrus, but over only a little more than half of it, and in the paracentral lobule they occupy only the anterior portion, or that portion which lies anterior to what would be the position of the Rolandic fissure if this fissure were extended over the edge of the hemisphere and down into the paracentral lobule. It is in these locations that the degenerated giant cells were found. For details as to the position of the various leg, trunk, arm and face centers, reference may be made to Campbell's book; it is enough to say here that these centers occupy the relative positions from above downward with which we have long been familiar, but they do not extend to and on the postcentral convolution.

3. Experimental.—Since the early work of Fritsch and Hitzig and the classical work of David Ferrier.[7] the experimental method has held first place; and it was early seized on, as I have already said, by a few neurologists and surgeons for exploring the human brain. It is remarkable, however, how comparatively little of this experimental work on the human brain has been done recently. The most noteworthy paper recently published is that of Mills and Frazier,[2] in which a series of cases is reported with valuable observations. There are probably two chief reasons why we have heard so little of this kind of work in recent years. First, the opportunities are rare, for cases are not frequent in which an osteoplastic flap is required, and when they do occur the man with scientific curiosity to apply the faradic test is not always present; second, for a number of years the question was considered about settled; every one acquiesced in the location in a general way of the motor centers both in front of and behind the fissure of Rolando; and there seemed no need of further demonstration. But from this dream of assurance the work of Grünbaum and Sherrington has somewhat rudely awakened us.

It is needless to say that the faradization of the human cortex during a surgical operation is just as much an experiment as is the faradization of the cortex of an anthropoid ape in a vivisection; the chief difference is that we are more intimately interested in the man's cortex than in the ape's, and the result is more directly related to our clinical work and is, therefore, the more valuable. The material on which we thus experiment is vastly more to our purpose.

DETAILS OF TECHNIC.

There are some details of the technic which are of importance.

In the first place, in human subjects a large osteoplastic flap should be made. According to most surgeons, such a flap exposes the patient to little, if any, more risk than the smaller sized trephine wound, especially when this latter has to be enlarged with the rongeur. The welfare of the patient demands, or at least justifies, the larger opening in most cases, because this gives the surgeon a better opportunity to perform the task for which the operation is primarily done. Moreover, it leaves a much better permanent result, for there is left no gaping opening in the skull, covered only by the scalp, and pulsating with every emotion and almost with every breath. The faradization, being only an incident in most of these cases, ought, of course, not to determine the details of the operation; but, other things being not to the contrary, there is no harm in so conducting the operation as to give the experimenter a chance. This the osteoplastic flap may do when a trephine opening would not. To determine the Rolandic fissure is important, but this is not difficult in a big osteoplastic opening as wide as 9 or 10 centimeters. There are several methods, more or less exact, of which I am most familiar with Read's base line, Horsley's meter, and Wilson's cytometer. Fuller gives a very simple method, according to which a line is let fall from the lower angle of the malar bone to a point about one-half inch behind the vertex, or the midpoint between the glabella and the external occipital protuberance. I have tested this method both on the living and the dead subject and have found it exact enough for practical purposes. All methods are liable to deviate from exactness, and need to be used with care and judgment. In one sense, the faradization itself is a test, because if it be true that only the cortex in front of the Rolandic fissure is excitable by mild currents, then it need not be difficult to pick out this fissure. This is a sort of reasoning in a circle, but the two propositions are mutually supporting. In any given case, for instance, in which only the area in front of a given fissure is found to be excitable, the inference would be that that fissure is the Rolandic.

The unipolar method should be employed, as this allows of a concentrated effect, which is not possible when both poles are applied to the cortex.

In the experiments of Grünbaum and Sherrington, in which the higher apes, such as the orang-utan, the gorilla, and the chimpanzee, were used,[3] the unipolar method was employed. The motor area was found to extend over the whole length of the precentral gyrus, also to the depth of the fissure of Rolando, but not to extend behind this fissure. About this localization these observers are very positive. The precentral gyrus is also excitable over its whole free width, according to most of their cases, but there seems to be a possibility of some exceptions as to the whole exposed surface of this convolution being always equally excitable. The island of Reil was found inexcitable. It is important to note that, according to these observers, the anterior limit of the motor field is not sharp and abrupt, but fades off. Under conditions producing lowered excitability, this anterior limit retires backward toward the fissure of Rolando. This is seemingly verified by Campbell's histologic studies, for that observer claims that the giant cells of Betz are not so thickly distributed over the anterior part of the precentral gyrus as over its posterior part and down into the depths of the Rolandic fissure. This has suggested to my mind a possible explanation of the fact that in some cases the human cortex has failed to give results when faradized; it may be that the faradic pole has been placed too far forward on the convolution. In such cases, the attempt should be made to secure reactions by placing the pole

7. Functions of the Brain, New York, 1886, second edition.

as near as possible to the fissure of Rolando, or even down into that fissure.

Direct faradization of the postcentral gyrus, according to Grünbaum and Sherrington, does not cause motor reactions, but in some cases it seems to facilitate movements when the precentral gyrus is in turn faradized; a sort of reinforcement.

Ablation of portions of the motor cortex in the higher apes causes paresis, which, however, is soon recovered from, a result similar to that found in man, as was true in the original case of Lloyd and Deaver,[1] reported eighteen years ago.

These, in brief, are the results reported by Grünbaum and Sherrington, and it is important to note that they were obtained with mild currents. A mistake is sometimes made, I believe, in using too strong currents on the human brain.

CASE REPORTS.

During the past winter I had two opportunities to test this question by faradizing the human cortex in cases in which a brain operation was required.

The first case occurred in the service of my colleague, Dr. Thomas L. Coley, of the Methodist Hospital. It was a case of traumatic focal epilepsy. The operation was performed by Dr. Joseph M. Spellissy, surgeon to the hospital. I was indebted to Dr. Coley and Dr Spellissy for the privilege of making a faradic exploration in this unusually favorable case, and I also owe to them the privilege of reporting the results. As my paper is especially concerned with the subject of faradization, I shall not attempt a full report of the surgical operation, or give a full clinical history.

Patient.—G. W., aged 23, male, white, was brought to the Methodist Hospital at 11:30 p. m., Feb. 8, 1906.

History.—Two years before, while dismounting from a trolley car, the patient fell, striking his head. Two months after this he had his first epileptic fit. During the next twelve months he had six attacks, and in February, 1905, he was picked up unconscious in Atlantic City and taken to a hospital, where he was trephined by Dr. Stewart. During the next twelve months he had no fits, or, at least, very few (for the history is obscure), but he had several attacks of bleeding from the nose. His mind has been unaffected. On the evening of Feb. 8, 1906 (the night he was brought to the Methodist Hospital), his father heard him come into the house about 11 o'clock. He went to the kitchen and, as afterward appeared, took off his overcoat, coat, vest and shoes, and again left the house. He was probably at the time in a state of epileptic automatism. He had not proceeded more than a few hundred feet from his home, when he must have fallen in a fit, for it was there that the police found him lying unconscious.

Clinical History.—On admission to the hospital he was profoundly unconscious, with a history of having been found in the street by the police fifteen minutes before. His pupils were widely dilated, jaws in trismus, muscles of the arms spastic. During the night he bad several fits.

Feb. 9: The fits were carefully noted on this day. They invariably began with a movement of the index and middle fingers of the left[8] hand, and a twitching of the muscles of the jaw, during which the eyes looked toward the right side. The right pupil was slightly larger than the left, not widely dilated, and both pupils reacted to light. Violent pleurothotonos followed. The tonic spasm lasted for from one-half to two minutes, and was not usually followed by a clonic one, though on one occasion the patient had marked clonic movements lasting for about half a minute. On several occasions, before consciousness fully returned, he placed his hand on the site of an old trephine wound on the left side of his head—to be mentioned later.

Feb. 10: The patient had had three fits since the preceding night, of the character already described, varying in duration for from one-half to one and one-half minutes.

Physical Examination.—February 10 the pupils were equal, and the eyegrounds normal. Heart and lungs were negative. Liver and spleen were not palpable. Urine was practically normal, showing a mere trace of albumin and a very few hyaline casts. There was no paralysis in any limb. An old rheumatic trouble had caused some stiffness of the right knee. The mind between fits was perfectly clear.

February 12: The patient had but one fit since the last note. He complained of headache at the site of the old trephine wound. This wound was located on the left side of the head, over the middle and lower portion of the Rolandic area. It was about 5 cm. broad, as measured by the scar in the scalp.

First Operation.—Dr. W. Blair Stewart, Atlantic City, N. J., kindly sent the following note of the operation, which he had performed: He had been informed that before the patient came under his charge he had had many attacks of focal epilepsy; as many as twenty in one day. They began in the right hand and arm. Dr. Stewart trephined over the arm center of the left side, and found a number of dense adhesions to and near the button of bone removed. The dura was very thick at this point, and the intracranial tension so great that when the dura was punctured the cerebrospinal fluid spurted out in considerable quantity, but it was perfectly clear. All adhesions were broken up and the bone still further cut away. Recovery from the operation was perfect, and for three months there was no return of the fits. Dr. Stewart evidently found no marks of fracture of the skull; and as he makes no mention of faradizing the cortex, it is to be presumed that he made no such exploration.

Fig. 2.—Diagram to illustrate faradization of the motor cortex. The dotted line shows the location of the osteoplastic flap. The continuous line indicates the fissure of Rolando. The numerals indicate reactions as follows: 1, hand and arm; 2, neck; 3, face. It was not found practicable to differentiate with certainty the centers for the hand from those for the arm. V is the vertex or midpoint between the glabella and the external occipital protuberance. No reactions were obtained from behind the central, or Rolandic, fissure.

Second Operation.—This operation was done Feb. 21, 1906, in the Methodist Hospital by Dr. Spellissy. A large osteoplastic flap was laid back, exposing the area both in front of and behind the fissure of Rolando on the left side. It included the site of the former trephine opening, as made by Dr. Stewart, but was much larger. Very firm adhesions were found between the dura and the edges of the wound made by the previous operation, and a thickening of the dura at this point formed a dense nodule about 1 cm. in diameter. This was removed. The dura was laid back and the convolutions, both in front of and behind the fissure of Rolando, were subjected to careful tests by faradism.

Faradic Tests.—The unipolar method was employed; and in determining the fissure of Rolando and in noting the reactions I received valuable aid from Dr. D. J. McCarthy. The fissure of Rolando divided the exposed area into two unequal parts, the anterior being smaller than the posterior part of this area. It extended completely across the field and occupied very accurately the location as indicated by measurements on the outside of the skull, especially Read's lines, and the aforesaid line of Fuller. Although the anterior portion, or that in front of the fissure of Rolando, was only about two-fifths of the whole area exposed, it was ample for exploration. The upper margin of the osteoplastic flap reached to within about 3 cm. of the mid-longitudinal line of the skull; therefore the leg centers were doubtless not exposed. The width of the osteoplastic flap

8. The bedside notes have *left*, but from all the subsequent history of the case it is probable that this is a mistake for *right*.

from before backward was little short of 10 cm. and its height was a little more than 7 cm.

A moderate strength of current was used, one which would cause slight reaction when applied to a motor point of a nerve under the skin of the hand or forearm. The first applications were made to the precentral convolution, as I wished to test it before the postcentral convolution had been stimulated. According to Grünbaum and Sherrington excitation of the postcentral convolution seems to act as a reinforcement to the precentral, it was, therefore, deemed best to make the observation on the precentral gyre first.

Reactions were promptly obtained by faradizing the precentral gyrus, and their location is indicated in Figure 2. They were noted in the arm, hand, neck and face, in the order named, from above downward. The centers for the arm and hand were near the upper limit of the exposed area; no reaction was observed in the lower limb, so it is to be concluded, as already said, that the leg centers were not exposed. The center for movements in the neck apppeared to be between those for the upper limb and those for the face; the latter were the lowest exposed by the operation. So far as the relative position of these various centers from above downward is concerned, they were practically the same as has been known for years. When the electrode was applied to the post central gyrus no response was obtained. The application was made with the same care and with the same pressure as to the precentral gyrus.

So far as observations on one case can determine the important question of the location of the motor centers entirely in front of the central fissure, my observation was entirely in accord with this claim. The applications were made with exactly the same strength and same care to the postcentral gyrus as to the precentral, but no reaction whatever was obtained. The experiment was repeated several times, the electrode being applied finally to the pre-Rolandic and post-Rolandic regions alternately, and always with the same result; the reactions were prompt when the precentral gyrus was faradized, and there was no response when the postcentral gyrus was touched. These observations were corroborated by Dr. McCarthy, Dr. Coley, Dr. Spellissy and the others present. The electrode used was the blunt end of a thick wire, thinly covered with wet absorbent cotton, so that there would be as little diffusion of the current as possible. I was careful, moreover, to make as light a touch as possible, although ample to excite the reaction, and exactly the same in all the regions faradized.

It is interesting to note that this patient has had no return of his fits nine months after the operation.

CASE 2.—A woman, about 40 years of age, was admitted to my wards in the Methodist Hospital.

History.—The symptoms had been a hemiplegia, of gradual onset and slow progress, with a high grade of choked disc, some headache, cerebral vomiting and incontinence of urine and feces, with mental changes, but no anesthesia. There were no convulsions. A diagnosis of cerebral tumor, possibly subcortical, and partly in the frontal region, had been made.

Operation.—Although not a promising case, it was resolved to do an exploratory operation. With this intention, Dr. Spellissy, at my request, turned down a large osteoplastic flap from over the Rolandic region. No tumor was found. The intention to explore the cortex with faradism could not be carried out because the patient's condition on the table became alarming, and it was thought best not to take extra time. So the flap was closed. The patient eventually recovered from the operation, although the flap was a long time in healing.

In Case 2 the question arises whether a subcortical tumor, causing hemiplegia, might not interfere with the transmission of cortical impressions. I am sorry that the test was not made, as, either way, it would have been an interesting observation.

This patient partially recovered the power in her hand soon after the operation; and this suggests a comment on the now temporarily popular operation of "decompression." No decompression was possible in this case, however, because the flap was firmly secured in place, after the dura had been sutured. I imagine that some readjustment of parts took place as a result of the operation, permitting some restoration of power.

ADDENDA TO THERAPEUTIC MEASURES IN CERTAIN FORMS OF NEPHRITIS.*

F. M. JOHNSON, M.D.
BOSTON.

It is a recognized fact that the therapeutic agents now known and made use of are entirely inadequate satisfactorily to check the progress of diseases belonging to the kidney. This is true in spite of the constant additions of drugs and other remedies to our list of available measures. I appreciate most keenly that the physician busy in general practice is well-nigh overwhelmed by the so-called new methods which come into vogue. It is with some hesitation that I stand before you as an earnest advocate of lavage of the renal pelves as an addition to the usual medication in certain types of nephritis.

Each true physician, however, is likewise a true student, and the goal of his most intense desire should be to give to his patients in the way of treatment only the very best that can be obtained from every possible source. We therefore must become co-workers in medical progress. Each one working in his own way may be able to suggest from his field of experience a remedy of proven value, or if by patient, arduous labor he become skilled in special surgical procedures, his deductions will become our guide. We all should exercise the right to question, to discuss, to agree or disagree, but we have not the right to cast aside a principle or a truth because it happens to be new to us or because in the hustle of a busy practice we have been unable to devote the time and study necessary to perfect ourselves in the groundwork on which the actual realization of the research is based.

MICROSCOPIC ANALYSIS.

To know the secrets of our microscope is a most essential element when we attempt to unravel the mysteries of disease of the kidneys. Well do I remember when the ordinary urinary examination consisted in taking the specific gravity, in noting the reaction, the color and similar qualities, and in ascertaining if albumin or sugar were present. This was essentially all that was asked for or required, and many a patient has been told he was normal in every way if these simple tests alone were satisfactory. When, after some agitation, the microscope was used, a few crystals that one could not escape seeing were called by some name, as a rule wrongly, and epithelium became a generic term that conveyed no special meaning and surely gave us no aid in diagnosis. This is now a thing of the past, and from the form and general appearance of the various epithelia and other cells we learn location and extent of invasion of disease and the various layers of the mucosa that are infringed on. By the shreds of connective tissue accompanying large numbers of pus corpuscles, we are apprised of abscess formation; if this be in the kidney its location may be determined from the presence of certain well-known epithelia. We also learn to differentiate between a true cast and a cylindroid, and are able to determine

* Read in the Section on Pharmacology of the American Medical Association at the Fifty-seventh Annual Session, June, 1906.

the presence and the nature of a calculus, the existence of which is from other other signs suspected.

Time and again in obscure cases in which the diagnosis is unsatisfactory do we gain true light from a thorough chemical and microscopic examination of the urine. All can not become experts in this method of diagnosis, but when one is in doubt he can profit by the skill of those who have made a life-long study of this work and in this way gain the information he seeks. It is a safe procedure to examine accurately the urine in every case in which any doubt exists as to the exact nature of the ailment. Those who follow this advice will never regret it. Such examination will in many cases result in the recognition of the site of the lesion giving rise to obscure clinical pictures, and make possible early efforts to prevent the extension of the inflammatory processes that in a short time are sure to follow; before it is too late measures will be taken to prevent serious inroads of disease.

PRELIMINARY MEASURES.

In addition to the urinary examination as a method of exact diagnosis, successful renal lavage requires preliminary measures. Skill is needed for the very simple but potent procedure of washing out the bladder. The introduction of the catheter without causing pain may possibly be looked on as a slight surgical trick, but it is one which when well done gives prompt relief to existing agonies of pain that at times almost frenzy the patient. Study this in its details and also accustom yourselves to select the best solutions to use in each case requiring this interference. Even if in case of disease of the kidney you find it necessary to refer your patient to one who is regarded as being skilled in this special branch, it will fall to you again to look after the condition of the bladder and employ certain medications. There are many medical journals having on their staff able writers which devote their pages almost exclusively to diseases of the bladder and the kidneys. These journals or individual reprints of papers furnish details of operative interference, the suggestion of new remedies, and discuss new theories far better than a paper of this kind can even touch on at this time.

RENAL LAVAGE IN LITHEMIA AND OXALURIA.

Lithemia and oxaluria, both at times stubborn in character, both failing to respond to internal medication, change in scene and diet, will be conquered if after the usual therapeutic measures have failed there be added to the general treatment lavage of the renal pelves with warm boracic-acid solution. This may become necessary, as crystals of uric acid or of oxalate of lime cause in the pelves of the kidney an irritation that may start a pyelitis, which in turn extends and if not combated will end in a nephritis. Within the past year 3 patients suffering from mild parenchymatous nephritis presented themselves for treatment. In each the disturbance was limited to one kidney and was due to a twist or stricture in the ureter, causing the urine to accumulate and excite irritation and inflammation. The pains complained of were sharp and intermittent in character. A full dilatation followed by lavage seems in each patient to have entirely eradicated this most annoying condition. Stricture in the urethra or ureter should be suspected in certain cases with ill-defined histories and thorough examination at once be made with a view to their correction and the institution of lavage. Our armamentarium is at best limited in its scope and power, and additions of merit should indeed be welcomed.

Lavage of the renal pelves is in selected cases a factor of unique worth, and so many confirmatory cases have been reported by recognized authorities that an enumeration of additional instances from a record book is hardly called for at this time. In tuberculous conditions, in the small white kidney, and in the advanced stages of interstitial change in the kidney structure, lavage is without value and as a rule will only do harm. This being so, a diagnosis of any of these conditions will not even suggest an attempt to use this form of local medication. Equally confident am I that in many other phases of kidney lesion we possess in lavage a powerful and efficient agent in producing alleviation or even a cure, or surely in preventing extension of dangerous and ill-defined stages of inflammatory affections.

IN PYELITIS.

Catarrhal pyelitis is a particular phase in kidney affections that as yet appears often to be overlooked in the beginning. It is one that may end in spontaneous recovery without local interference, but is far more apt slowly but surely to increase in strength and insiduously invade more and more of the renal tissues. Among the causes of pyelitis are extension of inflammation from the neck of the bladder, or a purulent cystitis or catarrh of the vesical trigone may ascend the ureters to the pelves, or inflammation of the kidney may involve the pelvis. Pyelitis is found when a calculus is present or when an excess of uric acid or oxalate of lime has existed for a long time. Infection from a non-sterile catheter or the progression of changes first started by gonorrhea and its complications may also be causative elements. If, then, in addition to the clinical history, pelvic epithelia are repeatedly found in the urine, catarrhal pyelitis must be suspected.

In purulent pyelitis or pyonephrosis, examination of the mixed urine is not entirely satisfactory owing to the immense number of pus corspuscles that tend to obscure other elements. Cystoscopic examination with catheterization of the ureters immediately clears up doubt that may have existed and locates the disease. If such a case does not show a gain under rest, diet, and the well-known medicaments as salol, hexamethylenamin (urotropin), potassium citrate, etc., there is usually thought to be nothing possible but recourse to a major operation, either nephrotomy or nephrectomy. Before either is performed, however, it is wise first to determine what can be accomplished by a thorough lavage and local medication. Such satisfactory results have followed this procedure that I feel it is entitled to a thoroughly fair trial.

IN NEPHRITIS.

In the earlier and milder stages of subacute parenchymatous nephritis and of chronic catarrhal nephritis, the added soothing and healing influence of lavage, given with due care and attention, certainly appears to exert a powerfully beneficial result. The albumin in the urine becomes less and less, casts appear less frequently and finally disappear, and the whole aspect of the patient changes for the better. Annoying and distressing symptoms fade away and there springs forth a new lease of strength and vitality, the patients themselves soon acknowledging that their improvement is not mythical but a reality. Hand in hand with lavage, other appropriate measures as diet, correct hygienic surroundings and supporting remedies necessarily play an important rôle. I call to your attention the benefit derived from lavage only when used as an addendum to our bet-

ter known alleviative measures. Personally, success with these cases now comes instead of former failure. I feel strongly that I am justified in my conclusions, as I have been able to watch cases for more than two years. When certain signs and symptoms have disappeared and have not returned, and in the interim the patients continually gain, is it not fair to ascribe such changes to this particular procedure when without it recrudescence is all that is ever expected?

SKILL IN PROCEDURE.

The manipulation of the cystoscope and the passing of the catheters require a great amount of patient perseverance; especially is long experience needed in acquiring the very deliberate touch necessary for successfully carrying out the procedure. This can never be learned from text-books; it is the vague something that finally comes after hours are spent in attempts and in gaining step by step until something like perfection crowns the arduous efforts. Even a teacher can not well instruct the learner except in the broader principles. In certain published articles I made the attempt to demonstrate each stage, relying on illustrations to make clearer the words, yet I greatly doubt if I succeeded, as each has to conquer the difficulties one by one by his own persistent endeavor. I realize fully that the trained hand alone is to be trusted, and that it is wiser to err on the side of safety and to treat in all its details what appears at first sight to be of minor importance as though it were a major operation.

Cool distilled water is the best material to introduce into the bladder before the cystoscope is used. For the kidney, the solution should be warm and at first mild in strength, regardless of which is selected. The use of small quantities is better than those too large. One may employ silver nitrate, 1 to 10,000 up to 1 to 2,000, in boracic-acid solution; argyrol, freshly prepared, 5 per cent.; or albargin, one-fourth to one-half of 1 per cent.

The exact way in which lavage acts in producing its beneficial action is not absolutely known, but from the results its employment is certainly justifiable. While lavage is still crude and still leaves much to be ascertained and much to be desired, I believe it is a procedure possessing intrinsic merit, and will in time force itself on the recognition of the profession. It is not possible that all observers using this particular treatment can be wrong in their deductions. And in the future better instruments for its performance will be devised, and better and more healing and solvent solutions discovered, thus enhancing its efficacy and increasing the value which it now possesses.

IMPROVED INTERNAL MEDICATION NEEDED.

In the same line of thought let us direct our attention to the internal medicaments to-day employed in lesions of the kidney and ask if there is anything like true worth existing in any of them. But I am optimistic and believe that more powerful, efficacious and generally reliable preparations for internal employment will be found. There must even be devised a diet that will surpass that at present recognized as the most favorable. There may yet be discovered a way in which by the diet alone many harmful micro-organisms will be eliminated from the human system. We are at present but in the kindergarten stage of treating diseases of the kidney. Yet I believe the road to a fuller and keener understanding of them has been found. Then let each and every one of us do his best to aid in clearing up this devious pathway in therapeutics.

CONCLUSIONS.

Let me summarize the points which I trust will meet with your attention and approval. There is needed:

1. More extensive scientific investigation of the chemical and microscopic characters of the urine.
2. A full examination of the urine of patients much more often than is now done.
3. Earlier recognition of pyelitis and beginning forms of nephritis. Also of both ureteral and urethral strictures.
4. Employment of lavage of the renal pelves in properly selected cases.
5. Greater familiarity with simple bladder washes and the proper use of the catheter.
6. Searching investigations regarding better therapeutic agents in kidney diseases and a more thorough study of the chemistry of foods.
7. Better coöperation in thought and work among the members of the medical profession.

43 Tremont Street.

DISCUSSION.

DR. W. J. ROBINSON, New York City, does not believe that lavage of the renal pelvis is invariably a beneficent measure, although in a few selected cases, when administered by very skilled hands, it is such. On the other hand, it is a very dangerous procedure, one which has done more harm than good. He knows of cases where it was the cause of pyelitis and quite severe hemorrhage. A year ago, he said, he heard the late Prof. Max Nitze, the discoverer of the cystoscope, say: "I really do not know whether my discovery has been a blessing or a curse." Of course, in Nitze's hands it did good in practically every case, but many physicians are careless, and to avoid injury the technic must be followed with great care. Many physicians are attempting ureteral catheterization who are not fully familiar with the technic of the method, and Dr. Robinson believes that much damage is being done by it. It is a dangerous procedure, and, besides, in most cases it is not needed. In selected cases, in the hands of specialists, it will be beneficial, but it is not a procedure to be recommended to the general profession even to try.

As to casts in the urine, it is Dr. Robinson's opinion that it is important to call attention to the fact that many casts found in urine which has been centrifugated are not true casts, but have been made artificially by the centrifuge. This has been proved in a number of instances.

DR. A. R. ELLIOTT, Chicago, regretted that Dr. Johnson did not clearly define the forms of nephritis in which he employs this therapeutic measure. Dr. Elliott thinks he is justified in concluding from his remarks that it is employed in local conditions, conditions of infection of the kidney, either one or both; in short, that it is a local treatment for a local disease. It is important to differentiate here between the different forms of nephritis; if this is not done there is danger of the instrument being employed in true chronic Bright's disease. Another form of local treatment has been applied broadly to the treatment of chronic nephritis, decapsulation which, used originally for the cure of local conditions, was subsequently, and erroneously, applied to the treatment of chronic Bright's disease. Dr. Elliott said that the greatest necessity exists for a true distinction between local and infective nephritis and Bright's disease, diffuse or interstitial. He took exception to another statement which Dr. Johnson made, i. e., that casts without albumin in the urine are cylindroids. He thinks that many so-called casts in the urine, with or without albumin, are cylindroids erroneously interpreted, but they are not true casts. If an individual familiarizes himself with the form of the true renal cast he will not make mistakes. Tailed casts are undoubtedly often cylindroids, but Dr. Elliott gave it as his experience that true casts are found in the urine without albumin.

DR. J. M. JOHNSON, Boston, did not agree with Dr. Robinson that lavage is limited to such a very narrow field. The time is not far distant, he said, when in the larger cities there will be needed some few men to do this particular work and aid physicians and surgeons alike, when their cases demand this procedure. The operation is fraught with danger in the hands of the neophyte. It demands the same care that governs a major operation. It can never become general. It requires the giving up of a practice while engaged in study, and much very costly apparatus. Lavage of the renal pelves when better recognized and known will possess true value and clear up many points that are doubtful. Dr. Johnson believes that the true cast is pathologic. Albumin can always be found where there are true casts. Sedimentation by gravitation alone is far ahead of the use of the centrifuge, and a better diagnosis can be given from the microscopic findings.

MENSURATION OF THE CHILD IN THE UTERUS WITH NEW METHODS.

ELLICE McDONALD, M.D.
Clinical Assistant in Gynecology, College of Physicians and Surgeons.
NEW YORK.

Estimation of the size of the fetus in the uterus has long occupied the attention of investigators in obstetrics. Any degree of pelvic contraction is only relative and a pelvis is judged to be large or small according as to whether or not it will admit the passage of the head. The ever present obstetrical question is whether a fetal head of unknown dimensions can be delivered through a pelvis whose measurements can be ascertained.

The ordinary operations of obstetrics offer no great difficulty to a man of surgical training when once the procedure has been correctly decided on. This "obstetric judgment" is only gained through much experience of difficult cases and any method of measurement of the fetus in the uterus is a welcome addition to the present inadequate and unsatisfactory maneuvers.

Exact pelvic measurement is a work of supererogation and futile unless some attempt be made to estimate the size of the fetal head.

A knowledge of the size of the fetal body and head offers a sure basis for obstetrical prognosis and for choice of operation. If a pregnancy, in a woman with a contracted pelvis, can be watched and the head of the viable fetus measured from time to time, until it has arrived at such size as to come through the pelvic canal without injury to mother or child, Cesarean section is unnecessary and premature interruption of pregnancy is placed on a scientific and exact foundation.

It is well known that Cesarean section has but little mortality save in patients who have had many examinations and ineffectual attempts at delivery by forceps or other means and who have become infected during these attempts.

Premature children have not the same resistance to disease and have a greater mortality than those born at full term. Karb[1] in a study of 50 cases of artificially interrupted pregnancy, divided his cases into two classes: First, patients in whom pregnancy was interrupted for conditions threatening the life of the mother; in this class there was an infantile mortality of 70.9 per cent. Second, patients with small pelves; in this class the infantile mortality was 53.4 per cent.

1. Karb: Zeit. f. Heil, 1903, vol. xxiv, No. 4, p. 12.

Kleinwachter[2] states, that following induced labor for pelvic deformity, 78.3 per cent. of the children were born alive and only 60.4 per cent. leave the hospital in good condition.

Kronig and Zweifel[3] have investigated 726 cases of patients with small pelves and found that 91 per cent. delivered themselves without assistance. Among these 669 babies, 44 children were stillborn. Assistance was given in 64 cases and 39 babies succumbed. Thus, there was a total loss of 83. Voorhees[4] states that during 12 years in New York City 24 per cent. of all deaths were among children under one year of age. He states that in the Sloane Maternity Hospital, after induction of labor, 21 per cent. of the babies were stillborn and only 70 per cent. were discharged from the hospital in good condition.

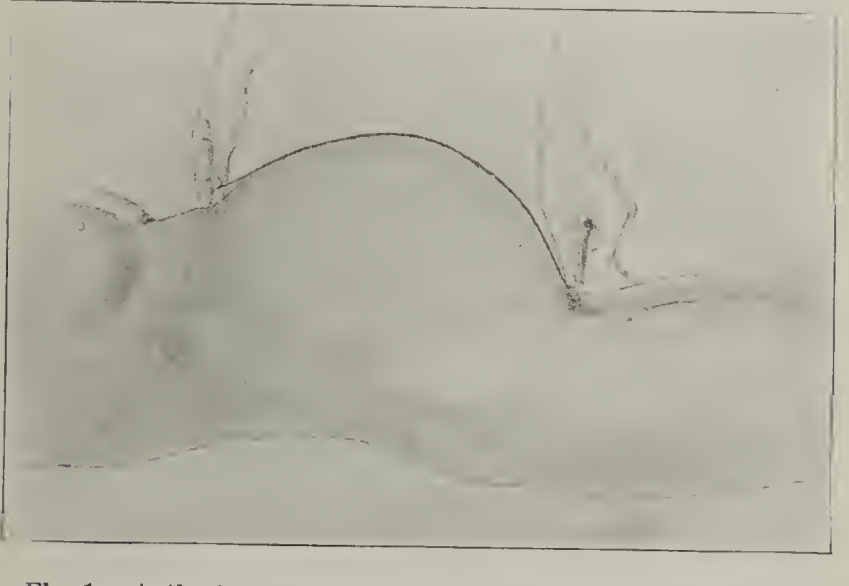


Fig. 1.—Author's method of estimating the duration of pregnancy.

Norris[5] also found that, in 30 cases of induced labor for lesser degrees of pelvic contraction, 7 infants died.

It may be seen that taking all cases of induced labor, there is a very high primary mortality among the infants. It is obvious, however, that the nearer the approach to term the greater is the prospect of life for the uninjured infant. Ostreil[6] has shown that among infants of fair size, there is no such great mortality. He studied 1,542 cases of prematurely born babies at the Prague maternity and accepts 44 cm. as the minimum length and 2,000 grams as the minimum weight of these children under discussion. He states that he is unable to find that they showed less resisting power during their later life than children born at term and that the morbidity and mortality among them during infancy is not materially higher than those among ordinary children.

If it be possible to allow the fetus to reach a good size, its hope of survival is correspondingly increased. For this purpose a knowledge of the duration of pregnancy and a correct estimation of the size of the fetus is necessary.

ESTIMATION OF DURATION OF PREGNANCY.

Calculation of the expected date of delivery at full term from the date of the last menstruation is a useful

2. Kleinwachter: "Die Kunstleche unter krechung der Swangerschaft," 1902, No. III.
3. Kronig and Zweifel: "Die Therapie beln Enger Becker," Leipzig, 1901.
4. Voorhees: Amer. Jour. of Obst., 1905, vol. III, No. 2.
5. Norris: Amer. Jour. of Obstetrics, 1904, vol. I, No. 3.
6. Ostreil: Monatschr. f. Geb. u. Gyn., 1905, vi. xxii, No. 1.

but not infallible method. Blau and Christofoletti[7] examined the records of the clinics of Schauta and Chrobak for ten years and studied 68,032 births to determine the correlation of large children and protracted gestation. In 150 cases pregnancy lasted over 300 days, and in 135 cases over 302 days. Further mistakes in the calculation of labor are made by the fact that primiparæ often forget the exact date of their last menstruation. The possibility of conception having occurred in the postmenstrual, and not in the usual premenstrual period may be, as is pointed out by Norris, a source of error of as much as two or three weeks.

Fig. 2.—Müller's method of estimating the relative size of the head.

Measurement of the height of the fundus of the uterus is a useful adjunct in the estimation of the duration of pregnancy and of the size of the fetus. The umbilicus and ensiform notch are usually taken as the points from which such measurements are made; but the variable distance of these two points from the pubic bone render them useless for such purposes. Several thousand measurements were studied in the hope of reaching an average of height of the umbilicus; but it was found to vary from 12 cm. to 20 cm. above the symphysis. It is obvious that, if a finger's breadth above the umbilicus be taken as the height of the uterus at 6 months, a variable point is reached.

Spiegelberg's[8] table of the height of the uterus at various periods is exact and has been confirmed by me in every measurement. The difficulty lay in the fact that the table is difficult to remember and cumbrous to detail. The following rule was deduced and, within limits, gives fairly exact information in regard to the duration of the pregnancy.

Duration of pregnancy in lunar months = Height of the uterus in cm. ÷ three and one-half.

Thus, if a uterus measures 26 cm. from symphysis to fundus the duration of pregnancy is 7 3/7 lunar months or 7 lunar months and 12 days; or, if 35 cm. is the measurement from symphysis to fundus, the duration of pregnancy is 10 lunar months or the patient is at full term. The tape should follow the contour of the abdominal wall, save at the last dip (Fig. 1). The upper hand should be placed at the highest part of the fundus and held perpendicular to the long axis of the body, while the tape is held against the middle finger by the thumb. Multiparæ with thin soft uteri and lax abdominal walls should be supported at the sides by an assistant, so as to bring occipito-coccygeal axis of the fetus into the long axis of the body.

This method gives satisfactory results and is the most exact means of estimation of the duration of pregnancy by measurement of the size of the uterus. The height of the uterus depends mainly on the length of the occipito-coccygeal measurement. This varies but little in babies of various weights. The amount of the liquor amnii does not affect the measurement inasmuch as excessive fluid goes rather to increase the bulk than the length of the uterus.

It may be said that 35 cm. is the usual height of the uterus at full term when the fetus approximates 3,300 grams, the average weight of the babies studied. For every centimeter of height above this measurement approximately 200 grams should be added to this weight. Thus a uterus measuring 38.5 cm. contained a fetus weighing 4,000 and one measuring 40 cm. and with hydramnios contained a fetus weighing 4,200 grams.

The so-called "sinking" of the fetus which is supposed to occur in the last two weeks of pregnancy was not observed in 100 cases, mostly primiparæ, save just before labor in two multiparæ. I believe that this so-called "sinking" is due to the stretching and relaxation of the abdominal muscles and not to descent of the head into the pelvis. The fundus projects forward when the woman is standing and no diminution in the fundal height is observed in the recumbent position.

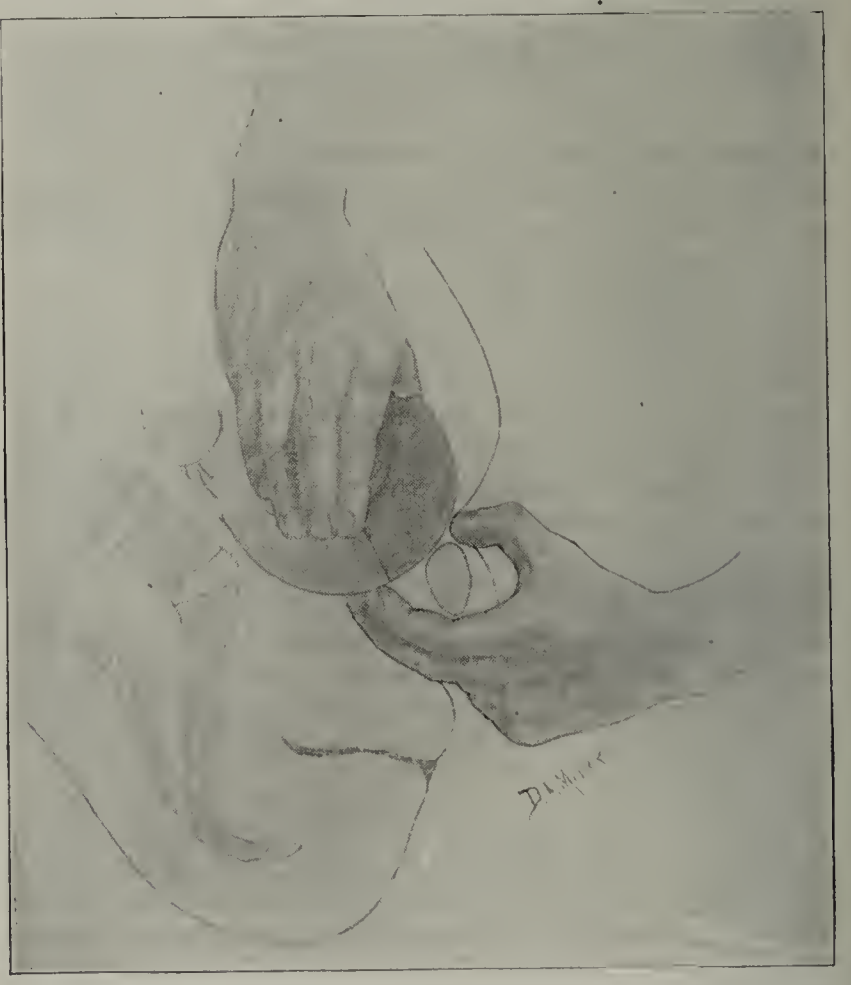


Fig. 3.—Munro-Kerr's modification of Müller's method.

7. Blau and Christofoletti: Monatschr. f. Geb. u. Gyn., 1904.
8. Spiegelberg: "Text-book of Obstetrics."

This is well shown in Hirst's[9] photographs of women at various periods of pregnancy. The head, as a rule, does not descend into the pelvis until the upper segment of the cervix dilates.

MEASUREMENT OF THE HEAD.

Various methods of estimation of the size of the head in relation to the pelvis are practiced. Chief among these is Müller's method (Fig. 2), in which an assistant presses the head into the pelvis while the operator, with two fingers in the vagina, feels how it engages. Another method is that of Pinard, in which the operator grasps the head firmly with one hand while the other rests at the edge of the pelvis and gauges any descent of the cephalic pole. Munro-Kerr (Fig. 3) has modified these methods by introducing two fingers into the vagina and grasping the head with the Pawlic grip. An attempt is made to thrust the head into the pelvis while the thumb of the lower hand feels along the pelvic brim, and estimates the overlapping.

These maneuvers are of some use, but limited in scope. In shallow pelves, they are deceptive; in breech cases, they are useless. They offer only a relative estimation of the size of the head. The undilated cervix and fixed lower uterine segment of primiparæ, for whom these methods are most needed, will not allow of descent of the head. Munro-Kerr's[10] method has given the best results of the three in my hands.

Actual measurement of the head through the abdominal walls has been practiced by Budin and Perret.[11] Perret has devised a special cephalometer by which he

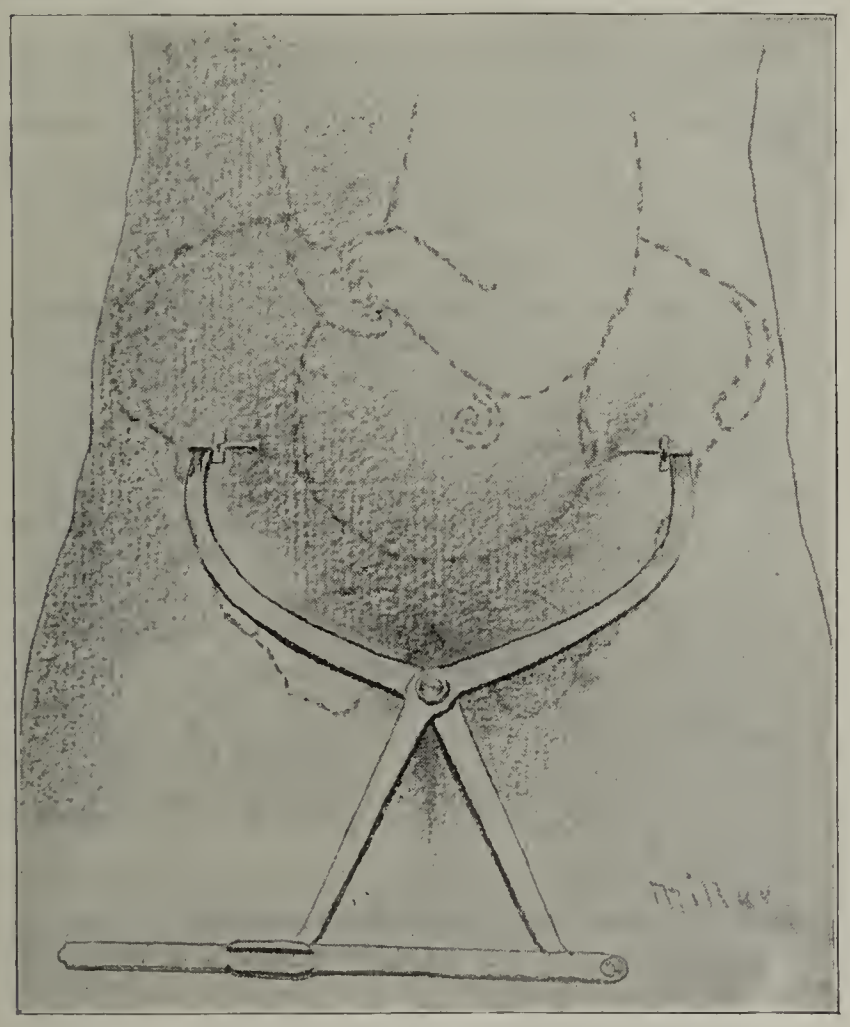


Fig. 4.—Perret's method of cephalimetry.

was able to measure the fetal head with some accuracy. The woman is placed on her back and the operator applies both hands to the abdomen as if for palpation. The short movable blades of the cephalometer are inserted between the fingers and the metal buttons are thrust toward the poles of the fetal head. The occipito-frontal diameter is measured and 2.5 cm. is substracted to obtain the biparietal. The biparietal is the most important diameter inasmuch as it engages in the antero-posterior diameter of the pelvis.

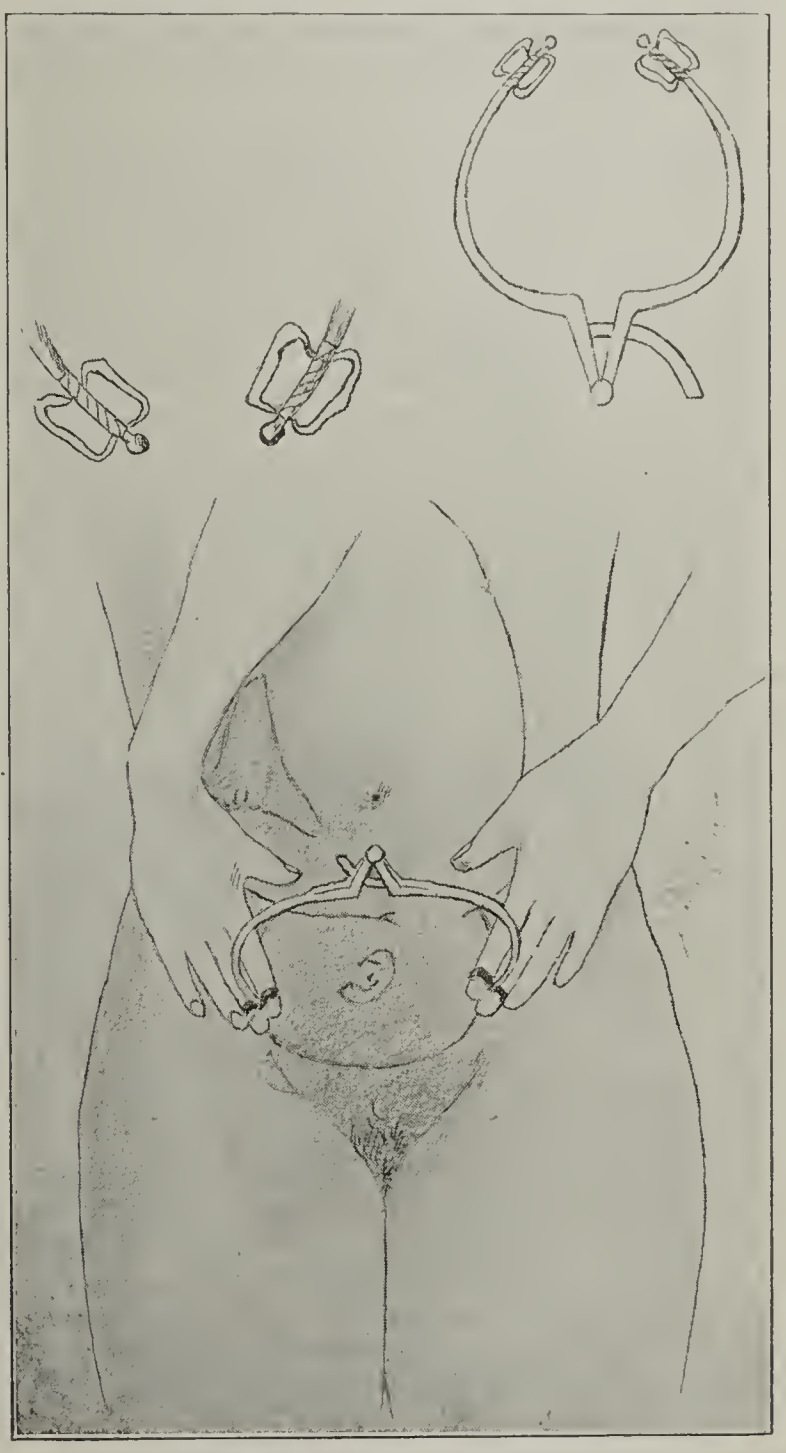


Fig. 5.—Author's method of cephalimetry.

The disadvantages of the method are due to the fact that a special instrument is required and the buttons can not be approximated closely to the cephalic poles. The instrument is only useful when the occipito-frontal diameter lies in the transverse diameter of the pelvis. This is very seldom the case as the most common position is L.O.A. or in the right oblique diameter of the pelvis, the sinciput being deeper and farther from the abdominal wall than the occiput. The cephalometer is flat and rigid and the broad ends with their tips can not be properly depressed to reach the sinciput.

The difference between the occipito-frontal and biparietal diameters is a variable quantity and can not be expressed by any fixed factor as 2.5 cm.

Stone[12] has based his method of measurement on a somewhat similar procedure, he places his hands as if for palpation and makes out the position of the head.

9. Hirst: "Textbook of Obstetrics."
10. Munro-Kerr: Amer. Jour. of Obstet., 1903, vol. xlviii, No. 1.
11. Perret: "L'Obstetrique," November, 1899.
12. Stone: Medical Record, Nov. 4, 1905.

The occipital and frontal poles are then grasped between the hands and an assistant places, from below, the ends of an ordinary pelvimeter, pushing them firmly inward, as the examiner directs. The tips of the pelvimeter are thrust between the middle and ring fingers. This method is open to the objection that it requires an assistant with more or less practice in the maneuver and that the extent to which the tips are thrust in is difficult to control. However, I have frequently practiced this method with Stone and, in his hands, it gives good results.

THE AUTHOR'S METHOD.

I have sought to modify these methods in order to obtain one which, with a common instrument, will give equally good results in all hands. With this idea, an ordinary pelvimeter of simple construction (Fig. 5) was taken and two rings of adhesive plaster, about 1 cm. in width, fastened to each tip. These rings are faced inside with adhesive plaster, back inward, and are made sufficiently large to readily admit the middle and ring fingers. The knob-like tips of the pelvimeter should project about 1 cm. beyond the palpating fingers.

The patient is laid on her back and the operator stands as if to palpate for the position of the head. An accurate diagnosis of the fetal position, not only in regard to the occiput, but as to the amount of flexion of the head, is essential to success. The occiput and sinciput are located; then the fingers are thrust into the rings and the knobs of the instrument approximated to these points as closely as possible. The weight of the hinge side of the pelvimeter is supported by the finger of an assistant or may be held up by a string attached to the operator's arm or button hole. It is necessary that the hinge side should have free play of movement in order that one or other tip may be depressed, if occasion requires. The tips are held firmly against the cephalic poles and the scale read. This gives occipito-frontal diameter. No deduction is required. This fact is not satisfactorily explained. The abdominal walls of a pregnant woman are very thin (usually less than 1 cm. measured at Cesarean section) and it may be that the exact prominences of the cephalic poles are not reached.

All heads above the brim or which may be thrust above the brim can be measured, although the greatest ease is found in thin woman with flat pelves which push the head forward. Small heads with much liquor amnii are difficult to fix; breech cases offer no special difficulty. However, heads lying above the pelvic brim and firmly placed thereon give the best conditions, e. g., in contracted pelves.

Forty-one heads were measured before and after labor and in 31 cases the occipito-frontal diameter was correctly estimated in 9 cases, there was an error of .25 cm. and in one 0.5 cm. These cases included many to which the method was not justly applicable, as the heads lay partially within the pelvis. These cases included 14 cases of contracted pelves of various grades and four Cesarean sections, one of these was done on indications supplied by Stone's and my methods and one on my method alone. The measurements were correctly estimated in both cases.

The size of the occipito-frontal diameter thus may be accurately measured and the important engaging diameter, the biparietal, must be deduced from this. Perret's fixed difference of 2.5 cm. is not accurate. It was found that routine records of head measurements were of no value, as accuracy into quarter centimeters was necessary. Heads of 100 new-born babies were carefully measured and it was found that, while the average difference between the occipito-frontal and biparietal diameters was 2.33 cm., the difference increased with fair regularity according to the increase in size of the occipito-frontal measurement.

TABLE OF MEASUREMENTS OF 100 NEW-BORN BABIES.[13]

No. of cases.	O. F. diameter.	Average difference.	Average weight.
1	10	1.00	2,600
4	10.50	1.55	2,716
8	10.75	1.81	2,975
17	11.00	1.91	3,100
21	11.25	2.07	3,156
19	11.50	2.26	3,247
9	11.75	2.50	3,313
13	12.00	2.30	3,514
5	12.25	2.35	4,100
1	12.50	2.50	4,100
2	12.75	3.12	4,350
100		average 2.33	

Thus it may be seen that with the increase in the occipito-frontal diameter, the difference between it and the biparietal also increased. So from an external occipito-frontal measurement of 11.25 cm., 2 cm. were deducted in order to obtain the biparietal; from 11.50 cm. occipito frontal, 2.25 cm. and from 12 cm. occipito frontal, 2.50 cm.

It will be also seen from the table that the weight increased with the increase in the occipito-frontal diameter. This, of course, varied within wide limits but, in the main, was true. This fact was made use of in estimating the size of the fetus in conjunction with the fundal measurements (v. supra.) and the estimated weight was used as a check on the correctness of the cephalimetry. In this way it was possible, after the study had advanced somewhat, to estimate correctly in several cases, the weight, the occipito-frontal and biparietal measurements of the baby before birth.

The question in regard to the amount of moulding the head will undergo caused some uncertainty. Experiments showed that large heads were firmer than small and that with moderate pressure directly over the parietal eminences, 0.5 cm. was the most that could be expected. The parietal prominences are much more firmly fixed than other engaging parts of the head.

In this series and other cases measured, I have never seen a child successfully delivered when the biparietal diameter was greater than the true conjugate. Several times in flat pelves, however, they were equal. So that moulding, if it does occur in this diameter, can not be depended on as a help.

These methods of estimation of size, together with accurate pelvic measurements to quarter centimeters, and Munro-Kerr's method of relative head estimation give a good working basis on which to determine the size of the fetus and the choice of the obstetric operations, Cesarean section, version, forceps or premature labor. The interruption of pregnancy need not be earlier than the amount of contraction requires and the child need not be exposed to the risks of unnecessary prematurity.

Norris, using Müller's method and inducing labor, has had 2,000 labors without a Cesarean section, and with one craniotomy. Stone and I measured a fetus from time to time in a patient who had been delivered by him in a previous pregnancy by Cesarean section. The pelvis was flat and the true conjugate was estimated at 8.75 cm. The patient presented herself ten days after the appointed time, labor was induced and the child de-

13. Part of this table and part of some experiments in regard to the amount of moulding were published, with permission, in Stone's article. I am indebted to Dr. B. H. Gray for 5 head measurements to complete the 100 cases.

livered by me after a difficult version. The occipito-frontal diameter was 11.50 as estimated before delivery by both methods.

With the application of these methods, induction of labor is the ideal operation in pelves of moderate degree of contraction. Forceps or version, according to the type of the pelvis, then may be done. Ineffectual attempts at delivery and consequent exposure to infection may be eliminated. Cesarean section is made an operation of choice with low mortality instead of an operation of necessity with a large mortality. The babies are allowed to reach the largest possible size before induction of labor and their mortality is consequently lowered. Both mothers and babies are spared the traumatism, infection and mortality resultant from improperly chosen obsterical operations and much vaginal manipulation.

13 West Eighty-sixth Street.

THE TREATMENT OF ASTHMA.*

DELANCEY ROCHESTER, M.D.
Associate Professor of Principles and Practice of Medicine, University of Buffalo.
BUFFALO, N. Y.

Samuel West, in his most excellent work "Diseases of the Respiratory Organs," says, after a careful survey of the various theories as to the nature of asthma:

> Asthma must be regarded as a reflex neurosis, the symptoms of which are spasm of the bronchial muscle, of the diaphragm and other inspiratory muscles, associated with more or less of vasomotor disturbance in the bronchi.

While all this is true, it is my opinion that in all cases of true asthma there is also present a true bronchiolitis with exudate of mucin, which is eventually expectorated in the form of Lænnec's perles, each of which may be shown to be a very tightly rolled mass of Curschmann's spirals, which may also usually be found in the sputum. In order to find these, it is necessary to examine the sputum immediately after the attack, as it does not take long for them to disappear, and even when they are present, if the sputum is allowed to stand, they quickly lose their form. I believe they can be found in every case if looked for sufficiently early.

West further goes on to state that the neurosis theory "necessitates the assumption of a peculiar unstable condition of the respiratory centers, the nature of which is at present unknown, but which constitutes the essential predisposing cause of the disease."

Musser, in an editorial note to Hoffman's article on asthma in Nothnagel's "Practice," says:

> Asthma is really a neurosis; indeed, a reflex neurosis. This assumes, of course, an abnormal condition of the nervous system, either inherited or acquired, which either limits itself to an increased irritability of the entire mucous membrane surface of the respiratory tract or of certain circumscribed diseased spots, or is a part of a general neurasthenia.

It is unnecessary to multiply quotations; all the modern writers, after more or less extended review of the various theories of asthma, come to the same conclusion, viz., that the disease is a neurosis, the nature of which is unknown.

It is as a step toward the elucidation of this unknown nature and the consequent treatment of the disease, that this communication is presented.

It is important that the diagnosis must be exact, and that the term asthma should not be used as synonymous with dyspnea; and such terms as cardiac asthma, or renal asthma, should not be used.

As an introduction, I relate the following cases:

CASE 1.—A. S. D., male, aged 68, clergyman, was seen Jan. 1, 1903. Family history is clear.

Personal History.—His habits and surroundings are good. He had malaria in early youth; he was early subject to colds. He had nervous prostration in 1876 and 1885. For about 20 years he has been subject to attacks of asthma, which of late have grown exceedingly troublesome.

General Symptoms.—Appetite was good; he had no indigestion. Bowels were constipated. He slept well, except when disturbed by asthma. He had no headaches or dizziness. Pulse was 100, of moderate volume and tension and regular. The vessel walls were very slightly thickened.

Urine: 500 c.c., strongly acid; specific gravity 1,030. There was no albumin nor sugar, but an excess of indican was found. Sediment was made up of urates, and one cylindroid.

Sputum: (Patient not having attack) Mucopus, some bacteria, no tubercle bacilli, no spirals nor crystals.

Physical Examination.—The uvula was long and thick. There was obstruction on both sides of nose by bony spurs on the septum and thickening of the lower turbinates.

Lungs: Emphysema of both lungs in moderate grade.

Heart: Slight enlargement, due chiefly to right ventricular hypertrophy.

Liver: Slightly enlarged; no edema or ascites.

Treatment and Result.—This patient's condition was improved by amputation of the uvula, the use of cleansing nasal douche, saline laxatives, alkaline diuretics, hot-air sweats and regulation of diet and exercise. He finally consented to have his nose operated on. After operation, for about two months he continued the local douche. He has continued the mode of life prescribed, the use of alkaline water, of occasional calomel and saline purge, of hot-air sweat once a fortnight, and has had in the last 18 months only three attacks of asthma, the last one five months ago.

CASE 2.—M. H., female, aged 32, married, baker and confectioner.

Family History.—Clear, except that mother has cancer of breast.

Personal History.—The patient had measles, mumps, pertussis and varicella in childhood; typhoid fever eleven years ago. Menstruation began at 13 and is regular. She has never been pregnant. She has been married eleven years.

Present Illness.—She was always well until in May, 1904, when she began to sneeze and grew short of breath. The attacks increased in violence and frequency.

Examination.—I first saw the patient Dec. 12, 1904; she was complaining of cough, shortness of breath and headache. Her appetite was good; no indigestion; bowels were regular. She complained of persistent headaches. Pulse was 96, small, low tension, regular. Temperature was 98.6. Weight was 210 pounds. Sputum showed crystals and spirals.

Urine: 750 c.c., strongly acid; specific gravity 1,018; urea 12 gm. No albumin or sugar. There was a moderate increase in the amount of indican. Sediment consisted of small and large epithelial cells with abundant urates.

Nose and Throat: There was nasal obstruction of right middle turbinate; the throat was normal.

Heart: There was slight accentuation of pulmonic closure sound.

Lungs: There was some emphysema of both upper lobes, sibilant breathing and a few râles scattered over both sides, especially at bases and in axillæ.

Treatment and Results.—The patient was given an adrenalin spray for nose, to be followed by weak mentholated oil; a dose of calomel and salts; an alkaline diuretic; cold morning bath; hot-air cabinet sweat once a week; restricted diet; regular out-of-door exercise; fresh air; a mixture internally of iodid and bromid of sodium, nitroglycerin, euphorbia pilulifera, stramonium and triticum repens. This last she took but a short time.

Subsequent History.—By carrying out the mode of life prescribed, with occasional recourse to the nasal spray, she had no recurrence of asthma until October, 1905. At that time she

---

* Read in the Section on Pharmacology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

called a physician who gave her salol, phenacetin and codein, and a cough mixture containing, among other ingredients, Dover's powder, and, later, heroin.

I saw her in November, stopped the medicine, gave calomel and salts, starvation, alkalies and an inhalation of eucalyptus, and for a short time a mixture containing senega, squill hyoscyamus, digitalis, niter, glycerin and tolu.

She improved, this mixture was stopped, and she was again put on a restricted diet, alkalies, sweats, etc.

March, 1906: In March she consulted me with slight return of the asthmatic symptoms. I advised, in addition to my prescription, that she have the sensitive areas in her nose attended to surgically.

CASE 3.—W. R., male, aged 20, employed in office; was first seen April 18, 1906.

Family History.—Mother died at 33 of diphtheria; father died at 56 of apoplexy. One brother has hay fever; one sister has hay fever and asthma; two sisters are living and well.

Personal History.—The patient had measles, mumps, pertussis, varicella and diphtheria in childhood; he had pneumonia three years ago and pleurisy two years ago. For eleven years he has had attacks of asthma. Between attacks he is well, except that he is constipated and is short of breath on exertion.

Examination.—He had had an attack two days before I saw him. At the time of examination he had frequent pulse, regular, small and of moderate tension; temperature was 97. His weight was 128 pounds, seven pounds below average.

Urine: 1,150 c.c., strongly acid; specific gravity 1,024; urea 20 gm., no albumin nor sugar; marked excess of indican. The sediment was composed of urates and crystals of calcium oxalate.

Sputum: This showed some ciliated epithelium and pus cells.

Physical Examination: This showed a deformed chest (present since birth), the left side being depressed and the right decidedly prominent, especially at costosternal junction. The heart was slightly enlarged with hypertrophy of right ventricle. The lungs showed emphysema of both, especially in upper lobes.

Treatment and Results.—Specific directions in regard to bath, mode of life, diet and exercise were given to him, together with regular administration of mild saline laxatives and alkaline diuretics, with a mixture of iodid, bromid, etc., similar to that administered in the preceding case. This patient has made steady improvement, but it is too early to claim any great results.

Remarks.—I have reported this case because heredity might be said to play some part in it, if in any. The man is handicapped somewhat by his deformed chest and his adherent pleura; nevertheless, I look for good results here as in my other cases.

The cases related are selected from a large number observed during a period of twenty-three years.

My conclusions are that there may be a few (but they are very few) cases of a hereditary lack of resiliency of pulmonary tissue, in which slight obstruction to exit of air from respiratory organs tends to produce an emphysema pulmonum, and that this condition interferes with proper oxygenation, and so tends to autointoxication from imperfect metabolism. Most cases, however, which are credited to heredity are due to neglect in early childhood of catarrhal affections of the upper air passages, producing pathologic hypertrophies of turbinated bodies, of Luschka's tonsil and of the faucial tonsils. The excessive strain thus put on the developing pulmonary tissues of the growing organism tends to bring about an emphysema pulmonum, interference with oxygenation, and thus the same autointoxication from imperfect metabolism.

In cases which develop later in life, I believe that the same imperfect metabolism is at fault; that the causes of this imperfect metabolism are to be found in the mode of life of the individual; that among the most common causes are overloading of the gastrointestinal tract with food and drink—especially with food—and imperfect evacuation of the colon; that other factors are a sedentary life and insufficient use of the lungs in a properly oxygenated atmosphere.

In brief, my conviction, based on clinical observation, is that the underlying cause of asthma is autointoxication, due to deficient oxygenation and imperfect elimination; and I believe the results of treatment justify my position. Most cases of asthma begin early in life, and by the time in which they come under the observation of the physician there is already more or less emphysema pulmonum present.

Two of the chief evidences of the autointoxication are the degree of acidity of the urine and the degree of indicanuria present. I have never yet had a case of asthma come under observation in which there was not, when first seen, a strongly acid urine which deposited on centrifugalization urates and uric acid or calcium oxalate, and showed a pronounced reaction for indoxyl sulphate.

From what has been said in regard to pathogenesis, the plan of treatment is simple.

In the first place, all obstructions in the upper air passages should be surgically removed, and, following the surgical procedure, there should be daily or twice daily cleansing of the nose and pharynx with a mildly alkaline cleansing douche. Powerful sprays are to be avoided. If the mucous membranes are especially sensitive, an oil application in the form of vapor is to be applied after the cleansing.

The patient should be encouraged to use pulmonary gymnastics, especially forced expirations. The skin should be made active by baths and friction. The character of the baths has to be carefully considered in each case, and even when one form of bath has been prescribed, it sometimes has to be changed later. As a rule, a cold sponge bath, followed by a brisk rub, is useful in cases in which there is not present too great emphysema of the lungs; even when this is considerable, it is sometimes worth while to try the cold baths. A warm bath, followed by friction, may be given once or twice a week; and in all cases a hot-air sweat occasionally—once or twice a fortnight—is useful.

The bowels should be kept active. At the beginning, and from time to time later, a full dose of calomel, followed by Epsom salts, should be administered. A bowel wash of saturated solution of warm boric-acid solution once or twice a week is to be recommended. The regular administration of laxatives is seldom necessary, but, when it is, a mild saline is the preferable form.

The regulation of the diet is of importance only in so far as that the amount of food should be limited to the minimum compatible with maintenance of health and weight. Any article of food known to disagree should, of course, be prohibited. I generally exclude from the diet of these patients fried foods, pastry, excess of sweets, rich puddings, highly seasoned and made-up dishes, tea, coffee and all alcoholic and effervescent drinks.

For the relief of the immediate attack of asthma, I have nothing new to recommend, and will not waste time by going over different formulas containing iodid, bromid, nitroglycerin and stramonium or belladonna in varying proportions, or in discussing the advantages or disadvantages of inhaling fumes of niter and various vegetable antispasmodics.

My chief contention is that the development of asthma can be prevented by proper attention to the upper air

passages and nutrition in early life; that, if seen later, much can be done to prevent the recurrence of attacks by paying chief attention to correcting any obstruction in the upper air passages, removing any other source of peripheral irritation of the nervous system in the given case, but, above all, by so regulating the intake of food and stimulating the elimination of waste products, that a proper metabolic balance may be maintained. This can be done only by the most careful study of each case in every detail, and by prescribing a mode of life in accordance with the findings.

DISCUSSION.

DR. GEORGE DOCK, Ann Arbor, said that asthma is an extremely important subject because the symptomatic diagnosis is very often made when a different and far-reaching diagnosis could be made, and so he has almost reached the conclusion that asthma is always a reflex condition. He can not, he said, go quite so far as Dr. Rochester in believing that there are many cases due to autointoxication, and especially is he somewhat doubtful of Dr. Rochester's reasons for thinking so, namely, through finding increased amounts of indican, for this occurs so frequently without any asthmatic tendency that Dr. Dock would hesitate very much to look on this as the chief factor in causing asthma. On the other hand, he thinks it highly important to realize the value of the possibility of intoxication in such cases from the point of view of treatment, because in asthma the reflexes are often widespread. He thinks that Dr. Rochester's point about the reflex nature of so-called hereditary cases is very important. It is a striking fact that in the cases we so often see of so-called congenital asthma, hereditary asthma, in young children in which we have sometimes been led to believe there was an acquired hereditary lack of elasticity in the lung tissue, when followed up for ten or fifteen years, show that these patients get over their asthma, and very much more rapidly if they have an operation, as for adenoids. In regard to the practical diagnosis of asthma, Dr. Dock thinks that we should never make a diagnosis of asthma and give symptomatic treatment without having exhausted all possible methods of organic diagnosis. It is surprising to see how many cases of tuberculosis, cardiac disease of all forms, renal disease and other conditions are overlooked as the immediate causes of asthmatic symptoms. Dr. Dock recently saw a physician who had made the diagnosis of asthma in his own case six months ago, who has been treated in sanatoria from Florida to the Canadian border and from the Atlantic to the Pacific Ocean, with precisely the same symptoms, namely, nocturnal dyspnea, and yet he had two quarts of serous fluid in his pleura, with hypertrophy of the heart and contracted kidneys. Dr. Dock is not sure that this man's asthma was entirely due to the fluid in the pleura, but at any rate he was much relieved after the fluid was removed. Curschmann's spirals are among the most misleading things in diagnosis. They are no more true indications of asthma than they are of tuberculosis. Dr. Dock had a case of consumption with beautiful Curschmann's spirals in the early stages, yet there were no symptoms of asthma, and the spirals disappeared later. There was an excess of eosinophile cells in the sputum, in the blood, there were also Charcot's crystals in the sputum. In chronic bronchitis in old people Curschmann's spirals are very often found. The most beautiful Curschmann's spirals Dr. Dock has seen were in cases of tuberculosis with tubercle bacilli in the sputum. It is an interesting fact that Charcot's crystals were described long ago by Förster in cases of chronic bronchitis. It is probable the patient from which the plate was made suffered from consumption or chronic bronchitis in some form. Dr. Dock emphasized the importance of the great reflex origin of these cases to which Dr. Rochester called attention, and the importance of looking for reflexes in all parts of the body, especially in the parts of the body so frequently involved and so easy to explore—the upper respiratory tracts.

DR. M. H. FUSSELL, Philadelphia, agreed with Dr. Rochester and Dr. Dock that the asthma as Dr. Rochester has described it is usually, probably always, a reflex condition. He is sure that there are many cases in which the gastrointestinal tract is not the seat of the cause. He is equally sure, he said, that there are many cases, particularly in children, in which it seems to be an impossibility accurately to fix the cause of this asthma. He cited a case of which he has very intimate knowledge: The patient was a child, a boy, whose parents were perfectly healthy; on the side of neither parent was there any asthma; that child was breast-fed, a perfectly healthy infant. During the first year—the child was about 9 months old—the boy had a furious outbreak of pustular eczema; shortly afterward he had typical attacks of asthma. These were repeated; they were extremely frequent and are still present. Dr. Fussell made a careful examination and had his nose and throat examined by Dr. Cohen. The urine was examined; every possible reflex cause was looked for, and Dr. Fussell is still in entire ignorance of the cause of that child's asthma. The boy is now about 12 years old, living in California, and he still has asthma occasionally.

DR. S. SOLIS-COHEN, Philadelphia, said that he has long taught and that his increasing experience confirms him in his opinion, that asthma is not a distinct entity, but a symptom group, a syndrome, capable of development under the most varied circumstances. He excludes, of course, recurrent pulmonary edema, the result of arteriosclerosis, or of renal disease, or of cardiac disease, which should not be called asthma and does not come under this syndrome. There are many pathologic conditions under which the asthmatic syndrome may arise, and so long as we erroneously seek an invariable causation, so long will we be vainly searching for an identical remedy which does not exist. Dr. Cohen has experienced the dyspneic syndrome in past years during the hay-fever season, and before he had found a remedy, so that he can speak not only from objective, but also from subjective observation. The paroxysm, he said, is unquestionably a nerve explosion which may be classed among the paroxysmal neuroses, but the underlying conditions are very different in many persons. Dr. Cohen would be inclined to place the illustrative case cited by Dr. Fussell in the group of vasomotor disturbances. There are individuals in whom the vasomotor regulation is easily disturbed. Such people under appropriate excitation will develop hay fever, as some people do, or exophthalmic goiter, as do others, or hives or nervous chills, or angioneurotic edema, or pseudo-appendicitis, and so on. The exciting causes are as various as the responses. The worst case of asthma Dr. Cohen ever saw occurred in a man who had had nasal polyps. In that case at least the reflex was not the sole exciting cause. The exciting cause may be emotion or temperature change, or autointoxication, or irritation by ipecac, or emanations of feathers or pollen of grasses or roses or the like. Given the unstable balance there are many excitants which will upset the vasomotor equilibrium and produce vasomotor asthma. In such cases as Dr. Dock has reported there is a mechanical element and the neurotic element only comes in at the last. There are spasmodic cases and emphysematous cases. In chronic bronchitis there is mechanical obstruction to breathing from swelling of the mucous membrane. In relief of the paroxysm Dr. Cohen thinks that we can differentiate the purely vasomotor cases by the instant relief given by the hypodermic use of 10 or 15 minims of a 1-1,000 solution of the active principle of the adrenal gland or less promptly by the use of suprarenalin tablet triturates from 1/40 to 1/20 of a grain on the tongue. Instead of using it hypodermically, the adrenalin or suprarenalin may be instilled into the nasal passages or conjunctival sac, where it can be quickly absorbed and escape the stomach or liver. General treatment resolves itself into a careful study of the individual case, and the use of measures applicable to the particular patient, for his peculiar relations to the existing causes of the syndrome and his idiosyncratic reactions to the drugs employed. Physiologic measures, especially hydrotherapy, pneumotherapy and respiratory gymnastics are, as a rule, of great utility.

DR. G. N. JACK, Buffalo, N. Y., advocates the theory that asthma is not a nerve disease, but a blood disease. He thinks that there is no muscle in any of the air tubes that can,

ever did, ever has, or ever will, nor ever can contract so as to close up the air tubes and produce asthma. He classifies asthma into three varieties: The lymphocytic, the toxic, leucocytic and the anemic. There is poison in the blood, no matter how it gets there, which has to be gotten rid of. The blood dumps this poisonous disintegrated or waste and useless substance somewhere. The kidneys carry off as much as they can. The skin carries off as much as it can. The mucous membrane of the intestines carries off as much as it can. What is left is eliminated through the mucous membranes of the respiratory apparatus into the air tubes. This is in the uncomplicated variety of asthma—not asthma of cardiac origin. It is Dr. Jack's custom to make a thorough clinical investigation as well as a laboratory study of the case, and to adapt treatment according to these findings. He can not turn a man out of his office in five minutes and treat him for asthma; it takes him sometimes two or three hours. He would like to compare the results he is getting by treating asthma from the blood etiologic standpoint with the results that those who are treating asthma from the neurologic standpoint are obtaining. Sometimes a correct diagnosis can be made in one sitting, but when we do determine the exact etiologic cause of the asthma we can stop it in twenty-four hours, and the man need not wheeze again if he understands what we tell him and lives up to our directions. Dr. Jack always substitutes physiologic measures for drugs. He makes a thorough analysis of the blood, urine and stool. Urine containing an excess of indican indicates an intestinal toxemia and a restricted diet. When he finds the blood coagulating slowly he prescribes gelatin. A toxic cadaveric stool indicates the withholding of proteids or meats. Blood giving a pronounced iodophilia indicates the withholding of starchy foods. Blood showing an excess of lymphocytes indicates the withholding of lymphogenous foods, as milk and raw oysters. Dr. Jack said that he is getting results that he is not ashamed of. Dr. Jack said that he has no secrets in his method of treatment, though many physicians think that he has because he gets the chronic cases, especially in Buffalo, with whose heretofore intractable nature other physicians have been familiar. Therefore they marvel at his results. In all chronic cases the nervous system is poorly nourished, and especially in those cases in which the physician's intervention has had little result. The patient becomes despondent and psychic treatment is of importance. Many of Dr. Jack's patients, he said, are referred to him by other asthmatics whom he has treated. His patients find him full of enthusiasm and hope, and they are soon convinced that they can be cured. Owing to this psychic influence peculiar to the specialist, and the sharp and decisive therapy required in the treatment of asthma, it is impossible for the general practitioner to compete with the specialist in the treatment of this condition.

DR. W. J. ROBINSON, New York City, called attention to the remarkable connection between eczema and asthma. There are numerous cases, he said, in which we can predict an attack of asthma by the disappearance of the eczema, and likewise the asthma disappears coincidently with the appearance of eczema. This shows very conclusively that asthma is a blood disease. As soon as the eczema, the toxic matter in the blood, appears on the surface, the attack of asthma is relieved. As soon as the elimination of the toxin is stopped the attack of asthma recurs. He knows several patients, he said, who have given up the treatment of their eczema, because they would rather have eczema than asthma.

DR. W. D. CALVIN, Ft. Wayne, Ind., said that while it is true that asthma relieves coexisting eczema, it is likewise true in all forms of respiratory disease. A patient suffering from pneumonia will be relieved of a coexisting eczema and the same is true of acne. It depends on the changed location of congestion of toxic blood. In asthma there is congestion of the lungs and air passages, and the congestion in the skin consequently being lessened the eruption disappears. This is not only true in asthma and eczema, but is true of nearly all dermatologic conditions when the patient is temporarily suffering from some intestinal congestion.

DR. DELANCEY ROCHESTER, Buffalo, said that the speakers had not convinced him that he is not right in his position. In the first place he believes that we have an autointoxication, the intoxication not necessarily from the intestinal tract, in every case of asthma, and that this autointoxication is largely the effect of metabolic change, chiefly in the katabolism, he is firmly convinced is the truth. In regard to the diagnosis of asthma, he feels that we must make sure of our cases of asthma and that all cases of hay fever are not necessarily asthma. He believes that in all cases of true asthma Laennec's pearls are present at some time during the attack, and that if we find them on Curschmann's spirals we may feel sure of our diagnosis. He did not think of eosinophilia because it has no bearing on this condition. The upper air passages and the sinuses generally should never be overlooked in connection with asthma.

In those cases in which we have interchange between asthma and eczema, as in the case cited by Dr. Fussell, we get good results if we pay close attention to the intestinal tract; these patients are relieved by bowel washing and attention to diet. Dr. Rochester believes in the washing out of a baby's bowels, even when it is fed at the mother's breast, and if necessary administering certain amounts of alkalies. He believes, he said, in the acid origin of asthma, and that we must stimulate elimination as well as the intake of the patient. He never speaks of any specific remedy, and agreed with Dr. Cohen that we can not have any specific remedy. There are various reflex nervous sources of attack, but there is at the bottom of asthma this condition of autointoxication, and if we pay attention particularly to that and take into account the various nervous reflex sources of attack secondarily we will get our results. There are very few children who have obstructions in their air passages alone. Of course, all such obstructions should be removed, but if one does not go ahead and treat the patient after the growths are removed success can not be looked for. It is the persistence of treatment after the removal of obstruction from which one gets results. The case Dr. Rochester reported illustrates this point: The man went a year without operation; he had relatively few attacks under treatment. He had had asthma for twenty years and the attacks were increasing in frequency, coming on at least once a week right along. By the constitutional treatment alone he was relieved and after operation he was entirely cured.

THE QUININ TREATMENT OF CHOLERA.*

ERSKINE B. FULLERTON, AM., MD.
Professor of Materia Medica and Therapeutics, Starling Medical College.
COLUMBUS, OHIO.

In this article, using the inductive method of reasoning that H. C. Buckle long ago characterized as peculiarly the American method, I shall endeavor to show that:

1. Rightly administered, quinin has always proved the best remedy in Asiatic cholera.

2. It has only failed to bring the best results when improperly used as to dosage or method of administration.

3. It is just the remedy, of all others, from which we should expect these results.

My own experience with the disease was in Columbus, Ohio, during the epidemic of 1873 in the Mississippi Valley. There were here 138 cases of the disease, with 90 deaths; a mortality of 65 per cent. Of cholera of statistic grade, I had 5 cases, all terminating in recovery. Of choleraic diarrhea, mostly of the intermittent (early morning) type mentioned below, I had some 30 cases during the time of the prevalance of the disease. It had been my fortune in the earlier years of

* Read in the Section on Pharmacology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

professional experience to see so many patients with so-called sporadic cholera and bilious diarrhea die under the calomel-opium-acetate of lead treatment that for some time in all serous diarrheas, including cholera infantum, I had made use of quinin with better results. Add to this the fact that the epidemic came unheralded; was mistakenly diagnosed at New Orleans, where it entered in February, 1873; at Nashville, at Cincinnati, where the first cases were called "sporadic cholera" or "cholera morbus," and I have no apology to offer that my first report on the subject in the Cincinnati *Clinic,* November, 1873, should bear the title "Cholera in Columbus, Ohio," with a sub-title, "Intermittent Diarrhea," with cases apparently selected according to my bias at the time. The largest body of medical men in Ohio taught their materia medica by any one man during thirty years past, have been fully instructed in my belief that instead of being the despair of the profession, cholera rightly treated is a highly curable disease. I do not see how it happened that none of my former students were in the Philippines during the recent epidemic in the islands, nor how mention of the treatment in two of the most popular works on materia medica and therapeutics should have escaped the notice of army surgeons there at the time.[1]

The first recorded use of the remedy comes, as it should, from India, where in 1762 two unnamed physicians, under certain conditions, recommended the use of bark in cholera and claimed to have had good results from the treatment.

In the London *Lancet,* Feb. 1, 1832, Mr. C. Negri reports the cases of two patients recovering under the use of bark and mentions the fact that true choleraic diarrhea often assumes an intermittent form. It often did in the epidemic in the Mississippi Valley in 1873, and I doubt not was one of the causes that led Dr. Henry to use quinin in the Tennessee penitentiary with the remarkably convincing results to be recorded later.

As a complete history of the early use of quinin in treatment of cholera is to be found in the *Medical Record* of April 29, 1893, I shall hereafter mention only notable results, following as nearly as may be the chronological order of their occurrence.

Dr. Bluff, Aix la Chapelle,[2] reports 25 cases, with 4 deaths, 16 per cent. mortality, in an epidemic in the above named city, where of 427 patients under other treatment 222 died, being the usual mortality of the disease in Europe and America of 52 per cent. Dr. Bluff gave 2 grains of quinin every fifteen minutes till the disease was controlled. His four deaths are sufficiently accounted for by the varying conditions of his patients when first seen by him, "only one being a young person in robust health previous to the attack."

Dr. Kossler[2] in the same journal reports from Posen 30 cases, with 2 deaths, a mortality of 6.6 per cent. His better results came from the fact that while he gave only 6 grains of the sulphate of quinin every two hours at first he "afterward grew bolder, and in the most dangerous cases gave the remedy every fifteen minutes—nay every ten minutes, in the same doses." Evidently the drug was not absorbed, but acted as an intestinal disinfectant.

Dr. Antonio Putelli,[3] Venice, speaks most highly of his results with his eight-grain pills of the sulphate of quinin, but gives no figures, nor does Dr. Charles W. Bell[4] in his lectures at Manchester, England, though he mentions "5,000 cases cured by quinin in India." It was his report that attracted most attention and which is most frequently mentioned by later writers.

Dr. B. F. Sargent[5] says: "This article deals only with the treatment we pursued in collapse of cholera, . . . typical unmistakable cholera of gravest form . . . we say nothing of the simple diarrhea that recovered under ordinary treatment." He gave 10 grains an hour and says, "smaller doses were useless." He reports 17 cases with 4 deaths, a mortality of 23.5 per cent.

Dr. Strange[6] reports 19 cases, with 4 deaths, a mortality of 21 per cent. He mentions, as most do, the prompt cessation of vomiting. Recoveries were slow, the doses of quinin being too small, only 2 grains every two or three hours. There is no record of symptoms and, judging by results, the cases could not have been so uniformly severe as in Dr. Sargent's list.

The first record of administration of the remedy otherwise than by mouth occurs in the leading article in the *Medical Times and Gazette,* London, October 8, 1853, where it is stated that Mr. Spencer Wells injected a solution of quinin into the veins in 4 cases, and that Dr. E. A. Parks did so in two others. All the patients died, as they most properly should. The germ, as we now know, infests only the intestinal tract, and given intravenously or hypodermically, quinin escapes almost wholly by the kidneys.

Dr. Thomas W. Gordon,[7] Georgetown, Ohio, reports 18 cases occurring in that vicinage the preceding summer. (Cholera persisted in Ohio from 1849 to 1854, inclusive.) Of these, twelve patients were treated with quinin, all recovering. Of six patients treated by other methods, five died. Dr. Gordon gave quinin sulphate at the rate of 10 or 12 grains an hour.

The Spanish and French records are of little moment. The latter mention their fractional grain doses as checking vomiting however.

With the exception of the Nashville, Tenn., epidemic of 1873, the most important testimony of all is that borne by Dr. J. L. Pompe Van Meerdervoort.[8] He says: "During my residence in Japan (1857-1862) I passed through three different fearful epidemics of cholera. In these three epidemics I treated personally 2,467 patients, all without doubt, affected with cholera. Of this number 1;746 recovered and 721 died." His mortality was 29 per cent. He was stationed at the time in Nagasaki, a city of 60,000 inhabitants, and was the only physician in the city. He complains very justly that he "was not called in many cases until the disease was well advanced and with but one-sixteenth of his cases in hospital, the remainder scattered about the city, he had no control of the epidemic." "All he treated were severe well-developed cases of cholera—not cholerine." I have shown elsewhere that under more favorable circumstances his mortality should not have exceeded 15 per cent. His treatment was excellent, at the rate of from about 7 to 14 grains of the sulphate an hour, according to the severity of the case under treatment. In a preceding epidemic in Japan (1854) the mortality had been 65 per cent.

Dr. Schlömann[9] at San Antonio, Texas, in 1866, had 223 cases of cholera and cholerine, (he excludes asphyc-

1. None of these authorities was known to me until after I had myself used the remedy successfully in the epidemic of 1873.
2. Jour. Chir. and Augenheilkunde, April, 1833.
3. Ann. Med. Universali, 1836.
4. Quoted in the New York Scalpel, July 25, 1849.
5. Phil. Med. Exam., Sept., 1854.
6. Prov. Med. and Surg. Jour., 1849.
7. Ohio Med. and Surg. Jour., 1853.
8. Nederl. Tijdsche Geneesk, Amsterdam, 1865.
9. Berl. klin. Wochschr., Sept. 4, 1871.

tic cases) of which 220 patients recovered and three died. His mortality was 1.3 per cent., an almost incredible result but for the latest news from Van, Asiatic Turkey. Dr. Ussher says, "Our cholera was the real cholera of the Ganges delta," but excludes his collapsed cases. He gave from 8 to 15 grain doses, "repeating after the next stool" or at two or three hour intervals thereafter. In my judgment, with the exclusion of the already collapsed, the treatment ought to bring Dr. Schlömann's results.[10]

Professor Botkin[11] gave 5 grain doses three or four times a day, with a mortality of 17.3 per cent. He occasionally gave an 8 grain dose hypodermically which, of course, did no good whatever. In Sajous' Annual[12] his cases are reported at 994, with a 20.7 per cent. mortality. This would imply that he still gave but 15 or 20 grains of quinin daily by mouth, or more frequently resorted to the hypodermic syringe which would only annoy his patient. His cholera drops contain only from 1½ to 2 grains in their usual dose of from 15 to 20 drops. The mention of "clinic" is, of course, suggestive of hospital treatment and the results altogether suggest that the dosage of 1871 rather than the "cholera drops" of this later report was used.

The most remarkable results, however, were obtained by Dr. George P. Henry, physician to the penitentiary at Nashville, Tenn., in 1873. He had about 500 prisoners and attachés in the prison and says, that "almost every man, woman and child there was afflicted by the epidemic." Of these he says 350 were of the statistic grade of severity. For a period of twenty-six days in June, 1873, he treated an average of 57 cases daily without a death. Of these only a small part could be accommodated in hospital; the greater number were in cells, two in a cell, with 250 feet of air space, ventilated through a fourteen inch grating, and with the bucket to receive the discharges inside the cell. In the same epidemic, in Columbus, out of 27 cases in the Ohio penitentiary, 21 patients died, 81 per cent. mortality. Dr. Henry's diagnosis was scorbuto-malaria. His treatment consisted of fresh vegetables and sauerkraut, with a mixture containing some useless drugs, but with from 20 to 30 grains of quinin to be taken in about four hours, one patient only, who received no quinin, dying. Before ordered back from their camps to prison there had been 40 cases with 24 deaths, a mortality of 60 per cent., and these same convicts introduced the disease into the city of Nashville, from which 1,000 persons were said to have died. After counsel came in from the city, corrected the diagnosis and changed the treatment, fifteen patients died, the mortality among cases of statistic grade being 4.2 per cent.

The first physician to use the treatment in the thirty-three years that have elapsed since I treated my own cases in August, 1873, was Dr. Clarence D. Ussher,[13] a medical missionary of the Congregational Board stationed at Van, in Asiatic Turkey, in the epidemic of the winter of 1904-5. In this epidemic he estimates the number of deaths in the city of Van at 2,000. From other missionary reports there were, in Persia, at stations near by, from 4,000 to 5,000 deaths at Hamadan, at Urumia 3,200 deaths, and at Tabriz from 6,000 to 10,000 deaths. Doubtless these losses are somewhat exaggerated, but we can not run an extensive epidemic of cholera through a hospital even, let alone a laboratory. In his own practice in the mission hospital, and in the city, Dr. Ussher lost all the patients he treated during the first week; 100 per cent. mortality. At midnight, Saturday night of that week, following the recommendations of my writings (of which he had found notice in Sajous' Annual, 1896,) he began to treat his patients with 10 grains of quinin hourly, with the result that in the succeeding five or six weeks of the epidemic he lost but two patients. In a letter received by me of later date than his communication in THE JOURNAL of the American Medical Association, he says that he had partial records of 157 cases, but does not state whether this number pertains only to those patients treated with quinin, or includes those who died under other treatment during the first week of the prevalence of the disease. Allowing that the very large number of fifty-seven were of his first week's patients, there would still remain 100 patients treated by quinin in the succeeding weeks with only two deaths; a mortality of 2 per cent. He had no nurses but day laborers, called away from their usual avocations to treat the sick, without sufficient training in their new employment to take pulse or temperature, or to note other symptoms.

In a paper[14] published in 1894 I gave the above, to date of publication, with scattering reports where the numbers were few, including my own 5 cases, of statistic grade of severity.

	Cases.	Deaths.	
Total to above date...	3,146	753	
Prof. Botkin	994	206	Estimated from 20.7 per cent. mortality.
Dr. Ussher.....	100	2	
Total	4,240	961	Mortality 22.9 per cent.

According to Professor Koch's table of agents inhibiting multiplication of the spirilla, quinin has the greatest effect of all practicable remedial agents in a strength of 1 to 5,000. From experiments made at my request by Dr. J. C. Graham, at the time bacteriologist of Starling Medical College, in a strength of 1 to 2,500 it disinfects cultures in thirty minutes, "beyond which time no growth occurred." This seems to give sufficient reason for the very favorable results shown in the above table. Dr. Henry had complete control of his cases in the penitentiary, with no loss, under quinin, for nearly four weeks. It was after the diagnosis had been corrected and treatment changed that the fifteen patients died; giving the mortality 4.2 per cent. The circumstances mentioned by Dr. Van Meerdervoort as he says, "gave him no control of the epidemic" and as stated elsewhere, his mortality of 29 per cent. should be reduced to 15 per cent. It is possible that in any extensive epidemic the mortality may reach as high as 15 per cent., but that result, at least, should be confidently expected. When attendance is promptly and efficiently rendered a much less rate of mortality should be looked for. When my attention was called to Professor Stille's list of 19 cases with 12 deaths occurring on board the British hospital ship Belleisle, I promptly stated that the quinin must have been given hypodermically, as no such rate of mortality as 63 per cent. had ever been known when the remedy had been given in sufficient doses by the mouth. Later investigations proved this to be true. Before the recent epidemic in the Philippines was over I knew that the remedy was not being used and called the attention of what I supposed to be the proper authorities to the fact, but with no result whatever.

10. See my analysis of Dr. Henry's experience in the Tennessee penitentiary in the epidemic of 1873, in which epidemic I had my own experience, New York Med. Record, April 29, 1893, New York Jour. of Med., Aug. 18, 1894.
11. Wien. Med. Presse, 1871.
12. Vol. II, p. 228, 1896.
13. THE JOURNAL A. M. A., Feb. 3, 1906, p. 361.
14. New York Journal of Medicine, Aug. 18, 1894.

By carefully reading the authorities above quoted it will be seen that the remedy given at the rate of 10 grains an hour of the sulphate gave the best results. The bisulphate is more soluble and more likely to be absorbed.

For the purpose of disinfecting the intestinal tract the remedy should be given moistened only with a little water and not in solution at all. This is my latest judgment. Slight symptoms only of cinchonism have been observed when the comparatively insoluble sulphate has been used. Larger doses than 10 grains have been given, but are more likely to be followed by vomiting. The fear of severely ill effects from the doses recommended, may be set aside, as the lethal dose lies somewhere beyond one ounce of the drug, and moreover quinin is antiemetic in cholera. Major-General Leonard Wood told me, that for malarial symptoms, he had himself, several times while in Cuba, taken doses of 75 grains of quinin. He promised to use it when he went to the Philippines, but about one year since wrote me that he had not had, to his knowledge, a case of cholera in the province under his command. There are yet scattering cases in the Philippines to which I have called his attention, but without any report as yet.

(The use of quinin in cholera is mentioned in Wood's work on therapeutics, eighth, ninth and tenth editions; in all recent editions of Shoemaker's "Materia Medica and Therapeutics"; and in the latest edition of Potter's "Materia Medica, Pharmacy and Therapeutics" there is fullest mention of all.)

DISCUSSION.

DR. N. R. COLEMAN, Columbus, Ohio, stated that the sum of our knowledge of the treatment of cholera, to date, shows that where quinin has been used the mortality has been lowered. If cholera should ever break out in this country this method of treatment should be kept in view, not only by practicians, but by those engaged in teaching. There is no question, he said, that quinin is one of the best intestinal antiseptics.

DR. A. W. BAER, Chicago, asked Dr. Fullerton whether he stated that the maximum dose of quinin is an ounce.

DR. FULLERTON answered that an ounce is not the minimal dose.

DR. BAER referred to a case verbally reported from the Nashville Military Hospital during the war where an ounce of quinin was given during twenty-four hours for tetanus. The patient did not die of tetanus, but from the effects of the quinin.

DR. E. B. FULLERTON, Columbus, said that he has treated cholera and has seen all the symptoms subside after administering 15 or 20 grains of quinin.

THE COMING REVISION OF THE PHARMACOPEIA OF THE UNITED STATES.*

M. I. WILBERT, PH.M.
Apothecaria at the German Hospital.
PHILADELPHIA.

While therapeutic measures, other than drugs and medicines, are very properly receiving an ever increasing amount of attention we must not lose sight of the fact that drug therapy can not, as yet, be considered among the practices that we can well do without. From evident indications it is probable that drugs and medicines will continue to occupy a very important position in the prevention as well as in the treatment of disease for decades, if not for centuries to come.

If the continued need for drugs and medicinal preparations be admitted to be evident it will readily be acknowledged that the need for a more systematic and detailed knowledge of the nature, uses and limitations of the several substances that are used in drug therapy can not be questioned and will, therefore, serve as an apology for introducing what may appear to some to be a hackneyed and uninteresting subject for discussion.

HISTORICAL REVIEW.

That the need for generally recognized descriptive lists, or treatises, of the materials used in medicine, manifested itself at an early period, in the history of the human race, is evidenced by the still existing works by Dioscorides and by Pliny and also by the much older Egyptian scroll usually referred to as the "Papyrus of Ebers." The more modern, and more distinctively pharmacopeial works, such as I propose to discuss in connection with this paper, appear to have had their origin with the Arabian school of medicine, about the end of the eighth century, and the earliest of the officially recognized pharmacopeias, in Europe, is probably to be found in the formulary published by the medical school of Salerno, and recognized by an imperial decree of the Emperor Frederic II, during the twelfth century.

To refer more specifically, however, to the history and the development of pharmacopeias in our own country, it may be interesting to you to know that it is just a century ago that James Jackson and John C. Warren, two of the most eminent and most respected medical men of the city of Boston, in pursuance of their instructions, as a committee of the Massachusetts Medical Society, prepared the manuscript for the first American pharmacopeia, and it is now ninety-nine years, almost to the day, since the completed manuscript was presented, at a meeting of the Councilors of the Massachusetts Medical Society, for publication. This interesting and in many respects unique volume is generally recognized as being the origin of pharmacopeial work in this country and it is perhaps not to the credit of the present, or of preceding, generations of medical men to point out that, if we expect to make reasonable progress in the development of a more satisfactory and a more generally acceptable materia medica, we must of necessity go back and readopt the principles and the ideals aimed at by these early pioneers in pharmacopeial work.

The opening paragraphs of the preface of the Pharmacopeia of the Massachusetts Medical Society contain several important suggestions, on the significance and the uses of a pharmacopeia, that may well serve as a text for what I wish to say to you to-day. In this preface Drs. Jackson and Warren assert:

> It is the intention of a Pharmacopeia to point out those articles whose properties entitle them to be employed for the cure of diseases, with the best methods of preparing them, and to supply the preparations and compositions of them with names by which they may be known or referred to without constantly repeating a description of their ingredients.
>
> Such a work is mutually convenient to the physician and apothecary. As it is the business of the physician to prescribe, and of the apothecary to prepare medicines, the physicians as a body ought to point out those articles of medicine which they shall ordinarily employ, and the standard preparations of them.

It will not be necessary for me to discuss at length how far and how physicians, as a body, have failed to take advantage of their evident duty to "point out those articles of medicines which they shall ordinarily employ," particularly as the direct results of this neglect or failure are so evidently apparent on all sides.

* Read in the Section on Pharmacology of the American Medical Association at the Fifty-seventh Annual Session, June, 1906.

In the matter of revising the now well established Pharmacopeia of the United States the members of the medical profession have, for five decades or more, taken an ever decreasing interest, and the selection of the content of that book, as well as the revising of the text and of the descriptions, is now practically left entirely in the hands of pharmacists and of a limited number of medical men who are directly interested in the book, either as teachers or as authors of text-books on therapeutics or materia medica.

The increasing neglect of the Pharmacopeia, on the part of members of the medical profession, appears to have led to a corresponding increase in the number of articles admitted or retained, as official, and this superabundance of material, much of it antiquated or useless, serves to detract materially from the proper appreciation to which the book is rightfully entitled. Size and numbers are so persistently taken to be synonymous with completeness that it need not surprise us to learn that with a very few exceptions the Pharmacopeia of the United States now contains from 20 to 50 per cent. more titles than any of the other known pharmacopeias.

That this superabundance of supposedly useful articles of the materia medica must be considered to be a matter of doubtful utility will be more apparent when we consider the uses to which such an authoritative list or pharmacopeia might properly be expected to be put.

In addition to being of value as an indication of "those articles whose properties entitle them to be of use in the treatment of disease a pharmacopeia should also serve as a guide to the pharmacist in making the preparations that are enumerated and described in its pages. A book of this kind should also serve as a text-book or guide to the students of medicine and of pharmacy.

PLEA FOR A MORE LIMITED MATERIA MEDICA.

It is in connection with its possible uses as a text-book for the student of medicine that a pharmacopeia containing a reasonably limited number of articles would be of greatest value. It will readily appeal to all that with the numerous branches that are now being taught in medical schools, and the accompanying relegation of materia medica as a subject of secondary importance, it must be practically impossible to impart to medical students any appreciable amount of practical information in connection with the 4,000 or 5,000 different medicinal substances enumerated in some of the so-called text-books on materia medica. If, on the other hand, instruction in materia medica could be confined to 400 or 500 widely used and thoroughly well established drugs and preparations the student could be given a thorough grounding in the uses and in the limitations of these fundamentally important articles, he would have little that he could afford to forget and the knowledge that he has would serve him as a basis for rational elaboration.

The more general acceptation of a more limited or basic materia medica would also lead to a more evident appreciation of the need for international uniformity in connection with the strength of potent medicaments. With the ever increasing facilities for inter-communication between widely separated peoples this need for greater uniformity in all lines of research is becoming more widely appreciated. In no branch of human progress should this tendency for unity of effort receive more hearty encouragement than in connection with the science of medicine, and in no department of this science is the need for unification more pressing than in connection with the materials that are used, or to be used, in the prevention or the treatment of disease and the accompanying endeavors to prolong human life.

PLEA FOR INTERNATIONAL UNIFORMITY.

In this connection it will not be necessary for me to recount the several efforts that have been made to secure greater uniformity in the strength or the composition of the materials used as medicine; suffice it to say that little or nothing of practical importance was accomplished until September, 1902, when the "International Conference for the Unification of the Formulæ of Potent Medicaments" was convened in the city of Brussels, Belgium, with thirty-one officially accredited delegates, representing sixteen of the leading countries of the world.

Despite the fact that this conference was held practically three years before the eighth decennial revision of the Pharmacopeia of the United States was published, and that the committee on revision had received definite instructions, from the National Convention, to keep in view the desirability of uniformity in the strength of potent remedies, which are in general use among civilized nations, the members of the committee on revision did not see their way clear to adopt fully all of the provisions of the resulting protocol and the Pharmacopeia of the United States, in place of being one of the first to fully endorse this admittedly desirable innovation, will probably be the last, of those represented in the conference, to adopt the several provisions *in toto*.

While it is true that the differences now existing are more matters of detail than of vital importance, it is nevertheless to be remembered that matters of minor detail frequently appeal more strongly, even to the apparently well informed, than do matters of greater moment.

To cite but one of the numerous differences, now existing, I may refer to the variation in nomenclature. Here the members of the committee on revision not alone ignored the suggestions made by the International Conference, but even went out of their way to introduce in connection with fluid extracts a lexicographic monstrosity that simply adds one other to the already too numerous minor differences of names and titles.

Up to the present time the provisions of the protocol have been fully adopted in the recently published Pharmacopeias of Spain, Austria and Holland and it is announced that they will also be included in the prospective Pharmacopeias of France, Belgium and Switzerland, to be published in the course of the current year. It may be added, in passing, that the protocol of the International Conference includes three chemical substances, ten crude drugs and twenty-six pharmaceutical preparations, or a total of thirty-nine titles, apart from the general provisions of policy or principle in pharmacopeial work.

COÖPERATION OF PHYSICIANS NEEDED.

The history, the uses and the needs of the pharmacopeia would all appear to indicate that the medical profession of the country should take a more active interest in the content and in the revision of the Pharmacopeia with a view of making that book, as it really should be, a reflection of the practice and the ideals of the science of medicine in the United States.

To have the Pharmacopeia used as a reference book, by physicians, would necessitate that it be published as a manual or treatise on materia medica, as it is out of reason to expect that a book, of the technical nature that a Pharmacopeia must necessarily be, could be made

to appeal to physicians or be useful as a reference book on materia medica. On the other hand, if physicians are to be led to take an interest in perfecting their own materia medica, and are expected to eliminate from the Pharmacopeia obsolete or useless materials they should of necessity have access to some ready reference list containing only pharmacopeial articles, their medicinal uses and doses.

CHANGES SUGGESTED.

A book of this description would be of little or no use to the apothecary who must have technical descriptions and detailed directions to insure uniformity of materials. It is evident then that among the innovations to be introduced by the present, or at least by a succeeding committee on revision, should be the publication of two distinct books: The Pharmacopeia proper for the use of apothecaries and druggists, and a manual of materia medica for ready reference by physicians.

Among other necessary changes I might suggest the revision of the Pharmacopeia before the decennial meeting of the National Convention, the elimination of the secrecy that has hedged in and hampered former revisions of the Pharmacopeia, and the reduction of the number of members of the committee on revision to a directly responsible board of editors, composed practically of the chairmen of the several sub-committees.

The first of these changes could, and very properly should, be introduced by the present committee on revision. The publication of a small handbook of the materia medica of the Pharmacopeia would enhance the use and the value of the Pharmacopeia materially and go far toward securing greater uniformity in the medicinal products now available.

The practical revision of the present Pharmacopeia, in advance of the National Convention, is an undertaking that is not alone authorized but even expected under the resolution instructing the committee to "report a complete plan for the revision of the Pharmacopeia at the next decennial convention."

The fact that such a plan could not be considered final would permit of widespread publicity, in a special bulletin, or in medical and pharmaceutical journals, and thus insure that prospective delegates to the decennial convention come well prepared to discuss and to act on the more important features of the revision. The need for reducing the number of the members of the committee on revision is one that has appealed to many, and particularly to members of the revision committee itself, and is perhaps evidenced by the increasing delay in the publication of the past three or four revisions.

The work that is now being done by an unwieldy committee of twenty-five or twenty-six members residing in widely separated sections of the country could readily be supervised by five or six specialists as responsible editors of the several departments of the Pharmacopeia and the credit for excellence or the censure for shortcomings would be more readily meted out to the one more directly responsible. Such an innovation would of necessity presuppose a more active interest in the Pharmacopeia on the part of all who are in any way dependent on the use of it, and the ultimate success of the change would depend very materially on the coöperation and the support given it by the medical practitioners of the country.

In further explanation of this suggestion it may be pointed out that the American Pharmaceutical Association, for nearly half a century, has taken an active interest in pharmacopeial work and the members of the several standing committees on the revision of the Pharmacopeia have not alone contributed materially toward improving the several decennial revisions but were also instrumental in bringing about the changes which established the Pharmacopeia of the United States as the peer of national pharmacopeias.

The American Medical Association on the other hand has so far contributed little or nothing toward the work and has not even indicated, as it properly should, what articles might preferably, be included. The collection of data, on the desirability of including certain widely used drugs and preparations, and of omitting such as may be of lesser importance, is a duty that would appear to come particularly within the province of this association, organized as it is to represent the better class of medical practitioners in all sections of the country. Minor details, as to the manner in which information is to be collected, could well be left for the responsible officers of the association to arrange. That this information should be collected, and that the American Medical Association, as an organized body, should take a more active interest in the revision of future editions of the Pharmacopeia of the United States is for you, as members of the Section on Pharmacology and Therapeutics to suggest.

CONCLUSION.

I recapitulate briefly the more salient features of the proposed innovations:

To be really national in character, the Pharmacopeia should receive the active coöperation and support of physicians as well as pharmacists.

The content of the book should be indicated by physicians, and should be limited to an enumeration and description of articles whose properties and uses are well established and generally recognized.

The work of revising the Pharmacopeia should be practically accomplished before the meeting of the National Convention, and the several changes, as proposed, should be given widespread publicity.

As in the past, the National Convention should act on the general principles that are involved and entrust the more minor details to the Committee on Revision and the Board of Trustees.

The supervision of future editions of the Pharmacopeia should be entrusted to a much smaller committee of directly responsible editors.

Finally, and perhaps of more immediate interest and importance, The American Medical Association should institute a standing committee on the Pharmacopeia for the two-fold purpose of collecting information to be used in connection with the revision of the Pharmacopeia itself and of popularizing the Pharmacopeia and its content with members of the medical profession.

DISCUSSION.

DR. O. T. OSBORNE, New Haven, Conn., thinks that no one is quite so disappointed with the Pharmacopeia as are those who teach practical therapeutics and materia medica. The profession has been talking, for years, against ordering a proprietary preparation when the Pharmacopeia has just as good a one; also against ordering a drug by its trade name when there is a Pharmacopeial name. The new Pharmacopeia, he said, absolutely defeats this object. Students can not be compelled to write on prescription blanks some of the names used in the Pharmacopeia. The bulk of material contained therein makes it almost impossible for any student to familiarize himself with it. Dr. Osborne has long contended that the Pharmacopeia should be in a convenient form and size. It should not be a great, unwieldy volume of instructions to the pharmacist in which medical men are not interested. They can have as large a dispensatory as they see fit. Then,

the answer comes, there should be some particular method for the pharmacist to follow in making all preparations. How many druggists, he asked, make these preparations? The majority of the preparations are made by manufacturing concerns, therefore that part of the Pharmacopeia can not be of much use to pharmacists. In the next place, it was unfortunate leaving out of the Pharmacopeia the preparations under the drugs. The doses in many cases have been carelessly put in. Why, he asked, depart from the metric system? Physicians talk of it, insist on it, the Pharmacopeial commission insisted on it, and then proceeded in such a way as absolutely to defeat the object of the metric system. There is no use in saying a dose is 4 c.c. when 5 c.c. is the dose it should be. It is impossible to teach students 0.025 of a gram or 37.5 cgrms. On the other hand, take acetanilid: The dose given is 37.5 cgms., much too large, while the dose of Pulvis Acetanilidi Compositus is positively dangerous and should never be repeated in the same day. Dr. Osborne hopes that a committee will be appointed to report at the next meeting on the recommendations of this paper, and to devise means of getting in closer touch with the commission for 1910.

DR. WM. J. ROBINSON, New York City, asked who is responsible for the dosage in the Pharmacopeia?

DR. C. S. N. HALLBERG, Chicago, said that the physicians are responsible.

DR. WM. J. ROBINSON, New York City, said that it was most likely the absence of physicians or at any rate the absence of real practicing physicians. All, he said, were looking forward expectantly to the doses in the Pharmacopeia, thinking that at last some order would be introduced into the chaotic condition of posology, but the doses in the Pharmacopeia have made confusion worse confounded. For instance, the average doses of cinnamon and of zinc oxid as given in the Pharmacopeia are exactly alike, namely, four grains. The physicians know that cinnamon can be given in 15 and 30 grain doses, and, if judging by analogy, he decided to give a similar dose of zinc oxid, what, asked Dr. Robinson, would be the result? From a careful study of the doses in the Pharmacopeia it is apparent to Dr. Robinson that the doses were not given by a practicing physician, if by a physician at all, and it is no wonder that the medical profession does not want to know anything about the Pharmacopeia, for it contains little or no information of value to physicians and much of the information it contains is not information, but misinformation.

DR. S. SOLIS-COHEN, Philadelphia, said that it is highly important that the methods and results of Pharmacopeial revision be considered carefully. The manner in which the revisions can be bettered is by giving greater weight to the views of physicians. He urged the appointment of a committee to study the whole subject leisurely and deliberately and to present a well-considered recommendation at the next meeting.

PROF. H. P. HYNSON, Baltimore, does not believe that the Pharmacopeia is a controlling influence in medical practice; the Pharmacopeia should be the servant of medical men. All the Pharmacopeia should be, and all it can expect to be, is a standard. If there is any need for a larger number of preparations there is no reason why the National Formulary should not furnish them. Pharmacists want the Pharmacopeia to offer more standards, especially the standard maximum dose. If physicians were in drug stores and knew the trials pharmacists have on this score they would appreciate the importance of this point. The druggists of the country do not want the Pharmacopeia restricted, unless the National Formulary is adopted, which will be satisfactory as an auxiliary standard.

DR. M. G. MOTTER, Washington, D. C., said he thought that Dr. Cohen wished to imply that the committee of revision was inclined to disregard the views of the medical profession. The facts of the case are utterly different. The call for the eighth revision convention was sent out to all the medical societies of this country with the request that they present suggestions, and there were only four medical societies which did present such reports. These were: Colorado Medical Society, Medical Society of South Carolina, New York State Medical Society, New York Academy of Medicine.

DR. S. SOLIS-COHEN, Philadelphia, declared that on the whole he considers the new Pharmacopeia a splendid book. It can be improved and made more practical when pharmacists pay more attention to the opinions of clinicians, and when medical men are more willing to assume their share of the actual burden of revision. The object of the Pharmacopeia is to prescribe a standard. Physicians do not have to use anything or to teach anything simply because it is in the book. Each man makes his own selection and will continue to do so, whether the number of admitted articles be less or more. On the other hand, omission of drugs or preparations in actual use by any considerable number of practicing physicians leads to confusion and difficulty. Dr. Solis-Cohen's criticisms were more of omissions than of commissions.

DR. REID HUNT, Washington, D. C., referred to the importance of the Pharmacopeia as a legal standard. While the practitioner does not care very much about the methods of detecting impurities which may be present in drugs, this is very important from the health officer's standpoint. The Pharmacopeia has to serve as the standard for so many people that it must be looked at from many sides, and its importance as a legal standard is increasing rapidly. The medical man wants a small, compact book, containing only the drugs he uses, yet throughout the whole country so many of the other preparations are being used that there ought to be some sort of a standard for them also. The Pharmacopeia, Dr. Hunt said, is becoming more and more the legal standard by which pure drug laws are enforced.

MR. M. I. WILBERT, Philadelphia, said that it is impossible to discuss so wide and important a subject in any reasonable amount of time that could be given to it. The appointment of a committee to consider the recommendations at length, he thought a good move. The criticism that the Pharmacopeia is too diffuse for medical men, is a just one, if future generations of medical men are to be instructed in but a few, or comparatively few, subjects. This need for restricting the Pharmacopeia is illustrated by the expansion of medical schools. For instance, the medical department of the University of Pennsylvania less than thirty years ago had 6 branches and 8 instructors; at present it has 21 departments and 137 instructors, and materia medica plays but a minor part. From being the one-sixth of the total instruction thirty years ago, it is the one twenty-first today, and is given secondary consideration at that. Mr. Wilbert is in favor of limiting the official preparations to a reasonable number that can be fully standardized and controlled. The question of dosage is an important matter, from the pharmacists' point of view, but it is readily demonstrated that doses are but relative. A normal dose for one patient might be a huge dose for another patient, so that any attempt at stating a maximum would be exceedingly unfair and would cause no end of trouble.

MALARIAL HEMOGLOBINURIA

WALTER V. BREM, M.D.
Physician at Ancon Hospital.
ANCON, CANAL ZONE.

(*Concluded from page 1904.*)

ANALYSIS AND DISCUSSION OF CASES.

ETIOLOGY.

Nationality.—Nine of the cases occurred in Americans, two in Spaniards, one in an Italian, one in a Greek, and one in a Spanish-American. Of the 1,107 malarial patients admitted during the period covered, the Teutonic race constituted 53.6 per cent.; Spaniards, 24.4 per cent.; Italians, 4.7 per cent.; Spanish-Americans, 5.6 per cent.; Greeks, .7 per cent.; seventeen other countries represented, 11 per cent. Hemoglobinuria developed, then, in about 1 out of every 66 Teutonic malarial patients; in 1 out of every 135 Spaniards; in 1

out of 52 Italians; in 1 out of 62 Spanish-Americans, and in 1 out of 5 Greeks. Among 122 representatives of seventeen other world-scattered countries no case occurred.

Age.—Seven cases occurred during the third decade, four during the fourth, three during the fifth. In the 1,107 malarial cases the incidence by decades was as follows: Third decade, 1 case out of every 77; fourth decade, 1 out of 77; fifth decade, 1 out of 45. Among 90 cases in the second decade, 30 cases in the sixth decade, 7 in the seventh and 1 in the eighth, no hemoglobinuria occurred.[3]

Sex.—All the cases of hemoglobinuria occurred in males. Of the total number of malarial cases, there were 30 females, 28 of whom were American and Canadian women.

Habitat.—One patient had lived on the Isthmus of Panama only 2 months and had come direct from the United States; four others had been on the Isthmus under one year, but three of these had lived in the tropics seven, five and two years; four had lived on the Isthmus under two years, and one of these had lived in tropical countries nearly six years; three had lived on the Isthmus between two and four years; one, twenty-two years; one, only two years, but was born in the tropics and had lived in tropical countries all his life except four years.

Previous Malaria.—One patient had had no malarial fever previously; two had had only one previous attack; four had had several attacks; six, many attacks.

Cachexia.—Five patients showed evidence of cachexia; six were large robust men; three were small men, well nourished, not particularly robust, but presented no evidence of cachexia.

Alcoholism.—Only one patient out of eight who were questioned gave an alcoholic history of any importance. One other gave a history of moderate use of alcohol.

Previous Hemoglobinuria.—None of the 8 patients questioned had had previous attacks of blackwater fever.

Quinin.—One patient received 30 grains of quinin daily for three days in the hospital before hemoglobinuria developed; another had taken 30 or 40 grains altogether during two days preceding admission, and he received 40 grains daily for two days in the hospital before the onset of hemoglobinuria; a third patient had taken some quinin before admission and received 45 grains in the hospital during the 30 hours preceding the onset of hemoglobinuria. A fourth patient gave a definite history of blackwater before admission and showed physical evidence of the correctness of the history; he had taken no quinin before the appearance of blackwater. Hemoglobinuria was present on admission in the ten cases remaining. Two of these patients were not questioned regarding previous quinin, but it is probable that both had received some. Of the other patients, one had taken 27 grains of quinin daily for six days before hemoglobinuria appeared; two had taken quinin, but no note was made regarding the quantity; one had taken small doses; one, 10 grains daily for two days; one, from 4 to 8 grains daily for four weeks (given prophylactically by canal authorities); one, 18 grains daily for two days; one, 30 grains during 24 hours preceding blackwater.

The largest quantities were 30 grains daily for three days, 40 grains daily for two days and 27 grains daily for six days; the smallest quantities were 10 grains daily for two days, from 4 to 8 grains daily for four weeks, and no quinin previous to blackwater according to the history of a patient who had no hemoglobinuria on admission, but who had three subsequent paroxysms while in the hospital and who showed evidence of having had hemoglobinuria before admission.

The 1,107 malarial cases treated in the wards during the period covered received as routine treatment from 20 to 40 grains of quinin daily. These are much larger quantities than are taken regularly by patients before coming into the hospital; yet among the 1,107 patients, in only three (excluding the last case mentioned above) did hemoglobinuria develop in the hospital.[4] Since those patients who are victims of the most severe infections are treated in the hospital, it would be anticipated that a greater number would develop hemoglobinuria from the large and regular dose of quinin if quinin were in any way an etiologic factor. It is probable that no one would contend that such small doses as 10 grains daily for two days or from 4 to 8 grains daily for four weeks would be factors in the onset of hemoglobinuria. Further, one patient who gave a credible history of blackwater previous to admission had taken no quinin before its appearance. While in the hospital he received quinin steadily, and, though he had three hemoglobinuric paroxysms occurring at intervals of two to four days, they were always associated with a recurrence of fever. Each time they subsided rapidly, although during two paroxysms the patient received 20 grains of quinin by intramuscular injection in addition to 20 grains by mouth on the day of one paroxysm and 30 grains by mouth on the day of the other (Case 13). Also, in Case 10 the recurrences of hemoglobinuria occurred synchronously with elevations of temperature, and did not appear to be related to the quinin received. That quinin could not have been an etiologic factor in these cases seems to be certain when are added to the above facts the results, discussed later, of the treatment of the condition by intramuscular injections of quinin.

Malarial Plasmodia.—Estivo-autumnal parasites were found in the peripheral blood of only one patient; in one other, tertian organisms were found, and the temperature curve for four days confirmed the diagnosis, but later the curve was of estivo-autumnal character, and it is more than probable that there was a mixed infection. In twelve cases the peripheral blood was negative, although one patient had taken no quinin before admission and the quantity taken by another patient (10 grains daily for two days) was so small that an absence of parasites would not have been anticipated. Five patients had taken a sufficient quantity to account for the absence of parasites in the peripheral blood, while the quantity taken by the five remaining patients is not

3. The ages of 1,100 of the 1,107 patients were obtained. The number of patients and the percentages per decade are as follows: First, 3 patients, .27 + per cent.; second, 90 patients, 8.2— per cent.; third, 531 patients, 48.3— per cent.; fourth, 303 patients, 27.5 + per cent.; fifth, 133 patients, 12.1— per cent.; sixth, 32 patients, 2.9 + per cent.; seventh, 7 patients, .6 + per cent.; eighth, 1 patient, .1— per cent.

4. The estivo-autumnal parasite was found in 473 of 1,107 blood examinations, a great majority of which were made by me. In 26 of these examinations it was in mixed infection with tertian parasites. Unmixed tertian infections occurred 232 times. The peripheral blood was negative for plasmodia 402 times. If the proportions hold good, 270 of the 402 negative cases were entirely or in part of estivo-autumnal origin, and there were then 743 estivo-autumnal infections, 67.12 per cent. Deducting the 11 cases in which hemoglobinuria occurred before admission, there remains 732 cases of estivo-autumnal infections, among which only three cases of hemoglobinuria developed while the patients were under treatment in the hospital.

known. Now, a great majority of patients admitted to the wards had taken a variable quantity of quinin before entering, yet in 1,107 cases plasmodia were found in the peripheral blood in 705 instances, 63.7 per cent.

In view of these figures, it is interesting to note again a phenomenon that has been pointed out often before, the frequent failure to demonstrate malarial organisms in the peripheral blood of hemoglobinuric patients. Organisms were found in only two of my fourteen cases, estivo-autumnal organisms in only one. In every case, however, except Cases 10 and 13, the temperature curve and course of illness indicated an infection with the estivo-autumnal parasite. In Case 10 the history and, more especially, the fifth, sixth and seventh days of fever indicate the presence of the estivo-autumnal parasite mixed with a double tertian infection.[5] In Case 13 the febrile paroxysms were too mild to show a definite character.

It is well known that the peripheral blood may give no indication of the "aggregate mortality going on among the corpuscles. . . . The principal part of the malarial drama is played out in the spleen, liver, bone marrow, brain, etc., and not in the general circulation. What is seen in finger blood is but an overflow, as it were, of the greater drama going forward in the viscera" (Manson). But why the malarial parasite disappears more frequently from the peripheral blood in hemoglobinuria has not been satisfactorily explained, and I have no data that would go to support any theory.

Is a Special Organism the Etiologic Agent?—There are several facts in favor of the theory that a special organism being the etiologic agent of hemoglobinuric fever: (1) The absence of pigment in the bone marrow of one and in the bone marrow and viscera of the other fatal case: the absence of parasites could be accounted for by the quantity of quinin received; (2) in many estivo-autumnal infections in which the peripheral blood shows an enormous number of parasites (I have seen five cases in which a thin blood smear showed an average of from 13 to 30 organisms to a field of the one-twelfth objective), there is no hemoglobinuria and but a small quantity of albumin in the urine; (3) when malarial plasmodia would certainly have been greatly decreased in number by quinin, the agent of hemoglobinuria is still able to produce in some way intense hemoglobinuria and albuminuria out of all proportion to other manifestations (Case 13).

On the other hand: (1) The disease is endemic in malarial regions, but never becomes epidemic, as would be anticipated, in a favorable environment if it were caused by a special parasite. The cases in the present series, for instance, are widely scattered both as to time and place. Case 10 came from Las Cascadas, from which place we had been receiving large numbers of patients with estivo-autumnal infections, yet this was the only one in whom hemoglobinuria occurred. In Case 11 the patient had lived in the house with eleven other men, seven of whom had had malarial fever, none blackwater. Cases 12 and 13 are other, but less striking, instances of the same kind. (2) The disease begins with manifestations resembling those of ordinary malarial fevers, and the course of illness, excepting hemoglobinuria and an occasional peculiar posthemoglobinuric fever, is not extraordinary. (3) Quinin appears to act as a specific remedy. (4) The estivo-autumnal parasite is associated with the condition much more frequently than is indicated by the present series. In a case of hemoglobinuria under my care while medical house officer in the Johns Hopkins Hospital, there was an enormous number of typical estivo-autumnal ring forms in the peripheral blood. Fully from one-half to two-thirds of the corpuscles were infected and many corpuscles contained from two to four parasites. One presegmenting form was seen. Malarial pigment was abundant.[7]

Summary.—The number of cases is too small to draw any conclusions regarding the etiologic significance of race, age and sex. Previous attacks of malarial fever seem to furnish a favorable, though not essential, ground for the production of hemoglobinuria. A cachetic condition does not appear to be important. Quinin as an etiologic factor may be reasonably excluded. The only factor of any great importance discoverable in this series is a febrile affection resembling the estivo-autumnal type of malarial fever. The burden of the evidence seems to be in favor of the view that the estivo-autumnal malarial plasmodium is capable, under certain unknown conditions, of causing sudden blood destruction sufficient to produce appreciable excretion of hemoglobin in the urine and intense albuminuria. What determines the onset of hemoglobinuria in one case out of every fifty-three[4] is not known, and at present one can only speculate on ideas of individual susceptibility or special characteristics of the infecting organism.

MORTALITY SCALE.

Among 1,302 total medical admissions during the period covered, there were 15 deaths, a mortality of 1.15+ per cent. The deaths from different diseases were as follows: Pernicious malaria (hemoglobinuric), 2 deaths; pernicious malaria (comatose), 2; pernicious malaria (atypical), 1; acute lobar pneumonia, 3; amebic dysentery, 3; chronic nephritis, 2; suppurative cholangitis, 1; undiagnosed, 1.

SYMPTOMS.

Onset.—There is nothing characteristic in the history of the onset in cases that develop hemoglobinuria to distinguish them from ordinary malarial fevers, except that a history of dark, black or bloody urine may be obtained very frequently. The symptoms vary as they may do in any estivo-autumnal infection. Fever was the only constant symptom; vomiting occurred in eleven cases; one chill occurred in four cases, two chills in three, three in one. Eight of the eleven patients who had hemoglobinuria before admission gave a history of having had dark, black or bloody urine; the other three patients were not questioned. Sweats, headache, backache, constipation and abdominal pain occurred variably.

Course of Illness.—The manifestations of the disease while the patients were under observation varied from those of the mildest infections to those of the severest grade. One patient had no symptoms whatever except slight fever, maximum 101, and retention of urine one day. He neither felt nor looked ill (Case 4). Vomiting occurred in eleven cases; five patients had one chill, one patient had two chills; two patients were irrational; two had involuntary passages of feces and one of urine; dyspnea occurred in both of the fatal cases.

5. In the discussion that followed the paper, nine cases were reported by Herrick; estivo-autumnal parasites were found in six, tertian in one. Curl reported sixteen cases that had occurred at Colon Hospital; estivo-autumnal parasites were found in ten, tertian in three. In the case above, it is true that hemoglobinuria occurred during the tertian-like paroxysms, and the case, together with those reported by Herrick and Curl should throw suspicion on the tertian parasite as a possible producer of hemoglobinuria.

7. The patient came direct from Louisiana.

Special Features.—Fever: Quotidian intermittent fever occurred in two cases; in one of these (Case 4) it was estivo-autumnal in character, the second paroxysm covering 20 hours; in the other the fever was double tertian in character for four days, estivo-autumnal afterward. In Case 2 one estivo-autumnal paroxysm about 40 hours long occurred—the rise and fall, each, occupied about 20 hours. In Cases 10 and 14 there were two estivo-autumnal paroxysms. Fever was estivo-autumnal, irregularly remittent and intermittent in two cases (Cases 3 and 5); in Case 5 there was a posthemoglobinuric fever of ten days' duration, which did not yield to quinin and was not malarial in character; in Case 3 the patient died during the posthemoglobinuric fever two days after the disappearance of blackwater. In Case 11 the fever was estivo-autumnal, irregularly remittent during hemoglobinuria. On the second day after the disappearance of hemoglobinuria, a quotidian remittent posthemoglobinuric fever began and continued obstinately for seventeen days; it was not influenced by quinin, and the Gruber-Widal test for typhoid was negative. In Case 13 there were three mild elevations of temperature; these occurred at irregular intervals, were of short duration and were not characteristic. In five cases (Cases 1, 6, 7, 8, 9) only morning and afternoon temperatures were observed, but the character of the fever was estivo-autumnal so far as can be judged. In Case 6 there was a mild posthemoglobinuric fever that persisted for ten days. In Case 7 the prolonged fever after the hemoglobinuric period, was not of the posthemoglobinuric character and could probably have been controlled by larger doses of quinin. In none of the other cases did the characteristic posthemoglobinuric fever occur.

To sum up, the character of the fever during hemoglobinuria was estivo-autumnal quotidian in one case; tertian quotidian in one case and later estivo-autumnal, irregularly remittent and intermittent; in two cases there were simple estivo-autumnal paroxysms; fever was estivo-autumnal, irregularly remittent and intermittent in two cases; estivo-autumnal, irregularly remittent in one; in one case the elevations of temperature were mild and not characteristic; in five cases the fever was of estivo-autumnal character so far as can be judged, but the curves have no definite character, as temperature records were made only twice daily. Posthemoglobinuric fever of special character occurred in four cases; the elevation of temperature in three cases was higher than during the hemoglobinuric fever. The low grade of fever in six cases was out of proportion to the severity of the illness. In no case did the fever afford information as to the gravity of the attack and the ultimate result.

Vomiting.—At some time during the attack vomiting was a distressing feature in all the cases except two (Cases 4 and 13). It was frequent and copious and seemed to be independent of the taking of food. It was most severe during the exacerbations of fever, and was probably central in origin. The vomitus was sero-mucoid and varied in color from light to very dark green, almost black.

Jaundice.—Jaundice was a constant feature. It varied from a slight discoloration of the scleræ to a rich yellow of scleræ and skin. Jaundice appeared with startling rapidity in Cases 3 and 14, in which hemoglobinuria developed while the patients were under observation. It cleared rapidly after the disappearance of hemoglobinuria in eleven cases, and in a twelfth it had almost disappeared before the patient's death. In two cases no note was made.

Spleen.—The spleen was not palpable in one case; in five it could be felt at or just below the costal margin; in five it reached 3, 5, 5, 8 and 10 cm., respectively, below the costal margin in the mammillary line; in two it reached to the umbilicus and crest of the ilium; in one it was "very large."

Blood.—It has been said that malarial plasmodia were found in only two cases. No other parasite-like bodies were seen. Though actual counts of the leucocytes were not made, there was no appearance in the blood smears of an increase in the number. Anemia was exceedingly rapid in progress in all the cases in which the hemoglobin was examined. The lowest posthemoglobinuric estimation was 17 per cent. in Case 11; the highest, 65 per cent., in Case 14. In the latter case there was practically only one hemoglobinuric paroxysm, yet there was a fall in hemoglobin from 95 to 65 per cent., nearly one-third. In Case 11 the hemoglobin fell from 42 to 28 per cent. in 24 hours, a loss of 18 per cent., or exactly one-third of the quantity first determined; the hemoglobin continued to fall to 17 per cent. In the last five cases, in which the hemoglobin was followed closely, the smallest quantities lost after the second morning in the hospital were 20 per cent. in Case 10 and 21 per cent. in Case 13. Still more remarkable is the rapidity with which hemoglobin is regained; in Case 11 it rose from 17 to 60 per cent. in 17 days; in Case 10, from 31 to 48 per cent. in 18 days; in Case 5, from 24 to 55 per cent. in 11 days. It is interesting to note that the fall of hemoglobin does not cease with the disappearance of hemoglobin from the urine. In Case 11 hemoglobinuria ceased at 10 p. m. April 20; on the morning of April 21 the hemoglobin estimation was 28 per cent.; during the next 24 hours there was a decrease of 6 per cent. In Case 12 there was a decrease of 5 per cent. during two days following the cessation of hemoglobinuria. In Case 14 hemoglobinuria had almost ceased on the morning of June 5, when the hemoglobin estimation was 86 per cent., but on June 9 there was shown a further decrease to 65 per cent., the quantity lost being far too great to be accounted for by the very mild hemoglobinuria on June 5 and 6.

By reference to the counts of the red blood corpuscles in Cases 13 and 14 it may be seen that at first the number of corpuscles decreases more rapidly than the loss of hemoglobin progresses, giving a color index above normal, 1.13 in Case 14. The color index then falls gradually until somewhat below normal eventually, .915 in Case 14, .93 in Case 13, .94 in Case 11. It appears, then, that there is at first a sudden destruction of a large number of red blood corpuscles, that the liberated hemoglobin produces a marked hemoglobinemia, and that the excretion of the hemoglobin produces hemoglobinuria. After hemoglobinuria ceases the hemoglobin percentage continues to decrease (with great rapidity in Case 14). A considerable quantity of this additional loss is probably taken care of by the liver and converted into bile pigments. Indeed, there is evidence of increased liver activity in the constant jaundice and the occasional positive reaction of urine to the test for bile. But it seems possible, also, that a portion is deposited in the body tissues, perhaps in the form of decomposition products, one of which, hemosiderin, is easily demonstrated in the viscera. This may help to explain the almost unparalleled rapidity with which the hemoglobin percentage in the blood increases after convalescence is

established. It seems that there must be present in the tissues of the body a large quantity of iron in a form readily available for use. In Case 11 the increase of hemoglobin was even more rapid than that of red blood corpuscles, the color index rising from .94 on May 5 to 1 on May 22.[8]

The fact that there is a more sudden decrease in red blood corpuscles than in hemoglobin indicates that the primary event is an actual destruction of red blood corpuscles. The corpuscles that remain retain a good color and do not appear to be greatly affected even when anemia is extreme, as in Case 11. In this case, with hemoglobin 17 per cent., there was but slight poikilocytosis, irregularities being chiefly in the size of the corpuscles. Smears stained with Hasting's stain showed comparatively little degeneration and no nucleated red corpuscles were found. In Cases 13 and 14 no poikilocytosis or degenerations were noted.

Urine.—Quantity: The data regarding the quantity of urine voided per 24 hours is meager and unreliable, except in Cases 8, 10, 11, 12 and 14. During most intense hemoglobinuria the output is usually decreased. In Case 8 there was almost total suppression, but in Case 11 the output was 2,100 c.c., 2,400 c.c. and 2,310 c.c. for the first three days; in Case 12 it was 2,160 c.c. for the first 18 hours; in Case 14 it was scanty, the maximum being 1,080 c.c. As improvement begins there is generally a decided increase, often in excess of normal. Retention occurred in three cases.

Color: During intense hemoglobinuria the urine in bulk by reflected light appears to be actually black. However, when viewed in a conical glass by reflected light it is of a Burgundy red or port color. Varying with the intensity of hemoglobinuria, the color ranges between a pale red and deep port. As hemoglobinuria decreases the supernatant urine may become perfectly normal in appearance, while the sediment yields the test for hemoglobin (Case 10). In two cases the urine had a greenish tinge with yellow foam; the reaction for bile was positive.

Sediment: The sediment at first is usually very heavy, and in color it is grayish brown, brown or brownish red. Macroscopically, it has a granular appearance and occasionally it is mixed with a mucoid material. Microscopically, it consists of an amorphous brown granular detritus, hyaline and granular casts and casts covered with the brown granular substance, a few leucocytes and epithelial cells. In the nine cases examined (repeated examinations were made in the last five cases) no red blood corpuscles were found.

Hemin Crystals: These were obtained by the sodium chlorid and glacial acetic acid method in all ten cases in which the test was made. During intense hemoglobinuria the crystals can be derived easily from the supernatant urine, but the supernatant urine usually fails to give a positive test before hemoglobin has disappeared from the sediment (Cases 10, 11, 14). In two other cases (Cases 12 and 13) the reaction was obtained from the urine when no sediment was present after standing. The test for hemoglobin can be obtained readily from the albumin coagulated by heat. The hemoglobin in solution is precipitated with other albumin, giving a brown color to the coagulum. The supernatant urine is left clear.

Albuminuria: In every case albuminuria was an important feature. The lowest maximum albumin was 15 per cent. (Case 7); the highest, 95 per cent. (Case 5). In the latter case the urine when boiled became almost solid. Albuminuria was greatest when hemoglobinuria appeared to be most intense, and it ran a course almost parallel with hemoglobinuria, but always persisted for a variable time after the disappearance of the latter. I have obtained a positive test for hemoglobin in only one case (Case 10) when the albumin was under 11 per cent. (Case 13). In Case 10 the sediment yielded the reaction when albumin was 6 per cent. Albuminuria does not appear to give warning of the onset of hemoglobinuria. In the cases of hemoglobinuria that developed in the hospital, no albumin was present in the urine on previous examinations. Further, there have been five white patients, with uncomplicated malarial fevers, whose urine showed albumin between 10 and 25 per cent., gave no evidence of hemoglobinuria macroscopically, and yielded no hemin crystals. Numerous similar instances have occurred among the negro patients. In only one instance (Case 13) was I able to obtain a very early specimen in a hemoglobinuric paroxysm. This urine was of a curious pale red color, clear, no sediment, albumin 11 per cent., test for hemoglobin positive. Three hours later the color was dark port, heavy sediment, albumin 46 per cent. The two conditions occur synchronously and suddenly and appear to be of common origin.

DIAGNOSIS.

In the more pronounced cases, practically an absolute diagnosis can be made from a macroscopic examination of the urine combined with the test for albumin. A characteristic picture is given by the black appearance of the urine in bulk by reflected light, its deep red color by transmitted light, the heavy brownish sediment, and a high percentage of albumin. In the less definite cases (Case 7) a positive diagnosis can be made only by a test for hemoglobin; for in ordinary malarial fevers the urine is frequently colored so deeply that the presence or absence of hemoglobin can not be determined otherwise. Albuminuria is a valuable aid, though it is not a certain one. As stated above, from 10 to 25 per cent. of albumin occurred in five white patients whose urine gave a negative reaction for hemoglobin. In all of these, albuminuria cleared entirely with the disappearance of fever. The sediment, also, is an inconstant feature. It has been said that a positive reaction for hemoglobin was twice obtained from urine when no sediment was present. As a rule, however, when a test for hemoglobin is not feasible, I believe that a fairly safe diagnosis can be made from a highly colored urine with a brownish sediment and albumin 20 per cent. or more.

PROGNOSIS.

A correct prognosis in individual cases is very difficult. Neither the blood nor urine examinations were of aid in forecasting the result. The patient who seemed most ill, whose urine showed the most intense hemoglobinuria, apparently, and the highest percentage of albumin, 95 per cent., and whose life was despaired of during three days, made a good recovery (Case 5). Likewise, the pa-

8. The hemoglobin estimations, except the one made with Dare's hemoglobinometer and the first one in Case 5 were all made by me with the same instrument; likewise the red blood counts. I have been unable to standardize my Sahli's hemometer, but in a number of ordinary malarial cases, in several cases of anemia from uncinariasis and in one healthy person I have tested the color index. This was low in the anemia of uncinariasis. In 3 malarial convalescents it ran as follows: (1) hemoglobin 100, color index .975; (2) hemoglobin 90, color index .868; (3) hemoglobin 84, color index .974. In a healthy person the results were: Hemoglobin 98, color index 1.007. In a large number of simple hemoglobin estimations, the instrument has given, apparently, very accurate results.

tient recovered whose hemoglobin reached the lowest mark, 17 per cent. (Case 11). It has been shown above that the character of the fever bears no relation to the gravity of the illness.

Mortality.—The mortality in the series was 14.3 per cent.[9]

TREATMENT.

Quinin.—The treatment that was pursued can be summed up practically in one word—quinin. In every case the drug was administered by intramuscular injections, and in every case, including the fatal ones, hemoglobinuria or blackwater disappeared with greater or less rapidity, and recurred only in the cases that received the smaller quantities. Albuminuria, also, rapidly decreased. Morphin was used freely with quinin to allay restlessness and vomiting and to lessen cinchonization.

Dose and Administration: Two methods of treatment were used. The first five patients were given 10 or 15 grains of quinin intramuscularly every four or six hours for varying lengths of time, usually covering 48 hours, and then 5 grains by mouth every four hours, except in Case 5. The next eight patients received 10 grains intramuscularly at 8 and 10 a. m. daily as long as indicated by vomiting or by the general condition of the patient, and then 30 grains by mouth given in broken doses before 12, noon, daily. The last patient (Case 14) received 20 grains intramuscularly on the evening hemoglobinuria developed, 20 grains intramuscularly the following morning and again in the afternoon, and 30 grains intramuscularly the third morning. The number of cases is too small to allow conclusions to be drawn from the mortality. There was one death in each group of cases. Theoretically, if quinin as an etiologic factor has been excluded, the first method should be of greater value. The cases in which recovery took place under it (except Case 5) ran a milder course and appeared to lose less hemoglobin than those treated by the second method. In none of this group did hemoglobinuria or blackwater recur after its first disappearance. In the second group hemoglobinuria recurred in four cases (Cases 10, 12, 13, 14). In Cases 10 and 13 there were three recurrences. Further, a case of algid pernicious malaria was admitted to the ward at 9 a. m. A moderate number of estivo-autumnal parasites were present in the peripheral blood. He received 10 grains of quinin intramuscularly at 10 a. m. and 12, noon, and the same dose at 8 and 10 a. m. on the following day. On the morning of the third day I was able still to find parasites in the peripheral blood. If hemoglobinuria is caused by the estivo-autumnal parasite, it seems certain that the small doses are not sufficient to destroy the organisms in a minimum length of time, every hour of which may count in the saving of so much blood for the patient.

I think that the best results will be obtained by administering 10 grains of quinin intramuscularly every four hours during the first 48 hours, or 15 grains may be well substituted for the first three or four injections. By this means a strong solution of quinin in the blood can be maintained during the cycle of development of the estivo-autumnal parasite, and all parasites will be subjected to its influence at some time during the cycle when they are most susceptible to the action of quinin. After 48 hours the dose may be reduced and given by mouth if vomiting does not forbid.

Preparations Used.—Two different preparations of quinin were used for intramuscular injections, the bihydrochlorid and the bimuriate with urea. Extensive necrosis and suppuration in two cases followed the use of the former preparation, while only a few superficial necroses occurred after the latter. In Case 7 and in the last five cases the two preparations were alternated, and with one exception (Case 12) the bihydrochlorid proved less irritating. The solution of bihydrochlorid used in the two cases of extensive necrosis (Cases 4 and 5) did not contain an excess of hydrochloric acid[10] and there was a precipitate in the bottle. The addition of a small amount of sodium bicarbonate to a portion of the solution caused a heavy precipitation. It is probable, then, that the alkalinity of the tissues caused a partial precipitation of quinin at the sites of the injections and that necrosis of the tissues and infection followed. Later solutions contained an excess of acid, and the results from these solutions have been definitely superior to the results from solutions of the bimuriate and urea. The strength of the latter solutions was 1 to 12; the strength of the solutions of bihydrochlorid from which the best results were obtained was 1 to 3. The bihydrochlorid, then, has the additional advantage of being much more easily administered.

GENERAL SUMMARY.

1. A febrile affection resembling the estivo-autumnal type of malarial fever was the only etiologic factor discoverable. Previous attacks of malarial fever appeared to furnish a favorable ground. Quinin was not an etiologic factor, either predisposing or exciting. Evidence appears to favor the view that the estivo-autumnal parasite, and not a special organism, is the exciting cause.

2. The symptoms and signs of the disease may be very mild and the gravity of the illness indicated only by the urine examination. A history of dark, black or bloody urine can be obtained almost invariably.

3. The degree of fever bears no relation to the intensity of hemoglobinuria and albuminuria. A post-hemoglobinuric fever of peculiar character occurred in four cases; it does not yield to quinin.

4. Blood examinations show that the primary event is destruction of the red blood corpuscles, with hemoglobinemia and subsequent hemoglobinuria. Anemia is very rapid, and the rapidity of recovery is phenomenal.

5. In well-defined cases practically an absolute diagnosis can be made from a macroscopic examination of the urine combined with the test for albumin. In borderline cases a test for hemoglobin is necessary for absolute diagnosis, but a probable diagnosis can be made from a deeply colored urine with a brownish sediment and albumin 20 per cent. or more.

6. The mortality was 14.3 per cent. in the series.

7. A correct prognosis in individual cases is difficult.

8. Intramuscular injections of quinin appear to act specifically. The best method is thought to be the injection of 10 grains every four hours during the first 48 hours (15 grains may be substituted for the first three or four doses) and then smaller doses by mouth may be given if vomiting does not forbid. Quinin bihydrochlorid in an excess of acid is more suitable than quinin bimuriate with urea for intramuscular injection.

---

9. In Herrick's nine cases there was one death. Eight of these were treated with quinin, and all recovered; one was treated without quinin and terminated fatally. These cases occurred at Ancon Hospitals. Adding the eight cases treated with quinin to my fourteen cases, the mortality was only 9.1— per cent.

10. The solutions of the bihydrochlorid were prepared from the hydrochlorid by the addition of pure hydrochloric acid to slight excess of solution. The very soluble acid hydrochlorid or bihydrochlorid was thus formed. Sodium chlorid was added to make a normal salt solution. Very slight and often no irritation followed the intramascular injections.

FIBROID TUMORS OF THE UTERUS.

A STUDY OF THE DEGENERATIONS AND COMPLICATIONS IN TWENTY-TWO HUNDRED AND SEVENTY-FOUR CASES.

CHARLES P. NOBLE, M.D.
Surgeon-in-Chief, Kensington Hospital for Women; Gynecologist to the Stetson Hospital.
PHILADELPHIA.

(*Continued from page 1886.*)

SARCOMA AS A COMPLICATION OF FIBROMYOMATA UTERI.

Sarcoma of the uterus was present in 34 of the 2,274 women, or 1.4 per cent. In the 337 cases operated on by me, there were 2 cases of sarcoma, and in the last 100 operations there was no case of sarcoma.

It is known by pathologists that a fibroid tumor may undergo a sarcomatous degeneration, that is, that the fibroid tumor itself may be converted into a sarcoma. On the other hand, certain clinicians believe that many cases in which this degeneration is supposed to have occurred were really sarcomata from the beginning.

Winter[7] reports two series of cases with reference to the relation of fibroid tumors to sarcoma. The first consists of 500 cases in which only the suspicious points were examined microscopically. In this series sarcoma was found in 3.2 per cent.; in the second series, consisting of 253 cases, where sections were taken systematically from different areas, sarcoma was found in 4.3 per cent. The average for the entire series is 3.6 per cent. His own cases added to those of Fehling and Hofmeier make 1,743 cases in which sarcoma was found 46 times, or 2.7 per cent. Winter believes that if myomata were examined systematically, sarcoma would be found in about 4 per cent. of all cases.

Cullen[13] insists on the necessity for an immediate examination of the uterine mucosa of all myomatous nodules after hysteromyomectomy in order to exclude the presence of sarcoma as well as of carcinoma. In my own series of 337 cases, there were only 2 cases of sarcoma. Combining the 2,274 consecutive cases with 1,743 from Winter's paper furnishes a total of 4,017 cases in which sarcoma was present 81 times, or 2 per cent. This experience should be taken in connection with the experience of Winter, who shows that when sarcoma was diligently searched for by examining all tumors contained in a uterus, it was found in 4.3 per cent., whereas, when looked for in the customary way by examining only one tumor and that the one which was under suspicion, it was found in 3.2 per cent.

THROMBOSIS, EMBOLISM AND PHLEBITIS, AS COMPLICATIONS OF FIBROMYOMATA UTERI.

Thrombosis, embolism and phlebitis are three complications which are encountered more frequently in connection with fibroid tumors than with any other known condition. All three are much more common after operation for fibroid tumors than in the natural history of the disease.

I observed a striking case of phlebitis occurring with a fibroid tumor before operation in the practice of Dr. Isaac Leopold. The patient was suddenly seized with a severe peritonitis. After the subsidence of the peritonitis, a phlebitis of the veins in the left side of the neck extending below the clavicle and into the axilla appeared. Operation was postponed until the evidence of phlebitis had disappeared. At the operation the cause of the peritonitis was found to be a pedunculated fibroid tumor which had undergone torsion of its pedicle. The patient progressed well after the operation until the third week, when she developed symptoms of embolism in the floor of the fourth ventricle and died two days later, the muscles of deglutition being paralyzed. I have seen at least one other case of phlebitis secondary to inflammatory changes in a fibroid tumor without operation.

Baldy[16] states that of 19 patients who died suddenly after operations in his hands, 13 were in cases of fibroid tumor, whereas the cases of fibroid tumor numbered but 366 out of a total of 3,413 patients. The sudden deaths were tabulated as cardiac 13, pulmonary 4, cerebral apoplexy 2. He holds that fibromyoma of the uterus is not a local disease, but that the process is practically a general one, in that it involves other organs, how many and to what extent and how early is unknown. He believes in the prompt removal of fibroids to avoid these general complications.

Schenck[17] states that postoperative thrombosis of the veins on the lower extremities occurred 48 times in a series of 7,130 women operated on in the gynecologic department of the Johns Hopkins Hospital. The operations in the affected cases were as follows:

Perineorrhaphy	4
Hysteromyomectomy and myomectomy	19
(Of the 7,130 women, 727 had fibroid tumors.)	
Ovariotomy	9
Hysterectomy for carcinoma	5
Suspensio uteri	3
Suspensio uteri and perineorrhaphy	4
Hysterectomy for pelvic inflammatory disease	1
Miscellaneous	3

This report of Schenck's is quite in accord with that of Baldy and with my own experience. The causes of thrombosis, embolism and phlebitis are by no means definitely known. There is no doubt that infection is the cause of thrombophlebitis in a definite proportion of cases, but the fact that thrombosis and phlebitis occurred 19 times in fibroid tumors and only once in pelvic inflammatory diseases is sufficient evidence that there are other factors than infection in the production of these allied conditions. Anemia, increase in the number of white blood cells and blood plaques and changes in the relation of the chemical constituents of the blood, slowing of the blood stream, abnormalities in the walls of the veins and traumatism, are all factors. The ultimate solution of this problem must be worked out on the lines of general pathology rather than by looking for a local cause. It is evident, however, that fibroid tumors in their development bring about such changes in the blood and circulation as to favor the development of thrombosis, embolism and phlebitis, and this fact constitutes one of the indications for the early removal of fibroid tumors.

FIBRO-CYSTS OF THE UTERUS AS A COMPLICATION OF FIBROMYOMATA UTERI.

In the total series of cases there were 58 fibro-cysts of the uterus, or 2.5 per cent. It is well recognized that the larger fibro-cysts rapidly increase in size and fluid contents, and cause a fatal termination in a manner similar to that caused by ovarian cysts. The natural history of the smaller cysts is not so definitely known, but there is every reason to believe that when cystic degeneration once occurs the fluid content increases and the small fibro-cyst becomes a large one. There is no

16. Baldy: "The Mortality in Operations on Fibroid Tumors of the Uterus," Amer. Jour. Obstet., 1905, vol. lii, No. 3, p. 370.
17. Schenck: "A Résumé of Forty-eight Cases of Post-operative Thrombosis," N. Y. Med. Jour., Sept. 6, 1902, p. 401.

doubt also that in a definite percentage of cases myxomatous degeneration ends in cystic degeneration. In another group of cases the termination is in necrosis, which is also true of edema of fibroids.

Bland-Sutton[18] holds that myxomatous degeneration of a fibroid tumor, so described, is not so in fact, but that it is a primary condition which seems to bridge the interval between true fibromyomata and sarcoma of the uterus. He appears to be alone in ascribing so serious a nature to myxomatous degeneration.

Winter[7] reports that Hofmeier in 255 fibroid tumors removed by operation found 8 fibro-cysts, or 3.2 per cent. Cullingworth found 5 fibro-cysts in 100 operations, or 5 per cent. If myxomatous degeneration, edema and hyaline degeneration were classed with the cystic degeneration, in which these morbid conditions frequently result, the percentage would naturally be far greater.

ANEMIA AS A COMPLICATION OF FIBROMYOMATA UTERI.

Having considered the more important degenerations and complications arising in the uterus and tumor itself in which it is feasible to draw fairly definite deductions as to the mortality which would ensue without operation, we will now consider a number of the associated conditions the result of fibroid tumors which cause invalidism, as a rule, and death in a variable percentage of cases.

Hemorrhage resulting in anemia is one of the most common results of fibroid tumors. According to Winter,[19] it occurs in about two-thirds of the cases of myoma, most frequently in cases of submucous fibroids. My own experience would not indicate so large a percentage, but in cases of submucous fibroids it is always present and is often very profuse, leading to profound anemia. I have reported two cases of this type. In one the hemoglobin was reduced to 10 per cent., the erythrocytes to 2,325,000. This patient was curetted to control the bleeding, and later had a hysterectomy and made a good recovery. In the other, the hemoglobin was reduced to 15 per cent. and the erythrocytes were reduced to 1,016,000. In this case also the patient made a good recovery.

Grave anemia is a serious condition which produces profound invalidism while it lasts, and sometimes it is fatal or impossible to cure. A fatal result due to hemorrhage is rare. Pellanda,[20] in a study of 171 cases of death from fibromyomata without operation, states that 6.4 per cent. of fatal cases are due to hemorrhage. The more usual result of grave anemia is that finally the patients are operated on and their unfavorable condition tends to swell the mortality of operation.

The relation of anemia due to hemorrhage from fibroid tumors to degeneration of the heart and secondarily to degeneration of the kidneys is well recognized. These secondary results of fibroid tumors lead to a fatal termination in a definite percentage of cases without operation, and the same conditions with the changes in the circulation due to pressure of the tumor constitute the chief underlying causes of thrombosis and embolism following operation, which would be avoided by the early removal of the tumors.

18. Bland-Sutton: "Essays on Hysterectomy," London, 1904, p. 7.
19. Winter: "Die Wissenschaftliche Begründung der Indikationen zur Myomoperation," Ztschr. f. Geburts. u. Gynäk., 1905, vol. lv, p. 59.
20. Pellanda: "La Mort par Fibromyomes utérins," Paris, 1905.

INJURIOUS PRESSURE BY FIBROID TUMORS ON THE URINARY ORGANS.

Symptoms referable to the bladder are very common in the life history of fibroid tumors. In a considerable number of women on whom I have operated for fibroid tumor, the cause of their seeking advice was that they were unable to void urine. In some of them this was the only symptom complained of. In other cases, through disturbances of the circulation and through infection, very marked bladder symptoms may be present, and cystitis may occur. In my experience this has been especially true of fibroids which had undergone calcification. In some cases the pressure has been on the ureter rather than on the bladder. As is well known, irritation in the lower end of the ureter causes an intense desire to urinate. In one case coming under my observation an old lady of 67 years, after a life of invalidism extending over 32 years, was driven to operation because of the torments she suffered from inability to hold urine more than a few minutes. A calcareous fibroid had made such pressure on the right ureter as to cause destruction of the right kidney; and thus the fibroid caused her death at 67, after enduring her invalidism from the age of 35, in the vain hope of a cure through atrophy following the menopause.

Knox[21] reports 25 cases of ureteral obstruction by means of fibroid tumors of the uterus. Ten of these occurred in Kelly's clinic at the Johns Hopkins Hospital and 15 were collected from other sources. He concludes that some compression of the ureters is produced by a large proportion of all large fibroid tumors. This is a question which has received relatively little study, because, as a rule, none of the cases except those found at autopsy has been diagnosticated. There is no doubt, however, that degenerative changes in the kidneys are caused by pressure on the ureters as well as by cardiovascular degeneration.

RENAL COMPLICATIONS OF FIBROMYOMATA.

Renal complications in the form of dilatation of the ureters from pressure and nephritis are more common than is usually believed. In 30 per cent. of Webster's* cases there was noted one or more of the following indications of renal involvement: Deficient amount of urine or urea, albumin, casts and edema of the feet. Webster believes that the factors concerned in the production of these renal disturbances are probably identical with those causing the cardiac changes in connection with myomata of the uterus.

Dilatation of the ureters and hydronephrosis was mentioned four times in the series of 2,274 cases. Any other cases occurring in this series were not observed at operation or at autopsy. The literature, however, contains numerous references to this condition found at autopsy.

Pellanda[20] states that in the natural history of the disease death from compression of the abdominal and pelvic viscera occurs in 25.8 per cent. of the fatal cases. Of 44 fatal cases from this cause, the intestine was involved in 20, the ureter in 13, and in 11 the uterus, vagina, bladder or abdominal wall was perforated.

21. Knox: "Compression of the Ureters by Myomata Uteri," Amer. Jour. Obstet., September and October, 1900, vol. xlii, pp. 364 and 496.

* Webster: "A Consideration of Fibroid Tumors of the Uterus, Based on a study of a Series of 210 Cases Treated Surgically," Amer. Medicine, 1905, March 11, p. 401.

CARDIOVASCULAR CHANGES DUE TO FIBROMYOMATA.

The relation of fibroid tumors to degenerative changes in the myocardium and in the blood vessels is a problem which as yet is not definitely settled. The occurrence of brown atrophy and of fatty degeneration of the heart, of fibroid changes in the arterioles, of secondary degenerations in the kidneys, and of changes in the circulation, blood vessels and blood, leading to thrombosis and embolism, have all been ascribed to the influence of fibroid tumors on the economy. The evidence is satisfactory that all of these secondary changes do occur, but the percentage and mode of their occurrence is not definitely known.

Hofmeier,[22] Fenwick,[23] Strassman and Lehmann,[24] all have discussed this question *in extenso*.

Boldt,[25] in a study of this subject, covering 79 cases of fibromyomata, states that in 37 patients, or nearly 47 per cent., some circulatory disturbance was noted. In many of the patients the symptoms might have been functional in their nature. One patient died of angina pectoris. Five of the patients died after operation. Death in three of the five patients was clearly due to cardiovascular degeneration.

Pellanda[20] states that death in the natural course of fibromyomata occurred from thrombosis of the pelvic venous sinuses and pulmonary embolism, cardiac lesions and sudden syncope, in 11.1 per cent. of the cases.

From my own experience I do not believe that cardiovascular degeneration plays a very important rôle in producing fatal results in fibromyomata of the uterus either in the natural history of the disease or after operation except in neglected and late cases. The changes are secondary, as a rule, to anemia from hemorrhage or to malnutrition superinduced either by hemorrhage or by disturbance of digestion from the pressure of the tumors.

Interference with the circulation by pressure of the tumors also plays its rôle in the production of thrombosis, phlebitis and embolism. If patients were operated on early, or if when referred for operation late they were well prepared before operation, the mortality from cardiovascular changes would be much diminished. There is no doubt that the occurrence of thrombosis, phlebitis and embolism is favored by the anemia and cardiovascular degenerations resulting from fibroid tumors, and thus add to the morbidity of operations for fibroid tumors.

Fortunately, only a small percentage of cases of thrombosis or of phlebitis end fatally either by embolism or by septicemia.

Winter[26] has studied a series of 266 cases of fibroid tumors from the standpoint of the relation of these growths to heart lesions. He did not trust to his own examination, but sent each of the patients to a skilled physician for examination. A summary of the results follows:

1. Heart entirely normal; clear tones, normal outline. 163 cases. 60 per cent.

2. Murmurs (78) and impure tones (3) were observed, 81 cases, 30 per cent.

The significance of the murmurs were ascribed to:

Anemia	52
Apparent anemia	16
Arteriosclerosis	6
Neurasthenia	2
Adipositas cordis	2

3. Dilatation and hypertrophy (cases due to valvular disease and myocardial alterations excluded), 16 cases, 6 per cent.

Fourteen cases of dilatation; majority due to anemia; some could be accounted for by nephritis, arteriosclerosis, emphysema.

4. Cardiac insufficiency, 3 cases, 1 per cent.

Mitral regurgitation	1
Mitral stenosis	2

5. Myocardial disease, 3 cases, 1 per cent.

This contribution of Winter is especially important as showing the percentage of cases having cardiac changes secondary to fibroids, presumably in the group of patients capable of walking to a physician's office.

THE INFLUENCE OF THE MENOPAUSE ON DANGERS ARISING FROM FIBROID TUMORS.

The classical position was that if a woman would but endure the sufferings entailed on her until the menopause the tumor would undergo atrophy and disappear, the woman thus making a spontaneous recovery. At this time it is scarcely necessary to say more than that this teaching had but a small basis in fact. It is true that some fibroid tumors undergo atrophy after the menopause and become smaller, but I am not personally familiar with a single authentic case in which a fibroid tumor has entirely disappeared after the menopause. Those mentioned in the literature which I have investigated have belonged to this category; that is, the statement is that they have become very much smaller or that the reporter has been told by somebody else that they have disappeared. On the contrary, it is very well known that the dangers arising from fibroid tumors are much greater at and after the period of the menopause than in women under 40. This fact has been especially emphasized, among others, by Bland-Sutton.[17] The point has not yet been worked out definitely and, therefore, should particularly engage the attention of gynecologists at this time, but from my own experience I am inclined to believe that cancer of the body of the uterus is as apt to occur in connection with the small, partly atrophied tumors found after the menopause as in tumors of large size. It is also well recognized that instead of undergoing atrophy at the time of the menopause a considerable proportion of fibroid tumors grow very much more rapidly after than before that period. Necrosis, cancer, sarcoma and cystic degenerations are all more common after 40 than before it. The tumors which become calcareous later in life produce injurious pressure symptoms upon the urinary organs and bowels. Calcareous tumors are especially liable to undergo necrosis from defective blood supply. The cardiovascular degenerations arising from fibroid tumors are also much more common after 40 than before it.

In 187 women whom I have operated on for fibroid tumors,[3] the following were the ages classified in decennial periods:

Under 20	1
Between 20 and 30	6
Between 30 and 40	77
Between 40 and 50	76
Between 50 and 60	20
Between 60 and 70	7

In the last 100 women operated on for fibroid tumors by abdominal hysterectomy, the ages were as follows:

20 to 30	2
30 to 40	36
40 to 50	45
50 to 60	14
60 to 70	7

22. Hofmeier: "Zur Lehre vom Shock (Ueber Erkrankungen der Circulations-Organe bei Unterleibsgeschwülsten)," Ztschr. f. Geburt., u. Gynäk., 1885, vol. xi, p. 366.

23. Fenwick: "Cardiac Degeneration from the Pressure of Abdominal Tumors," The Lancet, May 26, 1888, p. 1015.

24. Strassman and Lehmann: "Zur Pathologie der Myomerkrankung," Archiv. f. Gynäk., 1898, vol. lvi, No. 5, p. 503.

25. Boldt: "Uterine Fibromyomata and Visceral Disease," N. Y. Med. Jour., Oct. 28, 1905, p. 887.

26. Winter: "Die Wissenschaftliche Begründung der Indikationen zur Myomoperation," Ztschr. f. Geburts. u Gynäk., 1905, vol. lv, p. 109.

Thus, in 287 women who were driven to operation because of fibroid tumors, 44, or 15 per cent., were upward of 50 years of age. When it is considered that most fibroid tumors are removed before women reach the age of 45, it is striking evidence of the fact that they are prone to produce grave disorders in women who have passed the menopause.

As illustrative cases I might refer to the one already reported, in which a woman of 67 was driven to operation from intolerable bladder symptoms after enduring invalidism and semi-invalidism from the age of 35.

I have also reported the case of a physician's wife who had suffered from the age of 35 to 53 from uterine hemorrhages before the menopause was established. Subsequently her health improved, but she was never a vigorous woman. When about 75 years of age, after a rough drive on a country road, the tumor became necrotic, an abscess developed which ruptured into the bowel, a drainage operation was performed, but the patient died of sepsis.

A striking case was that of Miss M., aged 63, referred to me by the late Dr. Pugh. Her family and personal history presented nothing of a special nature. She passed the menopause at the age of 45 without incident. She had been relatively well until nine months before consulting me, when she had difficulty with the bladder and sometimes incontinence. Subsequently she was troubled with leucorrhea in increasing quantities and with some odor. For some weeks before she came to me the leucorrheal discharge was stained with blood. On examination a virginal and senile vagina was found,[27] the cervix was small and normal, and the uterine body was much enlarged and irregular in shape, suggesting fibroid tumor. A clinical diagnosis of degenerating tumor or a fibroid tumor complicated by an adenocarcinoma of the body was made. A hysterectomy was advised; curettage was performed as a preliminary for diagnostic purposes, and no evidence of cancer was found; hence a diagnosis of degeneration of a fibroid was made. Supravaginal hysterectomy was performed, and the uterus was cut open by an assistant, when the endometrium was found smooth and apparently uninvaded by any growth. Later the pathologist reported a squamous epithelioma of the fibroid, and after further study made the diagnosis indicated by the title of the paper in which the case was first reported. In other words, a fibroid tumor quiescent in the uterus for years was the final cause of the development of cancer at the age of 63. The operation was performed Feb. 18, 1903, and, although the cervix was left in, there has been no recurrence.

Another instructive case is that of Mrs. H., aged 49, who consulted me in 1891, complaining of neuralgic pains and the nervous symptoms of the menopause, which had existed for six months. Her menstruation was not excessive, although it came every three weeks. She was very pale and in poor health. On examination a large nodular fibroid tumor was found filling the pelvis and extending half way to the umbilicus. At that time I advised expectant treatment and put her on tonics, and gradually her nutrition improved. In 1902 she consulted me to thank me for the advice I had given her in 1891 and to say that the statement I had made at that time, that the tumor would become smaller, was true, because from her standpoint it had disappeared. She refused examination. She consulted me again May 23, 1904, and on examination I found a tumor pretty well filling the pelvis. She had lost thirty-seven pounds in the preceding seven months, was suffering from nausea, vomiting and partial obstruction of the bowels. There was every reason to believe that she had a cancer of the uterus, with secondary involvement of the intestines. She died later in the summer.

27. Noble: "Report of a Case of the Invasion of a Fibromyoma of the Uterus by an Adenocarcinoma, which by Metaplasia Had Assumed the Appearance of a Squamous Cell Carcinoma," Amer. Jour. Obstet., 1904, vol. xlix, No. 3, p. 306.

SPONTANEOUS DISAPPEARANCE OF FIBROID TUMORS AFTER PREGNANCY.

There is much more evidence of the spontaneous disappearance of fibroid tumors in a small percentage of cases after pregnancy than is true of their disappearance after the menopause. Thus, Doran[28] reports 13 cases of the spontaneous disappearance of fibroid tumors associated with pregnancy. In 11 it is stated that the fibroids entirely disappeared, and that in 2 they partly disappeared. Doran says that, although many of the cases reported may have been based on an error in diagnosis, nevertheless so many cases have been recorded by experienced authorities that there can be no doubt that fibroid tumors of the uterus of considerable size sometimes disappear spontaneously before the menopause. In a study of the subject in 1904, Doran[29] expresses himself even more skeptically concerning the spontaneous disappearance of fibroids. He refers repeatedly to errors of diagnosis and to the possibility of mistaking inflammatory masses for fibroids. He admits the possibility of the disappearance of fibroids, but says "evidence as to their total or almost complete disappearance before the menopause is very scanty and unsatisfactory."

Olshausen[30] states that myomata, as a rule, undergo considerable diminution in size after the puerperium. In most of the cases they do not become any smaller than they were before pregnancy; in others, the shrinkage goes further. The entire disappearance of fibroids during the puerperium has been reported by so many trustworthy authorities that it can no longer be doubted.

I have never observed the entire disappearance of a fibroid tumor, either after pregnancy or the menopause, nor has any case been reported to me as having been observed by any of my acquaintances. Therefore, while it is probable that fibroid tumors have disappeared spontaneously both after pregnancy and after the menopause, such a termination is one of the rare exceptions in the history of these growths and is never to be anticipated in any particular case.

RECENT LITERATURE OF FIBROID TUMORS OF THE UTERUS.

For the purpose of this paper, based, as it is, on the exact study of a consecutive series of cases, much of the recent literature, in itself valuable, could not be employed; hence, in this connection, I shall refer to a few of the papers which have especially impressed me among the many consulted in the hope of finding consecutive series of cases to add to the present table of 2,274 cases.

Gordon,[31] of Maine, in 1893, was one of the first to advocate the early removal of fibroids in cases which produced symptoms, and to make the claim that a very large percentage of fibroids do produce symptoms. In

28. Doran: "The Absorption of Fibroid Tumors of the Uterus," Trans. Obstet. Soc. of London, 1893, vol. xxxv, p. 250.

29. Doran: "The Disappearance or Absorption of Fibroids Before the Menopause," Jour. Obstet. and Gyn. British Empire, Aug., 1904, vol. vi, p. 141.

30. Olshausen: "Myom und Schwangerschaft," Veit's Handbuch der Gynäkologie, 1897, vol. ii, p. 767.

31. Gordon: "Dangers and Complications of Uterine Fibroids," Trans. Amer. Gyn. Soc., 1893, p. 91.

1895 he[32] again emphasized this belief, and in various discussions which have taken place since that date he has always maintained the correctness of the teaching that almost all fibroid tumors should be removed, certainly all fibroids which were causing symptoms when the patient consulted the physician, and has repeatedly pointed out that women do not consult a physician unless fibroid tumors are producing symptoms. In his first paper, he calls especial attention to the degenerations and complications which are present in a large percentage of fibroid tumors.

Richardson,[33] of Boston, in a suggestive paper, states that whenever we postpone operation on uterine fibroids, no matter how benign these tumors may seem, we are running a risk beside which the dangers of an operation are but trivial. Richardson believes that the risks of operation in skilful hands is less than the risk of overlooking carcinoma and sarcoma under the mistaken diagnosis of an uncomplicated fibroid.

Lewis[34] says that there is an etiologic relation between adenocarcinoma of the corpus uteri and fibroma seems probable, although the exact relationship can not be stated. "I would like to make it a working rule that every fibroid of the uterus should be operated on as soon as the diagnosis is made, except small ones whose only symptoms are slight discomfort due to their mechanical presence in the pelvis. These should be excepted only when the patient can be under proper surveillance and is willing to undergo examination at intervals of a few months and to report at once on the occurrence of noticeable symptoms of any kind." Lewis' conclusions are based largely on a study of the literature.

Eastman,[35] in a study of the literature and more particularly a study of his own experience, embracing 169 cases, reports 5 cases which illustrate the impracticability and often the impossibility of making a diagnosis of certain conditions existing in fibroid tumors prior to their removal; also 2 cases in which women were not operated on when first examined, as they presented no special symptoms at the time. Both of these patients died later without operation, as when seen again they were in such condition that operation was impracticable. The first patient had a fibroid tumor extending to the umbilicus, with few symptoms. The woman refused operation because the tumor was giving no trouble. A year later she presented herself, being eager for operation, but in the meantime she had developed a fatty degeneration of the heart and operation was impracticable, and six weeks later she died. The second patient presented herself not because of suffering, but because, having a large abdomen, her neighbors questioned her chastity. She preferred to wait until cool weather before being operated on. Soon after she was seized with a chill, high temperature, etc., and died. Autopsy showed necrosis. The third patient had some hemorrhagic symptoms and a tumor about the size of a cocoanut. It was not considered a complicated case. On operation and examination necrobiosis was found. The fourth case was a woman with a large tumor, suffering from hemorrhage and pressure symptoms, but able to support herself and a large family as a washerwoman. A diagnosis of uncomplicated fibroid tumor was made. After the removal of the tumor by operation, microscopic studies showed sarcomatous degeneration. The fifth patient had a tumor which she believed was giving her no trouble, although her general health was failing. After operation a microscopic study showed adenocarcinoma of the corpus uteri. His 7 cases all present one common characteristic—the lack of any symptom which would indicate a pathologic lesion other than the tumor itself. They all belong to the class in which the expectant treatment is advised by those who consistently hold to the classical position; occurring in a short series of cases, they offer strong evidence of the unwisdom of this position. Eastman concludes by saying: "I am convinced that all fibromyomata should be removed unless there should be concurrent conditions which render the operation inadvisable."

Bovée,[36] after discussing the teachings of the recent literature on fibroids, says: "I believe the scientific treatment of fibroid tumors should always be extirpation." Bovée is convinced that there is a causal relation between the presence of a fibroid tumor in the uterus and the development of cancer of the corpus.

Goffe[37] says: "All fibroid tumors, wherever situated and whatever their size and regardless of the age of the patient, except in extreme old age, should be removed forthwith." Goffe is impressed with the evidence that fibroids predispose to the development of cancer of the corpus.

Russell[38] says that cessation of the growth and even the spontaneous disappearance of a fibroid must be admitted as possible, though it is so unusual and so uncertain that it would be foolish to calculate on its occurrence. The day is near when, owing to improved technic ensuring greater safety, the discovery of a myoma by the gynecologist will be the signal for its early removal by one of the approved methods. Russell discusses the various secondary consequences of fibroids, and says that experience has taught him that the disease is far more serious than has been thought in the past.

Bland-Sutton,[39] in a paper suggested by the one read by me before the British Gynecological Society in 1901, which was followed by the papers of Cullingworth and Scharlieb, emphasizes the perils and complications of fibroid tumors after the menopause; necrosis and infection of fibroids after the menopause, and cancer of the body of the uterus. He emphasizes the point that the menopause, far from bringing safety and comfort to women having fibroid tumors, increases the dangers of these growths. He concludes his article as follows: "Certainly there is nothing more ironical than a woman spending twenty or even thirty years of her life as a chronic invalid on account of a uterine fibroid, in the expectation that at the menopause she will be restored to health and begin a new life, and then to realize that far from this dream being fulfilled the fibroid becomes necrotic, extruded and septic, and places her life in the gravest peril! and that she may die in spite of surgical intervention."

Polak[40] reports his experience in operating on 38 women having fibroids. In 12 women he performed

32. Gordon: "Further Experience and Observations in Hysterectomy for Fibroids," Trans. Amer. Gyn. Soc., 1895, p. 30.
33. Richardson: "Uterine Fibroids," Boston Med. and Surg. Jour., 1904, vol. cl, No. 2,p. 39.
34. Lewis: "Malignancy in Uterine Myomata," Amer. Jour. Obstet., New York, Oct., 1905, vol. lii, No. 4, p. 481.
35. Eastman: "Innocent Fibromyomata of the Uterus," The Journal A. M. A., Oct. 21, 1905, p. 1238.
36. Bovée: "The Treatment of Fibroid Tumors of the Uterus," Am. Jour. Obstet., New York, Aug., 1905, p. 203.
37. Goffe: "Fibroid Tumors of the Uterus as a Cause of Cancer," Amer. Jour. Obstet., New York, April, 1905, p. 500.
38. Russell: "Some Cases of Uterine Myoma," Glasgow Med. Jour., vol., lxiii, 1905, p. 241-252.
39. Bland-Sutton: "The Perils and Complications of Fibroids After the Menopause," The Lancet, June 6, 1903, p. 1571.
40. Polak: "Observations on Fibromyomatous Tumors of the Uterus," New York Med. Jour., May 26, 1906, p. 1061.

myomectomy, and in 7 of the 12 it was necessary later to perform a hysterectomy. This experience is so unique as to deserve mention. He says: "There can be no doubt, considering the weight of evidence, that fibromyomata predispose to malignancy. Myomata are more prone than fibromyomata to malignant degeneration, and adenocarcinoma of the body in a myomatous uterus is not infrequent, particularly at or just after the menopause."[42]

Deaver[41] reports his experience in the removal of 250 fibroid tumors by abdominal hysterectomy, and gives a table of the complications which were found. The list of complications was so palpably incomplete that in the discussion on his paper he admitted that the records were by no means exact. Deaver follows the classical lines in his argument, although the number of his operations and the good results secured in the last 100 as compared with his first 150 indicate that favorable cases have sufficient symptoms to cause even a surgeon advocating the traditional attitude to resort to operation.

Haultain[42] is among the few who have written recently on the subject to question the frequency or the importance of malignant degenerations or complications of fibroid tumors. On limited personal material and with scanty reference to the literature, he gives his *ipse dixit* that "malignancy and fibromyomata have an almost independent origin and but slightly affect one another." Nevertheless, he says that out of 9 cases of adenocarcinoma operated on by him 4 were associated with fibroid tumors of the uterus. He makes one point, however, of genuine importance, which is that as fibroid tumors frequently cause sterility, the percentage of cases of cancer of the cervix as compared with cancer of the body of the uterus would be made relatively smaller because of the lesser percentage of labors and of traumatism to the cervix.

OBSTRUCTION OF THE BOWELS, PARTIAL OR COMPLETE, FROM THE PRESSURE OF FIBROID TUMORS.

Partial obstruction of the bowels from fibroid tumors is relatively common. Numerous instances of this type have come under my observation in which obstinate constipation with distension and ultimately partial paralysis or atony of the colon has been due to pressure from fibroids. In such cases digestion is usually much disturbed, with resulting malnutrition, autointoxication and secondary degenerative changes in the blood vessels and kidneys. Another serious result of this condition is that after operation paralysis of the bowel, partial or complete, is not infrequent. I have seen numerous cases in which the life of a woman was in serious jeopardy from this cause, and have seen death ensue in spite of all efforts to get rid of the intestinal gas. Death in such cases is due to heart failure from pressure on the heart through the diaphragm.

Donald,[43] of Manchester, reports an interesting case of acute intestinal obstruction from a fibroid tumor. The obstruction was due to adhesions.

Pellanda[20] states that in the fatal cases in the natural history of the disease, death results from compression of the bowel in about 12 per cent. of the cases.

The literature contains reports of isolated cases, and doubtless a certain percentage of cases of obstruction said to be due to adhesions are primarily due to the presence of a fibroid tumor. Perhaps the most remarkable fact in connection with fibroid tumors is how the fecal contents of the bowel pass by fibroid tumors which apparently absolutely fill the pelvis.

(To be continued.)

41. Deaver: "Hysterectomy for Fibroids of the Uterus," Amer. Jour. Obstet., Dec., 1905, p. 858.
42. Haultain: "Malignant Degenerations or Complications of Fibromyomata of the Uterus," Jour. Obstet. and Gyn. British Empire, August, 1904, p. 120.
43. Donald: Jour. Obstet. and Gyn. British Empire, May, 1906, p. 383.

CASE OF MULTIPLE FIBROSARCOMA OF THE TONGUE,

WITH REMARKS ON THE USE OF TRYPSIN AND AMYLOPSIN IN THE TREATMENT OF MALIGNANT DISEASE.*

FREDERICK HOLME WIGGIN, M.D.
NEW YORK CITY.

Primary sarcoma of the tongue is a disease so seldom met or recognized and recorded that a case of this character presents features of unusual interest. There appear to be less than forty well authenticated cases on record. Of the various varieties of sarcoma invading this organ, the fibrous seems the least frequent, as only three or four of the cases just mentioned are classified under this head.

History.—N. M., an unmarried female, aged 23, of Irish descent, a domestic, applied in November, 1905, to the Metropolitan Nose and Throat Hospital for treatment, complaining of an enlargement of the back of her tongue, which was causing her much discomfort, as, on account of its size, it made speaking, eating and sleeping difficult. The patient then stated that she had asked for treatment at several hospitals in London, but had been refused operation.

She was referred to me as one of the consultants of the hospital, for an opinion as to the nature of the growth, and the method of treatment to be employed. She gave a negative family, as well as personal history, up to about seven years previously, when she stated that she had first noticed a small growth projecting from the surface, at the back of the tongue, round at the bottom, and somewhat pointed at the top. This was shown to a physician, who pulled it off and treated the resulting sore for a time, and then as the growth began to reappear, left it alone. The patient stated that it grew rapidly for a time and then more slowly, but that of late, the tumor had been enlarging rapidly; she also said that she had had no pain, other than that caused by the mechanical difficulty encountered in speaking, eating and sleeping, especially the latter, as for some time past she had been obliged to sleep in a sitting posture.

Examination.—The girl appeared to be well nourished, but anemic, and rather dull mentally. Examination of the heart, lungs and abdomen failed to reveal anything of an abnormal character; when the mouth cavity was looked into, however, a tumor which nearly occluded the pharynx was found, projecting from the surface of the tongue at the site of the foramen cecum, rather more prominent to the left of the median line than elsewhere and about two and one-half inches by one inch in size. The growth was painless to the touch, but felt elastic almost to the point of fluctuation. The mucous membrane covering the growth was intact and normal in appearance and no glandular enlargement could be made out.

Diagnosis.—Taking into consideration the sex and age of the patient, the location of the tumor, its elasticity and the condition of the mucous membrane covering it, I considered it probable that the neoplasm was made up of thyroid tissue and its removal was advocated.

Operation.—In accordance with this advice, the patient entered the French Hospital and on Nov. 24, 1905, I performed the following operation, with the assistance of Dr. James Tayloe Gwathmey: Dr. Gwathmey anesthetized the patient by his vapor method, by means of a long hollow metal tube of the size and shape of a number 15 English catheter with its end cut off, the anesthetic being delivered directly into the

* Read before the Society of Alumni of Bellevue Hospital at the One Hundred and Second Meeting.

larynx (Fig. 1). This instrument was also employed to retract the tissues, being introduced into and along the side of the mouth nearest the field of operation. A heavy silk suture was then passed through the tongue, just beyond its tip and, by means of this retractor, the tongue, which was freely movable, was drawn well forward and a longitudinal incision, one and a half inches long, was made through the mucous membrane and muscular tissue covering the most prominent portion of the tumor, which was, as has already been stated, to the left of the median line. The tissues were easily reflected from the tumor, which was found to be encapsulated and which was readily shelled out of its bed. It was about one and a half inches in diameter and when the growth was cut into, it was found to consist of soft, fatty looking tissue. The incision in the tongue was closed by suture, which readily controlled the existing hemorrhage which was slight. No effort was made to remove the remaining enlargement on the right side, which had somewhat subsided with the removal of the tumor already mentioned, it being thought that it was due to the pressure exercised on the tissues by the tumor just removed and that in time it would disappear.

Result.—The convalescence proved uneventful and the patient improved very much in general health and in appearance, being now able to sleep in the prone posture, and to swallow with comparative comfort, but her ability to speak distinctly did not improve materially.

Examination of Tumor.—The tumor was submitted for microscopic examination to five eminent pathologists, with the result that three gave opinions favoring fibroma and two fibrosarcoma. Dr. W. R. Williams, pathologist of the French Hospital, through his assistant, Dr. Krumweide, reported as

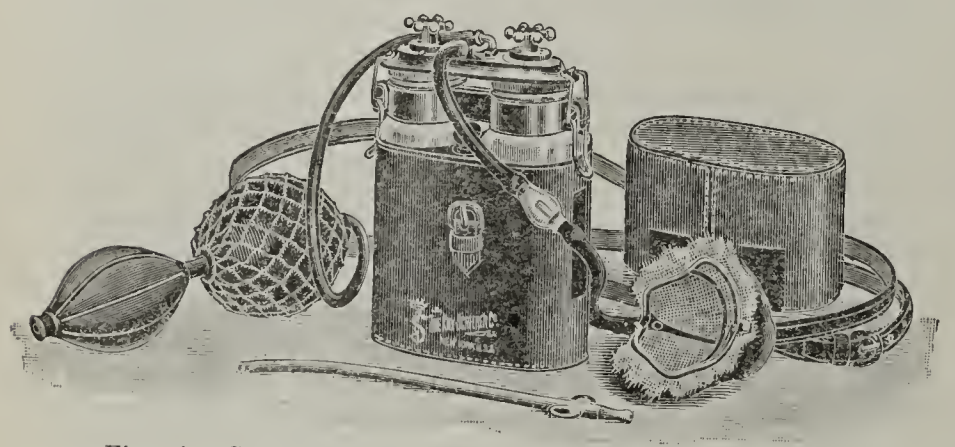


Fig. 1.—Gwathmey's anaesthetizing apparatus for operations about face, nose and mouth.

follows: "Specimen removed from tongue of N. M. is histologically a fibroma, the softness of the tumor is due to edema of the tissues. Though somewhat cellular there is no sarcomatous appearance and it is therefore benign."

Prof. E. K. Dunham of the New York University and Bellevue Hospital Medical College, said: "The specimen of lingual tumor which you sent to me is a fibroma, in most places it is composed of dense fibrous tissue, in other places the tissue is more areolar, the surface of the specimen presents fibers parallel to the surface, apparently due to compression of the surrounding structures. There are only a moderate number of vessels in the specimen and these are of moderate size. There is no suspicion of malignancy."

Dr. F. M. Jeffries of the New York Polyclinic, wrote as follows: "The tumor of tongue from Miss N. M., is a fibrosarcoma, I think it is possessed of but a slight degree of malignancy."

Dr. Jeffries informed me that Professor James Ewing, of Cornell University, had also seen the specimen and concurred with him in his view that the tumor was a fibrosarcoma. As the opinions of the pathologist who had examined the specimen were now equally divided, it was thought to be of sufficient interest to obtain the opinion of Prof. William H. Welch of Johns Hopkins University, and a specimen of the tumor was accordingly sent to him; the following was his reply: "I do not generally quarrel over differences in diagnosis between fibroma and sarcoma, as it is a question ordinarily of richness in cells and, as there is no sharp dividing lines, competent pathologists often differ, and so long as the separation between fibromata and sarcomata is an arbitrary one, it is often a matter of individual judgment which name should be applied. I should prefer to call the tumor of which you send a section a fibroma rather than a sarcoma, as there is so much basement substance. The fresher part of the growth shows fibrillated connective tissue, not richer in cells than many undisputed fibromata. There is an extensive and rather peculiar sclerotic or hyaline transformation going on, and enclosing dense strands and masses of cells of a fibroplastic type. I suppose it is the latter which raises the question of sarcoma; if these cells were getting the upper hand and taking possession of the field, I should incline to the diagnosis of sarcoma, but it looks to me as if the cells were being crushed out and replaced to a considerable extent by the sclerotic or hyaline tissue. I should not consider a tumor of this type likely to metastasize, although if not completely extirpated, it would be likely to recur *in loco*. The old fashioned recurrent fibroids of the surgeons often show much the appearance of your tumor."

Subsequent History.—About the middle of December, the girl resumed her former duties as housemaid and for a time her general bodily health was much improved, as she was now able to breathe, eat and sleep comfortably. A month after her return to work her employer informed me that since the performance of the operation her disposition seemed to have undergone a change for the worse, she being much depressed mentally, very careless as to personal appearance and indifferent as to whether or not she gave satisfaction in her work, which formerly was not the case. This, however, was thought to be largely due to the girl's disappointment of the lack of improvement in her ability to speak distinctly. The enlargement on the right side of the tongue, previously mentioned, failed to diminish in size, as it was hoped it would do and by February 1, it had perceptibly increased in size. Hence an operative procedure for its removal was advised.

Second Operation.—The patient accordingly entered my service at the City Hospital about the middle of the month and assisted by Dr. Gwathmey, a second operation, similar in detail to the one already described, was performed, the incision this time, however, being made over the right side. When the mucous membrane and overlying muscular tissue had been divided and dissected back for a short distance, nine separate encapsulated tumors of various sizes were easily shelled out, the slight hemorrhage being readily controlled by the sutures necessary to close the wound.

Result.—The convalescence was uneventful, the wound healing primarily. The same differences of opinion were expressed by the pathologists who examined the tumors removed at this operation, as in the first instance. Early in March, about three weeks after the performance of the last operation a growth which grew rapidly, was noticed making its appearance in the scar tissue on the right side of the tongue. On April 12, when it was removed, it measured two by one inches in size. This growth was not encapsulated as the other tumors previously removed had been, but was intimately connected with the tongue tissues and a wide cut was made around it.

Examination of Tumor.—When this tumor was submitted to the pathologists, three were in favor of fibrosarcoma, one was in doubt and one retained his original view as to the fibrous character of the neoplasm. Dr. F. M. Jeffries reported as follows: "The last two sets of growth removed from the tongue are identical in structure with those removed at the first operation. Even in view of the opinions expressed that this is a benign growth, I am still of the opinion that we are dealing with a sarcoma; not alone am I influenced by the fact of its frequent return, but still more so by the fact that at the last removal, this same tissue is no longer encapsulated as it was at first, but now invades and replaces the muscular tissue."

Professor Dunham wrote: "In the last specimen of tumor of the tongue received from you on May 7, I find several places, especially blood vessels, in which the tissue is much more highly cellular than in the previous specimens I have seen from the case. This makes me believe that there is a

sarcomatous element in the tumor, and that there is a chance for the development of malignant qualities, though the more highly cellular parts of this specimen are deeply situated and not at the periphery of the growth. There is also evidence in this specimen that the neighboring muscle has been infiltrated with the tumor and that the muscle fibers were undergoing degeneration and atrophy at the time the specimen was removed." In a more recent letter, Dr. Dunham says: "The case is unique in my experience. It seems to me that your suggestion of designating the growth as a fibrosarcoma is wise."

Dr. William R. Williams, by his assistant, Dr. Krumweide, writes: "After further examination of tissue from the case of N. M., I still consider that it is morphologically fibroma. The tissue from the second operation more closely resembles that from the first, that from the third is more like fibrous tissue resulting from scar formation, although there are places which simulate the original growth. In view of the further clinical history, the diagnosis would have to be reconsidered, although the specimens themselves, to my mind, do not suggest sarcoma."

Dr. W. H. Welch writes as follows: "I have examined the sections last sent of the tumor of the tongue. I do not recall having seen in the first set of sections, the structures which I find in these latter ones. There is a peculiar architectural arrangement of the tissue, characterized by bands and coils, cut variously, with nuclei along their margins. These bands and coils, which appear nearly homogeneous with a low power and staining with eosin, show with a high power a finely fibrillar and granular structure. In other places the tissue is wide-meshed, suggestive of edematous connective tissue. Here are long ribbon-shaped cells, with a peculiar longitudinal striation of the cytoplasm. It may be that these cells and bands belong to fibrillated connective tissue; in which case I should call the tumor a fibroma, but my suspicion is aroused of the possibility of a rhabdomyoma, although I can not prove it from your sections, as I do not satisfactorily make out cross-striation. Still in many rhabdomyomata longitudinal striation is the only type of striation which can be distinctly made out. Under the circumstances, it seems to me very important to apply other stains and reactions which will shed light on the nature of the fibrillation in the coils and bands referred to and in certain peculiar elongated cells found in the mucoid-like areas. Mallory's stain for connective tissue fibrils, Weigert's elastic tissue stain and Van Gieson's stains should be applied. Until the question of possible rhabdomyoma is cleared up, I should not be willing to make a positive diagnosis. There is certainly something very peculiar about some of the cells and tissue in the tumor, but the interest is pathologic rather than clinical, I think."

Recurrence.—April 19, a week following the third operation a recurrence in the line of incision was discovered which grew much more rapidly than the former one had, threatening, at the rate of progress it was making, soon to fill up the pharynx. Further attempts to remove the disease by an operation less extensive than the entire removal of the tongue seemed unwise, and even this procedure did not at this time seem to hold out much hope of the patient's permanent recovery.

Administration of Trypsin and Pancreatic Extract.—An editorial in THE JOURNAL of the American Medical Association[1] had directed my attention to the work of Professor John Beard, lecturer in comparative embryology in the University of Edinburgh, concerning the origin and treatment of malignant disease, and as this case was now considered practically a hopeless one, it was determined to test the efficacy of the treatment and some ampoules containing the trypsin preparation for hypodermic use known commercially as injectio trypsini, also some capsules containing three grains of pancreas extract, known commercially as holadin, were obtained from the manufacturers, Fairchild Bros. and Foster of this city. Beginning about April 24, ten minims of the injectio trypsini, diluted with double its volume of sterile water, were injected into the cellular tissue of the patient's left arm over the deltoid every other day, and a capsule containing the pancreatic extract was given an hour before each meal. After about two weeks of treatment the hypodermic injections were given daily, and gradually increased until forty minims were administered daily; this treatment continued for about two weeks, or until June 15.

Result.—At the time this treatment was begun, there could be felt a large growth approximately two by one inches in size at the site of the operation on the right side of the tongue, but well back, and a smaller one behind the first one. Soon after the administration of the trypsin and the pancreatic extract had been begun, it was noticed that the tumors had apparently ceased to increase in size; they remained stationary, however, until the injections were given daily and the dosage increased to fifteen minims. They then slowly began to decrease in size, but when the dosage had been increased to forty minims daily, about June 5, there was a rapid diminution in the size of the growths, especially in the larger one, which was perceptible from day to day, until when the treatment was discontinued about June 15, at the patient's request, the growths were barely perceptible to the touch and the patient was able to speak distinctly for the first time since the treatment began. During the early part of this trypsin treatment, April 24 to June 1, the patient's general health improved greatly as shown by her improved looks, her

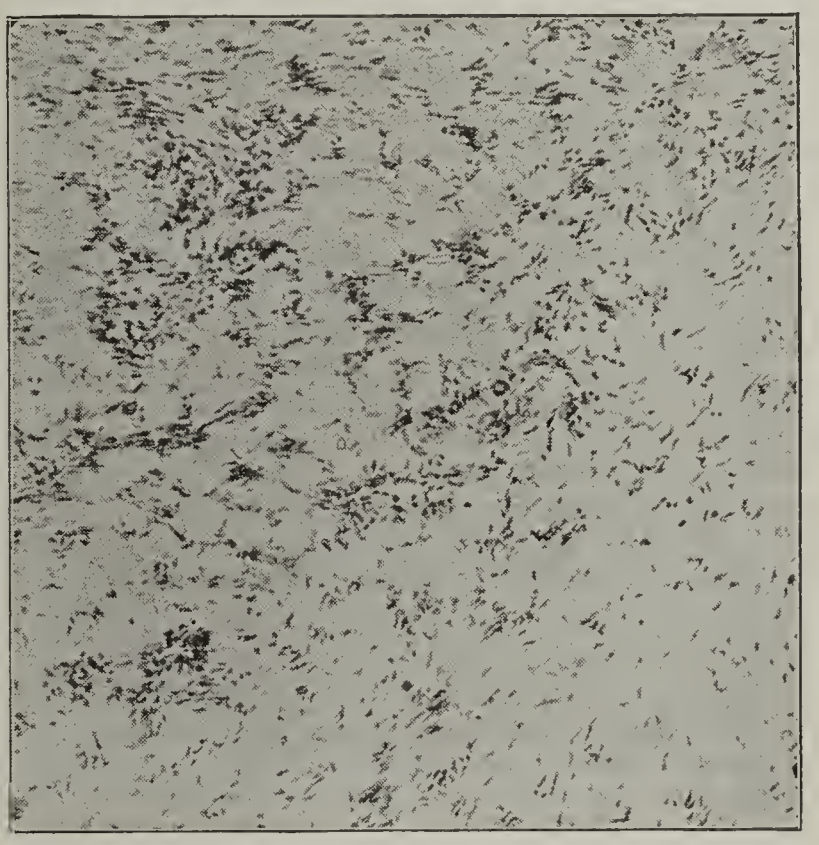


Fig. 2.—Photomicrograph of section of multiple fibrosarcoma of the tongue.

more cheerful disposition and a gain of eleven pounds in weight, and while she complained of the pain following the injections, no serious inflammatory reaction followed them and no abscess formed. Soon after the dosage had been increased to forty minims daily, the patient began to complain of severe headaches, but as she was of a pronounced hysterical temperament little attention was paid to this, beyond the giving of cathartics. The patient soon began to show signs of mental depression, became very careless of her appearance and of her work; she complained of more or less constant headache, of constipation and looked anemic. At her request, the treatment was discontinued June 15 although, as previously stated, the growths at the back of the tongue had not quite disappeared and it seemed as if only a few more doses would be needed to effect this much to be desired result. The patient continued, however, with more or less regularity to take the capsules containing the pancreatic extract until about the middle of July, when they were finally discontinued.

Administration of Amylopsin.—In a communication to the *Medical Record,* June 23, 1906, Dr. Beard called attention to

1. March 10, 1906, p. 728.

the fact that the trypsin injections are liable to be followed by certain bad symptoms, thought to be due not to the trypsin itself, but to the absorption of septic material from the degenerating tumor. These manifestations were stated to be nausea, vomiting, pain in the back, sleeping in any position and mental and physical torpor, and that these unpleasant symptoms could be made to disappear by the introduction into the body of diastasic ferment. Accordingly some ampoules of a solution of pancreatic diastase amylopsin, prepared for hypodermic use by Fairchild Bros. and Foster and known commercially as injectio amylopsini, were obtained and with the patient's consent, injections of this preparation were given daily, beginning with a dosage of ten minims, increased to twenty. This treatment for a time seemed to make a decided improvement in her condition, she became less morose, complained less of headache and for a time took more interest in her work. She also said that she felt better after the injections. The weather was very hot and trying at this time (July) and at her request the treatment was discontinued after only twelve ampules of the injectio amylopsi had been used. From June 15 to August 15, the neoplasms seemed to remain stationary in size, but by September 1, when the patient was next examined, it was found that the larger of the two growths had undergone a perceptible increase in size; this, the patient said, she had also noticed and was much depressed mentally thereby, but she refused further treatment and passed from under observation.

At this time she did not appear to be in good bodily health, being anemic, constipated, and having frequent headaches; much of this condition under ordinary circumstances could be fairly charged to the discomfort of remaining in the city throughout the heated term, which this year was especially trying. Love affairs were another possible complication.

This case is of interest, aside from its rarity, on account of the difficulty encountered by the pathologists in reaching a conclusion as to whether or not it should be classified as a fibroma or sarcoma, and in connection with this subject the following statement of Virchow's in regard to fibrous tumors should be recalled: "It is a matter of great importance to remember that the boundaries of tuberous fibroma are not clearly defined from those of other tumors, especially those of sarcoma, there being undoubtedly transition forms which exist between them."

From the viewpoint of treatment, the case is also of interest. In the course of an article entitled "The Cancer Problem," Dr. Beard[2] set forth the following scientific reasons on which he bases his recommendations for the treatment of malignant diseases by trypsin: "Any ordinary cancer or sarcoma is a new development of trophoblast due to the attempt of a germ cell to start the cycle anew. It has been established that in the normal life cycle of development in any of the higher animals there are two generations, an asexual one, the larva or phorozoon, and a sexual one, the embryo; that the former was mainly, if not entirely, represented in mammalian development by the trophoblast and that in every normal development the trophoblast is suppressed by the sexual generation, its degeneration commencing at the critical period with the completion of all parts of the embryo. The change in nutrition, initiated at the critical period in vertebrate animals from fishes to man, is based in the commencing functional activity of the pancreas. This introduces an alkaline digestion by means of pancreatic juice with its various ferments. A malignant tumor, a cancer or sarcoma like the trophoblast eats and erodes its way, destroying tissues by an intracellular acid digestion." The enzyme of this intracellular acid digestion, discovered by Eugen Petry[3] in 1899, has been named "malignin" by Beard. Again, the latter states in the course of the article already quoted from: "Briefly, as I conceive it, in normal development, and in a malignant tumor the matter is simply a question of the victory of a stronger enzyme over a weaker one. The whole story is but another example of that antithetic alternation which underlies all the phenomena of living things. The solution of the problem of the functional relation of embryo and trophoblast, how the latter nourishes itself by an intracellular acid peptic digestion and degenerates slowly by a pancreatic or alkaline digestion, becomes at the same time the embryologic if not the medical resolution of the problems of malignant disease, as well as of chorio-epithelioma."

In a late article entitled "Are the Problems of Cancer Insoluble?" Beard[4] says: "Cancer is an irresponsible trophoblast or chorion, the corollary of that thesis is that under the action of injections of trypsin the cells of, say, Jensen's mouse tumor must degenerate. In the cancer ferment malignin and in trypsin we have an antithesis of ferments of which the latter is the most powerful." Acting on these views, Beard inoculated a number of mice with Jensen's mouse tumor and began the injection of two minims of a 1.5 per cent. solution of trypsin in sterilized distilled water into one of them. One of these mice died apparently from the result of an accident on the tenth day, after four of these injections had been given. The postmortem examination revealed no cause of death and but for the presence of the tumor the mouse seemed healthy. Microscopic examination seemed to demonstrate that every single cell of the tumor was in degeneration, fully one-half of them being represented by shapeless masses of particles, probably remains of nuclei, and all the rest were skeleton cells. The somatic tissues of the mouth, as represented by the leucocytes and connective tissue cells, were normal. The second mouse received nine injections in twenty-two days and was then killed and the tumor exposed, the growth being about the size of a lentil. The cells were all found to be degenerated. On the same day that this mouse was killed an untreated control mouse inoculated with the same tumor at the same time died of its cancer; its tumor was as large as the terminal phalanx of a man's thumb.

The publication of the results of the trypsin injections, coupled with the advice that it should be used for patients suffering from malignant disease, based largely on theoretical grounds, and before a reasonable clinical experience had been had with it to enable the investigator to determine how the trypsin should be best prepared for use, the proper dosage and duration of the treatment, and the popular articles concerning this work of Beard's, written by an injudicious friend and published in various lay journals, in my opinion, have been most unfortunate and probably would not have occurred had Beard been a physician. The result could only be prejudicial in many ways to the treatment, no matter on how solid a foundation it may rest. In the first instance, solutions of trypsin wrongly prepared, of improper strength or improperly used by injections into the tissues near the site of the growth, or used for too long or too short a time or in too large or too small doses, would surely lead to unsatisfactory results and to wrong conclusions. Since

2. Lancet, Feb. 4, 1905, page 281.

3. Ein Beitrag zür Chemie maligner Geschwülste, Zeitschrift für Physiol Chemie, vol. xxvii, 1899, p. 398; also 1903; edition Hoppe-Seyler's Handbuch der Chemischen Analyse, p. 387.

4. Medical Press and Circular, Dec. 20, 1905.

January 1 various articles and editorials in medical journals have appeared combating the views of Dr. Beard and condemning the use of trypsin in malignant disease. Notably an article entitled "Trypsin in Malignant Growths," by Dr. W. A. Pusey,[5] of Chicago, who makes the following statement: "In one or two patients there was bitter complaint occasionally after an injection, frequent inflammatory swellings resulted and in six or eight instances abscesses developed at the site of injection." In one of his cases Pusey believes that the patient was positively benefited by the treatment with trypsin and that appreciable harm was done to others. These last had chills and Pusey believes failed more rapidly than they were failing before. Dr. Beard,[6] in a communication entitled "Trypsin and Amylopsin in Malignant Growths," makes the following statement: "The treatment has really only been in use for six months and naturally it is still in the experimental phase of its existence. The results recorded by the author (Pusey) can hardly be called good by any stretch of the imagination and did I not know of better ones I, as the scientific originator of this treatment, might well despair of it. My lips are closed regarding results, but shortly they will be forthcoming and the unfavorable cases will not be in proportion to the favorable ones as seven to one. As to abscesses, I have known as many as eighty ampoules to be given in America to a single patient with only one abscess and altogether I have as yet only heard of about six abscesses all told, excluding the record number mentioned by Dr. Pusey. Over here we (Dr. Robert Maguire, F.R.C.P., and myself) have, I think, considerably improved this treatment. The very good results obtained in certain very serious cases in Europe (to name a few, a case of cancer of the rectum, one of inoperable cancer of the tongue and two of cancer of the uterus) point to the following as on the lines of right treatment. After a few preliminary injections of small amounts (half an ampoule of the injectio trypsin) the course should be: 1. Injectio trypsini daily up to two ampoules for three or four weeks. 2. Then one ampoule of injectio trypsini on a certain day, followed by an ampoule of injectio amylopsini on the next day, and so on alternately for about four weeks. 3. Lastly, one or even two ampoules of the new injectio amylopsini daily for about four weeks, or longer, in the judgment of the physician. If using this injection any injections be still not well borne, the injection should be further diluted and given more frequently, but so that the total daily amount is not thereby diminished."

In making these injections I have found the following described technic to be satisfactory: The ampoule containing the trypsin or amylopsin is washed with 95 per cent. alcohol before it is opened. The hypodermic needle and the patient's skin at the site of the puncture are also washed with the same fluid and the wound made by the needle is sealed with collodion. Judging by this formula of treatment, it would appear that the injectio amylopsini should have been used much earlier than it was in my case and should have been continued longer. For the failure to do this last the patient was responsible.

As has already been stated, trypsin is thought by Beard to have no harmful effect on normal body tissue, the soma or sexual product, and that whatever unpleasant symptoms arise in the course of this treatment are due to absorption of septic material from the degenerating tumor mass. The position, scientific attainments and reputation of Professor Beard entitle him to a respectful hearing, and no good reason known to me can be advanced at the present time for not carefully carrying out and further investigating this line of treatment in at least the inoperable cases of malignant disease that may come under our care, until the truth or falsity of Dr. Beard's views are fully established. For what otherwise have we at this time to offer these unfortunate people?

By presenting this case, inconclusive as it is, it has merely been my wish to lay the facts before you and to call serious attention to a most important and interesting subject, which might otherwise be overlooked, largely on account of its unfortunate and untimely exploitation, in the hope that further discussions of and clinical experience with trypsin and amylopsin within a reasonable time will demonstrate beyond question that we have at our disposal a sure and efficient remedy for the treatment of malignant disease.

55 West Thirty-sixth Street.

4. THE JOURNAL A. M. A., June 9, 1906, page 1763.
5. THE JOURNAL A. M. A., Aug. 11, 1906, p. 445.

DISCUSSION.

PROF. E. K. DUNHAM limited his remarks to points concerning sarcoma: 1. Tumors of interstitial type are often heterogeneous in structure, ranging from portions resembling the more highly differentiated connective tissues to other portions that are clearly sarcomatous in character. This heterogeneity renders both diagnosis and prognosis difficult unless a number of portions of a given growth falling within this growth of tumors are examined. These facts, he said, amply explain many differences of opinion regarding a given tumor when each opinion is based on a different portion of the growth. 2. The malignancy of a connective tissue tumor can best be estimated by considering the tendency of the new growth to infiltrate the surrounding tissues and the liability to metastasis revealed by its structure, particularly the relations of the cells of the neoplasm to blood vessels and lymphatics. In these respects it has seemed to him that individual sarcomata of nearly if not quite the same general type as regards the cells of the tumors, differ considerably and that, therefore, they differ in degrees of malignancy. 3. In the tumor of the tongue under discussion, it appeared to him that the liability to undergo metastasis was very slight, there appeared to be little, if any, infiltration of neighboring structures and the cells of the tumor did not appear to be intimately related to those of the vascular walls. In the last specimen examined, the tendency of the cells to produce fibrous intracellular substance appeared in places to be very slight; for this reason he concluded that there was probably a sarcomatous element in the growth.

PROFESSOR JEFFRIES confined his few remarks to the pathologic viewpoint. This case, said to be fibrosarcoma, is certainly, he said, unique in two ways: The apparent discrepancy in the clinical history, which points to malignancy, and the microscopic examination, which has not pointed to any really great degrees of malignancy. In this he considers it unique. It is also unique in its structure. He declared his belief that no pathologist who has examined this tumor has ever seen anything like it, each one spoke of it as being a structure such as he had never seen. When Professor Jeffries first saw the first growth, even though at that time there was nothing in the history to point to malignancy, he was led to conclude that there was a sarcomatous element to it, by its structure and its marked vascularity, notwithstanding the fact that it was an encapsulated growth. At the second removal, still there was a chance of a mistake, because the second removal was from the opposite side of the tongue, and there was a possibility that the growth removed at that time was there at the time of the removal of the original portion, and was an effect of the operation. Perhaps the partial removal of the original growth had allowed the subsequent development of small growths to manifest themselves. At the third operation a different state of affairs existed; in the first place, the growth appeared in the cicatrix; that was one point

markedly like malignancy. Again when examined microscopically it was found that it no longer possessed a capsule, at least it seemed so. The growth was entering muscular tissue and was causing atrophy of the muscle fiber, both simple and numerical, and was invading the structure just as in malignancy. It is at times difficult for a pathologist to decide between sarcoma and fibroma as we do not really know the boundary line. It is a fact that a fibroma may become a sarcoma. In regard to Professor Welch's theory, or suggestion, of the possibility of it being a rhabdomyoma, Professor Jeffries took advantage of his suggestion and made some differential stains in the hope of clearing the matter up; and in these different sections he found nothing that would lead him to diagnose rhabdomyoma.

PROFESSOR EWING said that it is clear that the growth lies on the border line between fibroma and sarcoma, and probably if the section had been submitted to one hundred pathologists there would have been an equal division of opinion regarding its position. This result would not in his opinion, have demonstrated any error in diagnosis on anyone's part, but rather that the growth at first was actually capable of pursuing either a benign or a malignant course, as determined by the influences to which it was subsequently exposed. The separation between fibroma and sarcoma while not a point of much theoretical interest is one on which the clinician must lay a great practical emphasis, since the treatment depends on the distinction. It should be recognized by the clinician however, that the pathologist can not always make this distinction with certainty, and is not to be blamed or accused of error in such cases when his diagnosis fails to accord with subsequent developments. In this case Professor Ewing agreed with Professor Jeffries that the tumor would probably prove locally malignant, on account of its cellular characters, and from the type of tissue in which it was located. The announcement of Professor Beard that he had succeeded in clearing up the ultimate nature of carcinoma and had proposed an effectual cure has naturally been received with much incredulity, chiefly on account of the remarkable theories constructed as a basis for the claims. Professor Ewing has attempted to familiarize himself with Professor Beard's views, but has been entirely unable to follow his reasoning, either embryologic or physiologic. This result Professor Ewing was first inclined to attribute to comparative lack of acquaintance with these branches of science, but he has talked with embryologists and physiologists and has found that they too, have been unable to grasp his meaning. It is certain that Professor Beard's theories are either erroneous or considerably in advance of contemporaneous science. Professor Ewing said that he knows nothing of the results of treatment by trypsin, but in Toronto he learned from Dr. Bashford that the Imperial Cancer Research Commission had given it a very thorough trial and had no good results to report from it. The results in the case described by Dr. Wiggin astonish him. Diminution in the bulk of the tumor during administration of trypsin seem reasonably to be referred to the treatment. The result requires explanation and repetition. While Professor Beard's theory lacks any definite foundation and while bad rather than good results should be expected from his procedure, the actual position of the treatment can be determined only by concrete experience with it.

DR. WILLARD H. ROGERS said that his experience with trypsin in cancer is limited to one case. A woman consulted him a year ago last July, complaining of an irritable bladder, which nothing seemed to relieve. On examination of the rectum he discovered a growth about the size of a silver dollar situated on the anterior wall, low down. He asked her to go with him to see Dr. Kelsey, who pronounced it malignant and advised an operation at once. She refused. Dr. Rogers did not see her again until November, when he took her to see Dr. Parker Syms, who refused to operate as the growth then occupied the whole rectum. The woman grew steadily worse until April, when Dr. Rogers began the use of the injectio trypsini with holadin capsules internally. She is in as good condition to-day as she was in April; the growth has positively diminished in size. Where Dr. Rogers could apply the lotion the growths have almost disappeared. That it retards malignant growths, there is no doubt in his mind.

DR. C. C. RICE, New York, said that he reported a case of carcinoma of the left vocal cord in a man aged 70, in a paper which he read before the American Laryngological Association, last June. The growth involved the entire vocal band. He did not remove any portion of it for microscopic examination, because he wished to notice the effect of the injectio trypsini on it. Both Dr. Ferguson and Dr. Rice felt positive of the diagnosis on the physical appearance of the growth. They administered the pancreatic capsules for a period of two months, and gave the injections of pancreatic extract every day for thirty or forty days, in doses of from seven to ten minims each. Occasionally they were obliged to omit the injections because the patient suffered from disagreeable constitutional symptoms. In one week after the injections were commenced, the growth became very noticeably softer, and seemed congested. At the end of another ten days, perhaps three weeks from the beginning of the treatment, the anterior half of the growth sloughed off. The patient remained under treatment about a month longer, when he was obliged to go to Europe. The larynx did not improve, apparently, during the last three weeks of the treatment, so that when he went away they had to report the removal (disappearance) of only about two-thirds of the growth; the remaining one-third remained on the vocal cord. Dr. Rice saw the patient during the last week in September and found that the entire growth had disappeared and that the vocal cord was almost normal. He intends reporting the case more fully later.

DR. HARRAR said that he had but one case which was treated with trypsin and which Dr. Wiggin asked him to report. The patient had recurrent carcinoma of the rectum, and was operated upon two and a half years ago. For about one and a half years the patient, a woman, went on without any recurrence, until last January, recurrence began, curiously enough at one side of the anus, in the buttock. Dr. Harrar saw her in May, the growth was then about the size of a walnut with an ulcerated surface in the rectal mucous membrane. Of her own volition she had been taking holadin three times a day since April, and using lotio pancreatis on the ulcer. Dr. Harrar began the injections of trypsin 5 cgm. twice a week, increasing to 15 cgm. a week, up to the middle of August. Then for two weeks the injections were ommitted. Full ampoule doses were used, about 15 c. Injections were not made into the tumor, as apparently was done by Dr. Pusey of Chicago, but into the adjacent healthy tissue. There was no local reactions and no abscesses occurred from the injections. Mild constitutional symptoms occurred during the first few weeks; slight stupor, etc. The tumor had steadily increased up to this time; at no period was there any diminished size of the tumor at all; during August the general condition of the patient was about the same as before treatment was instituted. She was able to be up and about, but seemed to have very little if any benefit from the trypsin. The tumor made very rapid advance during the cessation of the injections and is at present about the size of one's fist. The tumor seems to grow more slowly while the injections are used than when they are discontinued.

Collateral Regeneration of Nerve Fibers.—Nageotte contributes to the *Nouvelle Iconographic de la Salpétrière*, xix, No. 3, 1906, a monograph on the subject of what he calls the collateral regeneration of nerve fibers. It occurs independently of the terminal regeneration, the only form at present recognized in the text-books. In the collateral regeneration the new nerve fibers sprout at points nearer the vital center of the neuron. He noticed an excessive, pathologic regeneration of this kind in the spinal ganglia in tabes, where it strives to take the place of the destroyed root axis-cylinder, without ever being successful in accomplishing its physiologic purpose, at least in the cases studied. The article is profusely and handsomely illustrated, like all those that appear in this journal, founded by Charcot. As the name implies, the records are kept mainly by profuse photographic reproduction. Each issue has at least one article devoted to medicine in classic art.

Clinical Notes

HEMORRHAGE FROM THE STUMP FOLLOWING APPENDECTOMY.

WITH A REPORT OF THREE CASES.*

WILLIAM HESSERT, M.D.

Professor of Surgery, Chicago Policlinic; Surgeon to the Alexian Brothers' Hospital and Cook County Hospital.

CHICAGO.

It has been my misfortune, during the year past, to have had three cases of postoperative bleeding from the stump following appendectomy, with a fatal issue in one instance. An experience of this kind would naturally lead one to ponder over the cause of the accident and to change the technic if found to be at fault. My method in the past had been the widely practiced one of clamping the appendix at its base, cutting off the distal portion flush with the forceps, inserting a purse-string suture around the base, releasing the forceps and inverting the stump while the suture is tied. The case histories are as follows:

CASE 1.—Female, aged 13.

History.—The patient has had four attacks of appendicitis during the past two years, all mild in character. The present

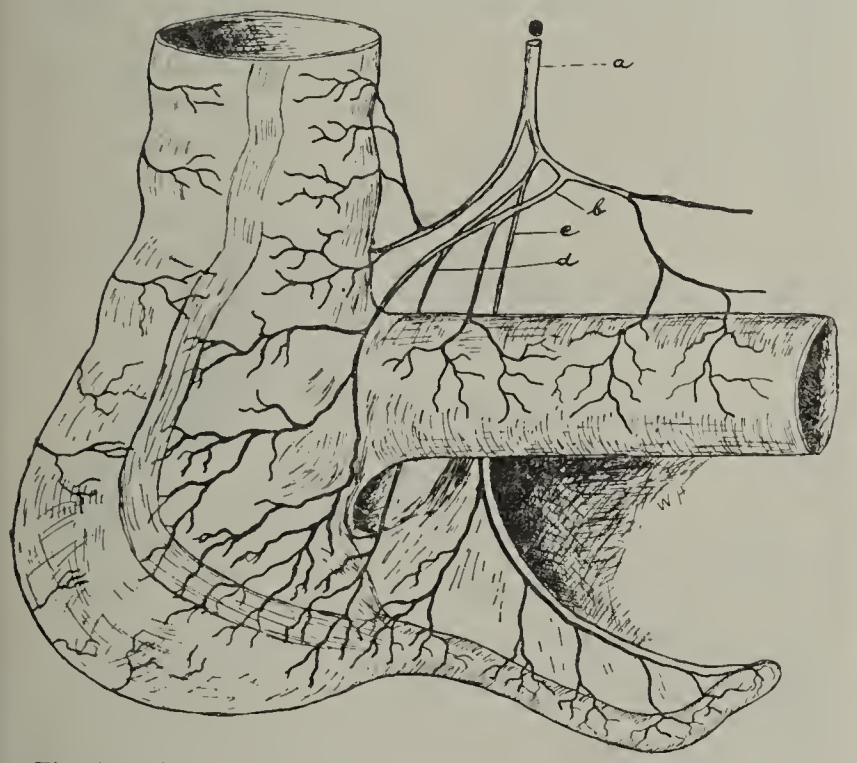


Fig. 1.—The ileocolic artery (*a*) gives off a branch to the ascending colon and an anterior and a posterior cecal artery (*d*). The appendical artery (*c*) arises in this figure from the posterior cecal artery. It passes behind the ileum to the free border of the mesappendix, where it gives off five (sometimes more) branches.

attack began with severe pain in the right iliac fossa, vomiting and constipation.

Examination.—I saw her after twenty-four hours. She was a strong, well-nourished girl. The general condition was good. The abdomen, flat, very tender over appendix, with reflex muscular rigidity. Temperature was 100; pulse 100.

Blood Count: This showed 9,000 white blood corpuscles.

Urine: Negative.

Operation.—Gas and ether anesthesia. The operation was well borne. Short muscle-splitting incision was made. The appendix was free in the abdominal cavity; it was moderately acutely inflamed, not perforated. The mesenteric artery was ligated with catgut and the appendix was divided between two forceps clamped on the base. A silk purse-string suture was inserted with inversion of stump and tying of suture. A second row of Lembert sutures was applied. No oozing from mesentery or stump was noticed at the time. The colon and the base of the appendix were in a healthy condition. Operation was concluded in a short time and the patient left the table in excellent condition. There was no drainage.

Postoperative History.—The girl recovered quickly from the anesthetic and vomited little. In the evening of the day of operation the nurse noticed a slight bloody stain in the bed and believing it to be menstrual blood, she applied a pad, the patient's condition being so good as to excite no suspicion. Next morning, twenty-four hours after operation, when I saw her, it was at once apparent that she was suffering from internal hemorrhage and that the blood she had passed in small amounts during the night had come from the bowels. She was very pale, clammy, restless, taking deep sighs at intervals. Temperature was 98, pulse 120, small and thready. She was given Dover's powder and Dermatol by mouth, food was withheld; strychnin and adrenalin were given hypodermically. The foot of the bed was elevated and an ice bag placed over the seat of operation. During the day she passed about 600 c.c. of fluid red blood, later it was dark and clotted. After twelve hours, toward evening, reaction set in; she warmed up and the skin became dry. The pulse, which had gone up to 140, became 110; she was not so restless. She was not pale. The bleeding was evidently checked, for she steadily improved. No blood was passed for another day, and then the clots were very dark. After several days she showed no signs of the hemorrhage save some weakness and pallor. Cathartics were withheld for some days longer. The wound healed by primary union. Ultimate recovery complete.

CASE 2.—Female, married, aged 25.

History.—During the investigation incident to an operation for cystic ovaries and retroflexion, the appendix was found to be five inches long and to contain three large fecal concretions. The pelvic operation being briefly concluded and the patient's condition being good, it was deemed justifiable to remove the

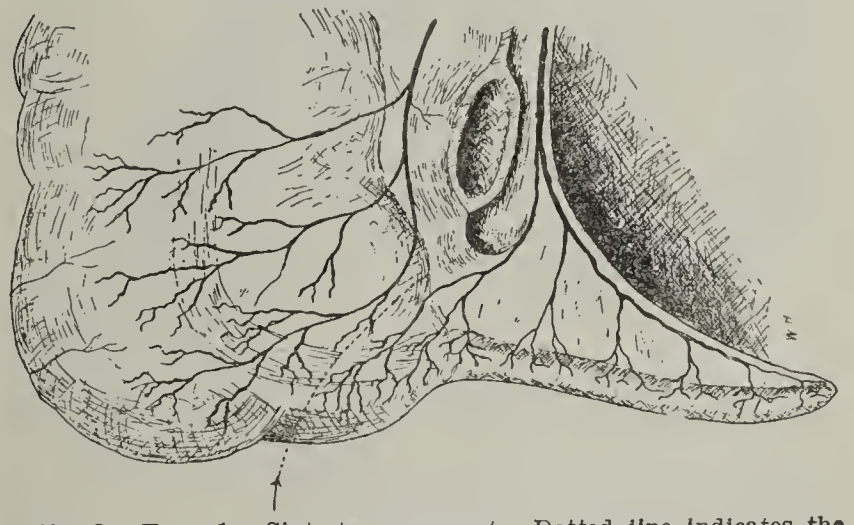


Fig. 2.—Type 1. Sixty-two per cent. Dotted line indicates the division between the cecal and appendiceal vessels.

appendix, even though there was no history of previous attacks of appendicitis. The organ was removed by the same technic as employed in Case 1.

Postoperative History.—The patient left the table in good condition and did well until evening, about twelve hours after operation. Then there occurred a rather sudden change; she went into collapse, the pulse rose from 85 to 110, and became weak and thready. The woman became pale and restless, with an anxious expression, and cold, clammy extremities. After being hurriedly summoned, and while sitting at the bedside, a large amount of dark and bright red blood was passed with a gush by rectum. The same treatment was employed as in Case 1. The advisability of reopening the abdomen was considered. To operate in such a collapsed condition, however, would only hasten a fatal issue, and if a reaction were waited for and did occur, it would probably indicate a cessation of the bleeding, and contraindcate any intervention. The patient died thirty-six hours after the onset of symptoms. She was subjected to the most heroic treatment: Intravenous saline infusions with adrenalin, stimulation, ice bags, lead and opium internally. All were of no avail. She seemed to rally at times and react, so that we thought that the active bleeding had stopped, but a fresh gush of blood by rectum would dispel

* Read before the Chicago Medical Society, Oct. 10, 1906. The discussion which followed this paper is given on page 2032 of this issue.

our hopes again. This patient lost nearly three liters of blood by rectum. No autopsy was permitted.

CASE 3.—Male, aged 23.

History.—The patient was a strong, robust young man who had always been well, with the exception of numerous mild attacks of appendicitis during the last two years. The last attack occurred three weeks before operation; some indefinite pain still persisted in the right iliac fossa; otherwise all the signs of the last attack had subsided.

Examination.—The chest was negative. There was some slight tenderness in the right iliac region. Urine was negative. There was no leucocytosis.

Operation.—Gas and ether anesthesia was well borne. A small muscle-splitting incision was made, which had to be enlarged somewhat later. The appendix was entirely post cecal. There was no mesoappendix. The cecum was drawn to the inner side, the peritoneum was incised over the appendix, and the latter liberated. There was only slight bleeding and one cat-gut ligature was inserted near the base. When the organ was delivered and held up by the tip, no bleeding was observed. The base was clamped with two forceps and the appendix severed between them. The purstring suture of cat-gut was then inserted and following the advice of Dr. M. L. Harris I passed an extra loop at the point usually corresponding with the insertion of the mesoappendix, but as we had no mesoappendix in this case I was in doubt as to any benefit to be derived from this procedure. The stump was inverted and an extra row of sutures inserted. The appendix was three inches long, sclerosed, thickened and presented two constrictions. Operation was completed in the usual manner and the patient left the table in excellent condition.

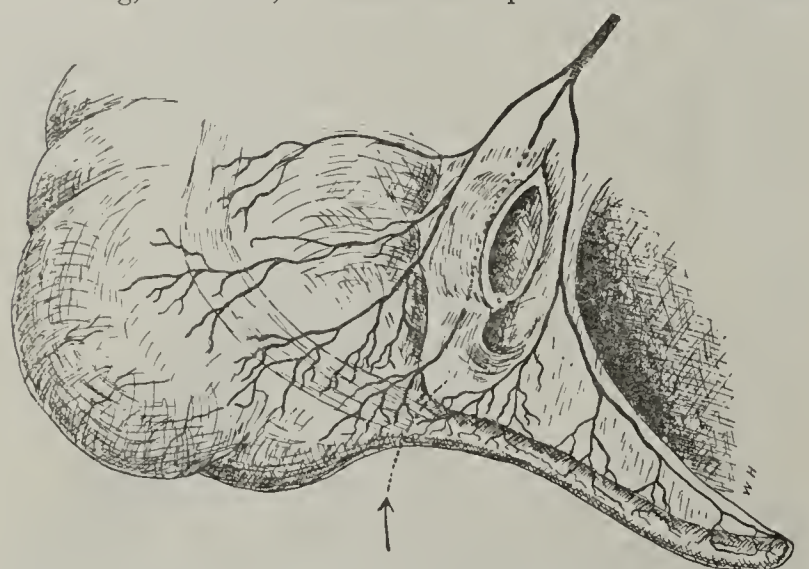


Fig. 3.—Type 2. Thirty-two per cent. Dotted line indicates line of division between circulation of cecum and appendix.

Postoperative History.—The evening of the day of operation there was a slight collapse. The pulse rose from 80 to 110. The man became pale, clammy and restless, with deep sighing. About 200 c.c. dark fluid escaped by rectum. He was put on the treatment already outlined. His condition remained about the same during the next day, and he frequently passed dark clots. On the third day the condition had greatly improved; reaction set in and no more blood was evacuated. He then went on to an uninterrupted recovery; the wound healed by primary union.

In order to understand how it is possible that such copious bleeding can occur, we must consider, first, that the bleeding vessel, though comparatively small, pours its contents into the lumen of the colon. The peristaltic action carries the clots away as fast as they are formed and there is no pressure from without exerted on the bleeding point and nothing to hasten the formation of a thrombus; it just oozes without hindrance.

Furthermore, the blood supply of the cecum and appendix must be considered. The ileocolic artery, a branch of the superior mesenteric, supplies the ileocecal region. The ileocolic divides into the anterior and posterior ileocecal arteries (Fig. 1). The appendiceal artery arises variously from the ileocolic or posterior ileocecal artery. The main branch passes down along the free border of the mesoappendix and usually gives off about five branches to the appendix. In a general way the anterior ileocecal artery supplies the anterior aspect of the cecum, and the posterior ileocecal the posterior portion. The cecoappendiceal angle is thus variously supplied by the anterior and posterior ileocecal and appendiceal arteries. There is an excellent description of the anatomy in Kelly's work on the appendix from which I have largely drawn.

There are various types of circulation, the commonest being represented by Figure 2. This form comprises 62 per cent. of the cases, and here the division of the cecal and appendiceal vessels is well up on the cecum, as indicated by the dotted line in Figure 2. In the second type (Fig. 3), the dividing line is at the cecoappendicular junction, and is the form in 32 per cent. of the cases. The third type (Fig. 4) obtains in 5 per cent. and is the one where the dividing line is well up on the appendix a variable distance. In 1 per cent. of the cases there is a broad anastomosis in the mesoappendix between the cecal and appendiceal arteries (Kelly).

It is apparent from the anatomy that after ligature of the appendiceal artery or its branches the bleeding from the stump will have been controlled in Types 1 and 2, but not necessarily in Type 3, where the blood stream flows distalward. It is in cases in which this type of circulation prevails that postoperative bleeding

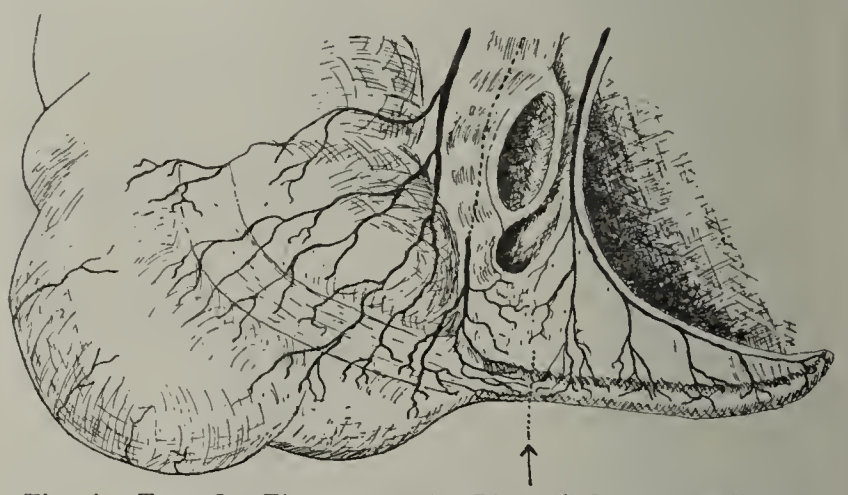


Fig. 4.—Type 3. Five per cent.—Line of division well up on appendix. Cecal vessels supply base of appendix. This is the type where the stump may bleed unless ligated or cauterized.

may occur. I have recently noticed in a few cases that after ligature of the appendicular artery and cutting the mesoappendix there were still a few actively bleeding points on the appendix, which necessarily derived their supply from the cecum. One can conceive also that in cases in which the appendix is severed close to the cecum and inverted that there might easily be oozing from the stump due to the blood pressure in the cecum alone without regard to any particular type of circulation.

The general principles involved in dealing with the stump are the following: ,

1. Ligation, excision of appendix, sterilization with exposure of stump.
2. Ligation, excision, sterilization with burying of stump, cuff method.
3. Crushing, excision and inversion of stump.
4. Crushing, ligation, excision, sterilization and burying of stump.
5. Amputation by the knife flush with the cecum, and suture.
6. Amputation by means of cautery.

There are many and various modifications of all methods, but the general principles involved are practically as above outlined

Mere crushing of the stump with forceps is no sure safeguard against bleeding. My cases have demonstrated that.

The use of the cautery clamp is perhaps the best and safest method of dealing with the stump. It effectually sterilizes the cut end and efficiently guards against bleeding. One has not always the necessary appliances at hand, however, in which case I would consider method No. 4 best. The appendix is grasped at its base by a strong forceps and thoroughly crushed; this forces most of the mucosa up and down, so that the crushed portion is reduced mostly to fibrous and connective tissue. The forceps is released and a catgut ligature is tied around the crushed portion and the appendix cut away. As a safeguard the distal portion of the appendix may be grasped with a light pair of forceps before cutting, to guard against any escape of contents. The stump, cut close to the ligature, contains little, if any mucosa, but it can yet be sterilized with carbolic acid, if desired. The stump is then buried under a row of Lembert sutures. Any method, though, otherwise surgically correct, which does not absolutely provide against hemorrhage is faulty. Harris' method of passing the extra loop does not apply in all cases and, therefore, can not be considered as always safe.

In conclusion, I will say that I have reported these three cases to show that hemorrhage from the stump is a real danger, which lurks in an operation usually considered as being comparatively safe. Furthermore, the operative technic should, among other things, make provision for the prevention of such an accident.

BRADYCARDIA IN APPENDICITIS.*

MAURICE KAHN, M.D.
Surgeon to St. Vincent's Hospital.
LEADVILLE, COLORADO.

A careful research of the literature at my command has failed to reveal any mention of bradycardia in appendicitis, the nearest approach thereto being the statement that the pulse and temperature are not to be relied on to too great a degree, as they are both, at times, capricious, even rarely being normal in the presence of a virulent condition. It is generally acknowledged that the symptoms of gangrenous appendicitis may be latent and exceedingly deceptive, and every surgeon realizes that early recognition and prompt interference is the only harbor of safety in this malignant form of appendicitis; and, conversely, that danger reposes on the rocks of tardy enlightenment and delayed operation, which has wrecked many surgical mariners, and still continues to augment our mortality rate in this disease. Hence the great importance attaching to any new symptom which may project further light on a given case prior to the development of general peritonitis or prior to operation.

If further observation should prove this symptom to be a reliable one, its importance would be difficult to overestimate, for in my series of cases it appeared, if not at the incipiency of the disease, yet early, at a time when knowledge of the pathology of the condition is most pertinent and most difficult to obtain; and especially so in this type of appendicitis, wherein the formation of protective adhesions is the most improbable. That it is reliable in some cases can not be questioned, and how frequently it occurs becomes of interest; but the cases observed since the symptom was first noted are too few to make percentage estimate of value. To be sure, we all see cases of appendicitis with tachycardia, which, on operation, manifest a gangrenous condition; this is usual, but I do not recall encountering bradycardia in a case of appendicitis that did not present gangrene.

In the last 6 cases of gangrenous appendicitis in which this symptom was evinced, the diagnosis of the gangrenous state was made before operation, based on the bradycardia alone. So it would appear from this, that given a case presenting other unmistakable signs of appendicitis, with a subnormal pulse, the tentative diagnosis of gangrene, with some reason, may be maintained. I should here caution the hasty to ascertain if possible the normal pulse for the individual in hand; for a bradycardia may be marked, and yet that slow pulse may be normal for a given patient. If this individual characteristic does exist, however, patients of the better class are often cognizant of the fact.

The cause of this symptom in appendicitis is probably to be ascribed to the absorption of a ptomain or ptomains into the system, which, during circulation, act on the cardiac centers or ganglia, as is not infrequently seen in jaundice, chronic digestive disturbances, etc. It is not akin to the slow pulse observed during convalescence from some of the acute fevers, wherein it is likely evidence of impaired reactive power, a result of inanition.

To avoid superfluous verbiage but two cases are briefly abstracted from my records. Case 1 is interesting in revealing a definite diminution of the pulse rate after the presumable development of the condition causing gangrene.

CASE 1.—Male, aged 33, was seen on the evening of August 2. Past history was negative.

Present Illness.—This began the evening of August 1, with pain in the abdomen, not localized; August 2 it was localized at the umbilicus. There was slight increased frequency of micturition.

Examination.—There was slight tenderness in right iliac fossa. Temperature, 98.4; pulse, 76.

Course of Disease.—August 5: No pain if patient remained quiet but tenderness still remained as on August 2. No chill nor sweating. Bowels regular. Temperature, 98.4; pulse, 64.

Operation.—The usual gridiron incision was made. The appendix was found constricted at the junction of the middle with the distal third by adhesions. It was gangrenous and swollen beyond the point of constriction. The appendix was removed, a purse-string suture was applied to stump, and abdomen was closed. Recovery was uneventful.

The chief interest in this case is to be found in the drop in pulse rate, which may be explained as follows: The mild adhesive inflammation was not sufficient to cause any marked trouble beyond moderate pain and tenderness, until the contracting adhesions constricted the appendix sufficiently to induce necrosis, when, as a result of the absorption of ptomains so produced, the pulse lowered, which, with the diagnosis of mild appendicitis made three days earlier, the assumption that gangrene had supervened seemed justified.

CASE 2.—Male, aged 29, unusually well developed, was seen at 8 p. m., September 9. Past history is unimportant.

Present Illness.—September 8, at 3 p. m., he first noticed slight pain in abdomen, since which time it had increased in severity, until when seen it was almost unbearable. Bowels were regular. Micturition was slightly more frequent than usual.

Examination.—There was tenderness over the entire abdomen, greatest in the right lower quadrant, particularly at McBurney's point. Temperature, 98.2; pulse, 60.

Operation.—Operation was advised but consent was not obtained until the following evening, during which interval food

* Read at the Annual Meeting of the Colorado State Medical Society, Oct. 9-11, 1906.

was withheld and an ice bag applied, which promptly relieved pain. The operation disclosed the expected gangrenous appendix, which, with a portion of the cecum was black and very friable. The gangrenous area was removed. The abdomen was closed as usual after careful sponging. Recovery was uneventful.

This case merely illustrates the typical case exhibiting bradycardia as a symptom of gangrenous appendicitis.

DEATH FROM RATTLESNAKE BITE.

W. A. LEWIS, M.D.
ENTERPRISE, ALA.

Patient.—A boy, aged 14, was bitten by a large rattlesnake, Oct. 7, 1906. A companion tied a cord around the leg above the bite, killed the snake, and brought the boy home.

Examination.—I saw the boy something over two hours after he was bitten. I found that he was bitten on the calf of the right leg about the junction of the upper with the middle third, both fangs having penetrated their entire length. The cord was very tightly drawn above the knee and the circulation was nearly cut off. The points of entrance of the fangs were ecchymotic and the entire leg was greatly swollen. The patient complained of pain. His condition indicated the absorption of large quantities of poison. The pulse was about 140 and weak, the extremities were cold, and he was considerably nauseated.

Treatment.—I made free crucial incisions where the fangs entered and extracted as much blood and poison by suction with the mouth as possible. Then I injected several syringefuls of warm saturated solution of potassium permanganate in and around the wound and tied another ligature around the limb above the one already applied, loosening the first a little, but drawing it tight again in a few seconds. During the entire time that I was with patient I occasionally relaxed one of the constricting bands slightly for a few seconds. He was covered warmly and bottles of hot water were placed around him. I gave 1/30 grain of strychnin hypodermically, following it in a few minutes by 15 minims of solution of adrenalin (1/1,000), and also gave a teaspoonful of aromatic spirits of ammonia, but this was soon rejected by vomiting. Patient called for water frequently and received several spoonfuls of weak toddy, but I think he vomited all internal remedies. Reaction soon set in, the pulse became slower and of greater volume, the extremities got warm, the mind was clear, and he did not complain of as intense pain as at first. Within an hour and a half the hypodermic was repeated, giving 1/60 grain of strychnin and 10 minims of adrenalin solution. Hot carbolized cloths were kept applied to the wound, promoting some bleeding.

Patient held his own for about two hours, but then began to decline rapidly, the pulse becoming weak and rapid (about 150), the respiration much faster, soon reaching 65 per minute. The bowels moved several times, the kidneys acted a little, and patient became restless, though the mind was clear. Stimulating hypodermics failed to have the desired effect and the patient died six hours after being bitten.

ACETANILID POISONING BY HEADACHE TABLETS.

D. CASSADY, M.D.
BISBEE, ARIZ.

History.—On the evening of Sept. 7, 1906, I was called hurriedly to attend Mrs. L., a large, fleshy Mexican woman, about 45 years of age. On questioning the family I learned that she had been in good health with the exception of being subject to severe headaches, for which she was in the habit of taking headache tablets. That afternoon she had bought a package of Stearn's Headache Cure, and had taken one tablet every hour until she had taken three tablets. That was the only drug or medicine she had taken that day.

Examination.—I found her lying on a bed gasping for breath. She had the appearance of extreme prostration and weakness. Her lips and face were dark blue, her skin was cold and damp, and her pupils were dilated. Her pulse was small, soft, and almost imperceptible.

Diagnosis.—The diagnosis seemed very clear, more particularly as I had previously seen cases of acetanilid poisoning.

Treatment.—She had vomited a few minutes before I arrived, but to empty the stomach completely I gave her mustard in warm water, which proved very efficient. I immediately give her a hypodermic injection of 1/15 gr. strychnin nitrate and 1/200 gr. of atropin sulphate. I applied heat externally by means of hot water bottles and hot stove lids, and covered her well with blankets. I prescribed a tablespoonful of brandy in water every fifteen minutes. In half an hour I gave her another hypodermic of strychnin, 1/30 gr., and a third dose an hour and a half later. By this time she was feeling considerably better, her skin was getting warm, and her pulse was moderately strong. Next morning I found her resting easy but very weak. In the next few days she gradually regained her normal condition of health.

DERMATITIS FROM BUTTER COLORING.

D. LICHTY, M.D.
ROCKFORD, ILL.

In view of the present interest in pure foods, the following case may be interesting and instructive:

Patient.—A man, American, aged 63, of medium height, weight 143 pounds.

History.—The man was acting commissary for his wife, who keeps a large boarding-house. He related that he had been persuaded to purchase some of the numerous brands of spurious butter on the market. As the manufacturer and the seller are not allowed to color these products the retail merchant furnished him with a small capsule of a coloring material, about the size of a 2 grain capsule of quinin, with which he was supposed to tint the product as from the "Meadow Brook Farm" or the "Heather Hills" or "Clover Vales." He hastily slipped this capsule into his trousers pocket and hurried toward home with his purchase. The capsule was not made to withstand autumn temperature and body humidity and soon melted and the coloring material filtered through the thin fabric of his pocket and on to his leg.

Examination.—When I first saw him he looked sick and worried, though he had no history of rigor and malaise, nor had he temperature. On the anterior surface of the thigh, extending from Poupart's ligament to the top of the patella, the skin was of an angry, dusky hue, with regular and raised margins at the sides. Over the area were about twenty well-raised blebs filled with a pinkish serum; the largest were at the outer margin and were about 3 cm. in diameter and about as high; scattered over the remainder of the area were many smaller ones from about 1 to 2 mm. in diameter and height. On the front of the left wrist, which he had involuntarily grasped after finding his right hand stained with the product, was also a diffuse inflammatory area of the dimensions of his hand, but less intense.

Treatment.—A brisk saline cathartic with an alkaline wash and a soothing salve comprised the systemic and local treatment. The inflammation gradually and uninterruptedly subsided, and in about a week the desquamation was complete.

There remains a redness tenderer than from any pathologic desquamation, the line of demarcation being yet very distinct, after seven weeks.

I was told by a well-informed local dyer that this coloring substance is "turmerin," an anilin or coal-tar derivative.

If the irritant properties of this coloring material are so intense on the cutaneous surface, what must be its action—even very dilutely applied—on the delicate mucous membrane of the stomach? Do physicians know how many times this may be a factor in their cases of gastritis?

New and Non-Official Remedies

THE FOLLOWING ARTICLES HAVE BEEN TENTATIVELY ACCEPTED BY THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR INCLUSION IN THE PROPOSED ANNUAL, "NEW AND NON-OFFICIAL REMEDIES." THEIR ACCEPTANCE HAS BEEN BASED LARGELY ON EVIDENCE SUPPLIED BY THE MANUFACTURER OR HIS AGENT, BUT TO SOME EXTENT ON INVESTIGATION MADE BY OR UNDER THE DIRECTION OF THE COUNCIL. CRITICISMS AND CORRECTIONS ARE ASKED FOR TO AID IN THE REVISION OF THE MATTER BEFORE FINAL ACCEPTANCE AND PUBLICATION IN BOOK FORM.

THE COUNCIL DESIRES PHYSICIANS TO UNDERSTAND THAT THE ACCEPTANCE OF AN ARTICLE DOES NOT NECESSARILY MEAN A RECOMMENDATION, BUT THAT SO FAR AS KNOWN IT COMPLIES WITH THE RULES ADOPTED BY THE COUNCIL.

W. A. PUCKNER, SECRETARY.

(*Continued from page 1919.*)

TANNALBIN.

TANNATE OF ALBUMIN. ALBUMINIS TANNAS.

Tannalbin is a compound of tannic acid and albumin thoroughly exsiccated.

It is prepared by precipitating 10 parts of a 10 per cent. solution of egg albumin with 6.5 parts of a 10 per cent. solution of tannic acid, washing the precipitate with water until the washings react only faintly with ferric chloride, drying it on porous tiles, powdering, and heating the product at 126° C. (258.8° F.) for six hours.

It is a light brown, odorless and tasteless powder, containing about 50 per cent. of tannic acid. It is practically insoluble in water or alcohol, but slowly soluble in alkaline fluids, which split it up into its constituents.

The filtrate obtained after shaking tannalbin with water should give at most a faint reaction with ferric chloride.

It is incompatible with alkaline liquids.

Actions and Uses.—Tannalbin is astringent. Being insoluble in the gastric juice, it becomes effective when it reaches the intestines, where it slowly splits off tannic acid. It does not produce gastric disturbance.

It is recommended in diarrhea, especially in that of children, and in phthisis.

Dosage.—1 to 4 Gm. (15 to 60 grains) in powder (or tablets) followed by water; infant doses, 0.3 to 0.5 Gm. (5 to 8 grs.) in gruel or other mucilaginous liquid.

Manufactured by Knoll & Co., Ludwigshafen a. R. and New York. U. S. patent No. 563,479. U. S. trademark No. 28,348.

TANNOFORM.

TANNINFORMALDEHYDE. METHYLENDITANNIN.

Tannoform, $CH_2(C_{14}H_9O_9)_2 = C_{29}H_{20}O_{18}$, is a condensation product of formaldehyde with gallo-tannic acid.

It is prepared by mixing solutions of formaldehyde and tannic acid, precipitating with concentrated hydrochloric acid, washing the precipitate with water, and drying.

It forms a voluminous, reddish powder, odorless and tasteless. It is insoluble in water, but soluble in alkaline liquids and in alcohol. 0.01 Gm. of tannoform dissolved in 2 Cc. concentrated sulphuric acid forms a brown solution which on warming becomes green and later changes to blue. The green or blue solution, on addition of alcohol, assumes a brilliant blue color, which gradually changes to wine color, while on addition of dilute sodium hydroxide the color is pale green.

Its incompatibilities are those of tannin generally.

Actions and Uses.—Tannoform is astringent and antiseptic. It is recommended on account of these properties in chronic intestinal catarrh and externally in hyperidrosis, bromidrosis, weeping eczema, ozena, etc.

Dosage.—0.25 to 0.5 Gm. (4 to 8 grains); externally, pure or in 25 to 50 per cent. triturations (with talc) as dusting powder, or as 10 per cent. ointment or soap.

Manufactured by E. Merck, Darmstadt (Merck & Co., New York). German patent Nos. 88,082 and 88,841.

TANNOPIN.

TANNON. HEXAMETHYLENE-TETRAMINE-TANNIN.

Tannopin, $(C_{14}H_{10}O_9)_3.(CH_2)_6N_4 = C_{48}H_{42}O_{27}N_4$, is a condensation product of tannin with hexamethylenamine.

It is prepared by mixing molecular proportions of solutions of hexamethylenamine and tannic acid, collecting, washing and drying the precipitate.

It is a fine, fawn-colored, odorless and tasteless, non-hygroscopic powder, containing 87 per cent. of tannin and 13 per cent. of hexamethylenamine. It is insoluble in water, weak acids, alcohol, chloroform, or ether, but slowly soluble in dilute alkalies. On heating dry tannopin, it swells and gives off the odor of formaldehyde. The odor of formaldehyde is also developed on heating tannopin with dilute sulphuric or hydrochloric acid, while on boiling with sodium hydroxide solution it splits off ammonia. The clear aqueous filtrate from tannopin does not give a reaction with ferric chloride.

It is incompatible with alkalies.

Actions and Uses.—Tannopin is an intestinal astringent and antiseptic; it passes unchanged through the stomach, but, being gradually decomposed by alkalies, it becomes effective in the intestinal tract, exerting the action of its two components.

It is recommended in acute, subacute or chronic intestinal catarrh, in tuberculous enteritis, and other intestinal disorders.

Dosage.—0.3 to 0.5 Gm. (5 to 8 grains) for infants and children; 1 Gm. (15 grains) for adults, dry on the tongue, followed by a swallow of water, or sprinkled on food, four times a day.

Manufactured by Farbenfabriken, vorm. Friedr. Bayer & Co., Elberfeld, Germany (Continental Color & Chemical Co., New York). U. S. patent No. 607,172. U. S. trademark No. 31,527.

THEOBROMINE.

1,7-DIMETHYL-XANTHINE.

Theobromine, $N(CH_3).CH:C.N(CH_3)\diagdown$ / $CO=$ / $CO\text{———}NH.C = N\diagup$, $C_7H_8O_2N_4$, is a base occurring in *Theobroma cacao, Kola acuminata,* etc., and also made synthetically.

It is a white, crystalline powder, odorless and bitterish. It is almost insoluble in cold water or chloroform, readily soluble in hot alcohol and in ether. It forms salts with acids.

Actions and Uses.—Its uses are similar to caffeine, but it has relatively greater diuretic, cardiac and muscular activity. It does not act so powerfully on the central nervous system.

It is recommended as a diuretic. The great obstacle to its use has been its insolubility and the consequent uncertainty of the degree of its absorption. It is liable to produce gastric disturbances.

Dosage.—0.35 to 0.5 Gm. (5 to 8 grains).

THEOBROMINE SODIUM SALICYLATE.

THEOBROMINUM NATRIO-SALICYLICUM PH. G. IV. THEOBROMINÆ SODIO-SALICYLAS.

Theobrominesodium salicylate, $NaC_7H_7N_4O_2 + NaC_7H_5O_3$, is a double salt of theobromine-sodium and sodium salicylate.

It is prepared by adding to a solution of one molecule of sodium hydroxide one molecule of theobromine. To this solution of sodium theobromine one molecule of sodium salicylate is added and the solution brought to dryness.

It is a white powder, odorless, having a saline taste, and containing 50 per cent. of theobromine. It is freely soluble in water, and, like "theobromine sodium-acetate" (see Agurin) is readily decomposed by exposure to carbon dioxide or by the action of acids. It must therefore be preserved in well-stoppered bottles.

The aqueous solution (1 to 5) is colorless, turns litmus paper blue and after acidification with acetic acid assumes a violet coloration on addition of ferric chloride solution. From the solution, hydrochloric acid precipitates salicylic acid and, after a time, also theobromine, the precipitate being completely soluble in sodium hydroxide solution, but not in ammonia water. If 10 Cc. of the solution, rendered clear by the addition of sodium hydroxide solution, is shaken with 10 Cc. of chloroform, the chloroform when separated and evaporated should leave a residue not exceeding 0.005 Gm. for 1 Gm. theobromine sodium salicylate.

It is incompatible with acids, bicarbonates, borates, phosphates, ferric salts, chloral, etc.

Actions and Uses.—Its effects are the same as those of theobromine (which see), over which it has the advantage of greater solubility.

Dosage.—1 Gm. (15 grains) five or six times a day. Its tendency to produce gastric irritation may be prevented by giving it in well-diluted solution, or, if preferred, in capsules or wafers, followed by water.

(*To be continued.*)

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

103 DEARBORN AVENUE . . . . CHICAGO, ILL.

Cable Address . . . "Medic, Chicago"

Subscription price.....Five dollars per annum in advance

[*For other information see second page following reading matter.*]

SATURDAY, DECEMBER 15, 1906.

IS APPENDICITIS ON THE INCREASE?

When a given disease is brought into prominent notice, it is often difficult to state whether there is an actual or only an apparent increase in its incidence. In order to ascertain the truth on this point, it is necessary to learn whether the same disease has appeared in the mortality sheets under other names and if a greater knowledge of the disease may not have led to its more frequent recognition. So far as appendicitis is concerned, there has been for years discussion as to whether or not the disease is on the increase. Some observers, such as Lucas-Championnière, have gone so far as to say that it is practically a new disease, but others, as Villaret, for example, strenuously oppose the idea that the condition is any more common than it used to be.

There is no doubt that the older clinicians failed to recognize the appendix as the commonest cause of acute abdominal disease, especially localized conditions in the right iliac fossa. It is true that they observed what we now know to be the terminal stages of appendicitis, and they labeled these conditions perityphlitis, iliac phlegmon, typhlocnteritis, and so on. Very commonly the patient died, and his case was entered on the mortality reports as one of peritonitis or of inflammation of the bowels. What the older writers failed to see was that the trouble underlying all these ills originated in the appendix. All this, however, does not prove that the condition, which we now know as appendicitis, was any less common fifty years ago than at present. There is no doubt that the terminal stages of the disease have been recognized under other names for several generations, and it is distinctly stated by some writers that they were common. Addison,[1] in 1842, in discussing a case of abscess in the right iliac fossa, states that he believes similar cases are of frequent occurrence. George Lewis,[2] in 1856, refers to numerous cases told him by neighboring physicians, and Leudet,[3] of Rouen, in 1859, specifically states that the appendix is a very frequent cause of localized peritonitis. It seems to have been generally overlooked, too, that in 1855 James Jackson[4] described the so-called McBurney's point, though he did not recognize its significance in appendiceal inflammation.

It is difficult to find statistics bearing directly on the supposed increase in appendicitis. There are some figures, however, which strongly suggest that the increase is only a supposed one. Villaret's figures on the incidence of the disease in the German army show that between 1874 and 1901 the proportion of cases of appendicitis had increased 70 per cent., but they also show that during the same period the mortality from peritonitis had decreased 70.2 per cent., that from diseases of the liver 60.4 per cent., and that from chronic affections of the stomach 79.9 per cent. The statistics from several large St. Petersburg hospitals show that since 1890 the average death rate from appendicitis has been 0.37 per cent., and that there has been no increase during that time. The mortality statistics of the State of Connecticut show a suggestive relation between appendicitis and peritonitis. In 1894 appendicitis was not recorded as a cause of death in the Connecticut tables, and there were 153 deaths from non-puerperal peritonitis; the next year there were 31 deaths from appendicitis and only 129 from peritonitis, the two together causing 160 deaths. From 1895 to 1904 the records of this state show a gradually increasing death rate from appendicitis, and a correspondingly decreasing one from peritonitis, so that, while in 1895 there were 31 deaths from appendicitis and 129 from peritonitis, in 1904 there were 85 deaths from appendicitis and 83 from peritonitis.

From the above statements it is evident that, while appendicitis as such is of recent recognition, its effects, and particularly peritonitis and abscess of the iliac region, have figured in the mortality returns for years. This, together with the distinct relation between peritonitis and appendicitis in the mortality statistics, make it certain that, probably to a large extent, the increase in the incidence of appendicitis is only apparent. Furthermore, when we come to inquire into the question of the recognition of the disease, we find, without doubt, that it is now recognized at an early stage where fifteen years ago it was hardly recognized at all. This widespread early recognition is due, no doubt, chiefly to the advances in abdominal surgery which have allowed us to gain a full understanding of the disease in its various stages We are forced to believe that the mortality from peritonitis which now appears in the statistics is still largely due to appendicitis, and we are of the opinion that, even now, many general practitioners fail to recognize the fact that most inflammations in the right iliac fossa are due to appendicitis, and allow a patient's condition to go undiagnosed until too late. While we do not believe that appendicitis has increased in frequency, we do believe that there is still room for improvement in its early diagnosis.

1. Dunn: Lancet, 1842, I, 483, discussion.
2. New York Jour. of Med., vol. i, 1856, third series.
3. Arch. Gén. de Méd., 1859, ii, 129.
4. "Letters to a Young Physician."

INTERNATIONAL SANITATION.

The Sanitary Convention, signed at Washington, D. C., Oct. 14, 1905, marked an era in this work in the Western Hemisphere. This agreement, which codified the measures necessary to guard against the invasion

and propagation of yellow fever, cholera and plague from one country to another, emphasizes the responsibilities of the different governments to each other in matters relating to the public health. Such measures will remain a necessity until the nations harboring infectious diseases institute engineering and sanitary measures for their elimination.

The duty devolving on all nations to eradicate disease from their territory formed the subject of a resolution which was passed by the American Medical Association at its annual session in 1889.[1] Since that time this principle has been repeatedly advocated.

In 1876 Woodworth[2] suggested the awakening of an international sentiment for the prevention of cholera and yellow fever; since 1896 Surgeon-General Wyman[3] has urged international action for the elimination of yellow fever from its endemic centers, and Kitasato[4] has recently advocated the organization of an international army to combat and vanquish plague. The arguments in each case are the relief of commerce and the saving of human life.

The advance in international understanding leads to the hope that before long an international compact will be formed looking to the eradication of transmissible disease from infected localities. This means the enforcement of sanitary and hygienic measures, particularly in seaport towns which, under present conditions, are a constant menace to the health of other countries.

A specific suggestion was made at the Conference of the American States in Mexico in 1901, looking to an international agreement for the elimination of yellow fever. Since that time much evidence has accumulated to show that with well-directed efforts such a consummation is possible. Two threatening epidemics have been suppressed, one at Laredo, Texas, and one at New Orleans; and the efficient sanitary work on the Isthmus of Panama is convincing that life in an endemic focus of yellow fever may be rendered safe. This suggestion served the purpose of pointing to a standard to which effort should be made, and had an influence in the adoption of the resolution under which international sanitary conventions are now held.

In this issue of THE JOURNAL[5] appear the recommendations recently adopted at the Third International Conference of American States held in Rio de Janeiro. They suggested the adoption of measures tending to secure improved sanitation of cities, and place on the next International Sanitary Convention, to be held in Mexico, December, 1907, the duty of devising some plan or agreement looking to that end. An international agreement to this effect would be of the greatest importance to commerce and the public health, and would ultimately relieve, in great measure, the necessity of quarantine.

The method of transmission and prevention of infectious diseases (particularly yellow fever, malaria and tuberculosis) are now so well understood that there should be little difficulty in arriving at some general understanding for a comprehensive working plan. Such a plan should take cognizance of the fact that epidemics requiring national intervention have their origin in insanitary local conditions, and the argument naturally follows that the national governments of the several republics must in some manner exercise a more direct influence for the correction of these faulty local conditions.

1. THE JOURNAL A. M. A., July 20, 1889.
2. Annual Report, U. S. Marine-Hospital Service, 1876.
3. Annual Report, U. S. Marine-Hospital Service, 1897.
4. Philippine Jour. of Sci., June, 1906.
5. See page 2025.

THE FIRST FRENCH PUBLICIST—A BIT OF MEDICAL HISTORY.

The first newspaper in France appeared in Paris in 1631. Unlike similar enterprises begun a little earlier in Germany and England by stationers in the ordinary course of their trade, this newspaper was but one of the many busy schemes of an energetic member of the medical profession, Théophraste Renaudot, of whose activities both within and beyond the limits of his chosen calling much of interest might be written.

Théophraste Renaudot was born at Loudun in 1584 and studied medicine in Paris and Montpellier. In 1612 he established himself in Paris, where he had reason to hope his acquaintance with Cardinal Richelieu would stand him in good stead. In this he was not mistaken. Having turned Catholic, he became physician to the king (Louis XIII) and was able to conquer all the difficulties put in his way by the Paris faculty, which would allow no other physicians to practice in Paris except those promoted by itself. But Renaudot was not satisfied with mere practice. He established an agency or office, "Bureau d'Adresses et de Rencontre," where could be learned the addresses of persons; to this he soon added an employment agency and a chemical laboratory where he gave instruction as well as manufactured certain preparations of antimony, introduced by Paracelsus, with the therapeutic action of which he had become familiar in Montpellier. The use of these preparations, however, was prohibited by the Paris faculty of medicine. To us of the present day, enterprises like these naturally suggest at once the great advantage of publicity and advertisement.

Whatever the motive or source of the suggestion—some say the project was formed by Richelieu himself—Renaudot, in 1631, began the annals of French journalism by issuing the *Gazette,* the continuation of which is said to be the present *Gazette de France.* Richelieu and the king took keen interest in the progress of the infant *Gazette* and letters-patent were issued to Renaudot and his heirs, giving the exclusive right to print and to sell where and how they may please "the gazettes, news, and narratives of all that has passed or may pass within or

without the kingdom." We can not now describe all the details of Renaudot's *Gazette.* It is necessary, however, to direct attention to the last page, which was occupied regularly by lavish advertisements of the many and excellent remedies that could be obtained at the bureau in Rue de la Calandre under the sign of the "coq d'or"; especially antimony was praised in extravagant terms. The faculty attempted in vain to suppress the paper. As the business increased, Renaudot, apparently on pure philanthropic grounds, commenced, each Saturday, to distribute his antimony preparations free of charge to the poor. Out of this custom grew a large policlinic, and one of the earliest. At first the dispensary was open only on Saturday, but later every week day, and the patronage grew to such an extent that Renaudot was forced to bring assistants from Montpellier. Finally the staff numbered no less than 15 physicians, all from Montpellier.

Renaudot was now at the height of his power; he was appointed general supervisor of the care of the sick poor in Paris and introduced many needed reforms. After Richelieu's death in 1642 Renaudot's influence gradually waned and the faculty succeeded, in spite of opposition from Montpellier, in securing the cancellation of his right to practice. The *Gazette,* however, flourished, and at his death in 1653 it was left to his sons in prosperous condition. Thirteen years later the Paris faculty found itself impelled to decree the free use of antimony.

Renaudot's purely medical writings are not many; the most important deal with questions concerning the care for the sick poor. The father of French journalism impresses one as a man of intense and diversified activity and of great energy. Considering the spirit of his times and the relentless opposition to him by the faculty of medicine in Paris, he accomplished much of importance in practical medicine. His was one of the first true policlinics, the example of which can not have been without subsequent influence, and his efforts on behalf of the sick poor were also beneficial.

THE NOBEL PRIZE IN MEDICINE.

As announced last week, the Nobel prize in medicine for the present year has been divided between Professor Camillo Golgi of Italy and Professor Santiago Ramon y Cajal of the University of Madrid. The prize amounts to over $40,000, so that, even when divided between two men, it makes a magnificent recompense for their labors.

While the names of the recipients are not familiar to the great mass of the profession, there can be no doubt that the selection for the distinction conferred is eminently fitting. Golgi's important work consisted in the invention of the staining method which has since been known by his name and by which the brain tissues, after hardening in bichromate of potash or corrosive sublimate, are stained by nitrate of silver. This method has given most beautiful results and has imparted information with regard to the central nervous system which had been unattainable before. The nerve cell in the brain tissues acquired an importance much greater than ever, and the first hint of a proper conception of the composition of nerve tissues was made possible.

Ramon y Cajal's work consisted in the development of Golgi's methods and their application especially to embryonic nerve tissue. He succeeded in demonstrating that anatomically nerve cells are independent of one another, and that even the axis cylinder does not become continuous with any other portion of nerve tissue, but only enters into communication with them by contact of the minute terminal filaments. After Ramon y Cajal's discoveries the neuron theory became a portion of the most discussed teaching in neurologic science. It was the Spanish anatomist himself who suggested that possibly the neuroglia cells in the brain act as insulators, preventing the passage of nerve impulses from one cell to another, except when by voluntary action their processes are withdrawn from the positions which they occupy between nerve cell endings. He also suggested that, as the neuroglia cells have minute terminal filaments ending in the blood vessel walls, it seems not unlikely that the contraction of these cells widens such blood vessels and so allows a larger amount of blood to reach a given part of the brain than before, thus heightening brain activity and explaining the mental process we call attention.

Needless to say, these theories have been very much discussed, but it is for his observations in brain anatomy that Ramon y Cajal has gained his reputation as a scientific worker and for which he has now received the merited reward of $20,000 from the annual Nobel prize fund.

CLIMATE IN THE TREATMENT OF TUBERCULOSIS.

The importance of correct appreciation of the problems involved in the advice given patients concerning change of climate for tuberculosis is forcibly set forth by M. A. Rogers,[1] a physician with eleven years' experience in the desert (Arizona) in the treatment of large numbers of tuberculous patients. He objects to the current statement that climatic treatment is not a necessary, and hardly an important, factor in the cure of tuberculosis, and he regards a stay in an arid climate as of especial importance for those convalescing from acute diseases at which time they are exceptionally liable to contract tuberculosis. Students who have had an attack of pneumonia, pleurisy or measles can pursue their studies in the University of Arizona when they might succumb to tuberculosis if they remained at home. Nursing women and debilitated persons generally will benefit greatly by such a change. The climate of Arizona is especially favorable, he states, to the growth and

1. Charities and the Commons, Sept. 1, 1906.

development of children, infant mortality among those of American parentage being almost *nil*. In reference to the treatment of tuberculosis the statement is made that only patients in the incipient stage recover, although patients in advanced stages may prolong life beyond what would be possible in more unfavorable localities. The consumptive in an arid climate needs medical care, rest and nursing as much or more than at home. Treatment in a sanatorium is most favorable, and Rogers emphasizes the importance of the immigrant at least being supplied with money enough to make himself comfortable without work. The proper time to send patients should be considered. To send them to Gallup, in New Mexico, at an altitude of over 6,000 feet above the sea, in the dead of winter, when there is probably a foot or two of snow on the ground and the temperature 10 degrees below zero, and to tell them to live out of doors, is to invite a fatal termination. What kills them a little quicker, according to Rogers, is to send them to Tucson or Phoenix in June, when the thermometer is registering 110 or 115, or even higher, in the shade, with instructions to "get a tent and go out in the desert and rough it." He states that the three great advantages of the arid climate are: 1. The dry, invigorating, sterile quality, which acts as a tonic. 2. The fact that the open-air treatment can be carried on without interruption during the entire winter and with comfort to the patient. 3. The almost continuous bright sunshine, which, besides being curative, is conducive to cheerfulness and hopefulness. All forms of tuberculous throat affections, Rogers states, are unsuitable for climatic treatment. He makes a plea for the establishment of a large sanatorium with ample endowment to care for the unfortunate patients who go to Arizona with insufficient means to care for themselves properly.

ANOTHER CARDIAC PERIL.

Many years ago a Russian physiologist humorously advised the use of the sphygmograph by lovers and others who wish to know the real feelings of those in whom they are specially interested. In view of the reported great increase of heart disease which is coming to the front, like cancer and pnuemonia, there may be other prudential reasons for the use of this diagnostic instrument in such cases. A young man in Brooklyn is said to have died on account of the shock due to acceptance by his sweetheart—at least, it is alleged that this was the verdict of the physician. He evidently did not expect it, and it was too much for him. As a lay contemporary says, this incident should be a forceful reminder to young women not to accept too promptly. It should also be a reminder to young men to be sure of the physical condition of their hearts before figuratively giving or offering them to others. It is perhaps the infallible female instinct or intuition which has led to the almost proverbial allegation that a woman's "No" means "Yes." They instinctively dally and hold back on such important occasions, for, as our contemporary says, what is the use of accepting a man and having him die on the spot?

BUSINESS BEFORE HEALTH.

After ten years' experience with what has been known as a practically model milk service, the milk dealers of Rochester, N. Y., have made an effort to take the control out of the hands of the very competent health officer and to put the power to revoke licenses into the hands of another official. The paid attorney of the milk producers, in his argument before the law committee of the city council, alleged, according to the newspaper reports, that the health officer was neglecting the business side of the question and going too much on theory. It was not right, he said, to raise the price of milk for a city of 200,000 people for the sake of 7,500 babies. This is the old conflict of individual or class business interests against the general public welfare cropping out in another place. It would seem strange that, after ten years of creditable obedience to necessary health regulations, the milk dealers of Rochester should at last break out in an attempt to nullify the whole system and thus imperil, if not absolutely destroy, the good reputation they have been so long in earning. The last straw, however (that seems to have broken the camel's back, if the simile is worth using in this case) was a proposed amendment to the ordinances, suggested by the health officer, that all milk sold should be delivered at a temperature of not more than 50 degrees Fahrenheit. This has been pending before the law committee of the council since the early part of last summer, and its reasonableness every physician will admit. We have not learned that the milk dealers of Rochester have carried their point, and it will be a pity if that city takes any such retrograde step. It seems specially unfortunate and ill advised that the attempt should be made to annul all the good accomplished in ten years just when reform is everywhere in the air and the old rule of "business before anything else," and especially before considerations of health, is being generally questioned in this country.

VIVISECTION.

The opponents of vivisection have usually ignored the benefits derived from the practice and have presented the absurd view that the vivisector is a heartless torturer of dumb animals. The prejudice against vivisection is strongest in Great Britain, and it is there that the antivivisectionists keep themselves most prominently in the public eye. In order to satisfy the clamorings of this body, the present British Government has appointed another Royal Commission on Vivisection. The commission has been selected with fairness; although, indeed, the antipathies of the antivivisectionists have been even unduly considered, for out of the ten commissioners four are on their side and two not in a position to criticise them. Two of the members are medical men of some note and at the same time antivivisectionists. The conclusions of this commission will be awaited with interest by the medical profession of Great Britain, the great majority of whom are probably in favor of experiments on animals. If the report be adverse to vivisection, strictly regulated as it now is in Great Britain, the cause of medical science in that country will receive a decided set-back.

Medical News

ILLINOIS.

Personal.—Dr. Joseph H. Firestone is reported to be critically ill with typhoid fever at his home in Freeport.——Dr. Frank M. Hagans, Lincoln, on December 10 was appointed physician of Logan County.——Dr. John W. Tope has been chosen to organize the medical staff of the Oak Park Hospital, which will be open about the first of February.

State Military Surgeons Meet.—The Association of the Military Surgeons of the State of Illinois held its semi-annual meeting in Chicago, December 13. At the morning session Dr. Billings' clinic at Rush Medical College was attended, followed by a business meeting and the reading of papers. Luncheon was served at the Presbyterian Hospital and demonstrations were made on the cadaver by Col. Nicholas Senn and others, and in the evening the association was entertained by Dr. Senn at dinner at De Jonghe's.

Warns Against Itinerant Vendors.—The State Board of Health is circulating a warning to the public against "the so-called 'traveling specialists' who come from time to time into the various communities, their visits heralded by bold display advertisements in the newspapers, or by showy handbills." The warning continues:

As a rule, the greatness and eminence of these itinerants is confined closely to their own statements—in their own communities they are not looked on as distinguished specialists, but as men of mediocre ability who find traveling and advertising more lucrative than the quiet, dignified practice of their profession.

The State Board of Health would especially warn the people to avoid any relationship with those itinerant physicians who say that written agreements be entered into regarding the treatment of cases; who insist on the signing of notes, or who guarantee to cure in consideration of contingent fees. In dealing with patients who are honest and straightforward, it is seldom found necessary by the regular physician to bind them with contracts, notes and agreements. Further, the innocent looking "agreement," which the traveling specialist asks the patient to sign, frequently turns out to be a promissory note, pure and simple, which is promptly transferred to a third person, and which must be paid, regardless of the effects of the treatment, or whether any treatment has been given or not. . . .

Unless the "specialist" is personally known to the patient as a man of honesty and ability it is foolhardy to enter into any agreement or business arrangement with him, and under no circumstances should an agreement or contract with an itinerant be signed except in the presence of a competent attorney.

Chicago.

Personal.—Dr. William L. Baum has been elected commodore of the Chicago Yacht Club.——Dr. A. E. Halstead has been elected professor of surgery in the Northwestern University Medical School.

Ambulance Service.—Dr. Charles J. Whalen, commissioner of health, announces that the ambulance service in the police department has been officially turned over to the health department and will be manned by physicians, and that this makes a good opening for young physicians who wish experience in emergency work.

Contagious Diseases.—The department of health reports a marked improvement in the contagious disease indications. Although there was an increase in the total specimens submitted for examination in the department laboratory there were fewer positive findings of typhoid fever, diphtheria, and influenza and a corresponding decrease in the number of cases of these diseases reported during the week.

INDIANA.

Personal.—Dr. Gustave A. Petersdorf, Indianapolis, newly elected coroner of Marion County, has announced the appointment of Drs. Edwin S. Knox and Ray V. Converse as his deputies.——Dr. William D. Milroy is reported to be critically ill at his home in Logansport.——Dr. Mary Wickens, the first woman interne at the Indianapolis City Hospital, began her service December 1.——Dr. Irvin J. Becknell, Goshen, has been reappointed secretary of the Elkhart County board of health.——Dr. Eugene Holdeman, Elkhart, has been reappointed physician of the Elkhart County Infirmary.——Dr. J. B. Rucker has taken charge of the State Laboratory of Hygiene, Indianapolis, vice Dr. T. Victor Keene, resigned.——The staff of the Fort Wayne Lutheran Hospital has elected officers as follows: Chief of staff, Dr. Herman A. Duemling; president, Dr. Henry G. Merz, and secretary, Dr. Eric A. Crull.——Dr. John F. Simison, Romney, has been elected to the legislature from the counties of Montgomery and Tippecanoe.——Dr. George H. Grant, Richmond, health officer of Wayne County, has resigned on account of ill health.——Dr. Charles Marvel, Richmond, has been appointed secretary of the Wayne County board of health and Dr. John M. Fouts, Centerville, has been reëlected physician to the county infirmary.

MARYLAND.

Care of the Insane.—According to Dr. George J. Preston, secretary of the lunacy commission, the needs of the state in this regard are as follows:

State supervision of dependent insane, with ample accommodations for their treatment.
A state insane asylum for colored patients exclusively.
A psychopathic ward in one of the city hospitals for temporarily insane patients, to be established as a phychopathic hospital as the need grows.
Separation of acute from chronic cases.
A hospital for epileptics.
Provision for adults in the School for Feeble-Minded Children who cannot now be sent to the over-crowded institutions.

Baltimore.

Suicides.—During this year thus far 72 suicides have been reported in Baltimore. Of these 68 were whites—56 female and 12 male; 2 colored males and 2 Chinamen.

Pneumonia and Tuberculosis.—During the week ended December 8 there were 23 deaths from pneumonia and 34 from tuberculosis.

Proportion of Instructors to Students.—The register of the Johns Hopkins University shows the attendance in the present session to be 623, 264 of whom are in the medical department. The faculty numbers 190.

Prosecution of Illegal Practitioners.—Dr. Herbert Harlan, chairman of the committee appointed to investigate and report for prosecution unregistered physicians of the city, announces that of the 13 physicians whom he had reported to the state's attorney, 11 had been indicted by the grand jury and the other two had removed from the city.

Hospital to Build.—The Sydenham Infectious Diseases Hospital Commission met December 6 to consider bids for the buildings. The bids exceeded $30,000, and as only $25,000 was available, the commission decided to build at present only the detention ward to accommodate 30 patients, and which will cost about $30,000, leaving the other matters for the future.

Medical Society.—At the annual meeting of the Baltimore City Medical Society, December 4, Dr. Archibald C. Harrison was elected president; Dr. J. Mason Hundley, vice-president; Dr. W. Edward Magruder, secretary, and Dr. William S. Gardner, treasurer. Dr. Richard C. Cabot of Boston made an address on "Suggestions for Hospital Reorganization, with Special Reference to Greater Effectiveness of Treatment Therein."

Source of Typhoid.—The water engineer of Baltimore has made an exhaustive investigation as to the source of the typhoid fever recently prevalent and declares that the city water supply is not to blame, that it is free from typhoid germs and that it would be a reckless waste of money to build a filtration plant as is being done in other cities. He attributes the cause of the infection to contaminated wells, bathing in polluted streams, infected flies, the use of night soil as fertilizer on truck farms, polluted milk and ice from polluted ponds.

Personal.—Dr. R. Dorsey Coale, dean of the Medical Faculty of the University of Maryland, has been elected to fill the vacancy in the Sydenham Infectious Diseases Hospital Commission occasioned by the death of Dr. Isaac E. Atkinson.——Dr. Thomas B. Futcher has been appointed attending physician to the Woman's Hospital, vice Dr. Isaac E. Atkinson, deceased.——Dr. William Osler arrived in Baltimore December 8, and remained as the guest of Dr. H. W. Cushing until December 12, when he left for Canada. He expects to spend several weeks in Baltimore after the Christmas holidays.

MICHIGAN.

Personal.—Dr. George E. Chamberlin, Grand Rapids, has been appointed medical director for the State Home for the Feeble Minded and Epileptics, Lapeer, to succeed Dr. William J. Polglase, who retires January 1.——Dr. Simeon S. French, aged 90, the oldest practitioner of Battle Creek, was the guest of honor at a banquet given by the Calhoun County Medical Society, December 4.——Dr. and Mrs. Alexander G. MacLeod, Calumet, returned November 25 from an extended trip to Europe.——Dr. Ernest L. Shurly, Detroit, has started for Europe.——Dr. Millie Wilson, Detroit, has succeeded Dr. Nina Oliver McIntyre as assistant physician at the State Home for the Feeble Minded and Epileptics, Lapeer.

NEW YORK.

Suffern Residents Protest.—Persons living in the neighborhood of the Good Samaritan Hospital, Suffern, have sent in a petition making a vigorous protest against the erection of an annex to the hospital, which is to be used as a laundry and which was presented to the hospital by Mrs. Thomas F. Ryan of New York.

New York City.

Bequest to Hospital.—By the will of the late Mrs. Catherine Goldbach, $3,800 has been bequeathed to St. Catherine's Hospital, Brooklyn.

Smallpox in Brooklyn.—Twelve cases of smallpox were found in the negro tenements at Cleveland Place and Baltic Street by the Brooklyn Health Department. They were all in one block and the block was put under police quarantine.

Right of Way for Ambulances.—At the meeting of the board of aldermen December 4, an ordinance was adopted providing that any vehicle bearing a wounded or sick person shall have the right of way over all other vehicles except those which carry the United States mail.

Emmet's Successor.—The vacancy in the medical board of the Woman's Hospital in the State of New York occasioned by the resignation several years ago of Dr. Thomas Addis Emmet, was filled December 10 by the election of Dr. J. Riddle Goffe as visiting surgeon.

Harvey Society Lecture.—The fifth lecture in the Harvey Society course, given by Dr. S. J. Meltzer, New York City, December 15, at 8:30 p. m., at the New York Academy of Medicine, is on "The Factors of Safety in Animal Structure and Animal Economy." All interested are cordially invited to be present.

New York Academy of Medicine.—The following officers were elected December 6: President, Dr. John A. Wyeth; vice-president, Dr. Algernon T. Bristow; trustee, Dr. Charles A. Dana; member committee on admissions, Dr. J. Ramsey Hunt; member committee on library, Dr. Henry S. Oppenheimer; recording secretary, Dr. John H. Huddleston, and corresponding secretary, Dr. Charles S. Bull.

Society Organized.—Physicians of the eastern district of the borough of Brooklyn organized a medical society to be known as the Williamsburgh Medical Society, December 5, with an initial membership of 48. The following officers were elected: President, Dr. Leon Louria; vice-president, Dr. William Linder; corresponding secretary, Dr. Marcus J. Levitt; financial secretary, Dr. Edward L. Friedman, and treasurer, Dr. Abraham Hayman.

New Woman's Hospital.—This institution which is located on 109th and 110th streets, between Amsterdam and Columbus avenues was formally opened December 5 in the presence of about 200 guests. Addresses were made by Bishop Potter, Gen. Horace Porter and Dr. D. B. St. John Roosa. The institution is said to be one of the most perfect in its appointments of any in the United States. The kitchen is on the top floor. The building is ventilated by a forced draught system. In the summer cold air is furnished and in the winter, warm air. There are 125 beds of which twenty-five will be devoted to charity patients. About $1,000,000 has been spent on the building and equipments.

OHIO.

Wrong Use of the Mails.—It is reported that a jury in the United States District Court found "Dr." J. E. Wenman, Lorain, guilty of mailing immoral and prohibited matter through the mails, fined him $100 and costs, and sentenced him to the workhouse for six months.

Communicable Diseases.—Smallpox is reported in McComb, where 15 families are under quarantine.——The mayor and the board of health have again closed the public schools of Batavia and prohibited public meetings, on account of the prevalence of diphtheria.——During the week ended December 1, 80 cases of diphtheria, with four deaths, were reported in Cleveland.——Three cases of cerebrospinal meningitis, with two deaths, are reported in Bellefontaine.

Medical Societies Formed.—The alumni association of the resident physicians and surgeons of St. Vincent's Charity Hospital, Cleveland, was organized at the annual reunion, November 21. Dr. William H. Humiston was chosen president, and Dr. Thomas A. Burke, secretary, both of Cleveland.——The Charity Hospital Medical Society, membership in which is limited to past and present resident physicians and surgeons of the St. Vincent's Charity Hospital, was organized in Cleveland, November 21. The following officers were elected: President, Dr. C. A. Hamann; vice-president, Dr. J. E. Cooke, and secretary-treasurer, Dr. William Schesinger.

Personal.—Dr. Seth E. Miller, Kipton, has been elected coroner of Lorain County.——Dr. Belle J. Allen, Bellefontaine, will soon leave for India as a medical missionary.——Dr. Heikki Koljonen, Ashtabula, has moved to Astoria, Ore.——Dr. Evans, Springfield, who has been ill with pneumonia, has recovered.——Dr. Thomas E. Shrider, Alvordton, has retired from active practice.——Dr. Edward G. Hersh, McComb, has been appointed health officer of Pleasant Township.——Dr. Charles F. Adams, Milledgeville, has succeeded Dr. George F. Brubaker, Springfield, as physician to the Odd Fellows' Home.

Cincinnati Hospital Staff.—The board of medical directors of the Cincinnati Hospital recently elected the following staff for the ensuing year: Department of medicine, senior staff, Drs. George A. Fackler, Joseph Eichberg, Edwin W. Mitchell, Oliver P. Holt; junior staff, Drs. John E. Greiwe and Mark A. Brown. Department of surgery, senior staff, Drs. N. P. Dandridge, Joseph Ransoboff, E. W. Walker, John C. Oliver; junior staff, Drs. Frank E. Fee, Arch I. Carson, Carl Hiller, H. H. Hines. Obstetric department, Drs. George M. Allen, W. D. Porter; junior staff, Dr. James W. Rowe. Gynecologic department, Drs. Sigmar Stark, Charles A. L. Reed, Charles L. Bonifield, John M. Withrow. Neurologic department, Drs. Frank W. Langdon, H. H. Hoppe. Pediatric department, Drs. B. Knox Rachford, Allyn C. Poole. Ophthalmologic department, Drs. Robert Sattler, Derrick T. Vail. Oto-Laryngologic department, Drs. Samuel E. Allen, John W. Murphy. Dermatologic department, Drs. A. Ravogli, Charles Seth Evans. Orthopedic department, Drs. Charles E. Caldwell, Albert H. Freiberg. Pathologic department, Drs. Henry W. Bettman, C. F. Hegner. Neuro-pathologist, Dr. David I. Wolfstein. Radiologist, Dr. Sidney Lange. Department of dentistry, Drs. W. D. Kempton, H. C. Matlack. Laboratory department, Drs. Horace J. Whitacre, F. W. Lamb, H. L. Woodward, L. G. Heyn, R. W. Thomas, Clifford Sater. Physician to the Branch Hospital, Dr. Albert Faller.

PENNSYLVANIA.

Hospital for Advanced Tuberculosis.—The Oil City board of health held a meeting with the city council to consider the building of a hospital for advanced cases of tuberculosis.

Sanatorium Rebuilt.—The Grand View Institution for the Care and Treatment of Tuberculosis, at Oil City, which was burned August 18, has been rebuilt, and the new building, with accommodations for 20 patients, is now ready for occupancy.

State Antitoxin.—The report of the State Department of Health from October 10 to November 10 shows that regarding 476 cases of diphtheria treated with the antitoxin distributed free, only 43 deaths resulted. This gives the very low death rate of 8 per cent. The report also shows that 418 children were immunized against the disease.

Typhoid at Greensburg.—Typhoid fever is epidemic in Greensburg, where 16 new cases have been reported in the last 10 days. Dr. Samuel G. Dixon will by request send a representative to make investigations of the condition. The water used by the residents has been analyzed and found to be pure and there are no surface indications of defects in the sewage system.

School Board Defies Dr. Dixon.—It is stated that the Altoona school board, at a meeting December 4, officially decided to ignore the rules regarding vaccination of school children laid down by Dr. Dixon, state commissioner, and to carry the fight into the courts if necessary. Dr. Dixon has ruled, as previously stated in THE JOURNAL, that if a child has been thrice vaccinated by the family physician without success, a fourth vaccination shall be made by a physician designated by the health authorities. The school directors voted to admit any child who had been vaccinated three times unsuccessfully by any reputable physician.

Societies Elect Officers.—At the November meeting of the Washington County Medical Society the following officers were elected for the ensuing year: President, Dr. William H. Alexander, Canonsburg; vice-president, Dr. William W. Weygrandt, Thomas; secretary and reporter, Dr. John B. Donaldson, Canonsburg; treasurer, Dr. Albert E. Thompson, Washington, and censors, Drs. William D. Teagarden and J. W. McKennan, Washington, and Dr. Joseph W. Hunter, Charleroi.——At the meeting of the Somerset County Medical Society the following officers were elected: President, Dr. E. Hunter Perry, Elk Lick; vice-president, Dr. Charles P. Large, Meyersdale; secretary, Dr. H. Clay McKinley, Meyersdale; treasurer, Dr. Walter S. Mountain, Confluence; financial secretary, Dr. Bruce Lichty, Meyersdale; district censors, Drs. Charles P. Large and H. Clay McKinley, Meyersdale, and censors, Drs. Maurice Stayer, Rockwood; Harry C. Hoffman, Meyersdale, and Albert M. Lichty, Elk Lick.——At the meeting of the Lawrence County Medical Society the following officers were elected: President, Dr. Jesse R. Cooper; vice-presidents, Drs. Charles A. Reed and Elizabeth M. McLaughry; secretary and reporter, Dr. Brant E. Sankey; treasurer, Dr. John Foster, and censors, Drs. John Foster, Walter L. Campbell and Robert G. Miles, all of New Castle.——At the meeting of the Franklin County Medical So-

ciety the following were nominated to the offices for the year 1907: President, Dr. John W. Croft, Waynesboro; vice-presidents, Drs. Guy P. Asper, Chambersburg, and James H. Swan, St. Thomas; secretary, Dr. John J. Coffman, Scotland; assistant secretary, Dr. H. Clay Devilbiss, Chambersburg; treasurer, Dr. David Maclay, Chambersburg, and censor, Dr. Henry X. Bonbrake, Chambersburg.

Philadelphia.

Dr. Hearn Injured.—Dr. Joseph W. Hearn, clinical professor of surgery in Jefferson Medical College, was thrown from his carriage in a runaway accident, December 4, and sustained a fracture of the base of the skull. Dr. Hearn was unconscious for twenty-four hours and his life was despaired of. On December 8 he showed marked signs of improvement and hopes for his recovery are now entertained.

Society Meeting.—The Northern Medical Association, the next to the oldest of the medical societies of Philadelphia, celebrated its sixtieth anniversary December 5, with a banquet at the Roosevelt. Dr. Joseph P. Remington presented the society with a portrait of his father, the first secretary of the organization. Among those present was Dr. William J. Mayo of Rochester, Minn. Dr. Albert Bernheim, chairman of the general committee of arrangements, presided, but later surrendered the chair to Dr. Thomas Shriner, who presided as toastmaster.

Personal.—Dr. Herbert Willis has returned from Europe.——Dr. William W. Trinkle, district police surgeon, has resigned.——Dr. W. M. Late Coplin, director of the department of health and charities, with Assistant Director Kearns, were guests of honor at a banquet given by the assistant medical inspectors of the health bureau, December 7.——Dr. S. Weir Mitchell was presented with a gold medal by the Society of St. Andrew at its one hundred and thirtieth anniversary celebration December 3.——Dr. Hobart A. Hare asks us to announce that the statements published in the Philadelphia papers, to the effect that he would spend the winter in Europe, are unfounded.

Filtered Water and Typhoid.—While the statement in The Journal of last week concerning the filtered water and typhoid fever question in this city was somewhat unfavorable to the water, the records of the bureau of health for the week ended Deeember 7 show a marked decrease in typhoid fever in the filtered water area. In one district supplied with raw Schuylkill water there were 91 cases of typhoid out of a population of 293,210. In another section of the city supplied with raw Schuylkill water there were 37 cases in a population of 309,973. In still another section supplied with raw Schuylkill water there were 32 cases in a population of 282,057. In a district supplied with raw Delaware water there were 29 cases of typhoid fever in a population of 176,712. In the Belmont district, however, comprising West Philadelphia and supplied with filtered Schuylkill water, there were but 8 cases in a population of 173,839. In the original filtered water district, the Twenty-fourth Ward, there were no cases at all. In the first extension of this district there was one case reported and in the last extension 7 cases, making a total of 8 cases in all West Philadelphia. The typhoid record for the city during the week shows the presence of 203 new cases, an increase of 23 over the number reported in the preceding week.

TENNESSEE.

Hospital Enlarged.—Plans are being drawn for the construction of a new wing to St. Thomas Hospital, Nashville, and it is understood that the work will be begun in a very short time.

Smallpox.—Dr. Lafayette F. Seal, Tazewell, county health officer, reports 60 cases of smallpox in Claiborne County. The circuit court has been indefinitely postponed on account of the prevalence of the disease.

Appointment and Removal.—Dr. Claude C. Sullivan, Waverly, formerly secretary of the Humphreys County Medical Association, has been appointed assistant to the chair of physiology in the Tennessee University, Dental Department, and has moved to Nashville. .

Middle Tennessee Association Meets.—The annual meeting of the Middle Tennessee Medical Association was held in Shelbyville, November 16 and 17, under the presidency of Dr. Lynn B. Graddy, Nashville. The association was welcomed to the city by the mayor and by Dr. Jabus S. Nowlin. The addresses of welcome were responded to by Dr. G. Chris. Savage, Nashville. The following officers were elected: Dr. W. Guy Freyerson, Shelbyville, president; Dr. Richard Douglas, Nashville, vice-president and Dr. William Litterer, Nashville (re-elected) secretary. The next meeting of the association will be held in Murfreesboro in May, 1907.

TEXAS.

Fight Against Scarlet Fever.—Dr. James M. Loving, city physician of Austin, has issued a pamphlet instructing parents regarding the prevention of diphtheria and scarlet fever.

New Hospital.—All Saints' Hospital, Fort Worth, which has been built and equipped through the efforts of the members of the Trinity Mission in that city, is practically completed and will be ready for occupancy January 1. The building has accommodations for 35 patients and is strictly non-sectarian. Patients who are unable to pay are treated without charge.

Personal.—Dr. Matthew M. Smith, Austin, secretary of the Texas Sanatorium for Tuberculosis and a member of the Regular Board of Medical Examiners, has returned from a short trip to New York and Chicago.—Dr. George R. Tabor, state health officer, has returned after a trip to New Orleans and New York.——Dr. John R. Frazier, city health officer of Fort Worth has resigned, the resignation taking effect December 10.——Dr. J. E. Manney, Shauga, was stabbed by a negro on the streets of Marlin, November 17.—Dr. Robert L. Hall, Terrell, has been appointed health officer of Kaufman County, vice Dr. Lewis M. Stroud.——Dr. John W. Reifel, Houston, was been elected physician of Harris County, vice Dr. Edward J. Hamilton.——Dr. Eben S. Cox, Galveston, has been appointed health officer of Galveston County.——Dr. John M. Neel, Bonham, has been elected physician of Fannin County and Dr. John A. Lanius, jail physician.

VERMONT.

Medical College Opens.—The fifty-fourth annual session of the University of Vermont, Medical Department, Burlington, opened December 1, with an address by Dr. F. A. L. Lockhart, Montreal.

Diseased Meat Bill Defeated.—The joint resolution providing for an investigation by the legislature of the sale of diseased meats in the state of Vermont was voted down by a vote of 156 to 54.

Tuberculosis Sanatorium.—The sanatorium for the treatment of tuberculous patients, established by Senator Proctor, and toward which he contributed $100,000, is now under construction at Pittsfield and expects to be ready to receive patients next summer.

Personal.—The governor has appointed the following members to the State Board of Medical Registration: Drs. George F. Forbes, Burlington; A. E. Parlin, Barton Landing and Schuyler Hammond, Rutland.—Dr. Clinton F. Gale, Walcott, who has been practicing in that place for about a year, has been missing for three weeks and it is feared that some misfortune has befallen him.——Dr. Charles G. Abell has been appointed health officer of Enosburg Falls, vice Dr. Fred S. Hutchinson, resigned.

VIRGINIA.

Personal.—Dr. Herbert M. Nash, Norfolk, has been appointed surgeon general of the Grand Camp of the United Confederate Veterans of Virginia, vice Dr. James W. Claiborne, Petersburg, deceased.——Dr. John M. DeShazo, Centre Cross, has recovered from an attack of typhoid fever.——Dr. H. Rolfe Dupuy has been appointed health commissioner of Norfolk.

Asylum Changes.—Dr. Oliver C. Brunk has been appointed superintendent of the Eastern State Hospital, Williamsburg, vice Dr. Littleberry S. Foster. Dr. William F. Driver will succeed Dr. John M. Henderson as assistant physician and Dr. Irene B. Bullard, Radford, will succeed Dr. Philip T. Southall, as second assistant physician, all these changes to take effect January 1.

Communicable Diseases.—Norfolk reports 23 cases of scarlet fever.——Smallpox was reported in Alamance, Cherokee, Guilford, Mecklinburg and Randolph counties, with a total of 17 cases.——Diphtheria is reported in 17 counties; typhoid fever in 66 counties; malarial fever in 9 counties and hemorrhagic fever in 7 counties.——Two cases of smallpox were discovered by the local board of health in Richmond, November 20.

WISCONSIN.

Back to Wisconsin.—Dr. F. Gregory Connell, formerly of Milwaukee, who for the last four or five years has been practicing in Leadville, Colo., has located in Oshkosh and is associated with Dr. C. W. Oviatt.

Smallpox.—Several cases of smallpox are reported in and around Hortonville.——On account of the prevalence of smallpox at Two Rivers the workmen of Manitowoc, who are employed in the factories of Two Rivers, are ordered to be vaccinated under penalty of strict quarantine.——Eight cases of

smallpox have been discovered in one ward in Beaver Dam and the schools and churches in that ward have been closed.

GENERAL.

Tri-State Meeting.—The annual meeting of the Tri-State Medical Association of Mississippi, Arkansas and Tennessee was held in Memphis November 20-22, under the presidency of Dr. Allen E. Cox, Helena, Ark. The president's address was on the subject of "The 'Patent Medicine' Evil; the Rôle of the Physician and the Crusade being Waged against it." The following officers were elected: President, Dr. Frank J. Runyon, Clarksville, Tenn.; vice-presidents, for Mississippi, Dr. John Barskdale, Vaiden; for Arkansas, Dr. Louis F. Heintz, Marion, and for Tennessee, Dr. James B. Witherington, Munford; secretary, Dr. Richmond McKinney, Memphis (re-elected) and treasurer, Dr. Marcus Haase, Memphis (re-elected).

FOREIGN.

"Patent Medicines" to be Unprotected in Switzerland.—According to the *Deutsche med. Wochschr.* the authorities in Switzerland have voted to exclude "patent medicines" completely from the protection of the patent laws.

Regulations Against Quacks in Austria.—The Austrian minister of the interior has empowered the police to arrest and fine unqualified persons treating the sick, even if they do not make a practice of it. Fines ranging from 40 cents to $40 can be imposed, with imprisonment for one or two weeks.

Bequests to Hospitals in London.—By the death of the widow of Mr. Sam Lewis, a well-known London money lender, over $5,000,000 will become available for charitable purposes. Among other items is $1,250,000 to King Edward's Hospital Fund for London.——Mr. Herring, who recently died in London, has also bequeathed immense sums to charity, including large bequests to London hospitals.

Additions to a Scottish Infirmary.—An addition to Falkirk Infirmary was opened during the second week in November. The addition consists of a wing for the accommodation of nurses, a new ward containing eight beds, a new operating theater with all the latest appliances, and new wash houses and laundry. The cost of the additions was about $17,500, which has been defrayed by public subscription and contributions from the employés of public works in the neighborhood.

Local Honors for Cajal and Golgi.—The fact that the Nobel prize this year has been awarded to Cajal and Golgi has roused their compatriots to do them exceptional honor. It has been proposed that one street in Madrid and one in Pavia be named after Cajal and Golgi, respectively, and the name of Golgi is to be given to one of the hospitals at Pavia. Various other projects also are being discussed. It is reported that Cajal may be knighted and made a senator for life and that endowed prizes may be given in his name. Both men have been previous recipients of some international prizes of lesser amount.

Imprisonment for Careless Medical Certificate.—It is reported from Frankfurt that a local physician gave a certificate to a married couple testifying that they had been physically maltreated by a certain inmate of the house. He made out the certificate without examining the pair, merely noting some scratches on the man, taking their word for the other injuries. The affair came into the courts and the physician was sentenced to three months' imprisonment for lack of care in making out the certificate and testifying to what had no existence in fact.

Coeducation at Glasgow University.—The senate of Glasgow University has recently decided that women students of physiology may attend the ordinary course of lectures on physiology for medical students at that institution. The *British Medical Journal* states that when certain subjects are to be taught the class is to be divided. In recent years the separate teaching of women students has added enormously to the work of the teaching staff. As the matter now stands, it seems that any professor can make application to be allowed to admit women to his class in the university and that in the course of a few years no provision for teaching medical students will be required at Queen Margaret's College (the women's department), as they will all be absorbed into the ordinary university classes.

Responsibility of Hospitals for Injuries Received Therein.—A suit is being tried at Cologne, Germany, in which a widow is suing the city for a pension, as her husband was killed by jumping from a window in the public hospital in the course of febrile delirium. She claims that the affair could not have occurred if the window had been properly protected against such contingencies, or if the patient had been properly supervised by attendants. It has been shown that the male attendant in charge of the case had left the room after entrusting the patient to two trained female nurses, but that the latter became frightened and left also. The verdict was against the plaintiff in the lower court, but the case was returned by the court of appeals, the verdict hinging on the point whether the hospital had sufficient male attendants for the supervision of male febrile cases. If not, then the authorities are responsible for damages. This point is now being argued, the court holding that male febrile patients should have one or two male attendants.

Teaching of Hygiene and Temperance in British Elementary Schools.—A committee of the British medical profession formed for the furtherance of the teaching of hygiene and temperance in elementary schools, comprising among its members such men as Sir Victor Horsley, Prof. Sims Woodhead and Sir Lauder Brunton, recently waited on the president of the board of education in regard to this subject. A resolution was passed requesting the adoption in the education bill now before the British parliament of the compulsory medical inspection of school children and the establishment in the education department of a medical bureau. The medical supervision of school children in Great Britain has been greatly neglected and in this respect is much behind America. Sir Lauder Brunton, in advocating the teaching of hygiene in elementary schools and among the lower classes generally, said that in the course of 25 years he had seen a large number of infants brought by their mothers to St. Bartholomew's Hospital, some of whom were living skeletons, chiefly due to the mothers using dirty feeding bottles. The consequence of ignorance of hygiene on the part of mothers is that babies are dying in multitudes, and this will continue until mothers are taught how to rear them. Such ignorance does not exist only among parents but among teachers. Lack of knowledge of even the first laws of hygiene is resulting in a holocaust of babies as well as of sending forth into life many stunted and deformed children.

CANADA.

The Montreal Maternity Hospital.—This hospital was conducted last hospital year on an expenditure of $15,267. Four hundred and three children were born in the institution. The management will appeal to the city for civic aid.

University News.—The lieutenant-governor of British Columbia has endowed a chair of chemistry and mining in the McGill University of British Columbia, to the extent of $1,500 annually; and Mr. A. C. Flummerfeit a chair of civil engineering to the extent of $500 annually.

Examination for Municipal Inspector.—The Royal Sanitary Institute of Great Britain, through its board of examiners for the Dominion of Canada, will hold an examination in Toronto, December 18. There is only one municipal inspector in Canada, Inspector Watson of Fort William, who has passed such an examination in Great Britain.

Muskoka Cottage Sanatorium.—At the ninth annual meeting of the National Sanatorium Association, in Toronto, November 17-19, the Muskoka Cottage Sanatorium, the parent institute of the association, reported, through its medical superintendent, Dr. J. H. Elliott, that 236 patients were treated last year, a number greater than in any previous year. During the nine years of its existence this sanatorium has treated 1,287 patients.

Unauthorized Use of Physician's Name.—On page 1840 of THE JOURNAL, December 1, an item announced that Prof. J. George Adami "states that his name has been used without authority in connection with the meeting of the American International Tuberculosis Congress and the American Antituberculosis League." Dr. George Brown, president and executive officer of the American Antituberculosis League, says that Professor Adami's name has not been used by the American Antituberculosis League.

Toronto Free Hospital for Consumptives.—Dr. W. J. Dobbie, the medical superintendent of this hospital, reports that during the last official year 149 patients were admitted, and that 336 have been cared for since the institution was opened two years ago. Buildings and improvements to the extent of $20,000 were added during the year. The hospital is for advanced cases. Three buildings in course of erection will furnish the nucleus for a new hospital for pay patients. This will be ready in June.

Muskoka Free Hospital for Consumptives.—Dr. C. D. Parfitt, the medical superintendent of this institution, states that during the past hospital year 186 patients were admitted, the daily average being 55. Sixty-five occupations were represented. In the four years this hospital has been in existence 752 patients have been cared for. During the year a new residence was erected for the superintendent at a cost of $5,000;

and a new administration building will be built at a cost of $15,000. This hospital is supported almost entirely by voluntary subscriptions.

Montreal General Hospital.—During the quarter ended September 30 932 patients were treated in the wards of the Montreal General Hospital. In that time there were 67 deaths, 33 of these occurring within three days of admission. In the outdoor departments there were 11,927 consultations. During the quarter admission had to be refused to many more patients than at any other time in the last few years. The revenue for the quarter was $17,549 and the expenditure $27,176. Dr. A. D. Blackador was appointed to represent the hospital on the Alexandra Contagious Diseases Hospital. Dr. F. S. Patch was appointed to succeed Dr. R. P. Campbell as medical superintendent Jan. 1, 1907.

LONDON LETTER.

(From Our Regular Correspondent.)

LONDON, Dec. 1, 1906.

The Chair of Comparative Pathology at the University of Liverpool.

Dr. H. E. Annett has been appointed to the newly established chair of comparative pathology at the University of Liverpool. This chair is the first of its kind established in Great Britain. Professor Annett has been assistant lecturer in tropical pathology at the Liverpool School of Tropical Medicine and lecturer on comparative pathology at the University of Liverpool. He was a member of the first expedition sent out by the Liverpool School of Tropical Medicine to West Africa in 1899 and 1900, and directed the second expedition.

Research into Yellow Fever.

A telegram has been received from the expedition of the Liverpool School of Tropical Medicine which has been in Brazil since the beginning of 1905 with the object of investigating yellow fever. It states that the expedition has just been successful in proving that chimpanzees can be infected with yellow fever by means of the stegomyiæ. This discovery will be of the highest importance to those investigating the disease. Both the doctors of the expedition contracted yellow fever in the earliest stages of their investigations.

Improved System of Food Inspection.

Better means of inspection of London's food supply are urged by the Public Health Committee of the London County Council. Some 1,500,000 tons enter London by the Thames every year. Conditions are very different from those of fifty years ago, the tendency being to transfer from London nearly every process of food preparation that can be carried on elsewhere. In many cases the change greatly improves the quality and lowers the price; but it necessitates examining the food on entrance and it is not possible, even were it desirable, to inspect in detail all the food stuffs entering the port. The ideal sought must be an effective agency which will detect underhand methods in the dishonest trader rather than the establishment of a scheme of inspection in detail. There are many obstacles to efficient inspection. The present system constitutes posts of observation, but these are so isolated that the dealer in unsound food readily learns how to avoid them.

The Royal College of Surgeons.

The twenty-second annual meeting of fellows and members of the Royal College of Surgeons has taken place. The question of direct representation of members on the Council has been before the annual meeting for many years and a resolution in favor of it has been carried by large majorities. The members have no voice whatever in the government of the college and it is only at the annual meeting of members and fellows that they can express any views. They may then pass resolutions, but have no power to carry them into effect. At this meeting Mr. Joseph Smith moved the following resolution which was seconded by Sir Charles Hutchinson and carried by 40 votes to 3: "This annual meeting of fellows and members reaffirms the desirability of admitting members to direct representation on the council which as now constituted does not represent the whole corporation." The following resolution was also carried: "This meeting recommends that when the question of admitting women to the college examinations is brought before the fellows and members this should be done by means of a poll of the fellows and members."

An Institution for the Crippled.

The Lord Mayor of London has decided to raise a fund of $300,000 for the establishment of an institution for the crippled children of the metropolis. The scheme has been drawn up with the advice of experts and has received the approval of the king. For many years the lord mayor has taken a charitable interest in the 7,000 London crippled children and sends to each one a Christmas hamper. He now desires to found a permanent institution. This will not displace a single existing agency nor compete with any similar institution. As many crippled children suffer from tuberculosis it is proposed that the institution be situated near the sea, so that treatment may be undertaken in the best air. The scheme provides that the crippled shall, whenever possible, be trained to become wage earners. The proposed institute will thus be both curative and educational.

The Medical Libraries of London.

Mr. Prideaux of the Royal College of Physicians has published in the *Library Association Record* an interesting paper on the medical libraries of London. He classifies them in 5 divisions according as they belong, respectively: (1) To the medical corporations and the university; (2) to the general medical societies; (3) to the special medical societies; (4) to the medical schools and hospitals; and (5) to the postgraduate schools. Class 1 is represented by the libraries of the Royal College of Physicians, Royal College of Surgeons, the Society of Apothecaries and the University of London. With regard to the first two of these many historical details are given. Class 2 includes the libraries of the Royal Medical and Chirurgical Society, the Medical Society, the British Medical Association, the Hunterian Society and the West London Medico-Chirurgical Society. Class 3 consists of the libraries of the Obstetrical Society, the Ophthalmological Society, the Laryngological Society, the Otological Society and the British Balneological and Climatological Society. Class 4 includes the libraries of 11 medical schools. The contents of the most important of these libraries, so far as can be ascertained, is as follows: Royal Medical and Chirurgical Society, 60,000 volumes; Royal College of Surgeons, over 50,000 volumes; Royal College of Physicians, 25,000 volumes; and University College (medical section), over 16,000 volumes. Mr. Prideaux also refers incidentally to the libraries of the Pharmaceutical Society and the Royal Sanitary Institute, as well as to one which is being formed by the Pharmacopeial Committee of the General Medical Council.

The Street Noises of London.

The street noises of London have been greatly increased by the recent introduction of the motor bus and in many neighborhoods constitute a great nuisance. A "Noise Abatement Committee," consisting principally of physicians, held a meeting at the rooms of the Medical Society of London. Among those present were Sir Dyce Duckworth, Mr. Mayo Robson and Dr. Radcliffe Crocker. The following resolutions were adopted: 1. The present excess of noise in the public thoroughfares of London is such as to cause disastrous consequences to the health and vitality of the people, and legislation in respect to the growing evil of street noises is urgently needed and should be promoted without delay. 2. Legislation should provide for prevention by the police of street shouting by coal or other hawkers, costermongers, milkmen, and vendors of newspapers, of organ grinding and of itinerant brass bands and other forms of music; it should also provide for the effective supervision, regulation and control as to speed and otherwise of all classes of vehicles used for the carriage of passengers or goods, such as motor omnibuses, traction engine, lorries and trucks; the routes through which such vehicles should be allowed to pass should be directed; and noisy traffic through purely residential streets should be prohibited at least between midnight and 6 a. m.

Novel Method of Encouraging the Care of Infants.

Alderman Broadbent, a brother of Sir William Broadbent, has reported the result of a curious philanthropic experiment made by him. During the year he was mayor of Huddersfield he promised to give every child born in the district of Longwood $5 on the first anniversary of its birth. His object was to ascertain whether through the constant watchfulness of a band of women workers, who help the mothers by advice, the infant mortality of Longwood could be reduced. During the past decade the average infant death rate has been 139 per 1,000, while in the Longwood district it has been 122. The alderman has accomplished his purpose. Throughout the two years over which the experiment extended the conditions have been by no means favorable, as whooping-cough and measles have been prevalent. The number of babies who received the promissory note was 112, and out of these 107 received the $5. Counting four as dead, the mortality is at the extraordinary low figure of 35 per 1,000; counting all five who have not received the gift it is 44. The babies belonged to all classes and some lived in slums. The experiment shows how largely preventable is the high mortality of infancy.

Pharmacology

Liquid Saponated Petrolatum Improved.

LIMA, OHIO, Oct. 11, 1906.

To the Editor:—I take pleasure in submitting for THE JOURNAL the following formula, the manner of preparation and a few words concerning the properties of its ingredients:

Oleic acid	50 grams.
Spirits of ammonia	25 grams.
Paraffin oil	100 grams.
Oil of wintergreen	17.5 grams.
Acetanilid	8.75 grams.

Mix the oleic acid, paraffin oil and spirits of ammonia in a porcelain-lined evaporating dish of convenient size, and apply heat from a steam bath for one-half hour. Permit the solution to cool and add alcohol q. s. 175 grams. Add the oil of wintergreen and dissolve the acetanilid. Filter if necessary.

The medicinally active ingredients of the above formula are indicated empirically and rationally, I believe, in the treatment of neuralgia. The vehicle is a substitute for that of the vasogen compounds, and was published some years ago in the *Pharmaceutische Zeitung*. It is of special value in that it possesses the remarkable property of mixing with both the oily and aqueous excretions of the skin, and, therefore, has penetrating qualities of the highest order. The preparation produces an elegant pharmaceutical, presenting an agreeable appearance and possessing the pleasant odor of wintergreen. In a case of facial neuralgia of long standing which had resisted all manner of treatment, the preparation produced the most gratifying results by local application and rubbing well into the parts affected. In cases of nasal neuralgia accompanied by a dry catarrhal condition, an atomizer may be used with advantage. It is my conviction that the formula is deserving of trial, and will produce results superior to any of the many preparations heretofore recommended.

JOHN W. FORBING.

[COMMENT.—The above formula consists of that of the National Formulary (III) Petrolatum Saponatum Liquidum, the so-called "Liquid Petrox" with the addition of the medicinal agents, oil of wintergreen and acetanilid. While the combination is not novel yet it indicates how this preparation, as well as its more ointment-like form, Petrolatum Saponatum Spissum, or "Solid Petrox," may be utilized for preparing combinations of similar character. While the assertion associated with the introduction of the original article of this kind, "vasogen," that this preparation has decided penetrating power, has not been disproved, yet it has been challenged from time to time and it would be desirable that the combinations with the salicylates, iodin, etc., should be subjected to thorough clinical demonstration and results reported.]

Coloring Matter in Food Products.

The use of coloring matter in food products is discussed in the second bulletin of the Illinois state food commission. The use of these substances has recently received much attention from food officials and the drastic action in some cases has led to a somewhat general adoption of a false opinion regarding their injurious character. It is necessary, the bulletin states, that these false ideas should be corrected and that people should not be governed by false prejudices in the purchase of food.

The use of coloring matter has been carried to an extreme; the ingredients furnishing the natural color are seldom used. An instance of this is found in lemon extract, the natural yellow color of which is furnished by the peel. The peel is now seldom used, the yellow color being supplied by anilin dyes. The manufacturer of the cheapest extract generally puts in the most artificial color, and the best extracts, naturally colored, though possessing a marked color when fresh, soon lose all or nearly all of it. Preserved strawberries, likewise, soon lose their natural red color, but the artificially colored brands hold their color and, therefore, are commonly accepted as the best. The coloring material conceals the presence of partially ripened or defective fruit, and the consumer is deceived by the appearance. In some articles, such as colored sugars and most candies, the color used does not indicate anything in regard to the purity, quality or flavor of the food or any of its ingredients; it is added to please the eye, and the only question is whether or not the colors are harmless.

Mineral colors, except ultramarines and certain compounds of iron, are regarded as harmful. Animal and vegetable colors are considered harmless. Anilin dyes, coal-tar colors and synthetic colors are different names for the same substances. By inexperienced and uneducated persons, the bulletin states, all these dyes are classed as poisonous. This classification is not entirely correct. Each color must be classified according to the results of experiments on animals, which have shown that some are harmful while others are harmless.

So far as their effect on health is concerned, the bulletin states that the coal-tar dyes which have proved harmless when administered to small animals, such as guinea-pigs, even in continuously large doses, may be as safely added to food as the vegetable or animals colors.

The bulletin also states that the prejudice against anilin dyes may have been founded on the poisonous impurities remaining in these colors as formerly manufactured. They were formerly prepared by the use of poisonous metals or acids containing such metals as impurities, and were liable to retain the poisonous substance in the final product. New methods of manufacture and the use of pure acids, etc., have now practically eliminated this danger in colors prepared for use in foods.

The Kansas Bureau of Investigation and Publicity.

Under the auspices of the Kansas State Board of Health and the State Board of Pharmacy, Prof. L. E. Sayre, dean of the School of Pharmacy of the University of Kansas, offers to investigate drugs and medicines to determine whether they conform to the United States Pharmacopeia standards of purity and strength. The bureau will test any official inorganic salts and determine the percentage of purity according to the Pharmacopeia. Organic medicinal chemicals and those subject to deterioration will be tested in order to ascertain their quality and medicinal activity. Microscopically the department is prepared to examine spices, condiments, commercial starches, whole and powdered drugs, grain and grain products, such as flour, meal, etc. The following are the rules governing analysis of drugs:

1. Analyses will be made of drugs and medicines suspected to be adulterated within the meaning of the law. Analyses of medicines simply to ascertain their composition will not be made.

2. Analyses of drugs or medicines will be made in cases of suspected poisoning, if sent in by local or state health boards, or by the county coroner having the case in charge.

3. Samples for analysis as above indicated must be sent from the local or state board. All charges must be prepaid, and a letter of information must accompany the package.

4. All samples sent in must be in sufficient quantity, and sent directly to Prof. L. E. Sayre, Department of Pharmacy, Lawrence.

The Nostrum Alcohol Consumption.

While statistics show that the average consumption of alcoholic drinks *per capita* is less in this country than in most others, it must be remembered that the figures do not include the "patent-medicine" tippling. We know of no reliable figures regarding the extent of this, but its existence as an evil will be denied by no one. One has only to estimate the profits of peruna manufacturers by the amount of advertising they are willing to pay for to see what a formidable amount of alcoholic consumption it implies, and this is only one of many disguised alcoholic drinks, to say nothing of those that are a little less misleading in their nomenclature, such as the various bitters, etc., which have so extensive a sale. The worst of this business is that many of the imbibers of these alcoholic mixtures are not aware of the habit they are creating or that they are in the hands of the drunkard recruiting agency. Temperance organizations would do well to devote a larger proportion of their energies to the suppression of the nostrum evil, not neglecting, of course, the more open sale of alcoholic drinks. If the consumption of alcohol by both these methods could be computed it might make a very perceptible increase in the official figures.

Correspondence

The One-Year Clause in Reciprocity.

Chicago, Nov. 24, 1906.

To the Editor:—A few of the states engaging in interstate reciprocity require that the original license on which the applicant requests reciprocal recognition, shall have been issued at least one year prior to the issuance of the license under reciprocity.

On June 20, 1906, the Illinois State Board of Health adopted a resolution to the effect that, after January 1, 1907, it would decline to reciprocate with any state exacting the above requirement. A short time later, the Minnesota State Board of Medical Examiners rescinded the above rule, which had previously been adopted by it, and the Wisconsin State Board of Medical Examiners likewise placed itself in accord with the Illinois Board.

One of the states with which Illinois had previously reciprocated, at once terminated reciprocity, although several months intervened before the rule of the Illinois Board would become effective—an act strangely at variance with the avowed advocacy of that state for the furtherance of the interests of practical reciprocity. The reasons assigned by this sister state for continuing the "one year requirement" are as follows:

"It is the best safeguard yet devised to prevent the roving charlatan, without any place of residence, from obtaining a license in ————." "It is believed by the ———— board that a certificate of moral and professional character, signed by parties (sic) of less than one year's acquaintance and actual knowledge of applicant's ethical standing, is of little value in determining the real character of the applicant." "It will also prevent state boards with commercial inclinations from inducing recent graduates and others to give up two fees instead of one, if examinations were taken where practice is intended."

Let us see how the rule works in practice. In Chicago, for example, all students who are certified to the Illinois State Board of Health as members of the senior class in good standing in a recognized medical school are granted the courtesy of a conditional examination at least one month before graduation. Their papers are rated, and, if they have succeeded in attaining the required grade on examination, licenses are issued to them after they have received their diplomas and have presented them to the board for verification. They are thus ready to engage in practice and with the least possible expenditure of time and money in securing the requisite license.

Suppose that one of these men wishes to engage in practice in the neighboring state above referred to, and with which Illinois reciprocates. He is first required to conform to the following conditions exacted by that state: He must present (a) a diploma from a recognized medical college; (b) evidence that his preliminary education is up to the standard; (c) a certificate of good moral, professional and ethical character from the board of his own state. He must (d) state under oath that he has never been a charlatan or quack, and promise under oath never to become one, and, he must present (e) a license issued by the state board of his home state, and (f) a certificate from that board stating that his entrance requirements are up to the standard, that he is a graduate of a medical college and that he has been examined by the board and found duly qualified, and is unreservedly recommended as a proper person to receive a certificate under reciprocity. Even if he conforms to all of these requirements, he is informed that he is not eligible to a certificate under reciprocity; that his certificate is but twelve days old, and that he must wait until it has become twelve months old.

Does his waiting eleven long months have anything to do with his becoming a charlatan? Is he less apt to become a charlatan after a year of unsuccessful practice, in a location which is not his by election, than he would be immediately on his graduation? Is it for a moment to be assumed that, because a man has been a medical student or a hospital interne for the preceding year, it is impossible for him to furnish a certificate of good character? Is it probable that the physicians who have known him more or less intimately for twelve months would be better qualified to certify to his character than those who have come in intimate contact with him in medical school each day for four college years? Is it to be assumed that the certificate issued by a state board is meaningless, valueless and fraudulent, because the applicant has not been engaged in the practice of medicine in the state for 365 days? Such an assumption is absurd. To refuse to accept the certificate of a sister state for the reasons enumerated above, is insulting to the intelligence and integrity of the board issuing it.

The statement that the requirement that the certificate be at least one year old "will also prevent state boards with commercial inclinations from inducing recent graduates and others to give up two fees instead of one," merits no comment, save that no board could conscientiously or properly enter into any form of reciprocal relationship with sister boards in whose honesty and integrity there was such grave doubt as is implied by the remark.

There seems to us no more valid reason why an applicant's license should be one year old before it is recognized as a legal document, than that his medical diploma should be a year old before he is permitted to take the examination of the state board.

The Illinois State Board of Health is desirous of doing nothing that will interfere with interstate reciprocity on a fair, rational legal basis. It does object, however, to having its licentiates discriminated against in what it deems to be an unfair, arbitrary manner, and its certificates discredited without reasonable justification therefor. The one year requirement might be worthy of closer and more careful study and consideration did more of the examining boards of the nation attach importance to it. As a matter of fact, however, but two of the thirty reciprocating boards of the nation, so far as we know, have such a rule in force. Two others, which once adopted such a rule, abandoned it as unnecessary.

I shall be pleased to hear from those interested on either side of this question, either personally or through the columns of The Journal.

George W. Webster.
President Illinois State Board of Health.

Comparative Prices of Various Proprietaries and Pharmacopeial Preparations.

Tiverton, Mass., Nov. 12, 1906.

To the Editor:—I have just received samples of cystogen from St. Louis. The price is $1 an ounce. Why should not the physician keep himself posted in the current prices of preparations and not be imposed on by these firms who are filling the shelves of the druggist and the table of the physician with goods under some fanciful name when the same thing can be obtained from some reputable manufacturer at about one-sixth of the price. For example, Mallinckrodt lists hexamethylenamin at 17 cents an ounce, $1.75 a pound, while Merck lists the same preparation, under the trade name of formin, at the same price. In the article advertised by the Cystogen Chemical Company there does not appear to be any deception except in the name and the statement that it is "A preferred product of hexamethylene tetramine remarkably free from irritating properties." The name appears to be synonym of hexamethylenamine of the U. S. P. But the price!!

Edward P. Stimson, M.D.

The Migratory Needle Story.

Philadelphia, Nov. 30, 1906.

To the Editor:—The belief that needles travel through the tissues of the body is an old one, and in the lay mind the anxiety to have them removed promptly is very prevalent. How such a belief could become so universal was made clear to me by the following case: A colored woman, who was being embraced by her admirer, while sitting on a sofa, suddenly experienced pain due to the entrance of a needle, causing her to cry out. On looking at the site of the pain a needle, broken level with the skin, could be readily felt and seen. She came immediately to my office, but when she reached it the needle had disappeared. I cut down on it and readily extracted it.

The explanation of the disappearance in this case was that in putting on her coat she had probably stretched the skin, which, becoming tense, slipped over the broken end of the needle. In reality the needle was exactly where it was when

it entered, but in the opinion of the patient it had traveled. Needles will travel, and this is explained by the fact that there is a sharp and a blunt end. They travel in the direction of the pointed end. In the various movements of the body, pressure is made on all sides of the needle, but it can only move lengthwise and in the direction of least resistance. In cutting for a needle, especially in the dense tissues of the palmar and plantar surfaces, the point of entrance should be taken as the center of a semicircular incision, and, a flap being raised, the only reliable searcher is the finger. OSCAR H. ALLIS, M.D.

NEW YORK CITY, Dec. 4, 1906.

To the Editor:—The pace having been set for the wandering needle, it is now my turn. We were smoking our pipes around the camp-fire after a good dinner of venison and trout. Apropos of some suggestion I told of the travels of a needle. It was a mild story—being mine. "That's nothing," said Dick, "me and Larry was trapping one winter, and we slept together. He got a porcupine quill in his leg in the fall, and in the spring it came out of my shoulder." ROBERT T. MORRIS.

STILLWATER, OKLA., Dec. 4, 1906.

To the Editor:—I have read with interest the tales of foreign bodies in the flesh published in THE JOURNAL. I had a very peculiar case of this kind. A married woman, 35 years old, stuck a needle in the middle finger of the left hand. Sixteen months later she gave birth to twins and one-half of that needle was in the corresponding finger of each twin at birth.

J. G. GRAY.

[Several other communications have been received, but when the above letters from Drs. Morris and Gray arrived we concluded that it was time to end the discussion.—ED.]

Miscellany

INTERNATIONAL SANITATION.

Arrangements to Facilitate Sanitation in Relations of American Republics.

The Third International Conference of American Republics, which met at Rio de Janeiro during the summer of 1906, adopted the following recommendations relating to international sanitation:

SANITARY POLICE.

Aug. 23, 1906.

The Third International American Conference recognizes the utility of the principles of international sanitary police, which inspired the last convention celebrated in Rio de Janeiro, applicable to a definite region, and the convention signed in Washington, Oct. 14, 1905, which is applicable to all the nations of America, and, in virtue of this, recommends to the countries here represented:

1. That, as a general rule, they adopt the said International Sanitary Convention of Washington, adhering to it and putting its precepts into practice.

2. The adoption of measures tending to obtain the sanitation of cities and especially of the ports and to attain as far as possible to a better knowledge and a greater observance of hygienic and sanitary principles.

3. The advisability that all American nations attend the next International Sanitary Convention to be celebrated in the City of Mexico in December, 1907, and that they instruct their respective delegates to study and solve the following points:

A. A practical means of rendering effective the second of the present recommendations.

B. Establishment and regulation in each of the American countries of a committee composed of three medical or sanitary authorities to constitute, under the direction of the International Sanitary Bureau, established at Washington, an International Sanitary Committee on Information of the American Republics, with authority to meet and to communicate between themselves data referring to public health and for any other purpose that the convention may think proper.

C. Establishment and regulation in some place in South America designated by the convention as a center of sanitary information that shall supply to the already existing International Sanitary Bureau the elements necessary to carry out the recommendations 5, 6 and 7 on sanitary police, made by the Second International American Conference.

D. Establishment of relations between the International Bureau established at Washington and the (Bureau Sanitaire International) of Paris, in order to obtain the best information in sanitary matters and to make resolutions tending to the object entrusted to both bureaus.

4. In accordance with the provisions of Article 3, paragraph c, the city of Montevideo is hereby designated as the "center of sanitary information."

The first recommendation relates to the agreement signed by the delegates to the International Sanitary Convention in Washington, October, 1905. This agreement is on quarantine measures against cholera, plague and yellow fever. Practically all of the countries represented at the convention in Washington have ratified this agreement, and the Rio conference has recommended that all of the American republics, including those not represented in the Washington meeting, take the same action.

The second recommendation contemplates an international agreement looking to improved sanitation and the elimination of disease from seaport towns.

The third recommendation throws on the next International Sanitary Convention, which is to be held in Mexico in December, 1907, the duty of devising some form of international agreement for such sanitation, and further provides for a committee in each country to obtain sanitary information. These committees in the southern republics will transmit their information through a central bureau in Montevideo to the International Sanitary Bureau in Washington.

These resolutions mark an advance over previous sanitary agreements which related entirely to quarantine defense. They were evidently based on the suggestions made by the surgeon general of the Public Health and Marine-Hospital Service, who, at the request of the Secretary of State, prepared suggestions on the subject of international quarantine and sanitation for consideration at the Rio conference. The surgeon general's letter, which follows, was printed and was included in the instructions given by Secretary Root to the American delegates.

TREASURY DEPARTMENT.
BUREAU OF PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

WASHINGTON, May 30, 1906.

Honorable Elihu Root, Secretary of State:

Sir:—In accordance with your request I submit herewith certain considerations regarding quarantine, hygiene and sanitation, which appear to me worthy of being brought before the Third Conference of American States to be held in Rio de Janeiro in July next.

PROPOSITIONS.

1. International conference on health matters have heretofore considered only the management of epidemic diseases in their progress from one nation to another.

2. These diseases are simply the result of unhygienic conditions in the several countries.

3. These unhygienic conditions are local, and the responsibility on their account lies with municipal or state authorities.

4. The national governments, therefore, are required to deal with conditions due to faults of the states and municipalities.

5. In the measure to prevent the spread of disease from one country to another, plainly the duty of the national governments, the latter are, therefore, dealing only with the effects and not with the cause; they are dealing with the symptoms rather than with the causative conditions.

6. Therefore, notwithstanding that the *fons et origo* of disease is ordinarily considered as within the legal jurisdiction and administration (police power) of the states and municipalities, the national governments must find some means of exercising effective influence in these local conditions which produce disastrous effects that quickly become the care and responsibility of the nation.

7. Quarantine, and quarantinable diseases, which heretofore have been the subject of international conventions and agreements, should now be put to one side as having been duly considered and acted on; and an advance should be made in international deliberations by the consideration of hygiene and sanitation; in other words, the deliberations of international sanitarians should be transferred from ships to the shore.

8. In considering the possibility of an international agreement for a more direct and effective influence of the national governments in local sanitation and hygiene, it will be more practicable to limit such agreement to seaport cities and towns, since these are the points of contact between nations.

9. In the effort to perfect the sanitary and hygienic condition of seaports, we find an international commercial justification therefor in the resultant elimination of yellow fever. There is another all important disease, tuberculosis, for whose elimination the commercial reason does not apply, but against which the whole civilized world is making warfare. This disease, on account of its universality and contagiousness, is well worthy of consideration in international agreement, irrespective of the commercial relations between nations.

10. In the sanitary and hygienic measures necessary to eliminate the two above-mentioned diseases, yellow fever and tuberculosis, are embraced the sanitary and hygienic measures (with the excep-

tion of minor details) necessary to overcome all the greater epidemic and domestic contagious diseases.

11. The more specific the objects of an agreement, the more direct and effective will be the efforts to enforce it. Therefore, there is recommended an international agreement for national effort in sanitary and hygienic measures necessary to eliminate yellow fever and tuberculosis.

From the foregoing propositions, it appears necessary that the central or national government of each republic should give greater attention to local sanitary measures. It is admitted that the activity of the national government in local sanitation is more difficult in some of the republics than in others, yet it is believed that in all much can be accomplished beyond the present activities and beyond the limitations which now seem to be acknowledged.

The proposed limitation of an international agreement to seaports is defended by the following considerations:

First.—Seaports have a more direct influence in conveying diseases from one country to another than interior ports.

Second.—The good effect of sanitation in seaports will be so obvious that interior cities will take note thereof and profit by the example.

Third.—By making the agreement relate to seaports only the scope thereof is limited and defined, and the plan, therefore, more practicable.

It may be remarked that in many of our larger seaport cities, such as New Orleans, Rio de Janeiro, Vera Cruz, and others, sanitary improvements of a broad character, such as improved water supply, sewerage, drainage and paving are already under way.

In quite a number of the smaller ports, particularly in some of the Central and South American republics, there has been manifested during the past four years an awakening of the need of sanitation, and actual work has been done. But in all our larger ports, no matter how extensive the improvements, much remains to be done to bring local sanitation and hygiene up to the required standard, and in numerous smaller ports in all of the republics, both on the Atlantic and Pacific coasts, sanitation is at the present time outrageously neglected. These smaller seaport towns and cities are potent factors in the breeding and dissemination of disease, and yet their proper sanitation would involve comparatively moderate expense.

In considering local sanitary measures, it is worthy of note that measures to eradicate and prevent two of the most important diseases will be sufficient practically for the eradication of other communicable diseases.

Sanitation for tuberculosis requires sufficiency of air and sunlight in domiciles, good water supply, drainage and sewerage, while the sanitation for yellow fever, demanding the removal of collections of water to prevent the breeding of mosquitoes, involves general hygienic condition of premises; so that with the cleanliness in and around the domicile, and assurance of the proper environments of man, conditions are produced favorable to the elimination of all disease.

The whole civilized world is fighting against tuberculosis, the great white plague, which causes at least one in seven of all deaths; and any international agreement for its suppression will redound to the honor of every nation concerned therein. As to the yellow plague, yellow fever, a disease which is the curse of the western hemisphere, conjoint action of the republics is necessary for its elimination.

It is, therefore, respectfully suggested that the delegates from the United States to the Rio Conference endeavor to secure from the conference by treaty, or by resolution, or in whatever form they deem to be most practicable, the adherence of each of the republics represented in the conference to the foregoing principles and their practical application.

The agreement should recite that epidemic diseases, which so frequently require national intervention, are due to insanitary local conditions, and that the central, or national, administration of each republic will use its utmost endeavors to institute and enforce locally in its several seaports all the sanitary measures, destructive, constructive, and administrative, which are necessary to eliminate tuberculosis and yellow fever.

In addition to the reasons given above, showing the necessity for such an international agreement, there are others which, though less urgent, should nevertheless lend encouragement thereto. It gives opportunity for the countries represented in the Rio conference to set an example which may be utilized in the coming Hague conference at which it is understood all the republics of the western hemisphere will be represented.

In the present relations of nations with one another there are two facts which seem strangely at variance. *First,* the regularly increasing naval and military armaments. *Second,* The rapidly growing sentiment for universal peace and disarmament.

Few will deny that universal peace is a desideratum. It is said that it is the purpose of the interparliamentary union to make of the Hague Conference a permanent body composed of two houses, an upper house representing the executives of the world, and a lower house composed of the members of the highest legislative bodies of the powers of the earth.

Even if such a body is formed, it would be marvelous if of itself it should be able to bring about a disarmament of the nations. Increase in armaments provides increase of employment of all kinds, manual, professional and administrative, and furnishes an outlet for the energy of a nation. It is worth considering whether a diversion of this energy is not more practicable than its abrupt termination.

A celebrated manufacturer in the United States, with a plant covering several acres, was much annoyed by the mischievous activities of a large number of boys in the neighborhood who trespassed on the property, maliciously injuring the same. Instead of arresting them and causing their punishment, he diverted their energies by purchasing land immediately around his plant and employed them in the development of lawns and gardens, thus adding to the attractiveness and utility of his possessions and transforming his annoying neighbors into agents of help.

This may be a homely illustration, but surely an international hygienic agreement which would demand physical operations of great scope and professional and administrative energies of the highest character would be more effective by diverting such energies from naval and military establishments than would be an effort to discontinue or abandon the military and naval armaments.

The same principles apply whether reference is made to disarmament, arbitration or the world-wide movement for peace.

An international agreement for sanitation, with the avowed purpose of eliminating communicable diseases, will furnish a plane on which nations may meet and an object for attack against which all nations may combine without fear of international complications.

In closing, there is one more suggestion which I have respectfully to make.

At the Second International Conference of American States in the City of Mexico, 1901-2, resolutions were passed providing for international sanitary conventions and for the establishment of an international sanitary bureau. Two conventions have been held, and at the last one, held in the City of Washington, October, 1905, there was signed by the delegates an agreement *ad referendum* relating to the management of ships and persons infected with or exposed to the infection of cholera, bubonic plague and yellow fever. This agreement has been approved by the Senate of the United States, and it is expected that it will be approved by the governing bodies of the other nations represented in the convention. It is worthy of the efforts of the delegates from the United States to secure the adherence to this same convention of those of the republics of the western hemisphere which were not represented at the Washington meeting The adherence of every republic in the western hemisphere to the principles announced in that convention would make complete so far as possible the understanding with regard to these quarantinable diseases, and would enable all of the republics hereafter to give their undivided attention, so far as international agreement is concerned, to the more important subject of hygiene and sanitation.

I have the honor to remain, respectfully,

Walter Wyman,
Surgeon-General,
Chairman, International Sanitary Bureau
of the American Republics.

Gelatin in Melena Neonatorum.—Neu contributes an article on this subject to *Med. Klinik* for October 17, reporting 2 cases and reviewing the literature. The mortality before 1900 ranged from 35 to 60 per cent. in 232 cases. Since the introduction of gelatin treatment the mortality has dropped to 13 per cent. in 23 cases. The gelatin should be injected as promptly as possible at the first signs of true melena, giving a subcutaneous injection in the thigh of from 10 to 20 c.c. of a 10 per cent. solution. The action by the mouth is unreliable and gelatin enemata are not advisable. There may be a slight febrile reaction, but it is harmless and transient. The child should be kept scrupulously warm and quiet, and given only breast milk after restriction to tea for a time. Local cold applications or compression to the abdomen and internal hemostatic measures should be avoided.

The Public Service

Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending Dec. 8, 1906:

Eastman, Wm. R., asst.-surgeon, granted leave of absence for one month.

Manly, C. J., asst.-surgeon, assigned to temporary duty at Fort Myer, Va., until December 13, when he will proceed to Cuba for duty in compliance with orders heretofore issued.

Fife, James D., asst.-surgeon, left Fort Slocum, N. Y., en route to Jefferson Barracks, Mo., on detached duty.

Rutherford, H. H., asst.-surgeon, ordered to proceed from the Army General Hospital, Presidio of San Francisco, to Washington, D. C., in charge of insane patients.

Ford, Clyde S., asst.-surgeon, relieved from duty at Medical Supply Depot, New York City, and ordered to report to the Military Secretary of the Army for instructions in the matter of personal identification record, and upon completion of this duty to proceed to the Philippine Islands for duty.

Duncan, Wm. A., asst.-surgeon, reported for duty as surgeon on transport *Thomas* at San Francisco, Cal.

Lewis, Wm. A., asst.-surgeon, assignment to station at Fort Snelling, Minn., revoked; relieved from temporary duty at Fort Monroe, Va., and ordered to Army General Hospital, Presidio of San Francisco, Cal., for duty.

Steer, Samuel L., asst.-surgeon, assigned to temporary duty at Fort Monroe, Va., pending sailing of transport to Cuba.

Harvey, Philip F., asst.-surgeon-general, granted leave of absence for one month, effective Dec. 10, with permission to apply for an extension of one month. During the absence of Colonel Harvey, Major Charles Richard, surgeon, will, in addition to his other duties, take charge of the office of the chief surgeon and perform the duties of that office.

Whitmore, E. R., asst.-surgeon, ordered to proceed from Fort Jay to Fort Slocum, N. Y., for temporary duty.

Marrow, Chas. E., asst.-surgeon, granted leave of absence for one month, with permission to apply for an extension of one month, effective on arrival in the United States.

Murray, Alexander, asst.-surgeon, relieved from duty at Fort Bayard, N. M., and to report in person to the chairman of the Isthmian Canal Commission, Washington, D. C., for duty with the Commission on the Isthmus of Panama.

Moncrief, Wm. H., asst.-surgeon, advanced to rank of captain, from Nov. 30, 1906.

Whitney, Walter, contract surgeon, granted leave of absence for one month.

Hughes, Leonard S., contract surgeon, granted an extension of two months to his leave of absence.

Slayter, John T. H., contract surgeon, left Fort William Henry

Harrison, Mont., and arrived at Fort Lincoln, N. D., for temporary duty.

Slater, Ernest F., contract surgeon, left Fort Hancock, N. J., and arrived at Fort Banks, Mass., for duty.

Parkman, Wallace E., contract surgeon, returned to Fort Assiniboine, Mont., from temporary duty at Fort William Henry Harrison, Mont.

Ames, Roger P., contract surgeon, returned to Fort St. Philip, La., from temporary duty at Jackson Barracks, La.

Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ended Dec. 5, 1906:

Smith, A. C., surgeon, granted leave of absence for three days, beginning December 2.

Rosenau, M. J., P. A. surgeon, detailed to represent the service at the meeting of the Society of American Bacteriologists to be held in New York City, December 27-28, 1906.

Grubbs, S. B., P. A. surgeon, granted one day's extension of leave of absence, December 3.

Parker, H. B., P. A. surgeon, granted leave of absence for twelve days from November 17, on account of sickness.

McClintic, T. B., P. A. surgeon, relieved from temporary duty on Revenue Cutter *McCulloch* and from duty at the San Francisco Quarantine Station, and directed to proceed to Manila, P. I., reporting to the chief quarantine officer for duty.

Wille, C. W., P. A. surgeon, granted leave of absence for two months, beginning December 9.

McCoy, George W., P. A. surgeon, leave of absence for two months, beginning October 4, amended so as to read for 1 month and 23 days only.

Steger, E. M., asst.-surgeon, granted leave of absence for three days, from November 24, on account of sickness.

Pettyjohn, Joseph, asst.-surgeon, relieved from temporary duty on the Revenue Cutter *Thetis* and from duty at San Francisco, and directed to proceed to Manila, P. I., reporting to the chief quarantine officer for duty.

Guthrie, M. C., asst.-surgeon, temporarily relieved from duty at Ellis Island, N. Y., and directed to proceed to Washington, D. C., for temporary duty at the Government Hospital for the Insane.

Barnes, W., acting asst.-surgeon, granted leave of absence for twenty-one days, beginning December 10.

Clark, E. S., acting asst.-surgeon, granted leave of absence for two days from November 21.

Gribble, B. G., acting asst.-surgeon, granted leave of absence for seven days under Paragraph 210 of the Regulations, from November 26.

Goodman, F. S., Pharmacist, relieved from duty at Norfolk, Va., and directed to report to the medical officer in command, Cape Charles Quarantine Station for duty and assignment to quarters.

Allen, G. C., pharmacist, leave of absence granted Pharmacist Allen for two months without pay from September 23, amended so that said leave shall terminate November 15.

Scott, E. B., pharmacist, relieved from duty at Baltimore and directed to proceed to Norfolk, Va., reporting to the medical officer in command for assignment to duty.

Hall, L. P., pharmacist, leave of absence for seven days from November 21, amended to read for five days only.

Stier, Carl, pharmacist, granted leave of absence for twenty-seven days beginning Dec. 5, 1906.

Eldredge, Merritt B., pharmacist, directed to proceed to Vineyard Haven, Mass., reporting to the medical officer in command for duty and assignment to quarters.

APPOINTMENT.

Mr. Merritt B. Eldredge was appointed a pharmacist of the third class, effective from date of oath.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service during the week ended December 7, 1906:

SMALLPOX—UNITED STATES.

Colorado: Las Animas County, Oct. 1-31, 3 cases, 2 deaths.
Georgia: Augusta, Nov. 20-26, 8 cases.
Illinois: Galesburg, Nov. 18-24, 17 cases.
Indiana: South Bend, Nov. 18-24, 4 cases.
Kansas: Seven Counties, Oct. 1-31, 23 cases.
Louisiana: New Orleans, Nov. 18-24, 3 cases; Shreveport, 1 case.
Missouri: St. Louis, Nov. 18-21, 3 cases.
New York: New York, Nov. 18-24, 1 case.
North Carolina: Greensboro, Nov. 18-24, 5 cases.
Ohio: Cincinnati, Nov. 24-30, 1 case.
Virginia: Richmond, Oct. 1-31, 1 case.

SMALLPOX—FOREIGN.

Africa: Cape Colony, Oct. 14-22, 15 cases.
Brazil: Rio de Janeiro, Oct. 22-24, 5 cases.
Chile' Coquimbo, Oct. 22-31, 28 cases, 1 death; Iquique, Oct. 29-Nov. 4, present.
Ecuador: Guayaquil, Oct. 24-31, 14 cases.
France: Paris, Oct. 28-Nov. 17, 7 cases, 1 death.
Gibraltar: Nov. 12-18, 1 case.
Greece: Athens, Nov. 9-15, 2 deaths.
India: Calcutta, Oct. 21-27, 3 deaths; Madras, Oct. 27-Nov. 2, 2 deaths.
Russia: Moscow, Oct. 28-Nov. 3, 1 case, 1 death; Odessa, Nov. 4-10, 4 cases.
Spain: San Feliu de Guixols, Oct. 11-17, 1 death; Seville, Oct. 1-31, 28 deaths.

YELLOW FEVER.

Brazil: Rio de Janeiro, Oct. 28-Nov. 4, 1 case, 1 death.
Ecuador: Guayaquil, Oct. 15-30, 4 deaths.
Cuba: Havana, Nov. 28-Dec. 4, 5 cases; Matanzas Province: Jovellanos, Dec. 3, 1 case; Union de Reyes, Nov. 26-29, 3 cases, 1 death; Santa Clara Province: Isabela de Sagua, Nov. 29, 1 case.

CHOLERA.

India: Bombay, Nov. 1-6, 1 death; Calcutta, Oct. 20-28, 28 deaths; Karachi, Oct. 20-26, 4 deaths; Madras, Oct. 27-Nov. 2, 1 death; Rangoon, Oct. 21-27, 3 deaths; Negapatam, Sept. 22-Oct. 19, 19 deaths.

PLAGUE.

Australia: Cairns, Oct. 21-27, 3 cases; Sydney, Sept. 25-Oct. 1, 1 case.
Brazil: Rio de Janeiro, Oct. 28-Nov. 4, 34 cases, 10 deaths.
Egypt: Alexandria, Oct. 30-Nov. 3, 1 case, 1 death; Suez, Oct. 30-Nov. 5, 1 case, 1 death.
India: General, Oct. 14-20, 7,876 cases, 6,216 deaths; Calcutta, Oct. 14-20, 7 deaths.
Japan: Fukuoka, Nov. 3, 2 cases; Iida, Nov. 3, present; Osaka, Oct. 10-Nov. 6, 24 cases, 17 deaths; Waykama Ken, Oct. 2-Nov. 6, 4 cases, 3 deaths.
Straits Settlements: Sept. 4-10, 1 case.
Turkey: Beirut, Nov. 6-10, 1 case.

Navy Changes.

Changes in the Medical Corps, U. S. Navy, for the week ending Dec. 8, 1906:

Gordon, F. T., pharmacist, placed on the retired list of officers of the navy from November 30, detached from Bureau of Medicine and Surgery, ordered home.

Gardner, James E., medical inspector, to U. S. S. *Charleston*, Fleet Surgeon Pacific Squadron.

Gates, M. F., surgeon, detached U. S. S. *Charleston*, on reporting of relief, to U. S. S. *Chicago*.

Biddle, C., surgeon, detached U. S. S. *Chicago*, to Naval Training Station, San Francisco.

Smith, W. B., P. A. surgeon, detached Naval Training Station, San Francisco, Cal., to U. S. S. Raleigh.

Carpenter, D. N., surgeon, detached U. S. S. *Raleigh* to Naval Station, Cavite, P. I.

Alfred, A. R., surgeon, detached Naval Station, Cavite, P. I., home and wait orders.

Higgins, S. L., asst.-surgeon, U. S. N., to Naval Hospital, Norfolk, Va.

Furlong, F. M., surgeon, U. S. N., to Naval Hospital, Chelsea, Mass., detached Bureau of Medicine and Surgery.

Johnson, M. K., surgeon, to Norfolk Hospital.

Grow, E. J., surgeon, detached U. S. S. *Ohio*, to home and wait orders.

Oman, C. M., P. A. surgeon, detached Norfolk Hospital, to U. S. S. *Ohio*.

Dessez, P. T., asst.-surgeon, detached Washington Barracks, to Chelsea Hospital.

Gill, J. E., P. A. surgeon, detached Washington Yard, to U. S. S. *Dubuque*.

Heiner R. G., asst.-surgeon, detached U. S. S. *Scorpion*, to Washington Yard.

Bishop, W. L., P. A. surgeon, detached U. S. S. *Dubuque* to U. S. S. *Iowa*.

Grove, W. B., surgeon, detached U. S. S. *Iowa* to U. S. S. *Minnesota*.

Marriages

T. L. WHITEHEAD, M.D., to Miss Eulalia Shepherd, at Chatham, Va., November 21.

OTTAWAY T. FIELDS, M.D., to Miss Clara S. Hutt, both of St. Louis, November 29.

ADOLPH G. FREEDOM, M.D., to Miss Leah Weinkrantz, both of Baltimore, November 27.

ANDREW K. NAUGLE, M.D., to Miss Bessie Calvert, both of Abbott, Miss., November 21.

HARRY E. BUCKNER, M.D., Baltimore, to Miss Rose Kaplan, at Baltimore, November 29.

HARRY VANDERBILT WÜRDEMANN, M.D., Milwaukee, to May Audrey Parker, of Minneapolis.

VINTON BOYINGTON, M.D., to Miss Eva Spaulding Price, both of Waukegan, Ill., December 12.

MARY KAVENY, M.D., and Gwilym M. Lewis, both of Denver, at Idaho Springs, Colo., November 29.

NICHOLAS H. KERN, M.D., Thawville, Ill., to Miss Mayme Wolf of Louisville, Ky., November 28.

CHARLES J. SHAW, M.D., Putnam, N. Y., to Miss Lottie Robinson, of Burlington, Vt., December 1.

WILLIAM HAMILTON SMITH, JR., M.D., Baltimore, to Miss Katherine Powell Martin, at Washington, D. C., November 24.

SAMUEL F. GILLAM, M.D., to Mrs. Clarrie E. Cowell, both of St. Johns, Mich., at Pontiac, Mich., November 27.

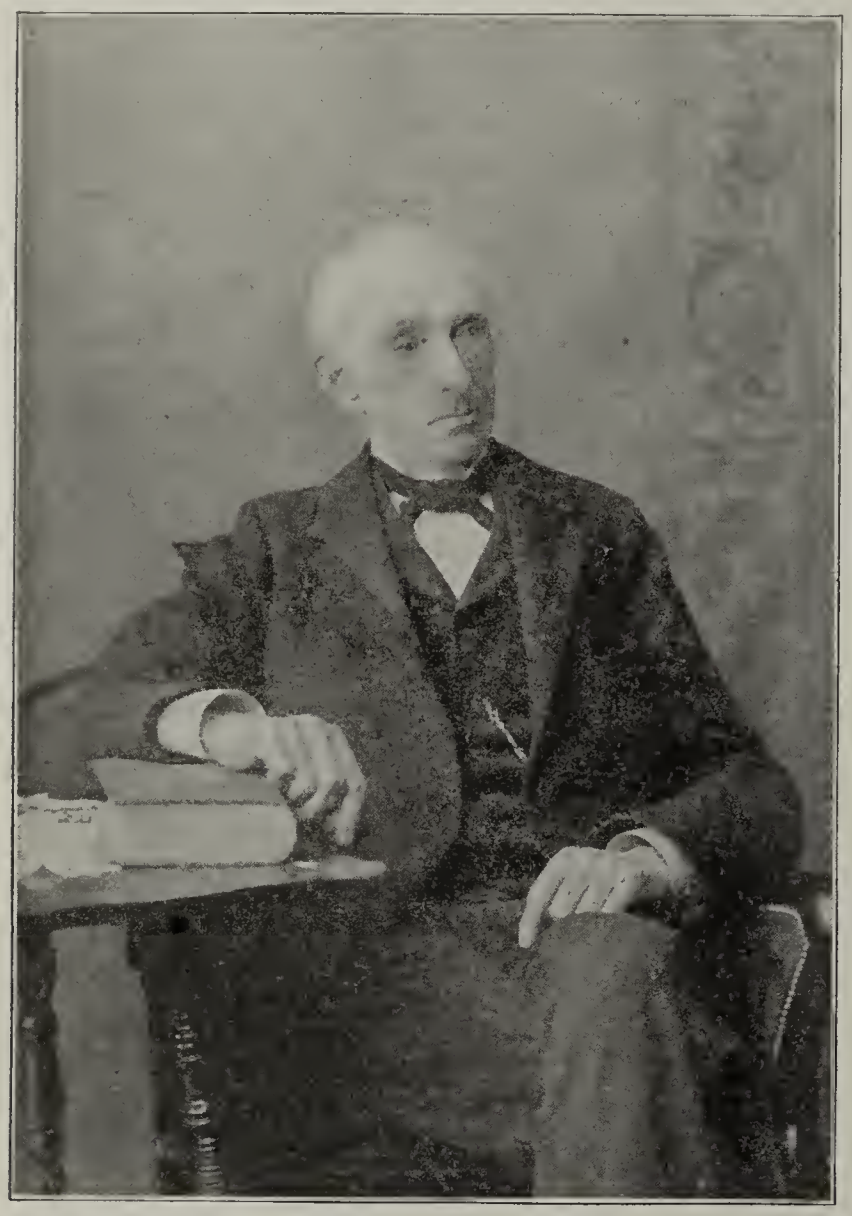
ROBERT PHILIPS MCREYNOLDS, M.D., Philadelphia, to Miss Frances Cornelia Coulter, of Los Angeles, Cal., December 12.

JAMES W. MASSEY, M.D., to Miss Mattie C. Biscoe, both of Spottsylvania, Va., at Antioch Church, Orange County, Va., November 20.

Deaths

Alonzo Garcelon, M.D.

Dr. Alonzo Garcelon of Lewiston, Maine, one of the oldest members of the American Medical Association, once its vice-president, and for many years a member of its Board of Trustees, who in all the years of his membership had never missed attending a meeting, with the exception of that in Portland, Oregon, in 1905, was found dead from accidental gas asphyxiation at the home of his daughter, Mrs. C. D. Dennis, in Medford, Mass., December 8, aged 93.



He was born in Lewiston and his preliminary education was obtained in the private grammar schools until 1829, when he went to Monmouth Academy and then to Waterville Academy, and later to Bowdoin College, Brunswick, in 1832, graduating therefrom four years later. During his college course he taught winter schools and was principal of Alfred Academy in 1836. After three years he relinquished teaching to study medicine and entered Dartmouth Medical School as a private student of Dr. Mussey. In 1838 his preceptor was elected professor of surgery in the Medical College of Ohio, Cincinnati, and young Garcelon went there with him. He obtained his degree of M.D. at that institution in March, 1839, and then served as interne in the hospital until October.

In 1853 he became a member of the American Medical Association and has been a constant and active worker since that time. When the Board of Trustees was organized to carry out the will of the association in regard to a journal Dr. Garcelon was elected a member of the board and served from 1882 to 1901, serving as chairman the greater part of that time. He was made vice-president of the association in 1901. He was one of the charter members and once president of the Androscoggin County Medical Society, and was one of the originators and once president of the Maine Medical Association. He served his state as governor in 1878 and was notable as the only Democratic governor that state has ever had. During the Civil War he was surgeon general of the state of Maine and for more than thirty years he was a member of the Board of Trustees of Bates College, was president of the State Agricultural Society and has been councilor, alderman, and mayor of Lewiston in 1871; representative in the legislature in 1853 and 1871; a member of the state senate in 1855, and has held many other positions of honor.

He was one of the first to secure the location of railroads in Lewiston and was for a time president of the Androscoggin Railroad. He, together with his brother-in-law, N. H. Waldron, established the Lewiston *Journal*, the first journal to be established in that portion of Maine. He was also one of the most persistent workers in securing the Maine State Seminary at Lewiston.

Dr. Garcelon was imbued with an enthusiastic public spirit. He worked for the development and improvement of his native town, Lewiston, urged the establishment of manufacturies, and built the first mill in that town. He was an early advocate of good roads and originated a central highway for the section east of Lewiston.

By the record from his own state and home Dr. Garcelon showed himself to be a man honest, industrious, faithful, patriotic and true in every sense of the word. Such he always was in his relation to the medical profession.

Fernand Henrotin, M.D.

Dr. Fernand Henrotin, one of the prominent practitioners of Chicago, died at his home from myocarditis, December 9, after an illness of three weeks, aged 59. He was born in Brussels, Belgium, Sept. 28, 1847, the son of Dr. Joseph F. Henrotin, a well-known practitioner of Chicago from 1847 to 1875. He received his education entirely in Chicago and, after his graduation from high school, entered Rush Medical College, from which he graduated in 1868. From 1868 to 1870 he was prosector at Rush Medical College; surgeon of the police department 15 years, and for 21 years of the fire department. For several years he was chief surgeon of the First Brigade, Ill. N. G. He served for many years on the medical staff of Cook County Hospital, and was president of the medical board. He was connected with the Chicago Policlinic and served as professor of gynecology, secretary, and, later and until his death, as president of that institution. He was deeply interested in the new Policlinic Hospital, which is now nearing completion. He was senior surgeon at the Alexian

Brothers' Hospital and gynecologist at the St. Joseph's and the German hospitals. For many years he was a member of the American Medical Association. He was a member of the Illinois State Medical Society, Chicago Gynecological Society, American Gynecological Society, Association of Military Surgeons of the United States, Association of Military Surgeons of the State of Illinois, and in 1896 was president of the Chicago Medical Society. During his term of office, and under his special supervision and management, the reorganization was undertaken which has resulted in more than trebling the membership of the society. For many years he was secretary-general for America of the International Congress of Gynecology and Obstetrics. Dr. Henrotin was a gynecologist of known repute and a bold, yet conservative, operator. He is said to have been the first operator in America to perform vaginal hysterectomy for suppurative pelvic disease. He has written many monographs of importance, most of which are on gynecologic subjects. His chapter on ectopic gestation in "Practice of Obstetrics," by American authors, and his article on gynecology in the International Text-Book on Surgery are especially noteworthy. At the time he was stricken with his last illness he had practically completed the section on vaginal hysterectomy for Kelly and Noble's gynecology. Dr. Henrotin was an ardent advocate of higher standards of medical education and was especially interested in postgraduate work; he published a small brochure about two years ago on "Democracy of Education in Medicine," which set forth his advanced views on this subject.

Otis Humphrey Marion, M.D. Harvard University Medical School, Boston, 1878; a member of the American Medical Association, Association of Military Surgeons of the United States, Massachusetts Medical Society, Cambridge Medical Society and Boston Benevolent Medical Society, Sons of the American Revolution and Naval and Military Order of the Spanish-American War; an officer in the medical department of the Massachusetts Volunteer Militia, from 1883 to 1903, during which time he rose from the rank of major to that of brigadier general and surgeon general of the state, during the Spanish-American War, major and surgeon of the Sixth U. S. Volunteer Infantry and acting brigade surgeon of the second corps, first division, second brigade, at camp R. A. Alger, Falls Church, Va.; house surgeon in the Boston City Hospital in 1886 and 1887, consulting surgeon to the Woman's Charity Club Hospital, Boston; one of the most prominent practitioners of Boston; died at his home in Allston, November 27, from pneumonia, aged 59.

Alexander E. McDonald, M.D. New York University, New York City, 1870; a member of the American Medical Association, Medical Society of the State of New York, Medical Society of the County of New York, New York Academy of Medicine and New York Psychiatrical Society; president of the American Medico-Psychological Association in 1904; lecturer and professor of medical jurisprudence and psychologic medicine in New York University, and professor emeritus until the time of his death; appointed a member of the staff of the Hospital for Epileptics and Paralytics, Blackwell's Island, in 1870, and a year later made chief of the staff of all the hospitals on Blackwell's Island; in 1874 appointed resident physician of the Manhattan State Hospital, Ward's Island, and a year later made superintendent, which position he retained until failing health compelled his resignation in 1904; died at his residence in New York City, from tuberculosis, after a long illness, December 7, aged 61.

Hiram R. Mills, M.D. University of Michigan, Department of Medicine and Surgery, Ann Arbor, 1866; a member of the American Medical Association, Michigan State Medical Society and St. Clair County Medical Society; major and surgeon at the Soldiers' Home, Grand Rapids, Mich.; a veteran of the Civil War and thereafter surgeon in the army for three years; for many years a leading practitioner of Port Huron, died at the Soldiers' Home, Grand Rapids, suddenly, from heart disease, November 29, aged 69.

J. Stebbins King, M.D. Medical College of Ohio, Cincinnati, 1860; a surgeon during the Civil and the Spanish-American Wars; at one time a practitioner in Natchez, Miss., and editor of the Natchez *Courier;* a member of the Medical Society of Central Illinois and the Capitol City Medical Society; for more than thirty years a practitioner of Decatur, Ill., died at the home of his daughter in that city, November 26, from cerebral hemorrhage, after an illness of several months, aged 70.

Samuel R. Watts, M.D. Howard University Medical Department, Washington, D. C., 1872; professor of medical jurisprudence and clinical medicine in his alma mater; formerly president of the Medio-Chirurgical Society of the District of Columbia, attending physician at the Dispensary Clinic, and member of the Medical Visiting staff of the Freedmen's Hospital; died at his home in Washington, D. C., November 28, after an illness of three months, aged 60.

Pedro M. Lusson, M.D. Department of Medicine of the University of Philadelphia, 1864; formerly president of the Santa Clara County Medical Society, and first vice-president of the Medical Society of the State of California in 1894, consulting physician to Santa Clara College, died at his home in San Jose, Cal., from heart disease, November 26, after an illness of six weeks, aged 66.

Melancthon Hogeboom Fisk, M.D. University of Michigan, Department of Medicine and Surgery, Ann Arbor, 1866; a member of the American Medical Association; a veteran of the Civil War and one of the most prominent physicians of Wauwatosa, Wis., died at his home in that city December 1, from malignant disease of the throat, after a long illness, aged 63.

Charles A. Gause, M.D. University of Michigan, Department of Medicine and Surgery, Ann Arbor, 1852; a member of the Kansas State Medical Society, and at one time superintendent of the Kansas State Hospital for the Insane, died suddenly at New Sharon, Ia., September 8, from angina pectoris, aged 75.

William A. Lee, M.D. Medical College of Virginia, Richmond, 1870; adjunct professor in his alma mater, where he had been a lecturer for many years; a prominent practitioner of Richmond, died suddenly from cerebral hemorrhage, while returning from a Masonic banquet, November 29, aged 64.

John J. Cook (Years of Practice, Kentucky); a member of the American Medical Association; one of the most prominent physicians of Mason County, Ky., where he had practiced for more than 42 years; died at his home in Wedonia, November 25, from gastritis, aged 58.

Alexander C. Sloan, M.D. Louisville University, Medical Department, 1870; a member of the Navarro County Medical Society and Texas State Medical Association, died at his home in Corsicana, Texas, from pityriasis rubra, November 30, after an illness of four months, aged 63.

William Copeland Philips, M.D. Transylvania University, Lexington, Ky., 1848; secretary of the state of Texas and chief clerk in the state comptroller's office, was found dead in bed at his boarding house in Rocheport, Mo., from senile debility, November 14, aged 83.

Francis Withers Allen (Examination Missouri), for two or three years president of the Macon County Medical Society, founder of Macon College, died at his home in Barryville, near Calleo, Mo., November 14, aged 74. The pallbearers were all members of the county society.

George W. Hubble, M.D. Long Island College Hospital, Brooklyn, N. Y., 1871; a confederate veteran and a member of the board of county supervisors for several years, died at his home near Chilhowie, Va., November 26, after a short illness, aged 62.

John Greer Smith, M.D. Medico-Chirurgical College of Philadelphia, 1898; a member of the American Medical Association; and of the Philadelphia County Medical Society, died at his home in Roxborough, Philadelphia, November 30, from tuberculosis, aged 30.

Glover Crane Arnold, M.D. Bellevue Hospital Medical College, New York City, 1873; a member of the Medical Society of the State of New York and Medical Society of the County of New York, died at his home in New York City, November 30, aged 57.

Charles Wilmot Oleson, M.D. Harvard University Medical School, Boston, 1866; assistant surgeon of the Fourteenth Infantry during the Civil War, a member of the Chicago Medical Society, died at his home in Lombard, Ill., December 1, aged 66.

John Adams Ten Eyck, M.D. Bellevue Hospital Medical College, New York City, 1882; ambulance surgeon in Bellevue Hospital from 1882 to 1883; died at his home in Bridgeport, Conn., from pneumonia, after an illness of 10 days, aged 44.

Charles Gould, M.D. Bellevue Hospital Medical College, New York City, 1888; interne in Bellevue Hospital, after his graduation; died in Bellevue Hospital, November 22, from septicemia, due to a wound of the right hand, aged 46.

William Henry Marean, M.D. New York Medical College, New York City, 1855; surgeon during the Civil War, died at his home in Ocala, Fla., November 23, from typhoid fever, after a prolonged illness, aged 70.

Edward J. McDonough, M.D. New York University, New York City, 1887; died at his home in New York City, November 30, from pulmonary edema, after an illness of four hours, aged 44.

Mary A. Howard, M.D. University of Nebraska, College of Medicine (Homeopathic department), Lincoln, 1885; died at her home in Hastings, Neb., November 24, from cerebral hemorrhage.

Mike M. Paul, M.D. Louisville Medical College, 1897; was shot and instantly killed by a negro whom he was attempting to arrest on order of the sheriff, at Center, Texas, November 17.

Christian F. Bolman, M.D. Medical College of Fort Wayne, Ind., 1881; of Coldwater, Ohio, died suddenly in a theater at Fort Wayne, Ind., from cerebral hemorrhage, December 1, aged 59.

George McIntosh, M.D. Faculty of Medicine of Queen's University, Kingston, Ont., 1904, died at his home in MacDonald's Corners, Ont., October 5, from typhoid fever.

Finley S. Frank, M.D. Starling Medical College, Columbus, Ohio, 1892; died suddenly at his home in North Robinson, Ohio, November 25, from heart disease, aged 53.

William E. Colthar, M.D. Cincinnati College of Medicine and Surgery, 1900; died at his home in Williamsburg, Ohio, November 24, from typhoid fever.

Arthur P. Keith, M.D. Kansas City Medical College, 1901; died at El Reno, Okla., August 14, from typhoid fever, after an illness of four weeks, aged 30.

J. Robert Landers, M.D. Hospital College of Medicine, Louisville, 1885; died at his home in Teheran, Ill., November 9, from acute nephritis, aged 45.

James W. Eberhardt, M.D. Medical College of Georgia, Augusta, 1890; died at his home in Hartwell, Ga., November 20, after a prolonged illness.

Rollin J. Dickinson, M.D. Kansas City (Mo.) Medical College, 1898; died at his home in Kirwin, Kan., November 13, from cancer of the stomach.

A. R. McDaniel, M.D. Jefferson Medical College, Philadelphia, 1845; died at his home in Greensboro, N. C., November 17, after a long illness.

Percy Linwood Tantum, M.D. Jefferson Medical College, Philadelphia, 1886; died at his home in New York City, November 26, aged 45.

William Schmoele, M.D. Jefferson Medical College, Philadelphia, 1866; died suddenly at his home in Portsmouth, Va., aged 60.

Jasper H. Brightwell, M.D. Medical College of Georgia, Augusta, 1860; died at his home in Maxeys, Ga., November 23.

Eugene V. Wharton (examination, Kansas), died suddenly at his home in Yates Center, Kan., from heart disease, November 27.

Book Notices

THE PHYSICIAN'S VISITING LIST FOR 1907. Fifty-sixth Year of its Publication. The Dose-Table herein has been revised in accordance with the new U. S. Pharmacopeia (1906). Flexible Leather. Price, $1.00. Philadelphia: P. Blakiston's Son & Co., 1907.

This neat little visiting list also contains space for addresses of patients and nurses, for obstetric and vaccination engagements, as well as a record for births and deaths. Brief chapters on drug incompatibility and on asphyxia and apnea, the usual list of antidotes for poisons, and a complete dose table assist in making it a very servicable book for the pocket.

PROGRESSIVE MEDICINE, A Quarterly Digest of Advances, Discoveries, and Improvements in the Medical and Surgical Sciences, edited by H. A. Hare, M.D. Vol. II. September, 1906. Paper. Pp. 298. Philadelphia: Lea Brothers & Co., 1906.

The present volume is in keeping with previous issues, giving a review of "Diseases of the Thorax and Its Viscera," etc., by William Ewart of London; "Dermatology and Syphilis," by William S. Gottheil of New York; "Obstetrics," by Richard C. Norris of Philadelphia, and "Diseases of the Nervous System," by William G. Spiller of Philadelphia. The treatment of tuberculosis receives more than its usual share of attention, and the opsonic index is described fully and its advantages and clinical application are set forth. Considerable space is devoted to obstetric surgery and to syphilis. The illustrations are numerous and excellent.

Society Proceedings

COMING MEETING.

American Association of Anatomists, New York City, Dec. 27-29.

MASSACHUSETTS ASSOCIATION OF BOARDS OF HEALTH.

Meeting held in Boston, Oct. 25, 1906.

DR. HENRY P. WALCOTT in the Chair.

Disinfection—Reasons and Methods.

DR. H. W. HILL, in charge of the Minnesota State Board of Health Laboratory, said that disinfection is literally the destruction of the power to infect, e. g., boiling of instruments before surgical operations; the use of bactericides in infected wounds; the exposure of infected materials to sunlight; the pasteurization of infected milk; the filtration of infected water, etc. Practically in public health circles it means the destruction of the infectiveness of the environment of persons, and is still further usually restricted to terminal disinfection, i. e., the disinfection of the patient's room, or house and its contents, after the patient has left. Disinfection acts by destroying the power to infect and usually by killing the living organisms which cause the infectious disease. Sterilization goes a step further and destroys all the germ life present. If then, disinfection from the public health point of view, narrows itself to the destruction of disease-producing germs after their escape from the body, we must consider how they escape from the body, where they go to, how long they live in their new location, what the chances are of their removal thence to well persons while still capable of producing the disease and how often such transfer actually does take place. Actual cases and not probability or possibility are demanded.

The diseases in which it is possible for the germs to escape, survive and be transferred to well persons are: Typhoid fever, diphtheria, influenza, dysentery, erysipelas, glanders, rabies, actinomycosis, tuberculosis, leprosy, syphilis, soft chancre, gonorrhea, gonorrheal ophthalmia, cerebrospinal meningitis, tonsillitis, pneumonia, cholera, anthrax, plague, smallpox, measles, scarlet fever, whooping cough, tetanus, possibly acute rheumatism and cancer; also septicemia.

The point of exit differs, but chiefly it is the nasopharynx and anus, with occasionally the skin and urine. It is a question whether measles and scarlet fever are infectious from the skin, while there is little doubt of their infectiousness from the nasopharynx.

Of all this list of diseases American practice has finally decided on four where usually disinfection is done: Smallpox, diphtheria, scarlet fever and tuberculosis. Diphtheria and scarlet fever may soon be added to this list of diseases in which transmission is so much more often direct than indirect, that disinfection to prevent the latter is scarcely a factor in reducing their prevalence. The germs of these four diseases escape chiefly from the nasopharynx, e. g., by spitting, coughing, etc., and are deposited in the immediate neighborhood of the patient. Some few go to other parts of the room and others may be carried by the hands to things touched. They remain moist for some time. The masses of mucus dry, but only rarely become powdered, so that they can be air-borne. When dry enough for that the organisms are usually dead. They fall to the floor and are not likely to reach the nose or mouth of a new victim. Scattering is very unlikely, except for the tuberculous patient. Most of these germs die in less than three weeks, especially if exposed to diffuse sunlight. Most of the bacteria in diphtheria, and probably in scarlet fever and smallpox are thrown out early in the disease, and are dead when disinfection is done, and the patient is released from quarantine. In tuberculosis the infection is much greater, therefore it is more important to disinfect after tuberculosis, if a well person is to occupy the room within three weeks, or better, within three months.

Washing with a disinfecting solution is laborious and uncertain. Gases are best. Sulphur dioxid, chlorin, hydrocyanic acid, carbolic acid vapor, are all efficient. Sulphur

and chlorin injure fabrics, hydrocyanic acid is too deadly. Carbolic acid is too expensive. Hence formaldehyd, cheap, innocuous, and efficient is generally used. All act best in moist atmospheres, and especially is this true of formaldehyd. Sufficient gas, sufficiently concentrated, and used for a sufficient length of time is accomplished by devices, mechanical, thermal, chemical and thermo-chemical.

Mechanical: Sprays, by atomizers, as in use in Chicago, or larger sprays used in Philadelphia, or through the key-hole, as in Boston, by steam pressure. Thermal: Range from simplest evaporating pan to complicated devices and auto-chairs. Chemical: Unslaked lime exposed to a formalin solution. Water is absorbed and gas set free, but the air is too dry. Mixing permanganate of potash with formalin. Use the proper proportion and the gas is obtained abundantly and cheaply. This requires about twice as much formalin as some of the other methods, but less apparatus and labor. moisture must be added. Leakage must be checked. Evolution of the gas is rapid, and time enough must be allowed for it to act. These matters under control and the machine or method is of comparatively little importance.

Because these factors have varied the results reported have been so contradictory. Five ounces of formalin with fifteen ounces of water will completely disinfect 1,000 cubic feet of space in two hours. This allows a wide margin for safety. For anthrax, double the amount and time. Public conveyances, sleeping cars, street cars, etc., have germs moist and active and should be as thoroughly and promptly disinfected as the pillows or sheets of a patient.

The Value of Two Consecutive Cultures as a Method of Releasing Diphtheria Patients.

DR. BURT R. RICKARDS, Director of the Bacteriological Laboratory of the Boston Board of Health, said that this rule was adopted in Boston in 1896. It then replaced the single culture for release, which in turn has replaced the previous arbitrary time limit. It acts as a check on the present imperfect bacteriological methods. Especially is this true in laryngeal cases and when due care is not exercised. The bacteriological error is less than the clinical error. The tests in the Boston Board of Health Laboratories show by the results of finding the germs on a second culture when the first was negative, that by the former method from 15 to 34 per cent. would have been discharged, while still capable of infecting others. These late germs are virulent up to the time of their disappearance. Boston requires for release a culture from both nose and throat. If this is negative the second culture is taken by the agent of the Board of Health. This insures greater care and thoroughness.

In 1900 the average duration of a case of diphtheria from the earliest symptoms to the date of the second negative culture was 23.3 days. In 1905 it was 16.8 days. The average duration of the clinical symptoms in Boston is two weeks. Hence, if an arbitrary rule to release only after ten days or two weeks from the disappearance of symptoms is adopted it will be seen that the average case would be kept in quarantine longer than is necessary. Hence, the second negative is better. Probably not 1 per cent. need a third negative. The second should be taken by an agent of the Board of Health, and for cases of long duration, virulence tests should be made.

Methods Employed in Providence, R. I., for Releasing Diphtheria Patients.

DR. C. V. CHAPIN, said that sanitary practice ought to be based on what we know of the origin of disease. Contagious diseases extend not from known cases usually, but from unrecognized ones. Infection is usually by quite direct contact. Formites play but little part in it. Formerly Providence had no stringent restrictive rules. Moderate reduction of cases was only secured. In 1902 the rule was adopted that the warning sign come down ten days after the disappearance of the exudate, as certified by the attending physician. No child in the family may attend school until one month from the beginning of the case, unless two successive negative cultures from both nose and throat have been obtained. Almost all these children come to the health department to have these cultures taken and many are found infected. But the period of isolation is reduced. Formerly 57 per cent. were isolated over three weeks, now only 27 per cent. are isolated beyond this period.

Isolation is now absolute. Judgment must determine how long it is wise to continue it. The rule in the general community would not apply to small communities, public institutions or schools. Here active interference may absolutely control. So. too, it is advisable to be quite sure, by two or even three negative cultures, that a child who has been cared for at considerable expense in a contagious hospital will not carry out germs to the public. The result in Providence has been a decrease in the number of cases, even though disinfection too, has been abandoned, and in September last, for a week the city was free from any reported case of diphtheria. Hence the leniency has had no serious bad effects.

DISCUSSION.

DR. HENRY J. BARNES, stated that to attain in a room high relative humidity, 80-85 per cent., is a different problem in different places. Boston averages about 70 per cent., Denver, 50 per cent. In summer it might be easy, but in winter, steam heated houses are about 30 per cent. and hospital wards as low as 12 per cent. even, it being 8 per cent. dryer than the air in a lumber kiln. Hence the few ounces of water recommended by Dr. Hill which might be ample in summer would have little effect in winter. The little German hydrometer, he said, is accurate within 2 or 3 per cent. It is easily read and should be used in every room to determine whether the necessary 80 per cent. of humidity has been secured.

DR. GARDNER T. SWARTS believes that what is practical and what is safe should be the aim of the health officer. If we take chances and do not disinfect, and no dire results follow, we are satisfying the public and health requirements. If ten days after the disappearance of the membrane, the germs do usually disappear, we are safe in assuming a shorter quarantine.

DR. C. E. A. WINSLOW stated that the danger comes from the fresh germs, chiefly, just as they leave the body. Therefore, concentrate attention on them, whether tubercle, diphtheria or typhoid bacilli. Give pointed instructions. Prevent the scattering of the germs from their source.

DR. JAMES C. COFFEY, stated that Worcester, Mass., a city with 135,000 inhabitants, is just now experiencing an unusual epidemic of diphtheria. It started in August, when the schools were not in session. The type is very infectious, several members of the family being usually affected, but it is not virulent. In the last 100 cases there has not been a death. Immunity is a factor which is quite as important in this matter of the spread of disease as is disinfection. Ordinary quarantine is pretty much a farce. Any member of a family in which diphtheria exists, who deals with the public, clerk, letter carrier, motorman, conductor, teacher, etc., should be required to leave that house or have the patient taken away.

DR. BURT R. RICKARDS said that antitoxin returned to the Massachusetts Board of Health Laboratory because it is slightly clouded is used for serum in which to grow the diphtheria bacilli. Hence it has no effect to kill the germs themselves. Infected persons may be compared to criminals. Patients: Those in prison. Infected well persons: Criminals at large, liable to do damage at any time. Companions of criminals: Exposed well persons. They may become criminal or they may not. Infected well persons do not generally have virulent germs. Methyl alcohol, he said, is only a wasteful method of producing formaldehyd.

DR. FRANCIS P. DENNY suggested that every diphtheria patient where the germs persisted more than four weeks by cultures be put "on probation" and allowed freedom, except school children, and those whose occupation brings them in contact with many others.

DR. CLARENCE P. HOLDEN urged the necessity of searching for the unrecognized case which so often precedes the one under treatment and may be still infectious and at liberty. These are apt to be untreated nasal diphtheria cases. The same holds true of scarlet fever. It is not enough to recognize a case and isolate it.

CHICAGO MEDICAL SOCIETY.

Regular Meeting, held Oct. 17, 1906.

The President, DR. GEORGE W. WEBSTER, in the Chair.

Hemorrhage from the Stump Following Appendectomy.

DR. WILLIAM HESSERT read a paper with this title, which appears in this issue of THE JOURNAL.

DISCUSSION.

DR. M. L. HARRIS said that it is now more than ten years since Dawbarn first presented the pursestring suture and the invagination of the stump method. It was so simple that he adopted it at once and has used it ever since. About that time the late Dr. Fenger said he had never used the method because he was afraid of hemorrhage from the end of the appendix. Dr. Harris had never seen hemorrhage from the stump up to that time, but bearing in mind Dr. Fenger's remark, he began to pay more attention to the appendix after ligating the stump. He noticed that after the ordinary ligation of the appendicular artery, then cutting the appendix, in a few cases bleeding continued from the side of the appendix, especially from the mesenteriolum, and he found that this hemorrhage in the majority of cases came from the small branch of the appendicular artery which was given off near the base of the appendix, and followed closely in the wall of the appendix, so that when the appendicular artery was ligated this branch failed to be included in the ligature. He described a modified technic which includes this branch in the ligature.

DR. A. J. OCHSNER said that for a number of years he regularly ligated the appendix, and then inverted it without crushing, but for nearly seven years he has followed the Dawbarn method and the Harris loop, and in about 1 per cent. of all cases he has passed a ligature about the crushed stump, selecting such cases as appeared to be unsafe. During this period he has removed over 2,000 appendices without a single case of postoperative hemorrhage from the stump.

DR. E. WYLLYS ANDREWS reported three cases in which hemorrhage occurred after the patients had left the operating table. In two a fatal hemorrhage followed from a vessel at or near the lumen of the appendix at about the time of the removal of the first gauze packing. The third case occurred in the practice of a fellow-practitioner. In this there was a perforation of the appendix, although the patient had not been operated on. He was treated by the Ochsner method, and while the temperature was improving he suddenly collapsed and died. Autopsy disclosed perforation near the base of the appendix.

DR. D. W. GRAHAM has had two cases of severe hemorrhage following appendectomy, and nearly lost both patients. In one the hemorrhage was from the stump; in the other from the rupture of an omental vein, which was not detected until the operation was finished.

DR. A. E. HALSTEAD has had one case of severe hemorrhage after appendectomy, and believes the hemorrhage came from a vein and not from the stump. He emphasized the point that in all cases the ligature should be passed around the stump and the surgeon should not trust to crushing of the stump in controlling hemorrhage.

A Few Disorders of Sleep.

DR. HUGH T. PATRICK first spoke of what has been called nocturnal palsy, night numbness, sleep numbness, waking numbness and acroparesthesia nocturna. The individual wakens in the night with one or more extremities numb, tingling and more or less paralyzed. This paralysis may be complete, but is of short duration. After some minutes of rubbing, slapping, shaking, etc., normal sensation and motion return and the individual is able to go to sleep again. When the trouble is hemiplegic in distribution it very closely simulates an apoplectic attack without loss of consciousness, and may seriously frighten the individual as well as give considerable concern to the medical attendant.

The causes of this disorder, approximately in the order of their importance, are neurasthenia and general nervousness, malnutrition and general debility, the menopause, rheumatism, cold and wet, anemia arteriosclerosis, hysteria, tobacco, gastrointestinal disorders, gout, Bright's disease and diabetes. After the meeting Dr. Hartung informed the author that he had known of one case caused by pregnancy.

The next disorder was what the author called painful awakenings. In this disorder the individual wakens suddenly with a feeling of intense apprehension or panic, as if something dreadful were about to happen or had just happened. There is apt to be palpitation, tachypnea, generalized tremor, or more frequently a sensation of trembling without visible tremor, sometimes cold perspiration and a feeling of great prostration. As nearly as may be ascertained these attacks have no relation to nightmare or bad dreams. They occur principally in the course of functional nervous disease, and although most distressing, not to say alarming, are entirely harmless, and nearly always disappear with successful treatment of the general nervous condition. However, sometimes heart disease, Bright's disease, arteriosclerosis or adenoids stand in a causal relation to the disorder.

The author then described different types of what he called indormescent shocks, because they occur just as the patient is falling asleep or immediately after. They may be divided into motor and sensory, although sometimes the two are combined in the same patient or in the same shock. In a very mild degree the motor shock is familiar to everyone, simply consisting of a sharp muscular start or jerk about the time one is falling asleep. The starts in this degree may be called physiologic, as nearly every person has experienced them, but they sometimes reach an intensity which makes them distinctly pathologic. In such a case the sudden muscular contraction may be so violent and so generalized as literally to throw the individual into the air and turn him over in bed, and in some cases these jerks may be repeated ten or twenty times before he finally passes into a sound sleep.

The sensory shocks are very apt to be related to the special senses. A typical case was that of a neurasthenic who was wakened by what seemed to be the discharge of a pistol inside of his head. He was conscious of a tremendous crash, like an explosion, and at the same time felt conscious of a vivid flash of light. He sprang from the bed, was terribly frightened, sat up the rest of the night, and for weeks thereafter retired with great timidity lest there should be a recurrence of the phenomenon. Another patient, a middle-aged woman, had a sensation of having received a violent blow on the head and she felt certain that some one had struck such a blow. In intense agony she waited for the second, which she felt would follow instantly, but after a time realized that it was purely a sensation and that she had received no bodily harm. Still another patient was suddenly awakened by what seemed to be a great flash of light, and another had a sudden sensation in the epigastrium as if he had received a violent blow in that region. A neurasthenic and hypochondriacal gentleman, past middle age, was several times wakened by a sound which he likened to a violent and sudden grinding together of two stones, the intensity of the sensation being sufficient to constitute a real pain. Other instances were related, in all of which the disturbance was sufficient to concern, if not greatly alarm, the patient, but the author had never known this particular disturbance to be a symptom of organic disease. The disorder of sleep always disappeared with the disappearance of the nervousness and a return to good general health.

Retention of Stomach Contents.

DR. ALBERT H. BURR described the conditions under which the stomach contents are retained beyond the period of normal digestion. He referred to the symptoms of retention, and spoke of the advantages of passing contents through the normal channel. The method of accomplishing it is by position on the right side to favor gravitation of the contents to the pyloric end of the stomach. He emphasized the importance of making strong rhythmic contractions of the abdominal muscles on the stomach to stimulate peristalsis, and finally firm fixation of the diaphragm by deep sustained inhalations, while strong abdominal contractions are made. This voluntary reversed emesis is not difficult to learn. He described a series of daily bedside abdominal gymnastics for deep active massage of all contained viscera, especially to promote the activity of the lymph channels and the lymph circulation for therapeutic and prophylactic effects.

Therapeutics

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulæ and outlines of treatment are answered in these columns.]

Bronchial Asthma.

In considering the treatment of bronchial asthma Melvin, in *Denver Med. Times*, states that nearly all cases of bronchial asthma prove to be symptomatic of some reflex origin, most frequently nasal.

In those cases in which a thorough search reveals no definite origin Melvin states that they may be divided into three classes:

1. Those patients who are not benefited by treatment.
2. Those who have been improved so far as the number and severity of the paroxysms are concerned, but are all chronic cases.
3. Those who could be called cured, all of whom had not been affected more than a few months or not over three years.

He states that the regulation of the diet and attention to metabolism were the first and important features in every case. He advises a strict limitation of tea, coffee, meat and sugars along with most careful regulation of the digestive functions. The next important factor in the treatment is the administration of alkalies. They should be given before meals and at bedtime, and continued over a long period of time.

He advises also sodium salicylate in 10-grain doses after meals as second in value of medicines. Syrup of hydriodic acid taken half an hour before meals is of marked benefit in chronic cases and given over a long period.

For the relief of the paroxysm he considers the regular A. C. E. mixture as of value; one or two teaspoonfuls being given by inhalation. He regards the stimulant and relaxing effect of this mixture as of more benefit and much safer than the simple chloroform inhalation. It may be handled by the patient himself by placing some absorbent cotton saturated with the mixture in the bottom of a small bottle and inhaling the fumes through the nose whenever the paroxysm comes on. He states that while the possibility of forming the drug habit must be kept in mind he has never observed such an instance. He prefers this method to the use of a hypodermic injection of morphin and atropin.

He states that only occasionally has he seen much benefit from the use of glonoin or amyl nitrite. Pilocarpin was tried with adverse results. In some of the chronic cases the stramonium and potassium nitrate inhalations gave good results.

A. R. Edwards recommends the following combination in the treatment of bronchial asthma:

℞.	Ext. grindeliæ robustæ fl	f℥i	30
	Tinct. lobeliæ		
	Tinct. belladonnæ, āā	f3ii	8
	Potassii iodidi	3iss	6
	Syrupi	f℥i	30
	Aquæ q. s. ad	f℥iv	120

M. Sig.: One teaspoonful four times a day.

H. C. Brown recommends the following:

℞.	Sodii arsenatis	gr. iss	09
	Aquæ	f℥x	300

M. Sig.: One tablespoonful before breakfast and supper.

Or:

℞.	Antimonii et potassii tart	gr. i	06
	Potassii chloratis	gr. v	30
	Aquæ q. s.	f℥iv	120

M. Sig.: One teaspoonful every two hours.

He further states that no treatment of bronchial asthma is complete without proper attention to the general condition of the general system regulation, the diet and avoidance of all irritating substances.

Rover, in the same periodical, states that there are two indications to be met in the treatment of bronchial asthma: 1. To relieve the paroxysms. 2. To prevent the recurrence of expiratory dyspnea.

To meet the first indication he states that a full dose of morphin hypodermically, grain ¼ to ½ (015-.03), or even a grain (.06), serves the best purpose. The latter amount should be given, however, in broken doses 15 minutes apart, with or without small doses of strychnia. In this connection he states that the morphin habit is not so easily acquired as if given for the relief of chronic pain. [We must suggest, however, that it is not advisable to use this amount of morphin except in extraordinary circumstances, and then only with great care.—ED.] Because of the fact that the sputum is scant and raised with difficulty he recommends the following:

℞.	Ammon. carb.		
	Potassii iodidi, āā	3ii	8
	Tinct. belladonnæ	f3i	4
	Syr. pruni virg. q. s. ad	f℥iii	90

M. Sig.: One teaspoonful in water every four hours.

To prevent the recurrence of the paroxysm he advises:

1. Proper attention to the general health. 2. Removal of all causative factors. 3. A change of climate, even a change of location, although the patient may remain in the city.

As to medicinal preparations he advises potassium iodid, Lugol's solution, arsenic, syrup of hydriodic acid, cod-liver oil and tonics.

Mixtures for Infants (Continued).

Mistura hematoxyli composita:

℞.	Ext. hematoxyli	gr. i	06
	Vini ipecacuanhæ	m. i	06
	Tinct. opii	m. 1/6	01
	Misturæ cretæ	f3i	4

M. Sig.: To be given at one dose.

Mistura hydrargyri perchloridi:

℞.	Sol. hydrarg. chloridi B. P.	m. i	06
	Aquæ dest.	f3i	4

M. Sig.: To be given at one dose.

Mistura iodi composita:

℞.	Glycerini phenol		
	Tinct, iodi, āā	m. 1/3	02
	Aquæ q. s. ad	f3i	4

M. Sig.: To be given at one dose.

Mistura ipecacuanhæ:

℞.	Vini ipecacuanhæ	m. i	06
	Glycerini	m. x	65
	Aquæ	f3i	4

M. Sig.: To be given at one dose.

Mistura ipecacuanhæ ammoniatæ et belladonnæ:

℞.	Tinct. belladonnæ		
	Tinct. scillæ, āā	m. i	06
	Ammonii carb.	gr. 1/5	012
	Vini ipecac	m. i	06
	Aquæ	f3i	4

M. Sig.: To be given at one dose.

Mistura ipecacuanhæ cum ammonia:

℞.	Ammon. carb.		
	Potass. bicarb., āā	gr. ss	03
	Vini ipecac	m. i	06
	Syr. tolutani	m. v	30
	Aquæ cari q. s. ad	f3i	4

M. Sig.: To be given at one dose.

Mistura naphthalini:

℞.	Naphthalini	gr. ¼	015
	Syrupi	m. x	65
	Mucil. tragacanthæ q. s.		
	Aquæ cari q. s. ad	f3i	4

M. Sig.: To be given at one dose.

Mistura olei morrhuæ:

℞.	Olei morrhuæ		
	Glycerini		
	Solutio calcis, āā	f3i	4

M. Sig.: To be given according to the age of the patient.

Mistura olei morrhuæ cum ferro:

℞.	Olei morrhuæ	m. xx	1 30
	Mucil. acaciæ	gr. ii	12
	Ferri tartratis	gr. ¼	015
	Aquæ cassiæ q. s. ad	f3i	4

M. Sig.: To be given at one dose.

Mistura olei ricini:

℞.	Olei ricini	f3i	4
	Tinct. opii	m. 1/6	01
	Vini ipecacuanhæ	m. i	06

M. Sig.: To be given at one dose.

Mistura potassii bromidi:

℞. Potassii bromidi.....gr. i | 06
Syr. aurantii.....m. x | 65
Aquæ q. s. ad.....f3i 4|
M. Sig.: To be given at one dose.

Mistura potassii bromidi cum chloral hydratis:

℞. Potassii bromidi.....gr. i | 06
Chloralis hydratis.....gr. ss | 03
Syrupi .....m. x | 65
Aquæ .....f3i 4|
M. Sig.: To be given at one dose.

Mistura potassii citratis:

℞. Potassii citratis.....gr. ii | 12
Aquæ .....f3i 4|
M. Sig.: To be given at one dose.

Mistura potassii iodidi:

℞. Potassii iodidi.....gr. 1/3 | 02
Spts. ammon. arom.....m. i | 06
Aquæ .....f3i 4|
M. Sig.: To be given at one dose.

Mistura quininæ:

℞. Quininæ sulphatis.....gr. ¼ | 015
Acidi sulphurici dil.....m. ss | 03
Syrupi .....m. x | 65
Aquæ q. s. ad.....f3i 4|
M. Sig.: To be given at one dose.

Mistura quininæ cum ferro:

℞. Quin. sulphatis.....gr. ¼ | 015
Sol. ferri chloridi.....m. ss | 03
Glycerini .....m. v | 30
Aquæ q. s. ad.....f3i 4|
M. Sig.: To be given at one dose.

Mistura rhei cum soda:

℞. Pulv. rhei |
Sodii bicarb., āā.....gr. ss | 03
Syrupi zingiberis.....m. ii | 12
Aquæ q. s. ad.....f3i 4|
M. Sig.: To be given at one dose.

Mistura salina:

℞. Sol. ammon. acetatis.....m. xv 1|
Potassii citratis.....gr. i | 06
Aquæ camphoræ q. s. ad.....f3i 4|
M. Sig.: To be given at one dose.

Medicolegal

SOME LEGISLATION OF 1906.

Prohibits Adulterating or Misbranding Drugs and Food.

No. 463 of the Laws of Georgia of 1906, approved August 21, 1906, provides that it shall be unlawful for any person to manufacture, sell or offer for sale within the state of Georgia any article of food, drugs, medicines, or liquors, which is adulterated or misbranded, or which contains any poisonous or deleterious substance within the meaning of this act. Examinations of specimens of foods and drugs shall be made by the state chemist, or under his direction and supervision, for the purpose of determining whether such articles are adulterated or misbranded. The term "drug" shall include all medicines and preparations recognized in the United States Pharmacopeia, or National Formulary, for internal or external use, and any substance or mixture of substances intended to be used for th cure, mitigation, or prevention of disease of either man or other animals. The term "food" shall include all articles used for food, drink, confectionery or condiment by man or other animals, whether simple, mixed or compound.

In the case of drugs an article shall be deemed to be adulterated: First. If, when a drug is sold under or by a name recognized in the United States Pharmacopeia or National Formulary, it differs from the standard of strength, quality or purity, as determined by the test laid down in the United States Pharmacopeia or National Formulary official at the time of investigation; provided, that no drug defined in the United States Pharmacopeia or National Formulary shall be deemed to be adulterated under this provision if the standard of strength, quality, or purity be plainly stated on the bottle, box, or other container thereof, although the standard may differ from that determined by the test laid down in the United States Pharmaeopeia or National Formulary. Seeond. If its strength or purity fall below the professed standard or quality under which it is sold.

In the case of confectionery, an article shall be deemed to be adulterated if it contain terra-alba, barytes, tale, chrome yellow, or other mineral substance or poisonous color or flavor, or other ingredient deleterious or detrimental to health, or any vinous, malt or spirituous liquor, or compound or narcotic drug.

In the case of food, an article shall be deemed to be adulterated, among other things, if it contain any added poisonous or other added deleterious ingredient which may render such article injurious to health; provided, that when in preparation of food products for shipment they are preserved by any external application applied in such manner that the preservative is necessarily removed mechanically, or by maceration in water, or otherwise, and directions for the removal of said preservative shall be printed on the covering or package, the provisions of this act shall be construed as applying only when said products are ready for consumption. An article shall be deemed to be adulterated if the package, vessel or bottle containing it shall be of such a composition, or carry any attachment made of such a composition or metal or alloy, as will be acted on in the ordinary course of use by the contents of the package, vessel or bottle in such a way as to produce an injurious, deleterious or poisonous compound.

The term "misbranded" shall apply to all drugs, or articles of food, or articles which enter int the composition of food, the package or label of which shall bear any statement, design or device regarding such articles or the ingredients or substances contained therein which shall be false or misleading in any particular, and to any food or drug product which is falsely branded as to the state or county in which it is manufactured or produced.

In the case of drugs an article shall also be deemed to be misbranded: First. If it be an imitation of, or offered for sale under the name of, another artiele. Second. If the contents of the package as originally put up shall have been removed, in whole or in part, and other contents shall have been placed in such package, or if the paekage fail to bear a statement on the label in as conspicuous letters as is or may be prescribed by the United States law or rules and regulations of the quantity or proportion of any alcohol, morphin, opium, cocain, heroin, alpha or beta eucain, chloroform, cannabis indica, chloral hydrate, or acetanilid, or any derivative or preparation of any such substances contained therein; provided, that nothing contained in this paragraph shall be eonstrued to apply to the filling of written prescriptions, furnished by regular licensed practicing physicians, and kept on file by druggists as required by law, or as to such preparations as are specified and recognized by the United States Pharmacopeia or National Formulary.

Restricts Child Labor in Factories.

No. 339 of the Laws of Georgia of 1906 provides that from the approval of this act, August 1, 1906, no child under ten years of age shall be employed or allowed to labor in or about any factory or manufaeturing establishment within the state under any circumstances. After January 1, 1907, no child under twelve years of age shall be so employed, or allowed to labor, unless such child be an orphan and has no other means of support, or unless a widowed mother or an aged or disabled father is dependent on the labor of such child. After January 1, 1908, no child under fourteen years of age shall be employed or allowed to labor in or about any factory or manufaeturing establishment within the state between the hours of 7 p. m. and 6 a. m. Besides, after said last date, certain educational qualifications are demanded up to eighteen years of age.

Provides for Material for Treatment of Hydrophobia.

No. 546 of the Laws of Georgia of 1906 empowers and directs the State Board of Health, as soon as practicable, to

arrange for the preparation and manufacture in its laboratory at the capitol, material necessary for the treatment and prevention of hydrophobia according to the method of Pasteur, and to keep constantly on hand the necessary material sufficient in quantity to meet the requirements that any exigency may demand, and to distribute the same free of cost to physicians and surgeons over the state for the treatment of such of their patients as have been bitten by an animal suffering with rabies.

Authorizes Appointing Policeman Health Officer.

No. 63 of the Acts of South Carolina of 1906 amends section 1098 of the code of that state, relating to "organization of board of health," by adding thereto the proviso: "Provided, that in cities and towns of more than 5,000 inhabitants and less than 10,000, the mayor or intendant of such city or town shall be authorized and empowered to designate and detail, under such rules as may be prescribed by the city or town council, one of the policemen of such city or town to perform the duties of health officer in such city or town."

Gives Board of Health to Unincorporated Towns.

No. 82 of the Acts of South Carolina of 1906 provides that the executive committee of the State Board of Health shall have power, and it shall be their duty, to appoint local boards of health in all unincorporated towns and villages, where the population of any of said towns and villages is not less than 100 inhabitants, which local boards shall consist of seven members, one of whom shall be a regularly licensed practicing physician, one the nearest magistrate, and five laymen; provided, however, that no such board of health shall be appointed until one-fourth of the qualified electors of such unincorporated towns and villages shall have, in writing, asked for the appointment thereof.

Such local boards of health shall have power, and it shall be their duty, to make and enforce all needful rules and regulations to prevent the introduction and spread of infectious or contagious diseases by the regulation of intercourse with infectious places, by the arrest, separation and treatment of infected persons, and persons who shall have been exposed to any contagious or infectious disease, and by abating and removing all nuisances which they shall deem prejudicial to the public health, to enforce vaccination, to mark infected houses or places, or to prescribe rules for the construction and maintenance of house-drains, waste pipes, soil pipes and cesspools, and make all such other regulations as they shall deem necessary for the preservation of the public health. They shall also have power, in case of the prevalence of any contagious or infectious disease within any of the said towns or villages, to establish one or more hospitals and quarantine stations, and to make provisions and regulations for the management of the same.

For the purpose of executing and the enforcement of any of the orders or rules prescribed by said boards, the said magistrate shall be invested with power and authority equal to that of a police officer in municipalities.

Provides for Analyses in Supposed Poisoning Cases.

No. 85 of the Acts of South Carolina of 1906 provides that it shall be the duty of the coroners in that state, and of any other persons acting as coroner, whenever on the holding of any inquest there is reason to believe that the deceased came to his death by means of poison, to carefully prepare the body or parts of the body, as directed by the authorities of Clemson Agricultural and Mechanical College, and to carefully send the same promptly to the authorities of said college. It shall be the duty of the authorities of said college to have made by the proper department thereof a chemical analysis of all bodies, or parts of bodies, as the case may be, so sent to them by any coroner, or other person acting as coroner in the state, and to report the result fully to the coroner, or acting coroner, with all convenient speed. It shall be the duty of the chemist who conducted or performed said analysis, or of a competent assistant who was present aiding therein, on notice from any solicitor, to attend the trial of any case involving the issue as to the cause of death in question; and for such attendance and testimony in the case he shall be entitled to mileage, going and returning, and five dollars per day for the actual number of days of such attendance, to be paid for by witnesses' pay certificate issued in the usual way of such.

Current Medical Literature

AMERICAN.

Those marked with an asterisk (*) are abstracted below.

Medical Record, New York.

December 1.

1 *Treatment of Diffuse Suppurative Peritonitis Following Appendicitis. F. Torek, New York.
2 Hospitals Connected with Medical Schools. D. B. St. John Roosa, New York.
3 More Ether; Less Chloroform. J. E. Lumbard, New York.
4 *An Important Factor in the Causation and Treatment of Many So-Called Functional Disorders. C. G. Leo-Wolf, Niagara Falls, N. Y.
5 *Quinin Fever. A. L. Goodman, New York.
6 Perforation of the Soft Palate, Due to Tertiary Syphilis; Staphylorrhaphy. H. F. L. Ziegel, New York.

1. **Treatment of Diffuse Suppurative Peritonitis Following Appendicitis.**—Torek has operated in 18 cases of diffuse suppurative peritonitis. All patients operated on not later than 70 hours after the onset of the diffuse peritonitis recovered. Two patients who were operated on on the fourth day also recovered. Torek's method of operating differs in various particulars from that described by other surgeons. In all but four cases the incision was made in the median line. In almost all the cases the exudate extended all the way over to the left. The incision described reaches from the pubes to about two inches above the umbilicus. Torek has never excised the navel. The peritoneum is subjected to as little traumatism as possible. After lavage, the abdomen is completely closed without drainage. There are patients in whom the general systemic affection has so far progressed that the removal of infectious material from the peritoneal cavity can not save them. Operation in these cases should be undertaken as soon as the diagnosis has been made.

4. **Causation and Treatment of Functional Disorders.**—Wolf claims that phenomena of hysteria are repeatedly due to eyestrain. The same is true concerning neurasthenia. This is a disorder common to men with sedentary habits and women with too much money and leisure. Wolf says he has never seen a case of nervous prostration in a washerwoman or of neurasthenia in a track hand. Other disturbances that he has observed to be caused by eyestrain are chorea, neuralgia, colds, asthma, anemia, polyuria and dysuria, dysmenorrhea, and backache and torticollis.

5. **Quinin Fever.**—Goodman reports the case of a patient who some years before she was seen by the writer had been treated with quinin for attacks of malaria. On examination the spleen was found to be enlarged and somewhat painful. Six decigrams of quinin sulphate were ordered to be taken once daily. A few hours later the temperature had risen 4.2 degrees. After giving further doses of the drug, it was concluded that the fever was due to the administration of the quinin. As soon as the patient was put on a mixture of ergotin and piper nigrum, her fever failed to appear and she made an uninterrupted recovery. Goodman concludes that the phenomenon here described is due to some chemical changes in the blood acting on the heat dissipating apparatus in persons who have, or who have had, malaria.

New York Medical Journal.

December 1.

7 *Exophthalmic Goiter from the Standpoint of Serum Therapy. J. Ewing, New York.
8 A Clinician's Observations of Opsonic Therapy. C. D. Aaron, Detroit.
9 Medical Societies of New York County, with Especial Reference to the Need of Better Organization of the Medical Profession. F. M. Crandall, New York.
10 *Etiology of Cholelithiasis; Bacteriologic Study of One Hundred and Two Calculi. J. Funke, Philadelphia.
11 *Tuberculosis of the Kidney in an Infant. J. L. Morse, Boston.
12 Liberal Diet in Typhoid Fever. M. Manges, New York.
13 *Use of Arsenic in Pneumonia. T. F. J. Dunn, Fordham, N. Y.

14 A Reply to Dr. E. N. S. Ringueberg's Article on a Plea for More Catholic and Broader Views on Ophthalmology. F. W. Bates, Hamilton, Ontario.
15 *Case of Tying Wire Perforating the Appendix. A. Denenholz, New York.

7. **Exophthalmic Goiter.**—Ewing considers briefly the theories of the nature of Graves' disease, the pathologic anatomy of the thyroid gland, and the general pathology of the disorder.

10. **Bacteriology of Biliary Calculi.**—Of the 102 calculi examined by Funke but 31 gave rise to growths in the bouillon; 71 inoculations remained sterile. Only now and then were bacteria found in spreads, and occasionally, perhaps in three calculi, were bacteria found in the spreads when no growth from the same calculus developed in the bouillon. From the infected tubes the colon bacillus was isolated 11 times in pure culture. The *Bacillus typhosus* was found once in pure culture and never associated. The following organisms were isolated once; occasionally they were in pure culture, occasionally associated: *Bacillus limbatus, Bacillus gasoformans, Bacterium oxygenes, Bacillus Fricdländer, Bacillus lactis erythrogenes, Micrococcus tenacatis,* and the *Bacillus subtilis.* The last named organism was found in pure culture in eight of ten stones taken from the same case. The *Sarcinæ luteum* was found in four calculi always associated with one or more organisms; the *Micrococcus cereus albus* was isolated twice. One calculus yielded a bacillus which could not be identified; it resembled the *Bacillus brookeri* very closely.

11. **Tuberculosis of Kidney in Infant.**—Morse's patient was only 3 years of age. He was breast fed for the first four weeks. Then he was given a home modification of milk from untested cows, pasteurized at 155 F. Later he was put on unpasteurized milk. Attention was attracted to the kidneys when the baby was seven months old. Tubercle bacilli were found in the urine. He was at once given the fresh-air treatment and is now a large, strong, healthy 3-year-old boy. The case suggests several important points in diagnosis. First, the importance of examination of urine in all obscure illnesses in infancy, especially if associated with fever; second, the necessity of considering tuberculosis of the urinary tract in differential diagnosis, even at this age. It also emphasizes the usefulness of fresh air in the treatment of tuberculosis, and shows that even young infants can not only bear, but profit by the outdoor treatment, day and night, even in a cold climate.

13. **Arsenic in Pneumonia.**—In the 10 cases reported by Dunn the medication consisted essentially in the use of large doses of Fowler's solution of arsenic. In some cases nothing else was employed, and it was found that enormous doses of the drug were tolerated in a most surprising manner. Five minims, every two or three hours, were given in these cases for several days without the slightest evidence, either proximate or remote, of arsenical poisoning. In fact, it seemed that these patients showed the same tolerance of arsenic that malarial patients show of quinin, or that syphilitics do of mercury or iodid. Aside from the absence of untoward symptoms there seemed to be positive results in the control of the toxemic symptoms of pneumonia. In several of the cases there was a decided break in the temperature about 48 hours after the beginning of medication.

15. **Tying Wire Perforating Appendix.**—The interesting features of Denenholz' case are the peculiar etiology and the existence of the high polynuclear count as indicative of abseess at the time of admission. The source of the trouble is traced to the entry of a piece of wire, such as is used in making artificial flowers. Undoubtedly in this instance, while cutting off an end of the wire, it alighted on some article of food which the boy ate, and became incorporated with it in its descent in the alimentary tract. It gradually worked its way down into the lumen of the appendix, setting up an inflammatory condition in its efforts to escape, at last perforating the appendix wall.

Boston Medical and Surgical Journal.

November 29.

16 Major Symptoms of Hysteria. P. Janet, Paris, France.
17 *Examination of the Throat in Chronic Systemic Infections. J. L. Goodale, Boston.
18 *Some Fundamentals in Hydrotherapy. C. C. Nicola, Melrose, Mass.

17. **Examination of Throat in Chronic Systemic Infections.**—The object of Goodale's paper is to present suggestions for examination of the throat which he has found of value in conditions of chronic systemic infection. He reports nine cases of cervical lymphadenitis which demonstrate first that tuberculous cervical adenitis may exist in association with the presence of tubercle bacilli in the tonsils, with or without visible changes in these structures, and is not necessarily affected by the removal of the tonsils. Second, that a form of cervical adenitis occurs, accompanied by distinct enlargement and subacute or chronic inflammation of the tonsils, and disappears after their excision. In the first instance, it appears reasonable to assume that a penetration of tubercle bacilli through the tonsils into the lymph glands has occurred; in the second, that an absorption of irritating material generated in the tonsils is taking place from them into the adjacent lymph nodes. In the latter instance, the removal of the focus of toxin production is followed by immediate relief. The examination of a large number of cases of infectious arthritis, with regard to the conditions of the throat, has demonstrated to Goodale the existence of pathologic alterations in the tonsil characterized in general by retention of lacunar detritus, with or without hypertrophy of the organ. Since, however, inspection and careful clinical examination may fail to disclose deep-seated collections of detritus, communicating by circuitous passages with the open air, Goodale deems it wise, if other points of infection can be eliminated, to extirpate the tonsils in the most thorough manner, thus replacing a tissue of diminished resistance by a stout barrier of compact structure without nook or recess to harbor a pathogenic parasite.

18. **Fundamentals in Hydrotherapy.**—Nicola reviews briefly some of the fundamental principles which should be a guide in making applications of hydrotherapy. From his own experience, covering a number of years in an institution where hydrotherapy is largely employed, as well as from reports from similar institutions elsewhere, he is fully convinced that hydrotherapy, while not a panacea, has a very wide range of applicability. Of course, he says, it will find its greatest efficiency in well-equipped institutions where especially constructed apparatus and appliances can be utilized. Nevertheless, he has attempted in this paper to point out more especially the simple fundamental principles which can be utilized in many ways in every household, and to call attention to such special treatments as would be of most service to the general practitioner.

Lancet Clinic, Cincinnati.

December 1.

19 *Future of the Medical Profession. J. H. Carstens, Detroit, Mich.
20 Gonococcus Vaginitis in Children. B. K. Rachford, Cincinnati.
21 X-Ray in Epithelioma, Lupus and Tertiary Syphilis—Photocystoscopy in Genitourinary Neurasthenia. M. L. Heidingsfeld, Cincinnati.

19.—See abstract in The Journal, Nov. 17, 1906, page 1674.

St. Louis Medical Review.

November 24.

22 Some Causes of Inefficiency in Medical Practice. J. B. Roberts, Philadelphia.
23 Pathologic and Clinical Diagnosis of Sarcoma. (To be continued.) M. G. Seelig, St. Louis.

Annals of Surgery, Philadelphia.

November.

24 *Dislocation of Vertebræ in Lower Cervical Region, Followed by Symptoms of Complete Severance of the Spinal Cord; Laminectomy; Later Partial Restoration of Function. W. C. Krauss, Buffalo, N. Y.
25 *The Omentum and Its Functions. G. K. Dickinson, Jersey City, N. J.
26 *Cirrhosis of the Stomach. J. G. Sheldon, Kansas City, Mo.
27 *Rupture of the Intestine. W. W. Golden, Elkins, W. Va.
28 *Case of Intussusception Subjected to Operation. A. M. Cartledge and J. B. Bullitt, Louisville, Ky.
29 Angulation at the Sigmoid. G. P. LaRoque, Richmond, Va.
30 *Hernia into the Ileocolic Fossa. E. R. Secord, Brantford, Ontario.
31 *Trans-Uretero-Urethral Anastomosis. N. W. Sharpe, St. Louis.

24. **Dislocation of Vertebræ in Lower Cervical Region.**—Krauss' patient, a healthy, athletic young man, after diving into shallow water, became semi-unconscious and devoid of power over his arms and legs. A masseur, who was present when he was removed from the water, asserted that when he

then examined him there was a dislocation of the spine in the cervical region, which he reduced on the spot by manipulation. Four hours later there existed total paralysis of both legs; the arms and hands were partially paralyzed. Speech, eyes, pupils and facial muscles were not affected; the head was slightly retracted, but moved in all directions, with some pain, however. A careful examination of the spinal column did not reveal any fractures or dislocations. There was some tenderness about the spinous process of the fifth cervical vertebra, also some indefinite pain about the third thoracic spine. The patellar, ankle and plantar reflexes were absent. Marked priapism was present; catheterization was necessary. The patient was able to flex the arms but not to extend them.

Eighteen days after the injury Dr. Park exposed the spine between the fourth cervical and first dorsal, finding the sixth cervical apparently somewhat loosened and abnormally movable, but without fracture. He removed the posterior arch of the sixth and exposed the spinal canal. Outside the dura nothing appeared abnormal. On puncturing the dura a large amount of cerebrospinal fluid escaped with a jet, showing that intraspinal tension had been very much increased. After opening the dura for one inch, the cord itself showed no particular evidence of laceration or violent disturbance, but seemed to have shrunk; it was flattened so that it did not nearly fill the canal. There was a small remnant of old clot within the dura. On lifting the cord with an artery needle, it seemed flattened, ribbon-like, shrunken and to lack in bulk. The dura was closed with catgut and the entire wound with buried and superficial drainage. The wound healed kindly. Patient remained in the hospital about four weeks and went home, showing some improvement, able to move the feet a little, and with considerable improvement in sensation. In the hands and arms not much change appeared.

Krauss says that this case is a notable one. First, because the injury undoubtedly was a dislocation of the sixth cervical vertebra; second, that a crushed or pinched condition of the cord followed; third, that a regeneration of the spinal cord followed the operation, accompanied by a descending degeneration of the cord; fourth, that a remarkable recovery of function took place, although the operation occurred 18 days after the receipt of the injury.

25. **Omentum and Its Functions.**—Dickinson summarizes his paper as follows: 1. The numerous blood vessels and lax tissues of the omentum allow of storage of blood when the general arterial tension is high. 2. By venous anastomosis through adhesions, local congestion may be relieved. 3. Through its large surface freely exposed to surrounding parts in motion, it becomes a rapid absorber of fluids by the blood stream. 4. By the lymph stream it is a free carrier of white blood corpuscles, encapsulating solid particles. 5. Through its cohesive tendency, apertures in the abdomen into which the omentum has been forced by intra-abdominal pressure become more or less completely closed. 6. Through its readiness to lymph formation and local proliferation, it becomes attached to infected parts, which are walled off, subsequently to be absorbed by phagocytic action; the peritoneal cavity being thereby protected. 7. The majority of the phagocytes extruded into the peritoneum for its protection come through the omentum, largely from the general circulation, but in part from the tissues therein existing; subsequently to be attached to the surface of this tissue, taken into the lymph stream, and subjected to the cytolytic influences existing there. 8. Lack of development of the omentum, or loss through operation, renders one less resistant to peritoneal invasion. 9. Hemolymph glands of the splenic type existing in its base supplement the spleen if the latter be removed or its functions interfered with.

26. **Cirrhosis of Stomach.**—Sheldon's patient has remained well three and one-half years after gastroenterostomy was performed, which, he thinks, strongly suggests that the process involving this markedly contracted, thickened and indurated stomach, was not carcinomatous.

27. **Rupture of Intestine.**—Golden reports two cases. He says that, given a case in which an injury to the abdomen occurred which is liable to produce rupture of the intestine, and the abdominal wall is found rigid and the patient suffering from pain in that region, one should not hesitate to operate even in the absence of all other symptoms.

28. **Intussusception Subjected to Operation.**—Cartledge and Bullitt report a case of intussusception occurring in a boy aged 8 years. The colon was incised for about three inches, exposing the intussusception, which was drawn out and excised, the tumor mass being about six inches in length. The bleeding mesenteric vessels were caught in sutures and tied, and a running stitch united the cut colon to the ileum. The stump was allowed to drop back into the lumen of the colon and the longitudinal incision into the descending colon was closed by continuous suture. As it was certain that the excision was at a point several inches removed from where the intussusceptum entered the intussuscipiens, it was deemed advisable to draw a presenting coil of the distended small intestine into the lower angle of the wound, to fix it there, and to open it as the concluding step of the operation. No effort was made to reach the point where the intussusceptum entered the intussusceptiens, where amputation would preferably have been made.

The child reacted surprisingly well from the operation. The discharge from the fistula was profuse. At the end of five days, there being evidences of infection of the wound margins, the stitches were removed, whereupon the wound edges separated widely, both surfaces showing a purulent infiltration. It was necessary to pack and strap the wound to prevent the prolapse of the intestines. Fortunately the intestine was already adherent to the peritoneum at the margin of the wound. The wound gradually cleaned out and healed up satisfactorily, only the fistulous opening in the small intestine remaining. As the subsequent events proved, the fistula was established high up in the course of the small intestine. Later on, attempting to separate the small intestines from the abdominal wall, the adhesions were found to be very dense and the intestine was torn in several places, rendering it so ragged that a resection of about four inches had to be made, with end-to-end anastomosis by suture. After this operation convalescence was uneventful.

30. **Hernia into Ileocolic Fossa.**—Secord reports a case of frank, distinct, and undoubted hernia of the cecum, appendix, and about four inches each of the terminal ileum and ascending colon, into the ileocolic fossa in a man aged 40, with strangulation and obstruction caused by the anterior vascular fold. Laparotomy was performed, the obstruction was relieved, and recovery finally ensued.

31. **Trans-Uretero-Ureteral Anastomosis.** — Sharpe believes that his experiments have proved that an intraperitoneal trans-uretero-ureteral anastomosis is an anatomic possibility. The blood supply of the ureter is ample, of which probably the peri-ureteral arterial plexus is the most essential factor. Operative procedures which conserve the blood supply, in particular the peri-ureteral arterial plexus, are ordinarily satisfactory. When the integrity of the ureter is impaired, restitutional rather than destructive surgical measures should be followed. Of these restitutional measures the various methods of uretero-ureteral anastomosis are recommended. Intraperitoneal trans-uretero-ureteral anastomosis is also a physiologic success. Retroperitoneal trans-uretero-ureteral anastomosis, whether anterior or posterior to the aorta and vena cava, is an anatomic possibility. (Further experimentation is essential in order to prove that it is a physiologic success.) The route followed is the shortest path between the two ureters. The technical difficulties are not excessive. Sharpe says that it is highly probable that this method impairs the ureteric blood supply less than any other method in vogue.

Archives of Pediatrics, New York.

November.

32 Some Phases of the Feeding Problem. L. E. Holt, New York.
33 *Adherent Pericardium with Ascites. S. W. Sappington and C. F. Rau, Philadelphia.
34 A Study of Proteids in Infant Feeding, with Special Reference to Whey Proteids. F. M. Frey, Montreal, Canada.
35 Résumé of Work Done in the Section on Pediatrics at 1906 Meeting of A. M. A. E. E. Graham, Philadelphia.

33. **Adherent Pericardium with Ascites.**—Sappington and Rau report two cases. The first case was a 2-year-old child

of a tuberculous mother who died after an eight months' illness following an attack of measles. The predominant symptom was ascites, persistent and recurrent after tapping until three weeks before death, when all fluid disappeared. Signs directly referable to the heart, pericardium or liver were entirely absent or indefinite. At autopsy there was found an adherent pericardium with intervening sacculations filled with milky, purulent fluid. There was no valvular or mural involvement of the heart; no mediastinitis; no pleuritis; no peritonitis; no perihepatitis, or cirrhosis of the liver. There was a nutmeg liver. Microscopically, the pericarditis was found to be tuberculous in nature. The liver exhibited marked passive congestion with some central atrophy, but no cirrhosis. A few isolated tuberculous foci were found throughout the body except in the spleen, where typical tubercles were numerous. There was in no sense, however, a general miliary tuberculosis.

The second patient, a 10-year-old boy with a negative family history and a personal history of typhoid fever two years previous, was seen after two weeks' indefinite illness. He presented the signs of pericarditis with large effusions. In six weeks the effusion had disappeared. Ascites, without other dropsy, appeared two weeks later. Slight enlargement of the liver was discovered previous to the ascites, but not subsequently. Cyanosis and dyspnea were present; and an intercurrent attack of pleurisy occurred. Just before death the dropsy became general. The duration of the illness was six months. At autopsy there was found an obliterated and thickened pericardium, marked mediastinitis and adhesive pleuritis (right). There was ascites, but no peritonitis local or general. There was no perihepatitis. The liver was enlarged by a very marked passive congestion. Grossly, all evidence of tuberculosis was wanting. Microscopically, the pericarditis was distinctly tuberculous and a supposedly normal mediastinal gland was found to be infiltrated with tubercles.

Journal of the Michigan State Medical Society, Detroit.

November.

36 Consideration of Some of the Diseases of the Mammary Gland. T. A. McGraw, Detroit.
37 Some Diseases of the Kidneys and Appendages. W. T. Dodge, Big Rapids.
38 Border Line Cases of Neurasthenia. C. W. Hitchcock, Detroit.
39 Prevention of Venereal Disease. F. McD. Harkin, Marquette.
40 Chloroform Quantity versus Cardiac Quality. A. Williams, Grand Rapids.
41 *Ethyl Chlorid Anesthesia. J. G. R. Manwaring, Flint.

41. Ethyl-Chlorid Anesthesia.—Manwaring's experience covers 104 cases. With the exception of four given with the old Ware inhaler the anesthesias were all successful in that unconsciousnesss was produced. The duration of the anesthesia varied from one minute to 55 minutes, which time was that of a hemorrhoid case. In those cases in which deep anesthesia was induced, nausea was as prevalent as would have been the case with chloroform. When it was given only to the primary stages, as for most operations, there was none or at most but little. Of these patients 15 were babies, several of the operations being circumcisions of from 10 to 20 minutes' duration; 35 patients were children, 50 were adults, and 4 were quite aged. The only alarming results encountered were in one case, that of an old man with pronounced arteriosclerosis and subject to asthmatic attacks. He showed a marked cyanosis with unconsciousness for about one-half hour, which cleared up under a hypodermic injection of 1/75 gr. of atropin sulphate. The apparatus used is an ordinary soft rubber ice-bag, which is easily replaced and readily turned inside out for cleaning. The whole is much less clumsy than most other models when in use, and is accessible throughout, which is necessary for hygienic reasons. The inflatable face-piece adapts itself to any face, whether babe or adult, as is essential for successful results.

The Ohio State Medical Journal, Columbus.

November 15.

42 *Normal Saline Solution in Abdominal Operations. W. H. Humiston, Cleveland.
43 Rôle of the Mosquito in the Etiology of Fevers. J. C. Larkin, Hillsboro.
44 Inheritance a Factor in Disease. J. M. Howell, Dayton.
45 Removal of an Open Safety Pin from the Esophagus. F. L. Stillman, Columbus.
46 *Final Results from the Lorenz Operation for the Bloodless Reduction of Congenital Hip Dislocation. W. G. Stern, Cleveland.
47 Case of Hemorrhage into the Vitreous. B. L. Millikin, Cleveland.

42. Normal Salt Solution.—Humiston claims that the use of salt solution does not increase, but unquestionably minimizes, the dangers of pyogenic infection. In addition to the reduction of mortality, the convalescence of the patient is rendered infinitely more comfortable and satisfactory through the reduction of thirst, the increase in the urinary excretion, and the minimizing of vesical irritation.

46. Lorenz Operation.—Stern says that his experience with the Lorenz operation has been the most gratifying of any that he has had in the practice of orthopedic surgery. His failures to reduce the dislocation have all been in patients too old and too well-developed to permit of such an operation being successful. Among 2,593 hips successfully operated on since 1900 by various operators there were 1,084 or 41.76 per cent. anatomic replacements; 187 or 7.22 per cent. functional results; 1,038 or 39.98 per cent. good or fair functional results divided among anterior transpositions, subspinal positions or lateral appositions; 314 or 12.10 per cent. reported bad results. Of untoward results and accidents but a small number are reported since 1900. In all there have been 2,407 or 88.96 per cent. of improved functional results; 314 or 12.10 per cent. of total failures. (The discrepancy is due to the incompleteness of the reports of the majority of the writers). In many instances individual operators have obtained far better results and show much better the actual state of affairs as regards this operation.

California State Journal of Medicine, San Francisco.

September.

48 *Systematic Treatment of Chronic Urethritis. H. Somers, San Francisco.
49 *Report of Twenty-five Cases of Tuberculosis Treated with Intravenous Injections of Koch's Tuberculin. M. Rothschild, San Francisco.
50 Compulsory Registration and Fumigation, the Most Important of all Prophylactic Measures in the Prevention of Pulmonary Tuberculosis. G. H. Kress, Los Angeles.
51 Résumé of Work of Sanitation Performed by the San Francisco Board of Health, from April 18, 1906, to Date. W. C. Hassler, San Francisco.
52 Urology. M. Krotoszyner, San Francisco.
53 *Subordination of Medical Journals to Proprietary Interests. J. H. Salisbury, Chicago.
54 Hernia of the Bladder, Incarcerated in the Femoral Canal. C. G. Levison, San Francisco.
55 Miscarriage and Its Treatment. W. F. Burnett, Eureka, Nev.

48. Systematic Treatment of Chronic Urethritis.—Somers believes that the Janet method is excellent for its cleansing power; its ability to clear the canal of large quantities of pus, to get the tissues in a more subdued condition free to a great extent of the infective inflammation, but feels that it has not the virtue of producing an absorption of the inflammatory infiltration which is the ultimate cause of the chronic discharge.

49. Tuberculosis Treated with Intravenous Injections of Koch's Tuberculin.—Rothschild presents a report of a number of cases of tuberculosis treated with intravenous injections of Koch's tuberculin. In all cases of tuberculosis which he has treated in the last two or three years, the effect of this method has been very encouraging. Rothschild says that in comparing the intravenous injections of tuberculin with hypodermic injections, it can be asserted that the much more rapid and stronger reaction of the intravenous injections bear a relationship to the good results obtained. The reaction of the hypodermic injection is a great deal slower, and the results have not been nearly so encouraging as in the cases which were treated by intravenous injections. So far, Rothschild has not observed any relapses in any of his patients. In some of his cases he went up to two centigrams, and that is the largest dose he ever used. In patients whom he could afterward send to the country for a few months, the treatment was usually continued for about one or two months after the disappearance of symptoms and clearing up of the lungs. In patients who could not go to the country, the injections were kept up for about three months longer. All other known means of combating tuberculosis were also taken advantage of, such as diet and hygiene, and the use of proper drugs.

53.—See The Journal, May 5, 1906, page 1337.

California State Journal of Medicine, San Francisco.
October.

56 *Spasmodic Torticollis. P. C. H. Pahl, Los Angeles.
57 Spiral Organisms in Relation to Syphilis. T. G. Davis, Los Angeles.
58 Technic and Staining of Treponema Pallidum. E. L. Leonard, Los Angeles.
59 Subnormal Accommodation as a Manifestation of Hysteria. F. B. Eaton, San Francisco.
60 Notes on Hydrocyanic Acid Poisoning. T. C. McCleave, Berkeley.
61 Surgical Anesthesia with Hydro-bromate of Hyoscin and Morphin. E. Lanphear, St. Louis, Mo.

56. **Spasmodic Torticollis.**—In sixty-eight cases collected from the literature, Pahl found that men and women were equally affected; it occurred most frequently between the ages of 20 and 30, and that the right side was affected twice as often as the left. Out of sixty-eight cases, twenty-five were females, twenty-four were males; and, in nineteen cases, the sex was not given. Between the ages of 10 and 20, there were three cases; between 20 and 30, nineteen cases; between 30 and 40, eight cases; between 40 and 50, thirteen cases; and between 50 and 60, five cases. By various treatments employed 28 patients recovered, 17 were improved and 11 unimproved. In 12 cases the treatment was not given.

Medical Herald, St. Joseph, Mo.
November.

62 Cause and Possible Prevention of Gastric and Intestinal Hemorrhages Following Operations for Appendicitis, Hernia and All Other Operative Proccdures Involving the Blood Supply of the Omentum and Viscera. J. E. Summers, Jr., Omaha.
63 The County Sanatorium for the Treatment of Pulmonary Tuberculosis. R. C. Moore, Omaha.
64 A Second Case of Dual Personality. S. G. Burnett, Kansas City, Mo.
65 *An Unusual Case of Appendicitis. F. S. Clinton, Tulsa, I. T.
66 Treatment of Nocturnal Enuresis. G. F. Butler, Chicago.
67 Different Stages of Epilepsy and Its Distinct Pathology. M. R. Hughes, St. Louis, Mo.

65. **An Unusual Case of Appendicitis.**—On opening the abdomen, no anterior adhesions were found by Clinton, and when the appendix, which was about an inch long, was brought into view, there was considerable injection about the proximal end, but the distal end had sloughed off, leaving a patulous and irregular stump at the point of separation. There was no suppuration and after the usual appendectomy the incision was enlarged, and it was ascertained that the gangrenous end had been wrapped up in a piece of omentum and attached to the lower and posterior portion of the cecum. It was necessary carefully to dissect this necrotic mass, about 2½ by 3½ inches in size, from the cecum and posterior abdominal wall. The surface was wiped clean and dry with sponges wrung from hot sterile normal salt solution and a stab wound made in the loin, through which a tube surrounded with gauze and covered with gutta-percha tissue was introduced. A similar one was introduced anteriorly and the abdominal wall was closed about it with through and through silkworm-gut sutures. The lower tube was removed on the fifth day, the upper on the seventh; both being replaced by light gauze wicks after wiping out with sterile gauze. This was continued until complete recovery, seven months after operation.

Canadian Practitioner and Review, Toronto.
November.

68 The Opsonic Theory. A. E. Wright, London.
69 A Statistical Report of the Results of Operations in Sarcoma of the Nose by Methods Generally Adopted, with a Plea for the More Extended Use of the Electro-Cautery in Suitable Cases. J. Price-Brown, Toronto.
70 Occurrence of Babinski's Sign in Normal People During Sleep. R. D. Rudolf, Toronto.

Cleveland Medical Journal.
November.

71 Some Benefits Derived from Medical Libraries. A. Jacobi, New York.
72 Typhoid Fever Statistics. W. C. Abbott, Chicago.

Central States Medical Monitor, Indianapolis.
October.

73 Unusual Case of Eye Strain. S. C. Norris, Anderson, Ind.
74 Complicated Case of Typhoid Fever and Autopsy. S. E. Earp, Indianapolis.
75 Dropped Kidney and Its Causal Relation to Other Pathologic Conditions. J. W. Crismond, Anderson.
76 Practical Anesthesia. J. W. Wiltshire, Bloomington.
77 Hyperemesis, Syphilitic in Origin, with Spontaneous Recovery. P. H. Cobie, Indianapolis.
78 Genitourinary Axioms. N. E. Aronstam, Detroit, Mich.

The American Journal of Urology, New York.
November.

79 Two Cases of Gonorrheal Invasion of the Kidney and Renal Pelvis. A. Ravogli, Cincinnati.
80 Movable Right Kidney the Most Common Cause of Chronic Appendicitis in Women. W. P. Manton, Detroit.
81 Rupture of the Urethra. F. J. Cotton, Boston.
82 Renal Lavage in Pyelitis and Certain Forms of Nephritis. F. M. Johnson, Boston.
83 Prolapse of the Kidney from the Gynecologic Point of View. A. H. Goelet, New York.
84 Renal Calculus and Gynecologic Conditions Simulating Ureteral Disease. E. Garceau, Boston.
85 Explosive Rupture of the Testicle from Trauma. F. J. Cotton, Boston.

Iowa Medical Journal, Des Moines.
November 15.

86 Internal Use of Water in the Prevention and Cure of Disease. J. F. Herrick, Ottumwa.
87 Ichthyol and Its Therapeutic Value. E. T. Kegel, Walcott.
88 Section of Obstetrics and Gynecology. J. E. Conn, Ida Grove.
89 Case of Chorioepithelioma Malignum. P. E. Sawyer, Sioux City.
90 Case of Postpartum Hemorrhage. J. W. Findlay, Sac City.
91 Obstetrics—the Dark and Bright Side. A. Kessler, Carroll.
92 President's Address Before the Cedar County Medical Society. C. G. Stookey, Mechanicsville.
93 Case of Acute Hydramnios Treated by Tapping. J. H. Maynard, Adair.
94 Modified Milk, the Percentage Plan. L. W. Littig, Iowa City.

Archives of Otology, New Rochelle, N. Y.
October.

95 Points in the Diagnosis of the Complications of Temporal Bone Disease Based on a Study of 135 Fatal Cases. A. L. Whitehead, Leeds, England.
96 Case of Hysterical Mastoid Tenderness and Pain, without Functional Disturbance. H. C. Langworthy, Dubuque, Iowa.
97 Primary Cavernous Sinus Thrombosis Secondary to Osteomyelitis of the Petrous Pyramid. A. Knapp, New York City.
98 Nature of Otosclerosis in the Light of Heredity. O. Koerner, Rostock.
99 Theory of Sound Conduction. G. Boenninghaus, Breslau.
100 Changes in the Eye Grounds in Otitic Diseases of the Brain, the Cerebral Membranes and the Sinuses. Takabatake, Nagasaki, Japan.
101 Occurrence and Absence of Crossed Paralyses and Disturbances of Speech in Otitic Suppurations of the Brain and Meninges. Takabatake, Nagasaki, Japan.
102 Etiology and Pathology of Mastoid Empyema Complicating Acute Purulent Otitis Media. A. Scheibe, Munich.
103 Operative Treatment of Purulent Meningitis. V. Hinsberg, Breslau.

Columbus Medical Journal.
November.

104 Duty of the Physician in Regard to Tuberculosis. C. O. Probst, Columbus.
105 International Congress of Tuberculosis, Paris, 1905. H. B. Jacobs, Baltimore, Md.
106 *Results of Operative Treatment of Varicose Veins of the Leg by the Methods of Trendelenburg and Schede. R. T. Miller, Jr., Baltimore.
107 Inflammation. J. U. Barnhill, Columbus.

106.—See abstract in THE JOURNAL, Sept. 29, 1906, page 1057.

American Practitioner and News, Louisville, Ky.
November.

108 Treatment of Gallstones. W. H. Wathen, Louisville.
109 Postoperative Deaths with no Apparent Lesion. E. S. Allen, Louisville.

Vermont Medical Monthly, Burlington.
November 15.

110 Treatment of Cardiovascular Disease. E. LeFevre, New York City.
111 Treatment of Pneumococcic Infection of the Lung. F. C. Ligouri, Barre, Vt.
112 Tetanus with Special Reference to Fourth-of-July Injuries. C. A. Pease, Burlington.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal.
November 17.

1 *Operative Treatment of Ulcer of the Stomach and Its Chief Complications. A. W. M. Robson.
2 *Operations on the Lower Part of the Common Bile Duct. B. G. A. Moynihan.
3 Self-Restraint in Surgery. B. Hall.
4 *Suprapubic Lithotomy with Enucleation of the Prostate in an Aged Patient, Recovery. H. Littlewood.
5 *Treatment of Deviations of the Nasal Septum. St. C. Thomson, J. O. Roe.
6 *Id. G. R. McDonagh.
7 Id. O. T. Freer.
8 *Exostosis of the Frontal Sinus, and a Skiagraph of the Same. H. E. Jones and T. Holland.
9 Headache; Pathologic Conditions of Middle Turbinal a Causal Factor. H. Smurthwaite.
10 Some Unusual Cases of Frontal Sinus Suppuration. P. G. Goldsmith.
11 Certain Factors in the Diagnosis and Treatment of Suppurative Lesions in the Nasal Accessory Sinuses. H. Tilley.

12 Anatomy of the Accessory Sinuses of the Nose. H. W. Loeb.
13 Skiagraphy as an Aid in the Diagnosis and Treatment of Diseases of the Accessory Sinuses of the Nose. C. G. Coakley.
14 Two Cases of Abductor Paralysis. G. L. Richards.
15 Indications for the Ligation of the Internal Jugular Vein in Otitic Pyemia. H. E. Jones and J. F. McKernon.
16 Pathogenic Influence of Aural Lesions in Systemic Disease. S. Mac. Smith.
17 To what Extent is it Advisable to Adopt Conservative Methods in the Treatment of Aural Diseases? G. Bacon.
18 Value of the Blood Clot as a Primary Dressing in Mastoid Operations. C. J. Blake.
19 Use of Cold Wire Snare in the Removal of Hypertrophied Tonsils. A. G. Bryant.

1. **Operative Treatment of Ulcer of Stomach.**—Of 112 posterior gastroenterostomies done by Robson for ulcer or its complications, including hemorrhage and hour-glass contraction, 110 patients recovered, thus giving an operative mortality of 1.7 per cent. Out of the 110 recoveries, 101 apparently resulted in cure. He says that in cases of perforation it is important that, when the patient's condition will permit of it, the question of the performance of a gastroenterostomy should be seriously considered at the same time that the perforating gastric ulcer is closed. Robson has operated in 4 cases of acute hematemesis during the continuance of the bleeding. All the patients recovered and remain well. In 2 of these cases numerous bleeding points were ligatured *en masse* and gastroenterostomy was done; in 2 gastroenterostomy alone was performed. He also operated between the attacks on 22 patients suffering from hematemesis due to ulcer; in all a gastroenterostomy was performed, with recovery from operation in 21. In 1 case death occurred at the end of a week from exhaustion. Of 7 cases in which he performed posterior gastroenterostomy for hour-glass contraction all the patients recovered, and 5 are well at the present time, from three to six years later; 1 died of cancer of the sigmoid flexure of the colon four years and 1 of cancer of the rectum one year after operation. Of 10 cases in which he performed simple gastroplasty all the patients recovered, and 6 are known to be in good health at the present time, from three to six years later; 1 was well a year after, but can not be traced; 1 required gastroenterostomy two years later for ulcer of the pylorus; 1 was well for four years, had recurrence of ulceration, and died of hematemesis; and 1 after five years has had some gastric pain, but has not needed medical attendance.

Robson does not advise operation in ordinary acute gastric ulcer, the medical treatment of which, he says, should be much more careful and more prolonged than was formerly considered necessary. Nor does he advise operation in chronic ulcer before medical treatment has had a fair trial; but he thinks it is unfair to patients to advise a continuance of general treatment for chronic or relapsing ulcer until serious complications supervene, when by timely surgical treatment many of them can be prevented. In perforating ulcer, in chronic or relapsing hemorrhages, in pyloric obstruction or other mechanical causes leading to dilatation, medical treatment is as inadequate and useless as is operative treatment in gastric neuroses and other functional diseases, and to continue it beyond the period in which it can benefit, is as unscientific and unwise as it is to operate and to expect good results in improper cases.

2. **Operations on Lower Part of Common Bile Duct.**—Moynihan reports 6 cases, one of which was fatal, and describes the operations which may be employed to remove stones from the various divisions of the common duct.

4. **Suprapubic Lithotomy with Enucleation of Prostate in Aged Patient.**—Littlewood removed a vesical calculus weighing 2 1/2 ounces and a prostate weighing over 3 ounces from a man aged 90. The patient made an excellent recovery and was comfortable in every way. Death from uremic coma occurred more than 2 years afterward.

5. **Treatment of Septal Deviations.**—Roe sounds a note of warning. He says that the enthusiasm for the operation of submucous resection is very likely to cause the operator to overlook this danger of so weakening the septum as to cause flattening of the anterior portion of the nose. While this liability is disclaimed by many operators, it is nevertheless true, that this result is liable to take place; and in children, in whom the development of the nose is incomplete, these developmental centers should not be removed.

6. **Id.**—McDonagh states that other things being equal, a patient is better to be in possession of the natural supports of his septum—that is, the cartilage and bone; if any plan can be devised short of removing these supports, and if any simpler or less radical operation will suffice, that should be performed. Also he does not think it judicious to advocate the complete resection operation for septal deviations, or to recommend that more of the cartilage or bone should be removed than is absolutely necessary to attain the object for which the operation is undertaken.

8. **Exostosis of Frontal Sinus.**—The patient in this case, a married woman, aged 35, had been operated on fifteen years previously. The principal orbital projection was then removed, with marked relief to the orbital symptoms. The patient consulted Jones because of severe pain, obstruction of the right nostril, and gradual protrusion of the right eyeball. The radiograph gave most valuable information as to the position and extent of the exostosis. A curved incision was made from the middle of the right eyebrow to the right ala nasi. The expanded and thinned covering of bone was clipped off, and, the pedicle of the growth attached to the posterosuperior wall of the frontal sinus having been divided, the whole growth was removed with comparative ease by means of a strong pair of forceps. The growth measured 2 1/2 inches in length and 1 1/4 inches in breadth. The wound healed by first intention.

The Lancet, London.
November 17.

20 History of Clinical Medicine in the British Islands. N. Moore.
21 Longevity and the Means of Attaining It. L. Brunton.
22 *Bacteriology of Aseptic Wounds. L. S. Dudgeon and P. W. G. Sargent.
23 *Delayed Chloroform Poisoning. E. D. Telford and J. L. Falconer.
24 *Contributions to the Orthopedic Armamentarium. E. M. Little.
25 Chronic Intussusception with Complete Inversion of the Vermiform Appendix. J. W. Struthers.
26 *The Increased Mortality in England and Wales from Kidney Diseases, with Special Reference to Boron Preservatives as a Factor Therein. B. F. Giles.
27 Malaria in Greece. R. Ross.

22. **Bacteriology of Aseptic Wounds.**—The experiments of Dudgeon and Sargent included an examination of Petri dishes exposed at the time of operation; of the piece of skin cut from the edge of the wound at the conclusions of the operation; of the suture removed at intervals varying from twenty-four hours to six days after operation; of the exudate at the time of removal of the suture; and of a case of suppuration.

23. **Delayed Chloroform Poisoning.**—Telford and Falconer present the results of a clinical study of this subject and report three cases occurring in children. The occurrence of these cases prompted them to carry out a series of observations on the postanesthetic condition of children. Of 143 patients examined, 17 contained diacetic acid in the urine and 30 showed the presence of acetone. Of the 143 patients, 33 showed some focus of sepsis, and of these 12 proved to have diacetic acid and acetone in the urine. These patients with aciduria appeared otherwise in normal health. The examination for albumin and casts was negative throughout. The anesthetics used were: Chloroform by the open method (38 cases); chloroform by the open method introduced by ethyl chlorid (53 cases); ethyl chlorid alone (18 cases); and ether alone (9 cases). In the series as a whole, the examination of the pulse, temperature, and respirations yielded nothing worthy of note. Of the 118 anesthetized cases, vomiting was seen in 34, and in only four of these could it be described as unusual in amount. No case showed either albumin or casts. The results as regards diacetic acid and acetone are worthy of separate mention.

It would appear from these results that (1) chloroform, ether, and ethyl chlorid may produce a temporary aciduria; (2) so far as is shown by the ordinary routine clinical tests this aciduria occurs not invariably but in the vast majority of cases; (3) ethyl chlorid, either when given alone or when used as an introduction to chloroform, does not appear to differ from other anesthetics as regards the postanesthetic

aciduria; (4) there is no relation between the duration of the aciduria and the length of time during which the anesthetic is administered; (5) the acid bodies occur frequently in the urine of patients in apparently normal health and general anesthesia appears to have no special prejudicial action in these cases; and (6) the change of diet involved in preparation for a surgical procedure does not appear to produce aciduria.

24. **Orthopedic Armamentarium.**—Little describes a new osteoclast; an appliance for the treatment of club feet; a bunion spring for the ambulant treatment of hallux valgus when for any reason the radical cure by operation is not practicable; an adjustable spring retractor or dummy assistant, intended to hold the toes apart during small operations, dressings, or examinations, and so save the services of an assistant, and a universal foot splint for the treatment of deformities of that part after operations such as arthrodesis.

26. **Mortality From Kidney Diseases.**—Giles says that whatever the cause of the undisputed increase in the mortality from kidney diseases it must be sought for in some other factor than the use of boron preservatives. No evidence of injurious effects from the properly regulated use of boron compounds has ever been produced.

Medical Press and Circular, London and Dublin.

October 31.

28 Urethral Impediments to the Evacuation of Urine. R. F. Tobin.
29 *Compression Paraplegia. W. B. Warrington.
30 Further Work on the Chemistry of Viola Odorata. H. W. Gadd.
31 Acute Yellow Atrophy of the Liver. F. H. Edgeworth.

November 7.

32 Latent Diseases. Professor Potain.
33 Notes on Family Diseases. (To be continued.) T. K. Monro.
34 The Tuberculous and Their Hygienic Surroundings at Home. D. T. Barry.
35 *Simple Extraction of Senile Cataract by Teale's Method. C. G. Lee.

November 14.

36 Erythema Induratum (Bazin). J. M. Finny.
37 Notes on Family Diseases. T. K. Monro.
38 Inter-Relationship of Cancer, Tubercle and Venereal Diseases and Other Social Calamities. C. B. Keetley.

29. **Compression Paraplegia.**—Warrington reports a case of removal of an endothelioma or hemorrhagic angiosarcoma from the cauda equina. The patient improved considerably and regained the power of walking with the aid of sticks, the knee jerks returned, and the anesthesia greatly diminished. The pain also was very much relieved. Unfortunately, at about the end of three months symptoms began to return, and pain became again very severe. A second operation was thought to offer some slight chance of relief, but on exposing the nerves it was found that the tumor had grown enormously, and was now from two to three inches long. As the condition was obviously incurable, it was considered justifiable to divide a number of the posterior roots. The patient is now completely paralyzed in the lower limbs, but though pain was at first relieved it subsequently returned.

35. **Extraction of Senile Cataract by Teale's Method.**—Lee favors the use of this method in most cases of senile cataract. The knife employed resembles Taylor's cataract knife; it is much deeper in the heel than elsewhere in the blade; it is also thicker in this situation, more or less of a wedge; by virtue of this it retains the aqueous in its passage across the anterior chamber, and also lessens the tendency of the iris to double over the blade, advantages which the narrow knife of Graefe does not possess. The incision is situated altogether in the corneal structure. The point of the knife enters the cornea just within the outer margin at its equator, and emerges at a counter-puncture just within the inner margin of the cornea, at a level about two millimeters above the equator. As soon as the counter-puncture is well accomplished, and the point of the cataract knife has passed out of the cornea to the extent of about four millimeters, the next step is taken. This is the most critical part of the operation. The knife is somewhat rapidly and with a sort of knack turned directly forward so that the blade, which up to this point has been parallel with the iris, comes to a right angle with the back of the cornea. The section is completed by cutting directly forward, this final cutting being vertically through the corneal thickness, absolutely linear, and in position about midway between the horizontal equator and the upper margin of the cornea. The incision thus made is practically a shallow flap, chiefly linear, with a small limb at an obtuse angle, corresponding to the heel of the knife at the outer edge of the cornea, and a still smaller, hardly perceptible limb, corresponding to the point of the knife, at the inner edge of the cornea. At the limbs the knife passes through the cornea obliquely, but in the horizontal linear part. It cuts vertically through the corneal structure.

The Clinical Journal, London.

October 31.

39 *Union of Fractures. A. Bowlby.
40 Diseases of the Abdomen. W. H. Allchin.

November 7.

41 Arterial Sclerosis. W. P. Herringham.
42 Diseases of the Abdomen. W. H. Allchin.
43 Examination and Treatment of Ear Diseases. A. E. Cumberbatch.

November 14.

44 Observations on Gastric Surgery. C. M. Moullin.
45 *Iridocyclitis. J. H. Parsons.
46 Methods of Diagnosis in Skin Diseases. G. N. Meachen.

39. **Union of Fractures.**—Bowlby closes his lecture with the following words: "Do not lightly blame other surgeons for apparently bad results which under the circumstances were perhaps really better than might have been expected."

45. **Iridocyclitis.**—Parsons says that during acute phases energetic local treatment with atropin, hot bathings, and, if necessary, leeches, is indicated. The patient should be kept in bed and submitted to mercurial inunctions or baths which often do good in cases in which there is no evidence of syphilis. Diaphoresis by vapor baths and hypodermic injections of pilocarpin may be tried in intractable cases. During the intervals between exacerbations the pupils should be kept moderately dilated with weak atropin (.05 per cent.) Neutral tinted glasses should be ordered if the light is bright. The patient should have plenty of fresh air, good diet, and tonics. Above all, any source of septic infection must be eradicated.

Bulletin de l'Académie de Médecine, Paris.

47 (Year LXX, No. 36.) *Japanese Soldier's Manual of Hygiene.—Manuel d'hygiène. J. J. Matignon.
48 *Operative Treatment of Cancer of Stomach.—Resections de l'estomac pour cancer. R. Leriche.
49 *Curabilité du cancer en général et du cancer de la langue en particulier. P. Poirier.
50 *Paludisme. Kelsch.
51 (No. 37.) *Vaccination. Committee report.
52 *La tuberculose ganglio-pulmonaire dans l'école parisienne (among Paris school children). Grancher.

47. **Japanese Soldier's Manual of Hygiene.**—Matignon has translated the little pamphlet on hygiene which formed part of the pack of the Japanese soldier during the late war. The soldiers are taught the laws and practices of hygiene as they are trained in the use of the gun.

48. **Operative Treatment of Cancer of the Stomach.**—Leriche has been studying the immediate and remote results of resection of the stomach, as done in Poncet's surgical service, and also reviewing the literature, having thus collected a total of 1,300 cases. His conclusions are very optimistic. The mortality to date of operative treatment of cancer of the stomach is about 20 per cent. and it can frequently be traced to defects in technic. Recurrences develop almost invariably at the site of the former cancer, showing that resection was not extensive enough. The anatomic conditions and arrangement of the glands favor operative cure if two-thirds of the organ at least are removed. Less than this exposes to danger of recurrence.

49. **Curability of Cancer in General and of Cancer of the Tongue in Particular.**—Poirier reiterates that cancer is at first a local affection, and remains local for a length of time varying with the kind of cancer and, perhaps, with the individual. Permanent cures are realized now in from 20 to 40 per cent. of the cases in which an operation is performed, according to the latest statistics presented at the recent International Cancer Congress at Heidelberg. Poirier has operated in 32 cases of cancer of the tongue, always on the principle of total ablation of the connected glands on each side.

In most of the cases the cancers were in an advanced stage and eight of the patients succumbed during or soon after the operation, the mortality thus being 25 per cent. He has cured two patients with cancer in an advanced stage, but when the operation is performed early, recovery is the rule. Eight patients have been permanently cured for 5 years, 4 years, 2 years or a few months, and the ultimate outcome in several cases is not known. With cancer of the tongue, more almost than with cancer in any other location, an early diagnosis is essential for a permanent cure. Any ulceration or induration on the tongue, especially in a syphilitic, should suggest cancer, unless it is explained by some jagged piece of a tooth. Instead of giving a tentative course of mercury, thus wasting precious time, Poirier always excises a scrap of tissue for microscopic examination and operates at once in case of positive findings. As a rule, the cancer is generally preceded by leucoplasia or glossitis, and if these lesions persist, notwithstanding appropriate medical treatment, they should be excised as precursors of cancer, cutting away the patches of leucoplasia if they prove refractory to treatment. Cancer of the tongue is almost exclusively the prerogative of smokers and syphilitics. Among his 32 patients, all were smokers and 27 confessed syphilitic antecedents which were probable also in the 5 others. The irritation from the smoke may localize on the tongue the lesions of syphilis. He adds, "cancer of the tongue is exceptional in women, although women are affected with syphilis in about the same proportion as men, or nearly so." He proposes that cancer of the tongue should henceforth be officially designated as "syphilitic smokers' cancer." In the course of his communication he related what other countries are doing in the line of cancer research, while in France there is no cancer institute. The anti-cancer league founded by Verneuil and Duplay in 1892 died soon after its birth under the blight of public indifference. [As already mentioned in the news columns, Dr. Henri de Rothschild presented a check for $20,000 to Poirier as a nucleus for a fund to erect and to maintain a cancer institute, and other subscriptions are coming in, so that France will probably soon have its campaign against cancer officially organized. The *Lancet* states that in a recent communication on Jensen's mouse tumors, Williams summarized the situation to date as: "The mountain of cancer research has labored, and has brought forth a mouse."—Ed.]

50. **Transmission of Malaria.**—Kelsch presents further arguments to prove that malaria must be transmitted by some other means than by mosquitoes exclusively. Among the facts cited are Kourlow's experience at Tomsk in Siberia where malarial infection is observed during March and April while the temperature is still below the freezing point and no mosquitoes are to be found at that season. Similar observations have been reported from other parts of Siberia. Grawitz has also stated that among the German troops stationed in malarial districts the epidemics of malaria occur in March and April with the maximum in June, and decline during August and September. There are no mosquitoes during the early spring while they abound during the months when the epidemics die out. Plehn writes from Cameroon in Africa that mosquitoes are rare there. Prizes were offered for the anopheles with fines for houses in which specimens were found, but less than two dozen were encountered during a whole year. And yet, he says, there is nowhere throughout the world a more redoubtable focus of malaria than that colony.

51. **Vaccination.**—The committee on vaccination recommended the following resolutions which were adopted by the Académie: Strolling players, peddlers, gipsies, sailors and others constantly changing their residences must be vaccinated and revaccinated with special care, as these nomads are responsible in many instances for the spread of smallpox. The positive or negative result of a vaccination must be inscribed on the certificate. All school children between 6 and 10 must be revaccinated if the results of their preceding vaccination were negative, and again at 14. The vaccinations required by the law at 11 and at 21 must be repeated three times in case of a negative response. To aid in the compiling of statistics physicians must be careful to distinguish between the vaccinations made when previous attempts have failed and those which are really revaccinations.

52. **Glandular Pulmonary Tuberculosis in the Paris Schools.**—Grancher reports the results of examination of 4,226 school children at Paris during the last three years, and also the results of supplying 103 tuberculous children with cod-liver oil and a good dinner at the school. It was found that these latter measures had little effect. The first sign of tuberculosis infection is a change in the inspiration. This change, localized at one of the apices, when it is fixed and permanent, indicates a lesion. The child is generally paler than his mates, thin, coughs a little and gets easily out of breath. Almost always some glands in the neck, axilla or groin will be found enlarged. This change in the inspiration is generally a weaker inspiration, and if it extends throughout the entire lung, evident both from front and rear, it is due to involvement of the intrapulmonary glands with consequent compression of the vessels, nerves and bronchi. The persistence of this symptom speaks for glandular tuberculosis in its first appreciable stage. The second stage has two signs; besides the weaker inspiration of the first stage there is bronchophony, that is, exaggeration of the vocal vibrations. The third stage has the above two signs and also another, a slight tendency to dulness, sub-dulness he calls it. These three stages precede the classic "first period" of tuberculosis, and they offer the best prospects of a cure, especially if the children can be taken away from the city environment and placed in an out-door school. He advises segregating such children for fear of infecting others, as no one can foretell when the sputum may contain bacilli, although free from them at the time of examination.

Revue de Chirurgie, Paris.

Last indexed, page 900.

53 (XXVI, No. 9.) *Les grands kystes de la capsule surrénale. F. Terrier and P. Lecène.

54 *Actinomycose et grossesse (and pregnancy). L. Thévenot.

53. **Large Cysts of the Suprarenal Capsule.**—Terrier and Lecène state that they were able to find only nine cases of this kind on record. They describe a case personally observed, in which a serous cyst, probably of lymphatic origin, had developed in the left suprarenal capsule. As the other suprarenal was sound, there were no signs of Addison's disease. Tumors of this kind have a very slow development, but gradually push up the diaphragm, distending the lower part of the thoracic cavity and finally protruding in front below the costal arch. The neighboring organs are displaced to a remarkable extent, and compression of the abdominal sympathetic is liable to cause severe pains. If the cyst seems to shell out readily after it has been emptied of part of its contents, complete or partial extirpation should be done, but if not, then marsupialization will be found most practicable, that is, to suture the cyst to the lips of the incision. Out of the five patients who were operated on, two were cured and three died. The results will be better when the surgeon recognizes at once this rare variety of cyst, and does not waste further time in exploring the abdominal cavity. Five varieties of cysts are likely to be encountered in the suprarenal capsules, the hydatid, the true glandular cysts, cystadenoma, cystic lymphangioma, and pseudo-cysts or cavities filled with blood or detritus of tissues. The details of the various cases on record are summarized.

54. **Actinomycosis and Pregnancy.**—Thévenot reports three cases and summarizes three others already published. In the majority the patients became infected with actinomycosis during the pregnancy, probably through some erosion in the mouth, or decayed tooth. The lesions were in the neck and ran a torpid course until after delivery, which seemed to stimulate them to great activity. Actinomycosis is an infection to be cured by iodin, internally and externally, general tonic measures and evacuation of suppurating foci.

Semaine Médicale, Paris.

55 (XXVI, No. 45.) Is there a Center for Motor Aphasia?—Le centre de l'aphasie motrice existe-t-il? F. Bernheim.

56 (No. 46.) La contracture ischémique des membres. L. Cheinisse. Generai Review.

Archiv f. Gynäkologie, Berlin.

Last indexed, page 1600.

57 (LXXX, No. 1.) *Ueber die Enderfolge der Ovariotomie (remote results). A. Glockner (Zweifel's clinic, Leipsic).
58 Zur Kenntnis des Caput succedaneum. Ehrendörfer.
59 Zur Anatomie der Ovarien Neugeborener und Kinder vor der Pubertäts-Zeit (ovaries before puberty). E. Runge.
60 Experimentelle Untersuchungen über den Infections-Weg bei der weiblichen Genital-Tuberculose (route of infection). P. Jung and A. Bennecke.
61 *Klinische und radiologische Betrachtungen über 16 Pubiotomien mit der Nadel. Hocheisen.
62 *Das Verhalten der Nerven in der Substanz des Uterus (behavior of nerves). A. Labhardt.
63 Klinischer Beitrag Verkalkung des Uterus-Myoms (calcification). D. Grünbaum.

57. **Remote Results of Ovariotomy.**—Glockner states that he was able to trace the after history of 500 out of 540 patients in whom the ovaries had been removed at Zweifel's clinic. He adds parenthetically that 1,100 letters had to be written to secure this result, and that he examined anew with the microscope the various tumors preserved at the clinic during the last few years. This material demonstrates, he declares, the absolute non-malignancy of ovarian fibroma, serous cystadenoma and dermoid cystoma. There is no need to remove the second ovary with a growth of this kind as a second operation at need on the other ovary is a remote and comparatively harmless contingency. Glandular cystoma is generally innocent, but recurrences were observed in about 5 per cent. Generalized carcinosis was observed in 1.75 per cent. of the total cases, and autopsy revealed in one case that unrecognized cancer material had evidently been left behind in the stump, and this is probable in the other cases. It is difficult to recognize small cancerous patches in a large, predominantly adenomatous tumor. No recurrence was observed in any of his 10 cases of "pseudopapillary cystoma," but the true papillary cystomas recurred in 11 per cent. of the 19 cases. The frequency of secondary cancer in the ovaries is confirmed by his figures. He has observed a number of cases of mammary cancer in which there was metastasis in the ovaries with all the other organs intact. In one case a carcinoma in the uterus was accompanied by a carcinoma in the ovary, and the patient is still free from recurrence, nearly four years after, which he accepts as evidence that both of the tumors were primary. All the other 11 patients with secondary ovarian carcinoma succumbed soon after to recurrence. He tabulates the statistics of the clinic from various standpoints. Recurrence after ovarian carcinoma was observed in less than one year in 54.5 per cent. (in 37.26 per cent. with uterine carcinoma); less than 2 years in 22.7 per cent. ovarian (in 32.7 per cent. uterine); less than three years in 9.1 per cent. ovarian (in 17.1 per cent. uterine); less than four years in 9.1 per cent. ovarian (in 9.9 per cent. uterine), and in the seventh year in 4.5 per cent. ovarian (after the fourth year in 3.3 per cent. uterine). The uterus had been partially or totally removed in 53.8 per cent. of the cases free from recurrence to date, but only in 36.3 per cent. of the recurring cases. Removal of the uterus enables the glands to be extirpated more thoroughly with cancer of the ovary, and in this line alone does Glockner see any chance for bettering the technic. No recurrence of sarcoma was observed after the first year; the limit for permanent cure with sarcoma might be accepted as after the second year.

61. **Sixteen Pubiotomies With the Needle.**—The needle is inserted from below and skirts the rear of the pubic bone, emerging above in the median line, guided by the finger in the vagina. The experiences related from Bumm's clinic establish the operation as "simple, harmless, brilliant and rich in blessings" for multiparæ with contracted pelves. Its prospects will be still further assured, Hocheisen remarks, if experience confirms the present conviction that the pelvis remains permanently enlarged, that future births occur spontaneously, and that there need be no fear of sinking down and displacement of bladder, vagina and uterus from the changed conditions.

62. **Innervation of Uterus.**—This extensive illustrated monograph describes the history of the subject and the results of much experimental research. Labhardt complains that none of the stains yet in vogue shows adequately the terminals of the nerves in the human or rabbit uterus. No ganglion cells were found in the human or rabbit uterus. The contractions of the uterus occur by the neurogenic route from irritation of the cervical ganglion or by reflex action, by the myogenic route from direct irritation of the musculature.

Archiv f. klinische Chirurgie, Berlin.

Last indexed, page 1232.

64 (LXXIX, No. 4.) *Die Wirkung der japanischen Kriegswaffen im mandschurischen Feldzuge (action of Japanese firearms). F. Schaefer, E. Swenson and E. v. d. Osten-Sacken.
65 *Die Lymphectasie der Leiste und anderen Folgeerscheinungen der Lymphstauung (consequences of stasis of lymph). H. Gross. (Concluded.)
66 *Ueber plastische Anastomosen zwischen Gallenwegen und Magendarmcanal zur Heilung der completen äusseren Gallenfistel (anastomosis between biliary passages and alimentary canal). v. Stubenrauch.
67 Die primären Muskelangiome alse Ursache von Deformitäten. V. Putti.
68 Erfahrungen über die Therapie bei Schussfracturen der Extremitäten (firearm wounds of extremities). F. Colmers.
69 *Behandlung der Trigeminus-Neuraigie mit Perosmium-Säure. Ursachen der Recidive und deren Verhütung. R. Hammerschlag.
70 Ueber Kriegsverletzung der peripherischen Nerven (firearm wounds). Henle.
71 *Radical-Operationen bei Leisten-Hernien (inguinal hernia). A. Brenner.
72 *Ueber Herzschussverletzungen (firearm wounds of heart). R. Göbell (Kiel).
73 Ueber die acute und subacute "Osteomyelitis purulenta" der Wirbelsäule (of spine). M. Donati.
74 Ueber die Todesursache bei acuter Pancreatitis (cause of death). Doberauer.

64. **Effects of Japanese Firearms.**—This important report is dedicated to Kuropatkin and describes extensive personal examination of the wounded Russian soldiers returning from the front. The party of physicians traveled from regiment to regiment and were impressed with the rapidity with which the wounds healed. Nothing like the prompt healing under the modern methods of treatment has ever been witnessed in any previous campaign. The losses among the Russian troops were proportionately no higher than in the Franco-Prussian war of 1870. The proportion of fatally wounded averaged about the same, but the proportion of those soldiers who succumbed later to the effects of wounds is probably smaller than in any previous campaign.

65. **Lymphangiectasia in the Groin.**—This clinical and experimental study of the consequences of congestion of lymph criticises the French conception of "adenolymphocele." This is the fourth part of Gross' long monograph. He attributes the trouble to mere passive dilatation of the parts of the lymphatic system with its inevitable consequences.

66. **Plastic Anastomosis Between Biliary Passages and Gastrointestinal Tract to Cure Bile Fistula.**—The success reported by von Stubenrauch in a case of rebellious external biliary fistula testifies to the efficacy of his technic. For certain reasons cholecystenterostomy was out of the question; the gall bladder was too distant from the stomach to allow of direct union, and the omentum was too voluminous to allow a loop of the intestine to be utilized for the anastomosis. In a second operation adhesions were found so numerous that implantation of the biliary passages in the small intestine was out of the question, while the persistence of the bile fistula, in spite of all measures, was menacing. The only thing to be done was to divert the bile into the digestive tract, and this was accomplished by cutting a flap in the stomach, according to the technic proposed by Depage in 1903. The flap was long and about 3 mm. wide, with the base above. It was sutured over a drain to make a hollow cylinder, which was then sutured to the gall bladder, and the almost perpendicular defect in the stomach was then sutured. The details of the technic are illustrated as worked out on dogs and on the cadaver.

69. **Treatment of Trigeminal Neuralgia with Osmic Acid.**—Hammerschlag has treated nine patients with neuralgia by injection of a 1 per cent. aqueous solution of osmic acid. The fluid was injected into the infraorbital and mental foramina. In eight cases the pain was abolished permanently to date, for an interval of from four months to four years, and the other patient was much improved. The cases were exceptionally severe ones, several operations having been performed in some

instances without permanent relief. In one case recurrence always followed within four months of the operation, while the osmic acid gave relief for eight months. He believes that this treatment, while not specific, yet deserves more consideration than it has yet received. Good results with it have also been reported from Breslau. In conclusion he suggests the possibility of preventing regeneration of a nerve by filling the canal with paraffin after extraction of the nerve, according to Thiersch, and swabbing with osmic acid.

71. **Radical Operation for Inguinal Hernia.**—Brenner describes his experiences with about 2,000 Bassini operations in which he has slightly modified the original technic with excellent results. He uses the cremaster muscle to form the posterior wall of the inguinal canal.

72. **Bullet Wounds of Heart.**—Göbell discusses the treatment and reports a case of bullet wound of heart and lung in which he operated with success.

Deutsches Archiv f. klinische Medizin, Leipsic.

Last indexed, pages 1333 and 1422, and XLVI, page 1570.

75 (LXXXVII, Nos. 1-2.) *Ueber Leber-Degeneration infolge Pankreas-Nekrosen (degeneration of liver). W. Rudolph.
76 Fall von Polymyositis bei akuter Polyarthritis. H. Edenhuizen.
77 *Einfluss der Roentgen-Behandlung auf den Stoffwechsel bei chronischer myeloider Leukämie (*x*-rays and metabolism). H. Königer.
78 Ueber die Sklerose der Arteria radialis. O. Halienberger.
79 *Ueber Hydrops chylosus und chyliformis. Sommer.
80 *Phototherapy of Affections Due to Parasites in the Blood.—Ueber Lichtbehandlung blutparasitarer Krankheiten. G. Busck and H. von Tappeiner.
81 Ueber hämoglobinophile Bazillen bei Lngenkrankheiten. K. Klieneberger.
82 *Embolie der Arteria mesenterica superior mit Ausgang in Genesung (terminating in recovery). M. Haegel.
83 Ueber organ-spezifische Präcipitine und ihre Bedeutung. G. Grund.
84 *Deafness Due to Defective Functioning of the Thyroid Gland.—Die dysthyre Schwerhörigkeit. E. Bloch (Freiburg).

75. **Degeneration of Liver from Necrosis of Pancreas.**—Rudolph describes a case in which patches of necrosis were found in the liver and also in the pancreas, the latter evidently being the older process. In another case, similar in every respect except for the absence of icterus, the liver was much congested, but there was no necrosis and the pancreas was also free from necrosis. The possibility that pancreatic ferments might have something to do with the origin of acute degeneration of the liver has been suggested by various writers, and Rudolph reviews their arguments. Soetbeer, in 1903, reported a case of degeneration of the liver with extreme icterus in which he was unable to find any cause for the icterus. Sugar had been observed in the urine, and this suggests the possibility of a primary pancreatic affection. The passage of albumin-dissolving ferments from the pancreas into the liver may have been the cause of the icterus. The pancreas should be examined in all cases of degeneration of the liver.

77. **Influence of Roentgen Rays on Metabolism in Leukemia.**—Königer tabulates the findings in seven cases of chronic myeloid leukemia, under the influence of Roentgen treatment, in respect to the behavior of the urea, purin bases, phosphates, amount of urine, proportion of nitrogen, etc. The Roentgen treatment evidently does not affect the essential cause of the disease, but it limits the new formation of cells, and thus brings about a gradual retrogression of the leukemic composition of the blood and organs. Whether this effect is due to the action of the rays on the cells alone is dubious. It is certainly remarkable that exposure of the spleen alone is sufficient to accomplish the purpose. His experience has been decidedly in favor of exposing the spleen alone as much more effectual than exposure of any other parts of the body. The reduction in the elimination of the purin bodies is the most certain sign of the improvement of the leukemia. There are no grounds as yet for the assumption of a parasitic origin of the disease. The dosage of the exposures should aim to restrict cell proliferation while avoiding permanent increase in cell destruction.

79. **Chylous Dropsy.**—Sommer relates a case of profuse milky effusion requiring repeated tapping, in a woman of 51. A carcinoma was found in the ovary, and, in the apparently intact walls of the thoracic duct, nests of cancer cells were found, explaining the permeability.

80. **Phototherapy of Affections Due to Parasites in the Blood.**—The experiments and experiences related show that there is not much prospect of favorable results from phototherapy in this line.

82. **Embolism of Superior Mesenteric Artery.**—Haegel's patient recovered, but he is convinced that the signs indicated embolism of the superior mesenteric artery. The patient was a healthy young man with indications of a mild septic affection of the heart, circumscribed tenderness in the bone of the left forearm and an exanthem. The air passages were apparently normal. Suddenly, two weeks after the first symptoms, violent tenesmus developed with intense abdominal pains, complete unconsciousness, vomiting of bile, the arms and legs cool, but the reflexes not altered, pulse small and rapid, and temperature 36.6 C. in the rectum. The abdominal pains grew worse at times, and the patient constantly strove to get up out of bed. At brief intervals 5 c.c. of camphorated oil were injected; 30 drops of tincture of opium quieted the patient. The temperature rose to 37.1 C. and the next morning there were several diarrheic passages containing considerable amounts of red, thick blood. Vomiting and thirst continued and a slight protrusion was evident in the ileocecal and umbilical regions. The condition was so threatening that 5 gm. camphorated oil were again injected, and by night the patient was relieved. The stools were fetid and contained blood for a few days, and an exanthem developed, but the pains subsided by the third day, and by the ninth the patient was allowed to sit up. His diet was regulated for two months to avoid food containing much waste. The heart returned to normal conditions, but slight aortic valvular disturbance was detected five months later. The case answers Kussmaul's description of typical embolism of the superior mesenteric artery, but was further distinguished by the tenesmus at the onset. Only six cases of recovery are on record, confirmed in four by the postmortem findings later. Haegel thinks that the idea of thrombosis can be excluded in his case, as the patient was a healthy young man, ill only for a few days.

84. **Dysthyroid Deafness.**—Bloch applies this term to the deafness observed in many cases of defective functioning of the thyroid gland. Its most pronounced type is in the deaf-mutism of the cretins, but the deafness ranges from slight to severe in a large proportion of persons with goiter. He has been examining hundreds of goiter patients with a special view to the ear disturbances, and tabulates the findings from various standpoints. As the disturbance is chronic, treatment must be continued to correspond. In the old, consolidated cases little improvement can be anticipated, and in the more recent cases only after persevering thyroid treatment. The benefits of treatment may not be apparent for a long time, but once realized, they are gratefully appreciated, although the treatment may have to be continued through life to maintain the improvement gained. Bloch never gives more than two thyroid tablets a day, at 0.3 gm. each, for adults, and 0.1 gm. for the young, suspending treatment for a time after 100 have been taken, and then recommencing with a smaller dose. The article is dedicated to Politzer on the occasion of his seventieth birthday.

Deutsche medizinische Wochenschrift, Berlin and Leipsic.

85 (XXXII, No. 43.) Favorable Results of Feeding Infants with Perhydrase Milk.—Ernährungsversuche mit Perhydrasemilch. A. Böhme (Marburg).
86 Experimentelle Untersuchungen über das biologische Verhalten der Bakterien im Dickdarm (in large intestine). Rolly.
87 Fall von Tay-Sachsscher familärer amaurotischer Idiotie. L. Huismans.
88 *Quinin-Caffein Treatment of Eye for Hay Fever.—Das Helmholtzsche Verfahren gegen Heufieber, modifiziert. Boesser.
89 *Zur Therapie der Otitis externa circumscripta und verwandter Affektionen. S. Schoengut.
90 *Instructions for Workers in Poisonous Substances.—Die Hilfe für Giftarbeiter. L. Lewin.

88. **Quinin-Caffein External Applications in Hay Fever.**—Boesser has modified Helmholtz' method of local application of quinin for hay fever by mixing caffein with the quinin and instilling it into the eye instead of the nose. Two parts of quinin and one part of caffein are mixed and a 1 per cent. solution made of the mixture. A few drops of this solution

are instilled into the eye at the first symptoms of the typical itching in the inner angle, the patient reclining for a few minutes. The fluid bathes the conjunctiva and passes into the nose, flushing the nasal passages until a bitter taste is felt in the throat. He says that, with the exception of the maxillary sinus, this disinfects all the parts where the hay-fever reflex symptoms are generated. The influence of the instillation is felt for four or six hours or longer, all the symptoms vanishing for this length of time. In case of great sensitiveness a 1 per 1,000 solution may be preferable, but the dilution with the lachrymal secretion generally renders the 1 per cent. solution none too strong.

89. **Treatment of Otitis.**—Schoengut has found pressure very useful in treatment of circumscribed otitis externa and allied affections. He tampons the ear in case of a furuncle in the auditory canal with a strip of bichlorid gauze, 2 cm. wide, after due disinfection, and has found this very satisfactory in the majority of cases. The occasional failures have led him to try Bier's stasis hyperemia with a constricting band around the neck. His experience with 34 patients has convinced him that the method is very effectual if applied with care and individualized. It is especially useful for acute inflammatory processes in the meatus, especially circumscribed otitis externa. The prompt relief from pain is one of its greatest advantages.

90. **Warning Circular for Workmen Employed in Poisonous Substances.**—The various subheadings of the circular are: What is a poison? Who is a worker in poisons? Who are the ones injured by the poison? Slow and fast poisoning. How does the poison get into the body? What are the signs of poisoning? What must a worker in poisons do to protect himself against the poison? Under the latter heading are a dozen separate paragraphs, including the following:

> The prudent and cleanly worker in poisons keeps healthy longer than the careless and the uncleanly. If the workman keeps the danger from the poison in mind, he will not allow it to come in contact with his skin or into his mouth or nose. Most of the poison that reaches there can be removed by washing his face and head thoroughly with soap morning, noon and night; before eating, washing his hands with soap and sand, rinsing his mouth and snuffing water into his nose. When there are no facilities for bathing, he should wash his body with soap and sand twice a week. Poisonous gases and fumes pass rapidly into the lungs and blood. Washing does not help here, only the admittance of abundance of air into the workroom through windows and doors or arrangements to suck the air out of the workroom. The wise workman will not complain of the abundance of air, even if the room gets a little draughty or cold. The wise workman will also use all the means offered to him for his protection: breathing masks, sponges and gloves, even if they are very inconvenient. The worker in poisons should also breathe through his nose. During his work the worker on poisonous substances should not eat, nor drink, nor smoke, nor sing. Liquor drinking is dangerous for workers in poisons in many cases. When the worker in poisons takes his food at the factory or at his home, he should change his poison-soiled clothing and his neck-cloth and put on clean ones, or otherwise some of the poison may get into his food. He should never play with his children in his poison-soiled clothes for fear that they may get some of the poison.

Münchener medizinische Wochenschrift.

91 (LIII, No. 41.) Agglutinine im passiv immunisierten Organismus. Manteufel.
92 *Natürliche Darm-Desinfektion (of intestines). E. Moro.
93 Further Study of Proteolytic Ferment Action.—Unterschiede im Fermentgehalt der Leukozyten bei Warmblutern. Nachweis eines eiweissverdauenden Fermentes in Kolostrum. G. Jochmann and E. Müller.
94 Nachweis der Spirochaete pallida in syphilitischen Produkten. E. Ritter.
95 *Zur Technik des Aether-Rausches (anesthesia during first whiffs of ether). P. Sudeck.
96 Katgut vom gesunden Schlachttier (from healthy cattle). F. Kuhn.
97 Ueber die Induratio penis plastica. L. Waelsch.
98 Behandlung mit Quecksilberlicht (mercury light). Assfalg.
99 Zur Histologie der Chondrosarkome. K. Mayer.
100 *Value of Roentgen Examination of Thorax in Pneumonia.—Thorax-Durchleuchtung bei der Pneumonie, namentlich bei centraler Lokalisation. H. Rieder. (Commenced in No. 40.)

92. **Natural Disinfection of the Intestines.**—Moro states that in 1900 Escherich administered to infants young cultures of the *Bacterium lactis aërogenes*, hoping that its proliferation would drive the *B. proteus* out of the intestines, and his attempts were successful. Tissier has also recently reported administration of mixed cultures of paralactic acid bacilli and the bifidus to sick infants and older children, apparently with excellent results. Large amounts of cultures are necessary, however, to accomplish the desired result when administered by the mouth, as Moro's experiments have demonstrated. He has found that much better results are realized when the cultures are introduced into the rectum. He stirred young cultures of the colon bacillus into 250 gm. of 8 per cent. agar, solidifying at 40 C., and injected the mixture into the rectum in cases of dysentery and typhoid. The colon bacillus rapidly crowded out the specific bacteria. Nature shows us the ideal for this kind of disinfection in the pure cultures of the *B. bifidus* in the stools of healthy breast-fed infants. The contents of the intestines favor the growth of these active and normal intestinal bacteria alone. If artificially fed infants, older children and adults are fed for two or three days on human breast milk exclusively, the stools become similar to those of breast-fed infants. The same occurs also with dogs fed on human milk. The *B. bifidus* can be easily cultivated on human milk (anaërobic) from the stools of persons fed on breast milk. Human milk acts like a favoring ferment on the growth of this organism, both in the test-tube and in the intestines, promoting its growth so that all other species of bacteria are crowded into the background. The practical conclusions of his research and article are that the administration of human milk to infants and to older persons is the ideal natural mode of disinfecting the intestines in all forms of infectious intestinal disturbances except those contraindicating a diet containing any fat. Another advantage of the measure is the high nourishing value of the milk and the circumstance that the transformation of the intestinal flora proceeds in such an incredibly short time. The great drawback is the difficulty of procuring breast milk in sufficient amounts. It may be possible that only certain ingredients of human milk are the "bifidus-stimulating principle," and it may be possible to isolate these or to obtain them elsewhere.

95. **Operations During First Whiffs of Ether.**—Sudeck always uses a mask allowing free access of air, and commences to operate as soon as the patient ceases to distinguish between a prick and a touch on the arm, or ceases to reply to questions. He uses from 5 to 15 gm. of ether, very seldom requiring 20 or 25 gm. The patients often cry out as the operation is commenced, but this is not accompanied by any defensive movements, and he thinks it is more the result of suggestion than of any actual sensation of pain, owing to the loss of self control from the ether. The patient still has consciousness enough at the beginning of the operation to open his mouth or the like when told to do so; he is aware of the operation as it proceeds, and later can describe it all, but yet he experiences no pain, merely the sensation of contact, and as soon as the operation is concluded can arise and, merely slightly excited or at least in a somewhat exalted mood, feels perfectly well and after minor operations is able to return to business at once.

100. **Roentgen Examination in Case of Centrally Located Pneumonia.**—Rieder describes his technic and gives a number of *x*-ray views of the lungs of patients with pneumonia. The localization, extent, mode of spreading and other details of the pneumonic focus are shown up well by the *x*-rays. He regards their use as an important advance in the prognosis and treatment of pneumonia.

Virchow's Archiv, Berlin.

101 (185, No. 3.) Seltene Missbildung am Urogenital-Apparat (rare malformation). A. Weinstein.
102 Rhabdomyome des weiblichen Geschlechtsorgans (of female genitalia). F. Berka.
103 Leber-Regeneration und Adenom-Bildung bei akuter Atrophie (of liver). H. Schoppler.
104 Struma mit Kautschuk-Colloid und Tumoren mit kautschuk-collold-ähnlichen Massen. H. Wiget.
105 Experimentelle Untersuchungen über Fragmentatio myocardii. Giese.
106 3 Cases of Appearance of Fat in Muscles After Crushing of Cervical Vertebræ. Three cases.—Auftreten von Fett in der Körpermuskulatur bei Durchquetschung des Halsmarkes. R. Zipkin.
107 Zur normalen und pathologischen Histologie des Wurmfortsatzes (of appendix). W. C. MacCarty.
108 *Pseudo-Tuberkulose im Dickdarm (encystierte Amoeben?) (in large intestine). M. Leube.
109 Zur pathologischen Physiologie der durch Aetzung erzeugten Schleimhauterkrankung des Magens (caustic injury of gastric mucosa). S. Saito.

108. **Pseudo-Tuberculosis of Rectum.**—Leube reports the case of a well-to-do woman who complained of bloody stools and occasional tenesmus, the symptoms first observed about three months before; there was no diarrhea. The rectum presented

several small hard nodules in a circle around a depressed spot. The diagnosis of carcinomatous, cicatrized ulcer and infiltration of the glands was not confirmed by the operation. The excised parts showed that the mucosa was entirely sound without other lesions than the nodules. They resembled tubercles in nearly every respect, with numerous giant cells, but the microscope showed that they were of parasitic origin. The smallness of the nodules excluded the oxyuris and suggested the ameba.

Riforma Medica, Naples.

Last indexed, page 1863.

110 (XXII, No. 41.) Di una sindrome pseudo-ascitica in bambini affetti da dispepsia eronica (in Infants). G. B. Allaria.
111 L'intervento chirurgico nello stadio intermediaro dell'appendicite acuta. P. Fiori.
112 (No. 42.) Caso di afasia motriee con emianestesia corticale. A. Rovighi.
113 *Una sindrome scorbutiea determinata dal bacillo die Eberth. G. A. Auverny.
114 *Cistadamantinoma multiloculare del mascellare inferiore (of lower jaw). Studio anat.-patologico sulle neoplasie di origine paradentaria. O. Cignozzi. (Commeneed in No. 38.)
115 (No. 43.) *The Heart in Exophthalmic Goiter.—Il cuore nel morbo Basedo. G. Dernini.
116 Eredita per tubercolosi. G. Zagari.
117 *Coagulating Power of Blood Serum in Epilepsy.—Il potere coagulante del siero di sangue degli epilettici. C. Besta.
118 (No. 44.) Sulla nuova reazione mecrochimica dello sperma del Barberio (reaction for spermatic fluid). C. Galbo.
119 Technic for Tendon Transplantation in Operations for Strabismus.—Technic for Squint Operations.—La teenica dell' aecorciamento e del trapianto tendineo nella cura dello strabismo. G. Monzardi.
120 (No. 45.) Sull' azione fisiologica e terapeutiea dell' isoprale. A. Carusi.

113. **Scorbutic Syndrome Due to Typhoid Bacilli.**—Auverny reports a case of apparent scorbutus, the body covered with hemorrhagic patches, the joints painful, with great weakness and fever at 40 C. most of the time with the typical typhoid curve. The temperature rose as the hemorrhagic patches developed, and it also rose at the time of a severe epistaxis and remained high during the following 10 days before the patient's death. The facts observed in this case and the autopsy findings suggest that the typhoid bacilli had done damage more by their mere presence in the blood than by the toxins they had generated. There were no appreciable symptoms to attract attention to the digestive tract, but ulcerations were found in Peyer's patches at autopsy.

114. **Cysts in the Lower Jaw.**—From this study of 45 cases, including one personally observed, Cignozzi concludes that although these paradental cystic, solid and mixed tumors in the lower jaw are innocent in so far as they are of slow development, do not cause metastasis and do not affect the general health, yet they display a tendency to local recurrence which suggests the necessity for ample resection. The solid and semisolid tumors show this tendency to recurrence more markedly than the cystic.

115. **The Heart in Exophthalmic Goiter.**—Dernini remarks that the heart is peculiarly sensitive to the influence of fatigue in persons with exophthalmic goiter. Its reserve energy is soon exhausted and it enlarges. This increase in the transverse diameter of the heart may be slight and transient, but it always accompanies fatigue, and is most prominent in the right heart, involving the auricle when it attains considerable proportions. The auricle may enlarge also independently of the valvular insufficiency. The discovery of this dilatation of the heart after fatigue may aid in differentiating the affection in its early stages or in its latent form. The aorta may also display some enlargement and the peripheral arteries may be enlarged. The return of the heart to its normal size is generally complete, although it occurs more slowly and incompletely in advanced stages of the disease. The sounds of the heart in exophthalmic goiter, in the absence of anatomic lesions, parallel the transient changes in the diameters of the heart, occurring promptly, being intense, transient and subject to great variations even during brief intervals of time. The state of the blood does not necessarily influence the sounds in the heart and vessels. He relates a dozen cases in detail, with diagrams to show the great changes induced by even moderate fatigue in the action of the heart, the behavior of the pulse, and the return to normal under the influence of reposc. The curves are characteristic and of differential value, he thinks.

117. **Coagulating Power of Blood Serum in Epileptics.**—Besta's researches confirm those of Ceni in regard to the specific modification of the composition of the blood in epileptics. The modification seems to be constant in the individual, not varying with the seizures, consequently the latter can not be regarded as the explosive throwing off of morbid products. The proportion of fibrin ferment in the blood is much below normal, according to his experience, and as the fibrin ferment is an organic compound of lime, it follows, he thinks, that the epileptic may be suffering from a lack of lime.

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

MATERIA MEDICA AND THERAPEUTICS, PREVENTIVE MEDICINE, CLIMATOLOGY, FORENSIC MEDICINE. Edited by G. F. Butler, Ph.G., M.D., H. B. Favill, A.B., M.D., N. Bridge, A.M., M.D., D. R. Brower, A.M., MD,, and H. N. Moyer, M.D., Being Vol. VIII, Series 1906 of the Practical Medicine Series, Comprising Ten Volumes on the Year's Progress in Medicine and Surgery. Under the Editoriai Charge of G. P. Head, M.D., Professor of Laryngoiogy and Rhinology, Chicago Post-Graduate Medieal Sehool. Cloth. Pp. 358. Chieago: The Year Book Publishers, 1906.

RETRO-PERITONEAL HERNIA, Being the Arris and Gale Leetures on the Anatomy and Surgery of the Peritoneal Fossæ, delivered at the Royal College of Surgeons of England in 1887. By B. G. A. Moynihan, M.S., F.R.C.S. Seeond Edition, Revised and in Part Rewritten by the Author and J. F. Dodson. M.S., F.R.C.S. Cloth. Pp. 195. Price, $2.00 net. New York: William Wood & Company.

TRANSACTIONS OF THE SECOND INTERNATIONAL SANITARY CONVENTION OF THE AMERICAN REPUBLICS, held at the New Willard Hotel, Washington, D. C., Oct. 9-14, 1905, under the Auspices of the Governing Board of the International Union of the American Republics. Paper. Pp. 460. Washington, D. C.: Government Printing Office, 1906.

ENLARGEMENT OF THE PROSTATE, with a Deseription of the Author's Operation of Total Enucleation of the Organ. By P. J. Freyer, M.A., M.D., Surgeon to King Edward VII's Hospital for Officers, and to St. Peter's Hospital, etc. Third Edition. Cloth. Pp. 154. Price, $2.00 net. New York: William Wood & Company.

GOLDEN RULES OF PEDRIATICS, Aphorisms, Observations and Precepts on the Sciene and Art of Pediatries, Giving Praetical Rules for Diagnosis and Prognosis, etc. By J. Zahorsky, A.B., M.D. Cloth. Pp. 362. Price, $3.00 net. St. Louis: The C. V. Mosby Medieai Book Co., 1906.

THE INTEGRATIVE ACTION OF THE NERVOUS SYSTEM. By C. S. Sherrington, D.Sc., Hon. LL.D., F.R.S., Holt Professor of Physiology in the University of Liverpool, etc. With Illustrations. Cloth. Pp. 411. Price, $3.50. New York: Charles Scribner's Sons, 1906.

THE PHYSICIAN'S VISITING LIST FOR 1907. Fifty-sixth Year of its Publication. The Dose-Table herein has been revised in accordance with the new U. S. Pharmaeopeia (1900). Flexible Leather. Price, $1.00. Philadelphia: P. Blakiston's Son & Co., 1907.

CLINICAL THERAPEUTICS. A Handbook on the Special Treatment of Internal Disease. By A. C. Croftan, Assoeiate Professor of Medieine, Medieal Department, University of Illinois, etc. Cloth. Pp. 626. Price, $5.00. Chieago: Cleveland Press, 1906.

PULMONARY PHTHISIS; Its Diagnosis, Prognosis and Treatment. By H. H. Thomson, M.D., Visiting Physieian to the Consumption Sanatorium of Scotland Bridge of Weir, N.B. Cloth. Pp. 188. Price, $2.00 net. New York: William Wood & Company.

PATHOLOGY OF THE EYE. By J. H. Parsons, B.S., D.Se., F.R.C.S., Assistant Ophthalmic Surgeon, University College Hospital, etc. Voi. III. General Pathology—Part I. Cloth. Pp. 1128. Priee, $3.50 net. New York: G. P. Putnam's Sons, 1906.

TREATMENT OF DISEASES OF THE DIGESTIVE SYSTEM. By R. Saundby, M.D., M.Se., LLD., F.R.C.P., Professor of Medieine in the University of Birmingham, etc. Cloth. Pp. 133. Price, $2.75. Philadelphia: J. B. Lippincott Company, 1906.

MINOR MALADIES AND THEIR TREATMENT. By L. Williams, M.D., M.R.C.P., Physician to the Freneh Hospital; Assistant Physician to the Metropolitan Hospital, etc. Cloth. Pp. 383. Price, $2.50 net. New York: William Wood & Company.

HIGH FREQUENCY CURRENTS; Their Production, Physieal Properties, Physiologic Effeets and Therapeutieai Uses. By H. E. Crook, M.D., B.S. Cloth. Pp. 296. Priee, $2.00 net. New York: William Wood & Company.

PROCEEDINGS OF THE CONNECTICUT STATE MEDICAL SOCIETY, 1906. One Hundred and Fourteenth Annual Convention held at New Haven, May 23-24. Cloth. Pp. 354. Published by the Society.

LECTURES ON DISEASES OF THE LUNGS. By J. A. Lindsay. M.D., F.R.C.P. Second Edition. Enlarged and Rewritten. Cloth. Pp. 509. Price, $4.00 net. New York: William Wood & Company.

THE MEDICAL RECORD VISITING LIST OR PHYSICIAN'S DIARY FOR 1907. New Revised Edition. Flexible Leather. Price, $1.50. New York: William Wood & Company.

DES HAARSCHWUNDS Ursachen und Behandiung. By S. Jessner. Paper. Pp. 52. Price, Mk. 0.80. Würzburg: A. Stubers Verlag, 1907.

KOSMETISCHE HAUTLEIDEN. By S. Jessner. Paper. Pp. 124. Priee, Mk. 2. Würzburg: A. Stubers Verlag, 1907.

The Journal of the American Medical Association

Published under the Auspices of the Board of Trustees.

VOL. XLVII. CHICAGO, ILLINOIS, DECEMBER 22, 1906. No. 25.

Original Articles

TREATMENT OF TUBERCULOSIS OF THE KIDNEY AND BLADDER BY NEPHRECTOMY.*

LEONARD FREEMAN, M.D.

DENVER.

It has recently been recognized that tuberculosis of the kidney is much more common than was supposed, and considerable attention has been directed to its treatment by early nephrectomy. In this connection Senn has estimated that one out of every eighteen consumptives suffers from some form of genitourinary tuberculosis; while the Pathologic Institute at Prague, found 5.6 per cent. of renal involvement in autopsies on adult tuberculous patients, and Rillet and Barthez 15.7 per cent. in children.

For a long time it was believed, as taught by Guyon, that the tubercle bacillus seldom infected the kidneys through the blood, but almost invariably ascended through the ureters from the bladder. These views have undergone a radical change and the hematogenous origin is now commonly recognized. For instance, Schéde says: "It has been proved beyond all doubt, and is generally accepted, that the principal mode of infection is through the blood." Clinical experience is furthermore strongly supported by the interesting experiments on animals, made by Baumgarten and others, showing that tuberculous infection in the genitourinary system follows the flow of the secretions, from the testicle toward the prostate and from the kidneys to the bladder. Hence, there are two entirely separate systems, with the bladder as a more or less neutral point; it being seldom, if ever, the seat of primary infection, although it is frequently involved from above, but rarely from below. There is evidence, however, that when the bladder has once become infected, either from above or from below, danger exists of the disease ascending to a sound kidney; but it is difficult to see how this could occur except in rare instances of vesical and urethral dilatation from obstruction to the outflow of urine.

It has often been claimed that cases of ascending and descending infection can be differentiated by noting the points at which the tuberculous process has reached the greatest development. It must be understood, however, that this could only be determined by an operation or an autopsy; because advanced renal tuberculosis often remains almost without symptoms, while the comparatively slight secondary involvement of the bladder may cause so much suffering as to engage the entire attention of both patient and physician. But even when the parts are open to inspection, it is difficult to reach a reliable conclusion, because the stage of development of a tuberculous lesion does not always depend on its age, as is frequently manifested in the lungs and elsewhere. Besides, it is questionable to assume, as has been done, that infection from the blood always takes place primarily in the parenchyma of the kidneys; for it may occur in the pyramids or even in the pelvis. And if infection did appear first in the outer portion of the kidney, the lesion might remain insignificant or even disappear, while lesions lower down, in the pyramids, pelvis, ureter or bladder, were more progressive.

Renal tuberculosis is at first often unilateral—in 90 per cent. of the cases as estimated by Israel, while others place the proportion still higher. This, like so many other recent additions to pathology, has been learned at the operating table rather than in the postmortem room; for by the time a case comes to autopsy the second kidney may have become infected through the blood, or through the bladder, if you will. Admitting this unilateral origin it becomes clear that the majority of cases can be cured by nephrectomy, if recognized sufficiently early, thus adding one more to the heavy diagnostic responsibilities of the modern physician.

The shortcomings of medicine in this heretofore discouraging disease are too apparent to require emphasis. In spite of the fact that with some patients the disease becomes latent for longer or shorter periods, and a few recover, the large majority rapidly pass from bad to worse, with all the suffering incident to renal degeneration and painful harassing cystitis. To be sure, some benefit may arise from residence in a favorable climate, such as that of Colorado, and drugs are perhaps not altogether useless, but reliance on these things is unsatisfactory, to say the least.

The accumulated evidence of many observers has finally demonstrated that early nephrectomy, before involvement of the bladder occurs, is the best treatment for unilateral renal tuberculosis, provided the general condition of the patient will permit. We can not even afford to temporize too long with what appear to be mild or incipient cases, because we can not be sure of the extent of the disease from the symptoms. Even the appearance of the urine is unreliable, because it depends on involvement of the renal pelvis, which may occur only after considerable destruction of parenchyma has taken place. I have been strongly impressed with this in my own cases, in one of which (Case 8) a large parenchymatous abscess existed, together with numerous scattered tubercles, in the presence of apparently normal urine. Furthermore, it is in the early stages of the disease that the most brilliant operative results are achieved.

Tuberculosis elsewhere, if not too far advanced, is not a contraindication to operation, because improvement often results. Especially is this true of the bladder, which may get better or recover, even in bad cases, after the removal of the source of infection, as has occurred frequently in my own experience. This is sim-

* Read at the Salt Lake Meeting of the Western Surgical and Gynecological Association, Sept. 1, 1906.

ilar to what may take place following castration, when the bladder trouble has ascended from the testicle.

It may even be said that the first step in the treatment of a tuberculous bladder, when the disease has descended from a kidney, should be a nephrectomy, when possible. Without operation, all efforts at treatment are generally unsuccessful, while with it improvement, at least, may be confidently expected.[1] An extreme instance in point is reported by Kümmell, in which there coexisted tuberculosis of both testicles, both seminal vesicles, the bladder and both kidneys, together with a tuberculous periurethral abscess, the patient suffering great pain and prostration. Most of the actual difficulty seemed to center in the left kidney, and this was removed. Immediately a marked improvement took place, so that the patient was relieved and was able to return to his work. It must not be forgotten, however, that tuberculous disease of the bladder is often only apparent, as a reflex from the kidney or a result of irritating discharges. So deceiving is this, that operations on the bladder have frequently been done by mistake.

The one essential to be kept constantly in view is that the second kidney must be sound, as regards both function and tuberculosis. This can easily be determined in most cases by the various means now at our disposal—the Harris segregator, the catheterizing cystoscope, and the different ways of determining excretory capacity; although the last mentioned methods have not proved to be as reliable as could be wished, in fact, so experienced an authority as Rovsing has seen fit to discard them entirely. Occasionally, it may be necessary to make an exploratory lumbar incision as in two of my cases (Cases 11 and 14), or even to take some chances when there is great urgency.

The weight of evidence is against partial nephrectomy, however enticing it may seem in theory, for it is impossible to be sure that all the disease has been eradicated. My own limited experience has impressed on me the extreme difficulty of detecting the small and widely scattered foci which frequently exist. Nevertheless, it is interesting to note that Morris successfully excised a tuberculous focus from the kidney of a woman whose other kidney had previously been removed for the same disease.

Nephrotomy is never indicated except for the purpose of relieving great suffering in those who for some reason can not undergo nephrectomy. A cure can not be expected, and a troublesome urinary sinus nearly always results.

CASE REPORTS.

I have operated on only 14 cases for renal tuberculosis, but these seem to illustrate and emphasize some important points.

CASE 1.—Mr. S., aged 33, with a history of incipient phthisis, had suffered for four years with frequent attacks of more or less severe abdominal pain centering in the region of the appendix, accompanied with frequent urination and a burning sensasation at the end of the penis. He had lost much in weight and energy.

Examination.—The watery urine was cloudy with pus, and contained red blood corpuscles and albumin. No tubercle bacilli were detected. The Harris segregator revealed normal urine from the left kidney and cloudy urine from the right. The diagnosis before operation was tuberculosis of the kidney or possibly stone.

Operation.—A nephrectomy was done Aug. 12, 1889, at St. Anthony's Hospital. The kidney was markedly tuberculous, with cavities and nodules and ulceration of the pelvis. Recovery was uneventful, except that a sinus persisted for nearly a year, its closure being assisted by the use of the electrocautery.

Postoperative History.—The urine soon became clear and normal and has remained so to the present time, a period of seven years. There have been no urinary symptoms of any kind, the patient considering himself in this regard perfectly well. About two years ago a psoas abscess developed on the right side, but disappeared spontaneously.

As a matter of interest merely, a surgeon of standing had made all arrangements to operate on this man for appendicitis, being misled by the location and character of the pain.

CASE 2.—An emaciated boy, aged 10 or 11, with no tuberculous history, had been treated by a surgeon for cystitis for many months. The existence of pain and tenderness along the left ureter and under the ribs called attention, however, to the kidney. There was blood and pus in the urine, although no tubercle bacilli could be found.

Operation.—With a diagnosis of either tuberculosis or stone, a nephrectomy was done Aug. 24, 1899, at St. Anthony's Hospital. The kidney contained a large caseous focus and several smaller foci, together with numerous tubercles and considerable ulceration of the pelvis.

Postoperative History.—Recovery was prompt as regards the wound in the loin, but the trouble in the bladder and ureter persisted for some months. An examination at the end of 2½ years revealed a fat, healthy, strong boy with perfectly clear and normal urine. The boy committed suicide 3½ years after the operation. His condition remained good up to that time. Whether the suicide was in any way connected with the nephrectomy it is impossible for me to say.

CASE 3.—Mr. C., aged 30, had incipient phthisis, which was latent for 11 years. For several months he had been bothered with frequent urination and iritation of the neck of the bladder.

Examination.—There was watery urine, cloudy with pus, and containing tubercle bacilli. Loss of weight and strength had occurred. There was no tenderness or pain over the ureters or in the region of the kidneys. After careful washing of the bladder, the urine collected in a few minutes was found to contain the usual quantity of pus, and hence it was concluded that the trouble lay in one or both kidneys.

Operation.—The use of the Harris segregator demonstrated disease of the right kidney, which was accordingly removed Nov. 10, 1902, at St. Joseph's Hospital. In spite of the absence of local symptoms the disease involved the pyramids in large areas. There was ulceration of the pelvis and a cavity in the parenchyma as large as one's thumb filled with grumous material. There were also numerous isolated tubercles.

Postoperative History.—A sinus persisted in this case for nearly two years, although for the greater part of the time it annoyed the patient but little. He is now perfectly well at the termination of three and three-fourths years, with clear urine and no bladder symptoms whatever. He has gained much in weight and energy. About a year ago, however, he developed tuberculosis of the right testicle, necessitating castration.

CASE 4.—Mrs. S., aged about 30, had lost much flesh and was very sick and weak. As she was unable to speak English, no clear history could be obtained.

Examination.—There was much pus in the urine, but no tubercle bacilli could be found. The bladder was tender and painful and bled easily on introduction of a catheter, which indicated ulceration. A large kidney could be felt in the left loin. An attempt to segregate the urine was unsatisfactory because of pain and hemorrhage.

Operation.—In spite of this, nephrectomy was done on Jan. 30, 1903, at St. Joseph's Hospital, because demanded by extreme suffering and marked sepsis. The diagnosis was stone or tuberculosis. The kidney was fully twice its normal size and filled with pus cavities, caseous masses and tubercles in all stages of degeneration—local disseminated tuberculosis. There was much ulceration of the pelvis. Following the operation no urine was passed and the patient died of uremia on the eighth day. No autopsy could be obtained, but it is fair to presume that but one active kidney had existed.

CASE 5.—Miss Van L., aged about 25; no tuberculous history. She had been afflicted for a year with irritation of the bladder accompanied at times with pain and tenderness along

1. This in face of the dictum of Morris that involvement of the bladder is almost a contraindication to nephrectomy.

the left ureter and in the region of the corresponding kidney.

Examination.—There was abundant watery urine, cloudy with pus, containing at times considerable blood. Tubercle bacilli were present in abundance. Segregation gave clear, normal urine from the right side and purulent urine from the left. The woman had been treated for a number of months for simple ulceration of the bladder without improvement.

Operation.—Nephrectomy was done April 21, 1903, at St. Joseph's Hospital. The kidney contained two abscesses, the larger the size of a walnut, filled with watery pus and cheesy masses. Tubercles were scattered about the organ.

Postoperative History.—A sinus persisted for about one year but finally closed. Her general condition improved rapidly and she gained much in energy and weight. The irritability of the bladder improved also, but did not entirely disappear, although it ceased to be a source of much annoyance. The urine at the end of about 18 months was still a trifle cloudy, although much less so than formerly, showing a decided gain in the diseased condition of the bladder. The patient is now apparently perfectly well at the end of 3¼ years.

CASE 6.—Mr. H., aged about 30, had mild form of phthisis. For many months he had experienced severe pain in the right side, perineum and end of the penis. He had lost much flesh and energy and was compelled to urinate very frequently.

Examination.—The watery urine contained but little pus and no tubercle bacilli could be found.

Diagnosis.—Tuberculosis of kidney and prostate.

Operation.—In conjunction with the late Dr. Munn, a nephrectomy was done July 14, 1902, at St. Joseph's Hospital. Several abscesses of the kidneys were found, together with numerous tubercles, although there was no apparent ulceration of the pelvis, thus accounting for the scarcity of pus in the urine. A tuberculous abscess of the prostate was also opened and curetted. The pedicle of the kidney was tied with silk ligatures, which had to be removed from the bottom of the sinus at the end of about nine months, the sinus then closing after remaining open nearly a year. The patient is now, at the end of four years, in excellent health and strength with normal urine and no bladder symptoms.

CASE 7.—Mrs. B., aged about 50, with no tuberculous history, was emaciated and weak. Five years ago she experienced a severe pain along the left ureter. From this she recovered, except occasionally slight pain and tenderness, until several months ago, when irritation and pain began in the bladder, followed by chills and high fever. A large tumor appeared in the left flank, tender and solid.

Examination.—Segregation revealed pus from the left side and clear urine from the right, which later contained a great number of granular and hyaline casts and some albumin. No tubercle bacilli were found.

Operation.—On account of a scanty secretion of urinary solids, together with other evidences of nephritis in the second kidney, it was deemed unwise to give a general anesthetic, so a number of nephritic and perinephritic abscesses were opened under local anesthesia. Much relief, however, was not obtained, so on Sept. 9, 1905, at St. Joseph's Hospital, the kidney was removed under nitrous-oxid anesthesia, the operation lasting seventeen minutes. Owing to the great size, friability, and numerous adhesions of the organ, it was necessary to remove it piecemeal, the pedicle being clamped by forceps which were left *in situ*. The parenchyma was studded with tubercles and small abscesses (local disseminated tuberculosis). There were several large pus cavities outside the kidney capsule. In other words, the process had become extensively perinephritic. Recovery from the operation took place, but the patient died in about three weeks from exhaustion and sepsis.

CASE 8.—Mrs. D., aged about 30, who had been sick for several months, gradually becoming confined to her bed, had no tuberculous history, but considerable loss of flesh.

Examination.—There was a large tumor in the right hypochondriac region extending downward from the liver; tender, but not painful. Temperature was not elevated, and sometimes subnormal. Urine was high-colored and without pus or blood, in fact, normal. Segregation showed an equal secretion from both sides.

The diagnosis was enlargement of gall-bladder.

Operation.—Oct. 17, 1903, at St. Joseph's Hospital, an incision was made through the outer margin of the right rectus and the difficulty located in the right kidney. The suprarenal capsule was transformed into a great leathery mass as large as one's entire hand and filled with tuberculous abscesses and separate tubercles. The kidney itself contained a parenchymatous abscess the size of a walnut, together with many smaller ones. The pelvis and ureters were not involved, which accounted for the clear urine. There was also a perinephritic collection of tuberculous pus. The kidney and suprarenal capsule were removed through the anterior incision, which was then closed, drainage being established through the back. Prompt recovery without a sinus resulted, and the patient is still absolutely well, 2 3/4 years after the operation, with possession of her usual weight and energy.

CASE 9.—Mrs. B., aged 35, with a history of incipient phthisis, for a number of months had suffered with pain in the bladder, especially when urinating. The pain radiated into the region of the appendix. The urine always contained pus, sometimes in large quantities, as if from the rupture of an abscess. Occasionally blood appeared. Pain and tenderness, of which there was considerable at times, were always in the right iliac fossa, rather high up, so that a diagnosis of appendicitis was made by the attending physician, the pus in the urine being supposed to be due to rupture of an abscess into the ureter. At no time were any of the disturbances referred to the kidney, and its involvement was not even suspected. She was referred to me for operation for appendicitis.

Examination.—The use of the Harris segregator revealed pus and blood from the right kidney and normal urine from the left. No tubercle bacilli could be detected. No stone in either ureter or kidney could be seen with the *x*-ray. (Dr. Stover).

The diagnosis was tuberculosis of right kidney with secondary involvement of bladder.

Operation.—A nephrectomy was done at St. Joseph's Hospital March 29, 1905. The kidney exhibited a parenchymatous abscess containing about an ounce of pus and unconnected with the pelvis, together with numerous tubercles and two small caseous foci opening into the pelvis. Immediate relief from symptoms was experienced, together with improvement in health and strength. A sinus persisted which opened and closed at intervals. At the end of eight months there was still a trace of pus in the urine. Now, at the end of 1 1/3 years, the patient is enjoying excellent health and strength and is attending to all of her duties. There are no urinary disturbances. The sinus still opens slightly at intervals, discharging a drop or two of pus.

CASE 10.—A woman, aged about 45, was seen in consultation with Dr. C. K. Fleming. There was no tuberculous history.

Examination.—There was pus and blood in the urine and considerable vesical pain and tenderness. The emaciation of the patient rendered it easy to palpate the tender and enlarged right kidney. Tubercle bacilli were present. Segregation demonstrated that the left kidney was normal in function.

Operation.—A nephrectomy was done by Dr. Fleming at St. Anthony's Hospital, the wound healing without the formation of a sinus. The enlarged kidney was filled with abscesses, caseous foci, and scattered tubercles. The patient gained remarkably in health and flesh, and now at the end of about six years is in excellent condition.

CASE 11.—A man, aged about 35, had a mild form of phthisis.

History.—For more than three years he had suffered much from inflammation of the bladder. The attention of everyone concerned had been so strongly concentracted on this organ that a few vague pains over the ureters and kidneys of both sides were completely overlooked, the patient being able to recall them only after close questioning. Some months previously a surgeon had established a suprapubic fistula of the bladder, without much benefit resulting. Tubercle bacilli could not be found in the urine. A diagnosis of tuberculosis of the kidney was made, and supported by obtaining very cloudy urine shortly after a thorough washing of the bladder.

Operation.—It being impossible either to segregate the urine or catheterize the ureters, it was decided to explore both kidneys, which was accordingly done without difficulty at St.

Joseph's Hospital, May, 1905. Unfortunately, both organs were found in an advanced stage of tuberculous disease, with a number of abscesses manifesting themselves as soft areas on the surface, hence nothing further was attempted. The wounds healed promptly by first intention. In the course of about two months the patient died of exhaustion without relief from any of his symptoms.

CASE 12.—Miss B., aged about 25, gave a history of incipient phthisis.

History.—For two years or more she had been afflicted with cystitis, which for many months had been so severe as to confine her to bed during most of the time. The urine was filled with pus and blood. So much irritation of the bladder existed that the urine had to be passed every few minutes—a condition amounting almost to incontinence. Some time previously an abscess had presented itself in the right loin in connection with the kidney, which was incised by the attending physician, a sinus resulting which continually discharged pus and urine. No tubercle bacilli could be detected after repeated examinations. It had to be assumed that the left kidney was sound, as it was impracticable to use either the segregator or the cystoscope and the patient's condition scarcely permitted operative exploration.

Operation.—A nephrectomy was done, Nov. 13, 1905, the wound slowly healing without the formation of a sinus. The adhesions were so great that it was necessary to shell the kidney from its fibrous capsule. The organ contained tubercular and tuberculous abscesses.

Postoperative History.—At the end of about two months the wound was healed and the patient up and able to retain the urine from one to two hours. In eight months her condition was very satisfactory. She was able to retain her urine for long periods, although a slight irritation of the bladder was still present. Her flesh and strength had been regained and she was able to resume her social and other duties.

CASE 13.—Mr. H., aged 29, had advanced pulmonary tuberculosis, and a tuberculous nodule in the right epididymis.

History.—There was much vesical pain and tenderness and the urine was filled with pus and blood. Kidney symptoms were entiarely absent until shortly before he came under observation, when some pain appeared along the left ureter. Segregation showed an abundance of pus from each side, and the idea of operation was discarded. The symptoms, however, rapidly increased, the temperature going as high as 104, accompanied by great suffering in connection with the bladder and left kidney, making the presence of a severe mixed infection certain.

Operation.—On March 21, 1905, a left nephrectomy was done, not with the idea of obtaining a cure, but for the relief of suffering only. The organ was riddled with abscesses and studded with tubercles and caseous foci. Drainage was instituted and a sinus resulted. Relief from the harassing symptoms was marked and the patient remained in comparative comfort until the time of his death from pulmonary disease some four months later.

CASE 14.—Mr. H., aged 18, was seen in consultation with Dr. C. K. Fleming. No tuberculous history. About two years ago, following a friendly wrestling match, blood was passed in the urine, and again some three months later. Gradually pus appeared with severe cystitis, but at no time were there any renal symptoms, and the disease of the kidneys remained unsuspected by his numerous physicians. No tubercle bacilli could be detected after repeated examinations. After irrigation of the bladder the urine obtained in the course of half an hour was found to be very cloudy with pus, thus indicating the involvement of one or both kidneys. Owing to the lesions in the bladder, however, neither the segregator nor the cystoscope could be used to any advantage, even under an anesthetic, hence operative exploration of both kidneys was decided on.

Operation.—This was done Jan. 21, 1906, at Mercy Hospital, by Dr. Fleming and myself. The right kidney proved to be healthy while the left contained several abscesses and a number of scattered tubercles. A nephrectomy was at once done, which proved to be so difficult, on account of a short pedicle, that resection of the last rib had to be resorted to in order to gain sufficient room.

Postoperative History.—At the end of seven months the patient was much improved as regards both bladder and general condition, and although the sinus still persisted it was very small and annoyed him but little. The vesical symptoms had become comparatively mild and the amount of pus in the urine much reduced.

A résumé of these fourteen cases shows seven males and seven females. Ten were in middle or early adult life, when most cases are found; one was 50 years of age; one 45; one 18 and one 10.

There were no operative deaths. One patient died of uremia, eight days after the operation, and one died of exhaustion and sepsis at the end of three weeks. Both of these were desperate cases in the later stages of the disease, and the patients were exhausted by long suffering and protracted sepsis. Had they been operated on earlier the results might have been different. A third patient committed suicide 3½ years after the operation. Up to that time the urinary apparatus had been in perfectly good condition. I have been unable to trace any connection between the operation and the act of self-destruction. A fourth died of pulmonary consumption about four months subsequent to the operation, having been largely relieved of his urinary symptoms, for which purpose alone the nephrectomy was done. A fifth died in two months of exhaustion incident to advanced tuberculosis of both kidneys. In this case a nephrectomy was not done, only an exploratory operation.

This leaves 9 cases living at the present time: One at the end of 7 years; one at the end of 6 years; one at the end of 4 years; one at the end of 3¾ years; one at the end of 3¼ years; one at the end of 2¾ years; one at the end of 1¼ years; one at the end of ¾ of a year; one at the end of ½ a year.

Eight of these patients are well as far as urinary symptoms are concerned, as was also the patient who committed suicide at the end of 3½ years, although all of them had more or less marked bladder symptoms at the time of operating, leading to a diagnosis of tuberculosis of the bladder as well as of the kidney.

One patient operated on half a year ago still has pus in the urine, but the general and local conditions have undergone marked improvement. Seven patients developed fistulas in the loin lasting from a few weeks to a year or more. Such fistulas are tuberculous and arise from the divided end of the infected ureter. Hence, theoretically, it would be wise to remove the entire ureter down to the bladder, as practiced by Kelly and Hunner. Practically, however, this is not usually advisable, as it increases the extent and danger of the operation; which fact is of importance in any nephrectomy, on account of the welfare of the second kidney, and is especially so in patients weakened by tuberculosis of the genito-urinary tract. These fistulas almost always disappear in time, although they often persist for many months. They are not frequently very annoying. It is, nevertheless well to remove as much of the ureter as possible, cauterize its lumen, and fasten the stump in the lower angle of the wound, where it can be treated later, if necessary.

In spite of careful search, no tubercle bacilli could be detected in eleven out of the fourteen cases; this low proportion being due, perhaps, to the search not being sufficiently persistent. Inoculation of animals was not employed. In six patients a history of a mild form of phthisis could be obtained which was more or less latent when the kidney complications developed. In six others there was no such history. In one, severe pulmonary lesions existed. In the remaining case no history was

obtained. In some instances it was only with the greatest difficulty that the patient was made to recall the evidence of a previous involvement of the lung; so that it is, perhaps, fair to assume that others may have had mild forms of tuberculosis which had escaped their memories altogether, especially as most people are glad to forget such occurrences. My own limited experience would lead me to believe that it is in the mild cases of phthisis with a tendency to latency, that kidney involvement is most likely to occur. Or, is it that people with advanced phthisis are not apt to pay much attention to their kidneys?

CONCLUSIONS.

1. Tuberculosis of the urinary tract very often begins in the kidney, attacking the bladder secondarily.
2. It is usually at first unilateral.
3. Medical or climatic treatment is unsatisfactory in most cases.
4. The ideal treatment is early nephrectomy, provided there is one sound kidney.
5. Tuberculosis elsewhere, unless far advanced, is not a contraindication to operation.
6. Tuberculosis of the bladder derived from one kidney is positively benefited by nephrectomy and can seldom be cured without it.
7. The demonstration of tubercle bacilli in the urine often fails.
8. The removal of the ureter is not ordinarily indicated. If sinuses result, they nearly always heal in time.

KERATOSIS OBTURANS.*

G. STERLING RYERSON, M.D., C.M., L.R.C.S. (EDIN.).
Professor of Ophthalmology and Otology, Medical Faculty, University of Toronto.
TORONTO, CAN.

The formation of epithelial plugs of considerable size must be counted among the rare diseases of the ear. In my practice, private and hospital, extending over more than a quarter of a century, I have met with only two cases. The literature of the subject also confirms their rarity. They would appear to be allied in nature to cholesteatomata, described by Mueller and Virchow as pearl tumor, possessing a well marked wall with contents of hornified or epidermized cells arranged in layers like an onion. The same description applies to the tumor described by Habermann as occurring in the mastoid antrum, many examples of which are recorded. In the cases which I report there did not appear to be any middle ear involvement in so far as epithelial growth was concerned, though there was a history of previous suppurative trouble in both. Further, the removal of the growth from the external auditory canal entirely relieved the symptoms. According to Brühl and Politzer desquamative inflammation of the external auditory canal is either idiopathic or the result of chronic hyperemia. Microscopically the epithelial layer is found to be atrophic and the stratum corneum thickened; the latter is covered with successive wavy layers, consisting of large polygonal horny cells of squamous epithelium without nuclei. In places the cutis shows round-cell infiltration. The hair follicles are dilated and filled with horny cells.

In one of these cases the growth was of many years' duration and was attended by mental symptoms, loss of memory, difficulty in fixing the attention and following a train of thought, all of which were relieved by the removal of the growth. Ear cough was also present. The other case presented some of the symptoms of acute mastoiditis except that the pain was referred chiefly to the temple and anterior wall of the canal. There was tenderness of the mastoid, but little or no swelling, and an absence of that sickening pain produced by deep steady pressure. In one case the course was exceedingly slow, in the other, acute.

CASE REPORTS.

CASE 1.—*History.*—J. C., aged 45, farmer, consulted me Oct. 3, 1895, for deafness of long standing. He did not remember when he had heard well with his left ear. Of late there had been some pain, tenderness, and a feeling of weight in the ear.

Examination.—The ear was apparently filled with wax. Hearing: H. R., 20/40; H. L., pressure.

Treatment.—After syringing for some time without much effect, patient was given a solution of soda bicarbonate and instructed to go home, fill the ear, soak it thoroughly, and return next day. He did so and again the ear was syringed to little effect. Peroxid of hydrogen was given with instructions to use it frequently. This and syringing were continued for five days, little coming from the ear save small masses of epithelial scales, when a larger plug appearing to be loose I moved it with forceps.

I continued to do this for three or four days more, when the remains of the drumhead came in view. It was ulcerated, as were the walls of the canal in places. The bony canal was dilated to double its normal size. The parts were irrigated with weak bichlorid solution and swabbed with 2 per cent. solution, nitrate of silver, and healed readily.

The mental symptoms of which he complained, giddiness, loss of memory, difficulty in fixing the attention, and dulness, were completely relieved.

CASE 2.—*History.*—B. F., aged 36, clerk, had acute suppuration following scarlatina, twenty years ago. He made a good recovery, but from time to time during the intervening years he was subject to acute or subacute attacks of inflammation of the middle ear. On Jan. 11, 1906, he presented himself, complaining of what seemed to be a threatening attack of mastoiditis. He had severe pain in the region of the mastoid, redness, but no considerable swelling. The pain was referred to the middle ear and anterior wall of the external auditory canal rather than to the mastoid itself, and was worse at night. The parts were very sensitive to the touch, but the severe sickening pain produced by deep pressure over the mastoid, common in mastoiditis, was absent.

Examination.—The external auditory canal appeared to be plugged with wax, which syringing did not remove.

Treatment.—Any attempt to remove the plug with forceps and curette was attended by so much pain that I was forced to desist. Leeching and douching with hot solutions of bichlorid of mercury were ordered. The pain was controlled by ovoids of cocoa butter, each containing 1 gr. of opium. Temperature ranged from 99 to 102, with an evening rise. These symptoms continued for several days and I had about concluded to open the mastoid when the symptoms ameliorated. The following day considerable masses of epithelial scales came away and a loose mass lying in the external auditory canal was removed with the forceps. The walls were dilated and denuded of epithelium in places, as was the drumhead. Under continued douching and local application of nitrate of silver the parts healed. Hearing, H, 2/40.

Apart from the formation of an immense epithelial plug this case is interesting from the presence of symptoms so analogous to mastoiditis that a diagnosis was difficult. The fact that the anterior wall of the canal was swollen and tender as well as the reference of the pain to the middle ear and the absence of swelling of the mastoid, together with the absence of bulging of the wall of the canal, made me hesitate to operate, and the result justified my delay.

* Read in the Section on Laryngology and Otology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

DISCUSSION.

DR. A. E. CROCKETT, Boston, said that most of the cases he has seen have been secondary to a suppurative process in the middle ear. He recalled one patient who had recurrent keratosis filling the canal and completely denuding the periosteum from the inner wall; recurring about once in two years. So far as his experience goes, the disease has been difficult to handle because it is difficult to remove the plug, and the slightest manipulation is exquisitely painful to the patient. He has been accustomed to rely on the hook known as the stapes hook, rather than syringing. He mentioned an unfortunate case at the Boston Eye and Ear Infirmary which was syringed for a long time, the plug swelling instead of being removed, and in which there was infection and swelling of the plug, and mastoid disease resulted and also a posttonsillar abscess. Ever since he has been afraid to syringe unless he was sure that he could remove the plug at one sitting.

DR. C. J. BLAKE, Boston, said that one feature in connection with these epithelial plugs, the keratosis obturans of Wreden, is the lardaceous degeneration of the center of the epidermal plug. Such a plug is hard to deal with, the lardaceous mass offers no hold for forceps or hooks, and it is difficult to peel away the firmer epidermis from the wall of the canal. Under these circumstances the conversion of the lardaceous center of the plug into soap by applying caustic potash on a cotton-tipped probe works well. The external auditory canal, on the hither side of the plug, should be smeared with oil, the cotton-tipped probe with the potash put into the center of the mass, the resultant soap syringed out and this repeated until the lardaceous core has been removed. It is then easy to break up the epithelium with forceps to extract it.

ACUTE AND CHRONIC SUPPURATION OF THE EAR AND NOSE THE DIRECT CAUSE OF FACIAL ERYSIPELAS.*

CULLEN F. WELTY, M.D.

Clinical Surgeon of Otology, San Francisco Polyclinic; Aural Surgeon, City and County Hospital; Consulting Aural, Rhinological and Laryngological Surgeon, German Hospital.

SAN FRANCISCO.

1. Why should we have erysipelas especially confined to the face?

a. Because it is nearest the seat of infection.

b. Because the secretion of pus produces an abrasion of the mucous membrane or skin and then an inoculation follows.

c. The inoculation is also made by the handkerchief, but I think more particularly by the finger.

C. W. Major[1] reports 4 cases of facial erysipelas in which he says he thinks that the erysipelas was dependent on pathologic conditions of the nose. In 3 there was hypertrophic rhinitis; in 1, a child, chronic congestion. O. J. Stein[2] reports a case of suppuration of the antrum of Highmore followed by an attack of erysipelas, and says that many cases of erysipelas are due to unrecognized nasal conditions. Jannson,[3] in an extensive article, claims that erysipelas originates from various inflammatory conditions of the nasal mucous membrane. Howard[4] reports a small abscess in the nose as the cause of erysipelas. I have 3 such cases. Marcier and Bellevue[5] report a case of acute empyema, which was followed by facial erysipelas in a few days. They say that they believe it was due to the inflammation of a sinus. In a discussion of the former case, Bessonnet states that he has seen erysipelas follow acute rhinitis.

Coakley[6] believes erysipelas is rarely a primary affection, but is usually secondary to erosions of the face, the necrosis of the ethmoidal labyrinth. In the transactions of the American Laryngological Association, 1903, page 72, J. H. Falow speaks of erysipelas originating from nasal affections. Dr. Able Johnson, San Francisco, has seen 4 cases of erysipelas in European clinics. In 2 he was able to demonstrate pus in the nose; 2 followed surgical interference, 1 for extensive removal of polypi accompanied by pus, one following the removal of the inferior turbinate in which pus was not demonstrated. Dr. Albert Houston, San Francisco, has seen 2 cases follow surgical operation of the nose for the removal of polypi. In the Vienna Nose and Throat Clinics I have seen 3 cases of erysipelas develop while the patients were under treatment. The interval between these cases was long. I do not remember whether pus was present or not.

von Bergman and Buel[7] say that erysipelas is occasionally seen after operations on the face, and that with modern technic it has not been entirely banished, as in injuries; the infection is derived from opening the facial cavities with their chronic inflamed mucous membranes. J. A. White[8] reports a case of mastoid operation that was followed in eight days by erysipelas. H. Holbrook Curtis, discussing White's paper, said he had a similar case. Charles W. Richardson, in the same discussion, reported 3 cases, but considered it was from severe scrubbing of the operative field, as in all his cases the inflammation began outside of the operative area.

Vacher[9] reports a case of acute otitis of two weeks' standing, which was followed by erysipelas and a mastoid operation later. I am personally familiar with 1 case of erysipelas following a mastoid operation in a brother practitioner in San Francisco. I also observed 3 cases of erysipelas following mastoid operation, 1 in Halle and 2 in Vienna.

2. Why should we have more than one attack of facial erysipelas?

a. Because the source of infection is practically never eliminated without operation.

b. The reason erysipelas follows operations is explained by the fact that you open a field for direct infection.

Luc[10] reports operating a case of empyema of the antrum of Highmore, which was followed by erysipelas. This patient had facial erysipelas with abscess formation nine months before the nasal affection was diagnosed. Hajek[11] reports the case of a patient with empyema of the antrum of Highmore who had had facial erysipelas once a year for the last five years. Two years following operation the patient has not had an attack.

Hall and Tilly[12] state that in cases of recurrent erysipelas of the face the pharyngeal tonsil was apparently the starting point of the disease, and add that it is well known that the nose especially when affected by chronic rhinitis frequently gives rise to facial erysipelas. Mc-

---

* Read in the Section on Laryngology and Otology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

1. Med. Jour., New York, 1889, p. 148.
2. Chicago Med. Rec., 1899, xvii, p. 308.
3. Forhandl. v. Nord. Kong. f. inv. med., Stockholm, 1896, i, p. 62.
4. American Practice and News, Louisville, 1887, No. 3, p. 262.
5. "Un cas d'Erysipele de la Face d'Origine Sinusienne," La Portou Med., Porters, 1903, xviii, p. 241.
6. "Diseases of the Nose and Throat," New York and Philadelphia, 1901.
7. "System of Surgery," i.
8. Laryngoscope, St. Louis, 1904, iv, p. 689.
9. La Presse Oto.-Laryng., Belge, Brussels, 1904, iii, p. 13.
10. La France Médicale, 1891, xxxviii, p. 307.
11. "Krankh. der Nasen hoien," 1903
12. "Diseases of Nose and Throat," London, 1901.

Bride[13] says that erosions about the nostrils are the point of entrance for erysipelas poisons, and quotes Moldenhausen, who claims this condition is found in most cases of recurrent erysipelas.

In my private practice I have elicited the histories of four patients with recurrent attacks. In one case of chronic suppuration from both ears of fifteen years' duration, there were four attacks of erysipelas, always starting about the ear. Two patients had chronic discharge from the nose for many years, with empyema of the antrum of Highmore on one side and three attacks. One patient had chronic discharge from both nostrils for many years, empyema and polypi of the ethmoidal cells, and two attacks.

3. Why do we usually find erysipelas associated with suppurative processes of the ear and nose?

Because the source of infection is nearly always present.

My personal belief is that it is always present, but at times it is very difficult of diagnosis. To illustrate the point in question I recall a case of extensive disease of all the sinuses of one side of the head without anything showing at all in the nose. There was a perforation of the orbital wall and a fistulous formation at the outer angle of the eye. There was about a pint of pus in the immediate neighborhood. The antrum of Highmore was so extensively diseased that it extended to the median line of the hard palate and was full of polypi. Cutting away the floor of the nose we were directly in the antrum. I have not always been able to demonstrate pus, but it is my belief that it is present, but hard to find. This is especially so in the latent forms of empyema.

4. Why should this not be accepted as a fact when streptococci can be demonstrated in the secretion, or is it absolutely necessary to demonstrate the presence or absence of the same?

When streptococci can be demonstrated in the secretion of the ear or the nose in mixed or pure infections, I think it should be considered an established fact that the erysipelas is dependent on the same. Should you find the diphtheria bacillus present in the nose and later find a membrane in the throat that had been tested before, you would assume that it was due to direct inoculation. I think the same principle can be applied to this condition. I further think that it is absolutely necessary to demonstrate the streptococcus in mixed or pure infections to prove this theory of mine.

5. Why is it that 82 per cent. of facial erysipelas starts from the angle of the nose?

a. Because the secretion produces an excoriation which leaves a direct course for inoculation.

b. Through repeated cleansing of the nose with the handkerchief or otherwise an abrasion is produced which leaves a point of inoculation.

c. Because this streptococcus is the most virulent of germ infections and will propagate where others would have perished.

G. W. Spohn[14] collected 1,000 cases of erysipelas; 900 were confined to the face. The point of inoculation for the facial was as follows: 737 angle of the nose, 90 about the mouth, 60 about the ear, 7 about the eye, 3 about the cheek bone, 3 in the scalp. The author further states that careful examination will reveal the fact that nearly all cases of facial erysipelas have had a previous nasal catarrh.

6. Why is it that every case of streptococcus infection of the ear and nose is not followed by erysipelas?

I answer this by asking the question, Why is it that every case of infection of Klebs-Loeffler bacillus is not followed by diphtheria, the pneumococcus not followed by pneumonia, etc.? I think they all depend on a similar condition, that of immunity. In operative cases (mastoid operations particularly) under strict antiseptic precautions, the streptococci are so disturbed or crippled that their virulence as an infecting agent has been largely destroyed and erysipelas much less likely to follow.

AUTHOR'S INVESTIGATION.

Through the kindness of Dr. Langley Porter, in charge of the contagious diseases at the City and County Hospital, San Francisco, I have been able to make a personal examination of some 60 cases of facial erysipelas. During the two years' investigation along this line there was not a case of erysipelas that was not confined to the face or head.[15] I had arranged an elaborate chart to show age, sex, nationality, hygienic surroundings, number of attacks, point of inoculation, condition of the ear and nose prior to, during and following attacks, bacteriologic nature of the erysipelas infection, bacteriologic nature of the secretion from the ear and nose, contagion in the family, contagion in the hospital, but I am sorry to say that the fire destroyed all the histories, so I will have to report what I can from memory.

All the patients were over 20 years of age, largest number between 25 and 35. There were more males than females. As to the nationality, it was pretty well distributed. The hygienic surroundings in most cases were not good. Eight patients had more than one attack and pus was always demonstrated in their cases. Each attack was with apparently less severity. The point of inoculation in a large majority of cases was about the nose. I should say that more than 90 per cent. complained of nasal affections accompanied with a discharge. In 60 per cent. of the whole number of cases I demonstrated pus in the ear or the nose. I am very much indebted to Dr. Henry H. Lissme, assistant in the contagious department, for his work in my behalf from a bacteriologic standpoint. The bacteriologic nature of the cases of erysipelas examined (probably 30) demonstrated streptococci alone. The bacteriologic findings from the secretions of the ear and nose (probably 12 examined) usually showed mixed infections, streptococci always present. Most of the patients were lost track of as soon as they recovered from their erysipelas, probably 12 returned for subsequent treatment, and in all these pus was easily demonstrated; most of them were operated on. None had erysipelas following the operation or since. There was not a single case of contagion at the home of the patient or at the hospital. Four patients had lacerated or contused wounds about the face. In one I was able to demonstrate pus. One had such a complete deviation of the septum that the middle meatus and the olfactory fissure could not be seen at all. The other two were negative. Three patients had perforation of the septum with granulation tissue about the perforation; the only source of pus that could be demonstrated. Three patients had small abscess just within the nose, which I attributed as the cause. One patient had an abscess of the septum accompanied by discharge of pus from the middle meatus as well. I do not believe this was the nature of an erysipelas, but simply an abscess of streptococcus origin; in fact, I have not

13. "Diseases of Nose and Throat," Edinburgh, 1900.
14. Detroit Medical Journal, 1904-5, iv, p. 361.
15. This statement is not absolutely correct, as there were some cases of erysipelas of the extremities due to wound infections.

seen an inflammation of the nose or the throat that can be likened to the erysipelas of the face.

So, in conclusion, I say that we have sufficient evidence to assume that erysipelas of the face is due to a direct infection from a contaminated field of pure or mixed infections of streptococci; that in the majority of these cases the infection can be demonstrated, and those that are not demonstrated are probably present and are not found; that the epidemics of erysipelas are nothing more than a direct wound infection through surgeons or nurses; that the so-called idiopathic erysipelas is a misnomer. As to why we should not have erysipelas with every case of streptococcus infection I believe to be dependent on the character of the streptococci and the immunity of the patient. I also believe that the streptococci attain a more virulent form when one of the various cavities is infected.

2510 Washington Street.

DISCUSSION.

Dr. J. W. Farlow, Boston, said that he has seen a number of such cases. One patient, a man about 40, suffered for several years from repeated attacks of facial erysipelas which incapacitated him from work. Treatment of an erosion of the septum restored him to perfect health, and he has had no erysipelas since. A patient, aged 50, had several minor attacks of facial erysipelas, beginning on the side of the nose and also two very severe attacks. Treatment of the bloody erosion of the septum has prevented any further attack for three years. A woman, aged 40, had a similar experience, one attack being very severe. Complete success resulted from cure of the septal erosion. A woman, aged 84, had an attack of facial erysipelas, with temperature of 103 F., and a tendency to coma. Dr. Farlow washed out the nose, treated an erosion of the septum and the next day the temperature was nearly normal. She soon recovered and is still living. In the light of such experience Dr. Farlow strongly advises the routine examination of the nose in all cases of facial erysipelas in order to determine whether the interior of the nose is the portal of entrance of the infection.

Dr. H. P. Mosher, Boston, said that at the Massachusetts Charitable Eye and Ear Infirmary the greatest number of cases of facial erysipelas occur in the spring. Since this is so, Dr. Mosher asked if it would not be a good thing to isolate every case of mastoid operation for a few days until it is determined whether or not erysipelas will result. It is unfortunate to have a case of erysipelas develop in an open ward. Routine examination of the nose in cases of erysipelas has been the custom at the Massachusetts General Hospital for years. The dermatologists always send their erysipelas patients to the Eye and Ear Infirmary for examination of the nose.

Dr. John O. Roe, Rochester, N. Y., said that his observations coincide entirely with those of Dr. Mosher; he also has had many more of these cases during March and April than during any other months in the year. So much more frequent are they in March and April that in all nasal operations performed during these two months he always takes extra precautions to guard against all possible infections from every source.

Dr. Cullen F. Welty, San Francisco, in regard to erysipelas following mastoid operation, said that the more thorough the investigation along this line the more clear it is that the underlying cause is never entirely eliminated so long as the streptococci are present. The reason every case is not followed by infection is dependent on immunity and individual susceptibility. A few years ago Dr. Welty was in Boston, he was a guest of Dr. Blake at the Ear Infirmary. They had had recently many cases of erysipelas in their mastoid operations. The erysipelas was not stopped until physicians, nurses and attendants were required to wear rubber gloves in treating the cases. This effectually stopped the further spread of the erysipelas. Dr. Welty had intended to carry his investigations to the laboratory, but facilities for doing such work in San Francisco at present have been so much disturbed that it will be impossible. He would like very much if some one would take this subject up and work it out from a scientific standpoint. When certain conditions are present in a given number of cases, one can rest assured that they have something to do with the causation or the progress of the affection; furthermore, when streptococci can be demonstrated in the pus, why, he asked, should it not become an established fact that this is the direct cause of the infection. Until a better explanation can be given for the causation of erysipelas, Dr. Welty will look on the presence of streptococci as proof positive.

INFLUENCE OF A TUBERCULOSIS SANATORIUM ON THE VALUE OF SURROUNDING PROPERTY.*

WILLIAM H. BALDWIN.

WASHINGTON, D. C.

This question is practical, for it is admitted that many more sanatoria for the treatment of tuberculosis are needed, and the first question to be decided in starting to build one is where to locate it. Since it is also admitted that sanatoria need not be confined to any particular climate or region, there is a wide choice of locations, which will be affected by many considerations.

Foremost among them are those relating to the purpose for which the institution is started, requiring abundant fresh air, a maximum of sunshine and freedom from smoke or dust. These all imply plenty of room, if not something like isolation; and many sanatoria are located at a distance from cities or even from any large town. The absence of the excitement caused by contact with numbers of people, and of the distractions incident to city life, favors successful treatment, but convenience of access for patients and facility for obtaining needed supplies must also be thought of, and these can best be secured near some city, often without foregoing the first requisites.

The subjective conditions on which the accomplishment of the purpose of the institution depends being satisfactory, the next question is the value of the land required. Here, too, the isolated location has the advantage, for, other things being equal, the area of land needed can be bought for less money, or more land for the money available, than if a site is chosen to which the increment added by the proximity of improved and perhaps closely settled property has already attached. And in connection with this question of value we have also to take into account the effect such an institution will have on the value of adjacent property, for the total cost to the community includes anything it may subtract from that. In studying this effect two elements are to be distinguished, the influence of the building and improvements as such, and the purpose for which these are used.

INFLUENCE OF THE BUILDING.

As a rule, it may be said that the erection of any building not in itself objectionable, by taking up a certain amount of land and so decreasing the remainder available, while increasing the purposes for which it may be used, enhances the value of the surrounding land, and so is an advantage to it. The value of any piece of land is determined by many influences, depending on the various uses to which it may be put. Unoccupied land

* Report as chairman of the Sociological Section at the meeting of the National Association for the Study and Prevention of Tuberculosis at Washington, D. C., May 18, 1906.

is likely to be used first for grazing or farming, then, as population increases, for residences, and later for business purposes, manufacturing or trade, or both. So far as the value of surrounding property is concerned, that building is most desirable which best fulfils the general purpose for which land in the vicinity is used, a good farm house in the country, or a fine residence on an improved street, or a large store in the business section. No matter what its use, a building which is discordant in any way lessens the desirability of contiguous property and so detracts from its value, as a store in a residence street. Generally speaking, any large institution, the inmates of which are not united by association or community of interest with the people of a closely settled neighborhood in which it is placed, is a detriment to property about it. Beauty of buildings or of grounds may decrease this disadvantage in spite of the lack of connection between it and its environment.

Suburban or country property is not so much affected by such an institution, because initial values are less, and may be so low that its presence will cause values to rise. An increase in population, other things being equal, helps values, and the institution may be relatively large enough to have this effect. Such improvement may be limited, and should be compared with what might have taken place, or the extent to which it might hereafter be likely to go, if there had been no such institution. Hospitals of any kind would be objectionable to some people, partly because of the reason given above, and partly because the proximity of suffering or sickness is in itself distasteful. A detention hospital raises this opposition to the superlative degree, and prospective neighbors have been known to fight off such a necessary refuge for the unfortunates who require treatment somewhere, with all the fervor of a holy war.

Two years and a half ago I asked Dr. Biggs whether there would be any danger to residents in the vicinity if a detention hospital for smallpox and such diseases was located in the center of a piece of ground containing more than six acres in the suburbs of a western city. "Not a particle," he answered. "There has never been a case of infection from ours in New York, though it is located next to the most crowded portion of the city; but unless human nature is different there you will find the most vigorous opposition to it." Human nature instantly revealed its similarity, and the pesthouse, as it is called, is still no nearer an abiding place than the Wandering Jew, or the tramp who is told by the policeman to "move on." Each councilman is entirely willing to have it in any one of the other six wards, but as soon as a location in his own is offered he and his constituents raise a greater tumult than the Chinese when they beat their tom-toms and other noisy instruments to ward off an eclipse. So far, the vociferation, coupled in one instance with a threat to burn the building, has been as effective in frightening away the authorities as that of the Chinese is in making the dragon disgorge the sun, for no location has been held much longer than the duration of a solar eclipse, and the sky is now entirely clear.

USE TO WHICH BUILDING IS PUT.

This leads to the second element in the problem of the effect of the institution on the value of surrounding property, the knowledge that it is for tuberculous patients. In itself this must be objectionable, for tuberculosis is now known to be communicable rather than hereditary, and those who know no more are likely to fear and avoid it. Fuller knowledge dispels the fear and shows that under the training of a well-conducted sanatorium there is less danger of infection from a hundred patients than from two uninstructed consumptives going at will about the streets and disposing of their sputum in the way most convenient for themselves.[1] We can not overcome all the disadvantages of an institution, as such, but we can and should be sure that it is not in the slightest degree a menace to the health of those who live near it. This danger being therefore imaginary rather than real, there remains the interference with the serenity of the people in the neighborhood who come in contact with men and women whose appearance often discloses the struggle for life they are making, in which some are not winning.

STATISTICAL EXHIBITS.

In order to learn the facts concerning sanatoria already established, an inquiry was addressed to seventy-seven of the largest of such institutions throughout the United States and in Canada. Besides the name, location and date of establishment, thirteen questions were asked as to the character of each sanatorium and its buildings, the effect it has had on the community and on surrounding property and the attitude of people in the vicinity toward it. Replies more or less complete were received from fifty-nine of these, located in twenty states and territories, of which thirteen are in New York and two in Canada. Some general groupings from these returns may be of interest:

LOCATION.

In cities	18
In suburbs, smaller towns and settled country	18
Isolated or in thinly inhabited country	23

The capacity of the fifty-nine institutions runs from 12 at Lake Nebagamon, Wis., to 350 each at the Massachusetts State Sanatorium and St. Joseph's in New York, as follows:

CAPACITY.

50 or under	24	Over 100	15
Over 50 to 100	18	Not stated	2

As to the class of patients taken, 28 are for those who can pay, 19 for those who can not, and 12 for both. As to the kind of cases, 34 are for incipient or probably curable cases, 23 for those in any stage and 2 for advanced or presumably hopeless cases only.

The time during which they have been established, important as showing the period during which any influence on the neighborhood has been exerted, ranges from the State Sanatorium in Wisconsin, just being erected, to the Lincoln Hospital in New York City, started sixty-seven years ago. Several others were originally for other cases, and an approximately close division would be:

TIME ESTABLISHED.

1 year or less	4	5 to 10 years, inclusive	18
2 to 4 years, inclusive	26	Over 10 years	11

The kind of building would also make a difference about the effect on adjacent territory, and a classification of these must be somewhat indefinite. As nearly as may be gathered from the data obtainable, we may distinguish them as:

KIND OF BUILDING.

Very good	11	Poor	6
Good	34	Not described	1
Fair	7		

Another principal element in the problem is the quantity of land; for an institution with ample grounds may be more or less self-contained, the patients mingling little with the outside world, while the limitations

1. Waters: "Sanatoria for Consumptives," p. 29.

of a small lot may make walks about the neighborhood for exercise unavoidable. Aside from five on city lots or blocks, the quantity runs to 700 acres at the State Sanatorium of Minnesota, as follows:

QUANTITY OF LAND.

20 acres and under	7
Over 20 up to 100 acres	15
Over 100 up to 200 acres	6
Over 200 up to 500 acres	6
Over 500	4
Not stated	16

Although the question as to any change in the value of the land owned by the institution, measured either by its valuation for taxation when acquired and now, or in other ways, bears directly on the subject, and was plainly asked, it was not answered in 30 of the responses, and 4 replied that the land was not valued for taxation. The other 25 reported as follows:

CHANGE IN LAND VALUES.

	Established.	Located In City.	Country.	Isolated.
Increased 3	2, 4 and 14 years..	2	1	..
Much increased.3	3, 21 and 67 years..	1	..	2
Doubled in value or more.....10	2 to 42 years.....	1	5	4
No change 9	.....	..	2	7

In no case is it stated that the land on which the institution is situated has decreased in value, and as its worth depends largely on the value of surrounding property, there is nothing in this to indicate an unfavorable effect of the sanatorium.

Coming directly to the difference in the character or value of adjacent property since the founding of the sanatorium, an answer more or less definite has been obtained as to each, and divided into four classes with other features noticed, they are:

CHARACTER AND VALUE OF ADJACENT PROPERTY.

	Established.	City.	County.	Isolated.	Free.	Paying.	Both.	All cases.	Early.	Late.	Large(150A.+)	Smaller.	Not stated.
No change in character or value, ... 21	1 to 30 yrs.	6	3	12	8	8	5	10	11		4	6	11
No change in character increased in value, 24	2 " 67 "	8	10	6	7	13	4	8	15	1	7	15	2
Improved in character increased in value, .10	2 " 24 "	2	5	3	1	7	2	3	7		3	5	2
Nearby property injured or not inproved, . . . 4	3 " 42 "	2		2	3	1		1	2	1		3	1

In 58 per cent. of the instances, therefore, there has been an increase in the value of the land adjacent, accompanied in 17 per cent. by a change for the better in the purposes for which it is used; in 35 per cent. there has been no change, and in 7 per cent. a more or less marked depreciation in land immediately adjoining is admitted. In one instance this effect is for a distance of 400 to 800 feet, in another up to 1,500, while in the other two cases the opinion is given that the presence of the sanatorium has prevented or would prevent sales.

Connected with the foregoing, both as cause and effect, is the attitude of the community toward the institution. In one case this is not stated, in 37 it is said that there has been no opposition at any time, in 2 that there was once vigorous opposition, in 5 that there is some objection still, and in 14 that there was once opposition, which has since disappeared. Related also is the general effect on the community, which takes other aspects than that of commercial value. This is stated as follows:

EFFECT ON COMMUNITY.

Helpful, and in some cases educational also	21
Not unfavorable	6
Increased population	1
Educational	9
Detrimental to sale of land	4
No effect	18

DISCUSSION OF STATISTICS.

The circumstances about these institutions are so complicated that it is difficult to determine how far any change in surrounding property is due to the sanatorium, or what features in this surrounding property or on the institution have accounted for it. The average length of time for which the 10 sanatoria about which there has been a change in character as well as an increase in value have been established, is twelve years, and of those in which the increase has not been accompanied by any change, excluding Lincoln Hospital in New York City, established sixty-seven years ago for other purposes, six years. The percentage of increase in the six cases of the former in which an estimate is given, ranges from 15 per cent. to 300 per cent., and the average annual rate is 6.7 per cent., while the average length of time during which the six have been established is 13.7 years. In the seven cases of the latter group in which a definite statement as to percentage of increase in value is made, it runs from 15 per cent. to 100 per cent., averaging 16.6 per cent. annually, and the average length of time the seven have been established is 4.3 years. Combining the two the average annual rate of increase for the whole 13 is 12 per cent., and the average number of years established 8.6. Although two of the institutions showing the next to the largest rate of increase are located in a rapidly developing section of California, where the improvement is largely due to other causes, and although part of the increase in other cases, which are for the most part in places less affected by other circumstances, may be due to the general advance in prices of property constantly taking place throughout our growing country, these figures seem to indicate that in many cases a sanatorium has a beneficial effect on property values, except perhaps of that in immediate contact. It is unfortunate that the number of instances is not larger, as percentages drawn from so few are of less value, but of the thirteen 38 per cent. were in the city, 46 per cent. in the country and 16 per cent. isolated; while about half were for paying patients and one-quarter each for free or for both. There were 38 per cent. on tracts of land of 150 acres or more, and 54 per cent. on smaller tracts or lots, with one not stated.

The opinions as to the effect on the neighborhood came from those connected with the sanatorium, and to that extent may be unduly favorable. Some effort was made to get opinions from local authorities, to which reference will hereafter be made, which in five cases out of the thirteen confirmed or did not contradict the opinion given, and in one other declared that the growth had not been influenced by the institution.

How far the increase in values noted is but part of the general rise throughout the country it is difficult to determine for want of a proper standard. The average value per acre of farm land in the United States was $22.72 in 1880, $25.81 in 1890, and $24.39 in 1900, a net increase of 7 per cent. in twenty years, or 0.35 per cent. annually.[2] This in no way compares with the rate given for that about the sanatoria of which we know; but as an area of nearly 60 per cent. of new land had been added during that time the nearly stationary value may have been due to the proportion of this and not to a lack of increase in the value of land listed in 1880. It is probable also that agricultural conditions, which might not affect the property by which many sanatoria are surrounded, may have kept farm land from

2. Statesman's Year Book, 1902, p. 1303.

advancing as residence property did, or even put it back during the second decade.

The national wealth increased from forty-two billions in 1880 to ninety-four billions in 1900, which is 121 per cent., or 6 per cent. per annum, which is still only half the average rate for the property adjacent to the thirteen sanatoria; and if we take the national wealth per capita which is perhaps a fairer basis, the increase from $850.20 in 1880 to $1,235.86 in 1900 is 45 per cent., or only 2.25 per cent. per annum.[3] It may be that the rate for farm land and for national wealth during the last six years, covering more nearly a part of the average period during which these sanatoria have been in existence, has been more rapid, but it could hardly have increased enough to affect greatly the conclusion above drawn.

Several instances showing very large percentages of increase, which bring up the average materially, cover an existence of from three to five or six years only, and so far as the change is due to the starting of the institution, it can not be expected to continue. The initial value of the land also has an important bearing on the percentage. It is possible that failure to make any approximate statement as to the amount of increase in any case indicates that it is not so large, and that the average when not stated is much less. Information in some of the other twenty places tends to confirm this idea. In two small places, where the sanatoria have been established nine years and have been the only apparent reason for the growth, there has been an increase in the amount of taxable property listed of 36 per cent. in one case and 44 per cent. in the other, or an annual increase of 4 per cent. and 5 per cent.

INDIVIDUAL ILLUSTRATIONS.

Some reference to individual instances may be instructive, and typical examples of older institutions in cities are the Cullis Consumptives' Home in the suburbs of Boston, Mass., where opposition, started eight years ago, has ceased because experience has shown that there is no danger from the institution; and the Brooklyn Home for Consumptives and St. Joseph's Hospital for Consumptives in New York City, where there has been no opposition. In the first case land values have increased 400 per cent. in thirty-five years, and in the last 50 per cent. in twenty-four years.

The Adirondack Cottage Sanatorium is of course the earliest instance of one in an isolated locality, and its wonderful success has added greatly to values in the neighborhood by the large increase in population with the attendant expansion, or rather creation, of business which this has brought. Property which sold for $100 an acre when the sanatorium was established twenty-one years ago now brings 5 cents a foot, a more than twenty-fold increase.

Since the Winyah Sanatorium, Asheville, N. C., was founded eighteen years ago the value of surrounding property has increased probably three-fold. The city has recently passed an ordinance forbidding the establishment within its limits of any tuberculosis institution without a license; though the presence of such an institution must be far less dangerous to the health of its citizens than consumptives living in boarding houses without any supervision.

Statements of leading residents and business men show that property in Sharon, Mass., has greatly appreciated in value since the sanatorium was started there fifteen years ago, some in its vicinity being now worth three times as much as it was then.

An exhaustive inquiry by Dr. King shows that since the Loomis Sanatorium was established ten years ago in Liberty, N. Y., values of property have increased one-third; that the population of Liberty and the surrounding towns has increased 14 per cent., or 2,465 persons, in the last five years, while the increase in the rest of the county has been but 124 persons; that the railroad passenger business has increased about 20 per cent each year for the last five years; that the roads are better, and that there has been no increase whatever in the prevalence of tuberculosis among the natives. This indicates that in any such community such an institution would be a benefit, not a drawback.

A similar inquiry as to the State Sanatorium at Rutland, Mass., established eight years ago, proves that during that period the valuation for taxation of property on the assessors' books has increased 36 per cent., that the population is greater and that the public health has not suffered.

Testimony of similar import comes from the mayor and the editor of the local paper at Gravenhurst, Ont., where there are two sanatoria, showing that the assessment of the town for taxation increased 44 per cent. in nine years and the population 25 per cent. in the same period. So also has initial prejudice been removed and a friendly feeling on the part of the inhabitants been secured by the experience of the Montefiore Country Sanatorium at Bedford, N. Y., and the White Haven Sanatorium at the old lumber town of the same name in Pennsylvania; while in a new country the Pottenger Sanatorium at Monrovia, Cal., shows that in spite of some adverse feeling population and values in the locality have greatly improved in the three years since it was built. The people of the farming community about the South Mountain Camp Sanatorium in Franklin County, Pa., appreciate the demand for produce which it has brought, and the older community of Wallingford, Conn., looks more kindly on the Gaylord Farm Sanatorium because it has increased business, brought visitors and apparently caused some increase in real estate values.

In addition to the opposition noted in the previous instances, it is stated in another case that while the institution has had no effect on surrounding values it is probable that the land could not be sold so readily if put on the market, as there is some prejudice in the minds of the laity in regard to such institutions. In another instance it is said that all are proud of the institution, though "everyone is scared of consumption;" in another that there is no question that the existence of the institution has prevented the erection of residences immediately adjoining it; in another, recently established, that there was very decided opposition in the whole community, which has changed to active support, and there is no opposition now; in another, in a city, that there was no opposition at first, but when tents were put up in the grounds objection was made for esthetic reasons; and in another city institution that there was strenuous opposition on the part of residents, which seems to have been unreasoning or due to personal prejudice, as they were not as a rule owners of property.

VARIOUS EXPERIENCES.

A study of these various instances indicates that twenty years ago there was indifference to the establishment in the neighborhood of an institution for the treat-

3. Statistical Abstract, 1905, p. 534.

ment of tuberculosis. A partial knowledge of the nature of the disease has produced a hypersensitiveness in regard to it and developed opposition which a fuller experience removes in time. In some cases this opposition is due to prejudice rather than to any feeling of danger or the possibility of any considerable decrease in the commercial value of property. This was apparently true in the circumstances attending the proposed establishment of a municipal sanatorium for New York City in April, 1903. Following the decision to erect one a desirable tract of 90 acres in Orange County was offered to the city, rent free, and definite steps for the erection of buildings on it about to be taken; but, as it is related that, before Buddha first went out from the palace where no mention had been made of "death or age, sorrow, or pain or sickness," the king commanded that there be seen "none that is sick, or stricken deep in years," and that "no feeble folk go forth," so the owner of a vast estate near the site of the proposed sanatorium, not being filled by the pity taught by Buddha's later life, also desired to see no feeble folk with hollow cheeks along the ways where he passed in his automobile, and having influence with the state government, succeeded soon in having the Goodsell-Bedell bill passed, in spite of the protest of the New York Academy of Medicine and of the declaration of the commissioner of public charities that it "would result for years to come in more sickness, destitution, suffering and death among the tenement-house population in New York than it was possible to calculate." This law compels the county supervisors and the town board each to adopt a permissive resolution, in addition to the consent already required from the state and local boards of health, before any municipal sanatorium for tuberculosis can be established anywhere in the state. Since it was made impossible to secure such consent, the site had to be given up. Other attempts to obtain one also failed and two years later the health department had to abandon a large and satisfactory tract of land offered it in Sullivan County because the town board refused to permit its purchase for the purpose; but in the summer of 1905 a fine location with more than 1,000 acres at Otisville, Orange County, on the Erie railroad, 76 miles from New York, was purchased, on which buildings nearly ready for patients have since been provided. Even then the Erie railroad agent, with the assistance of some people in the vicinity, did what he could to prevent the establishment of the sanatorium in the place.

Several months since a proposal by private parties to start a sanatorium on Long Island met with opposition, which, so far as I know, stopped it. Last year General Sternberg, for the Washington Sanatorium Association, had an option on a very desirable property in Rockville, Md., about 20 miles out of Washington, but before the transaction could be closed the town passed an ordinance prohibiting the location of any institution for tuberculosis within the city limits, making it necessary to look elsewhere. When a farm house with 6 acres of land was bought near Washington Grove the camp-meeting association of that place had a spasm of fear, and demanded that the sanatorium be called by some other name, which accounts for its being known as Starmont, after General Sternberg.

In the search for the best location for the state sanatorium in Ohio, 104 sites were offered besides the one of 357 acres near Mt. Vernon finally chosen, and in only one instance did opposition before the commission develop; but there is evidence of latent objection in some cases which would perhaps have become active if the location had been more seriously considered, and there was a very little in Mt. Vernon after the site was chosen, which was removed. No unfavorable effect on adjacent property has resulted from the clinic for pulmonary diseases in New York City, but a similar dispensary, which was being started a year ago by the health department in Brooklyn, was stopped by an injunction granted by Judge Marean of the Supreme Court, who declared in his opinion that the institution would be a "crying nuisance," and that the complainants, among whom was a doctor, were right in swearing that its establishment would cause them irreparable damage. A similar prejudice hinders the location of one in Columbus, Ohio, and of a day camp outside the city.

The mayor of Denver writes that the hospitals for consumptives in that city are so sanitary and kept so chemically clean that they are little, if any, more objectionable than any other kind of hospital; but the head of the health department of another large city, while declaring that there is no reason why institutions for tuberculosis should injure surrounding property, says: "I think, as a rule, people are opposed to such institutions, and that some would sell at a sacrifice were such an enterprise inaugurated in their neighborhood."

In the establishment of a sanatorium it sometimes seems that the real obstacle is the prejudice, the groundless fear, the unreasonable and unreasoning opposition of the people, in comparison with which the raising of funds, the removal of rocks and the construction of buildings are trifles. When such antagonism exists, whether just or not, it demands consideration, and any needless interference with values should be avoided. Experience has proved that there is absolutely no danger from a well-conducted sanatorium, and that there is no valid reason for fear in regard to it. Too much emphasis can not be laid on this point; but it is easier to explain this to the few people in the suburbs or in the country than to the many in a more thickly populated section. Whatever damage there is will be less in the case of property not already very valuable than in that of residential streets or fine suburban homes.

It is clear that in the wide choice which the present knowledge of the necessary treatment affords some place within the region in which it is needed may be found for almost every sanatorium yet to be erected, where a wise policy may benefit the community and make friends, as has been done in so many of the cases cited. The educational influence of each of these institutions, exerted through its patients, extends beyond its own neighborhood, and by increasing the knowledge of the nature of tuberculosis lessens the fear of it when proper care against infection is taken, as it is in all well-conducted sanatoria. The more completely this knowledge prevails the sooner will those in need of sanatoria seek their shelter, the shorter will be their stay, and the sooner will any unfavorable effect on surrounding property by reason of the purpose to which such institutions are devoted disappear.

Instruction in Materia Medica.—W. S. Fullerton, St. Paul, in the *Journal of the Minnesota State Medical Association*, says that if surgery were taught in the dilettante way that materia medica is in too many of our medical colleges, surgical cases would be to a great extent in the hands of the instrument makers, who would be instructing the surgeon through their commercial travelers, as the medicine houses are attempting to do with the general practitioner.

THE PHARMACOLOGY OF DIGITALIS.*

ROBERT A. HATCHER, PH.G., M.D.

Instructor in Pharmacology in Cornell University Medical College; Member of the Council on Pharmacy and Chemistry of the American Medical Association.

NEW YORK CITY.

The suggestion of this title for a paper was held to imply considerable latitude, since even a single phase of the pharmacologic action of digitalis could not be treated comprehensively in the time allowed to a single paper.

I shall attempt, therefore, only a brief review of the principal actions of the drug with a few remarks on the individual peculiarities of certain pure principles having a digitalis action, together with some observations bearing on the therapeutic use of the crude drug, its preparations and these isolated principles.

The digitalis action is most briefly defined as consisting in the characteristic slowing, followed by systolic stand-still of the frog's heart. As Heinz has said, this does not seem like a happy choice of definition, since it merely states a toxic action without even indicating how it is brought about, but it is useful since almost any drug which produces this effect may be used in the same way that digitalis is employed for the human heart.

Withering published a book on digitalis in 1785, since which time the drug has been the subject of considerable study. The diuresis which it caused was at first the only effect noticed or utilized, and it was about fifty years later that Blake (in 1839) reported the characteristic effect on blood pressure. Some years later (1851) Traube undertook to explain the cause of this action, but he did not define sharply the relative effects of digitalis on the heart and blood vessels.

About thirty years ago Schmiedeberg and his followers observed the action on frogs' hearts, and concluded that the blood pressure effects were attributable solely to the action on the heart, which was of a specific nature. Kobert, however, showed that the vessels undergo constriction, and therefore participate in the rise of blood pressure.

When Williams devised his celebrated apparatus, and Herring and Bock evolved their method of perfusing the mammalian heart, the way was opened for the more exact study of the action of digitalis.

The literature of this subject is so vast that I can not attempt to mention all the sources from which our information is drawn, but will merely select a few bearing on the practical application of the drug in therapeutics.

It will be most convenient perhaps to consider the subject in the following order:

1. Pure slowing. Its cause and effects.
2. Pure general muscular actions and their effects.
3. Pure vascular actions—causes and effects.
4. The net circulatory effects.

The central action will be considered mainly with reference to its peripheral effects.

SLOWING OF THE HEART.

Slowing occurs in the atropinized frog's heart from the action on the muscle causing a veratrin-like condition, whereby the systole is increased at the expense of the diastole. Obviously, this alone would cause but little improvement in the circulation, save possibly at the very first, when the increased contraction may result in expelling more blood, particularly if the irritation of the muscle partially or completely overcomes the tendency toward slowing due to the increased systolic phase. Without atropin, the peripheral vagus mechanism participates in the cause of slowing in the frog, but not in the mammal to an appreciable extent, according to later observers.

In the intact mammal the vagus center is effectively stimulated, and causes slowing through an influence directly opposite to that of the muscular action, since vagus stimulation causes a true muscular inhibition, hence diminution of systole or an increase of diastole at the expense of the systole. In a high-grade stimulation of the center, the diastole may be increased to many times its normal duration. Ackermann did not observe any slowing or increased dilation after atropin, and Gottlieb and Magnus found the slowing in the Langendorff heart negligible, while vagotomy produces almost the same result.

Pure slowing must tend to lessen circulation and to cause a fall of blood pressure, which must actually occur if the slowing be sufficient to counteract other influences, but the lengthened diastole permits an increased volume of blood to enter the heart and also affords longer periods of rest. Slowing lessens the coronary circulation if the systolic phase predominates, but each separate contraction squeezes out the venous blood, permitting a fresh supply of arterial blood during each diastole; on the other hand, a lengthened diastole affords a longer period during which blood may flow through the coronary arteries, and if this phase predominates the longer period of free circulation may compensate for the more frequent renewal obtained by a faster heart. Another advantage obtained by pure slowing is the better opportunity for the great vessels to empty enough of their contents to lessen their distension and the subsequent resistance against which the heart must contract, and the substitution of resilient for more nearly rigid tubes of liquid.

CARDIAC EFFECTS.

The purely muscular effects are much alike in all animals and have been most frequently studied on the frog's heart. Primary quickening, due to muscular irritation, is often seen before vagus stimulation in experiments, but this soon gives place to slowing from the causes mentioned.

Certainly the most typical muscular action is seen in the tendency to remain contracted, which at first causes only lengthened systole and shortened diastole and later systolic stand-still. The capacity of the muscle for rhythmic contraction is not impaired or abolished at this time, as Schmiedeberg showed by distending it by force, when normal contractions ensued for a short time, soon giving place to paralysis of the function, the heart remaining contracted.

Schmiedeberg considered the chief effect of digitalis on the muscle as leading to an increased elasticity, a larger volume of blood entering the ventricle, which then resumed its normal systolic position. He was unable to perceive any increase in the total capacity for work or maximum strength, but supposed that digitalis merely made the energy more available. While it seems that this must be true for the latter statement, it has been found that the heart is capable of contracting more forcibly (maximum increased) under isometric conditions, and that a larger volume is expelled under isotonic conditions. There is, therefore, practically an

* Read in the Section on Pharmacology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

increase in the total maximum force, as well as the total energy because of the action of digitalis on the heart.

Heinz was unable, however, to get an increase in the absolute strength of the mammalian heart.

François Frank obtained an increased maximal force of contraction, and Gottlieb and Magnus, using the most perfect methods whereby they eliminated such disturbing factors as changes of temperature and alterations of coronary circulation, found that, when under the influence of digitalis, the heart would support a higher column of liquid.

The improved systole, whereby the ventricle is more nearly emptied, following the lengthened diastole, which permits of the increased distension by a greater volume of blood, must result in an increase in the volume of each pulsation, in some cases to the extent of 50 per cent., and this is usually more than sufficient to compensate for any slowing that occurs, hence there is an increase in the total output in a unit of time.

This single fact must mean an increase, if not improved, circulation. This will be mentioned later.

VASCULAR EFFECTS.

The vascular effects of digitalis and its isolated and related principles have been the subject of much dispute since Kobert showed that vasoconstriction occurs.

The several obvious proofs of vasoconstriction are afforded by the microscopic observation of the vessels in the web of the frog's foot; by a rise of mammalian blood pressure before the cardiac effects are produced; by oncometric measurement of certain organs; and by the fact that the circulation time in excised organs is increased by digitalis.

The latter experiment demonstrates that the action is in part at least peripheral, and since it occurs after the nervous elements are supposed to have ceased to function it is attributed to muscular action. That the center participates in the action in the intact mammal is not denied, and the reflexes appear to play a very important rôle in the case of certain of the pure principles to be mentioned presently.

The three principal points of therapeutic interest in connection with the vascular effects are: The general rise of blood pressure which occurs, the want of participation in the constrictor action on the part of the pulmonary circulation, and the different effects of the various principles on the coronary circulation. The coronary circulation is commonly lessened by digitalis in perfusion of the isolated heart, since the vessels are constricted.

CIRCULATORY EFFECTS.

These constitute the summation of all the actions just considered.

As previously stated, the total output of the heart must obviously control the amount of blood which passes through the arteries. Cushny specifically states that digitalis causes more blood to be driven out of the heart in the therapeutic stage, owing to the predominance of the systolic phase (cardiac effect). But he also states a few lines further on that digitoxin (and that may be considered as having the same action as digitalis) retards the outflow from all the arteries. It is incredible that the output of the heart for a unit of time, which amounts to 50 per cent. in some cases, can be attended with a slower circulation, but Sollmann also states that the velocity is diminished.

A slight increase over the therapeutic dose may cause the inhibitory phase to prevail and the output of the heart per unit of time will be diminished because the heart is greatly slowed, while the systole and diastole are altered but little.

A high blood pressure at the beginning of the systole will evidently increase the work of the heart which in turn must receive increased nutrition or become exhausted. If the systole persist until the aortic pressure has fallen materially, there will be less pressure to drive the blood through the coronary circulation during diastole, and the three factors—slower pulsations, constricted coronary vessels and inability to utilize the maximum blood pressure—must prevent as perfect nutrition of the heart as will occur if they do not coöperate.

On the other hand, more perfectly aërated blood displaces the venous blood, because of the more thorough squeezing out of the arteries and capillaries at each stroke, partially compensating for the disadvantages mentioned.

While the vasomotor center contributes to the rise of blood pressure, it appears that the musculature of the arteries is a more important factor in digitalis and some of its principles.

DIGITALIS, AND ALLIED, PRINCIPLES.

But little was known of the active principles of digitalis until Schmiedeberg's celebrated investigation was published about thirty years ago. He studied the seeds and extracted digitoxin from the leaves. Since then very small amounts of digitalin and digitonin have been found in the leaf. Keller was unable to find digitalein, which he considered as merely a mixture of digitalin, with a little digitonin. He worked with very small quantities of the leaf, which may account for his failure to find the digitalein.

Digitalin was investigated pharmacologically and clinically and bade fair to come into general use, but at the present time it is of little practical importance.

Digitoxin more nearly represents the leaf, but the presence of traces of digitonin in the latter tend to counteract the vasoconstrictor action of digitoxin and probably modifies it to a considerable extent.

Despite the numerous disadvantages of digitoxin, it bids fair to displace digitalis in therapeutics. Among these disadvantages are: Its insolubility in water and consequent irritant action, slowness to act and tendency to cumulative effect; its proneness to decomposition, whereby toxiresin is formed; the narrow margin between the effective dose and that which causes accumulative effects on continued use; and its marked vaso-constrictor effects, which may, or may not, be objectionable, dependent on the case in hand.

The irritant action is responsible for the gastrointestinal and cardiac effects, and it precludes its subcutaneous injection. This insolubility also seems to be responsible for the delay of forty-eight hours or more in inducing the cardiac effects, the rapidity of action of those principles appears to be proportional to the readiness with which they combine with the sensitive apparatus in the heart, while the cumulative effects seem to be in proportion to the stability of the combination.

It has been urged that the ease with which digitalis may be washed from the heart precludes any fine molecular combination in the muscle.

Digitoxin does not cause a greater vasoconstriction in the splanchnic area than in the periphery, and it appears to be capable of restoring the rhythm of the heart to an extraordinary degree when this is disturbed by pathologic conditions, apparently by virtue of its lessening the susceptibility to abnormal stimulants.

It will be noticed that the prineipal objections to digitoxin are eonnected with its insolubility, and Cloetta has sueeeeded in preparing a soluble, amorphous digitoxin, whieh may be injeeted subcutaneously.

I have not been able to find an aecount of the proeess of manufacture, but his original artiele is usually quoted to the effeet that it is prepared by a very complicated process, evolved after five years of effort. This preparation, called digalen, is marketed by the firm of Hoffmann, LaRoehe & Co., which, so Cloetta states, despite the trouble and expense amounting to 11,000 marks per kg., has happily undertaken the preparation, selling it at but 2 marks (48 eents) for a small vial so that it may be universally used.

Quite a bit of philanthropy, it would appear, but when we reflect that a kg. costing 11,000 marks eontains 3,000,000 doses and sells for 440,000 marks ($105,600), the philanthropy becomes less obvious.

While clinical evidenee seems to show that digalen is an effective substitute for infusion of digitalis, Karl Reitter, in Schrötter's clinie in Vienna, was unable to obtain the therapeutic effeet with less than 6 c.c. (6 mg. daily), and finds it no better than the leaf and more expensive.

This preparation presents the anomaly of requiring a mueh larger dose when injected intravenously, presumably beeause of its rapid elimination by the kidney, and it will be interesting to know what the effect will be on that organ of the eontinued administration of so irritant a substanee.

STROPHANTHIN.

Loeb found that strophanthin had much less eonstrietor effect on the coronary circulation than digitoxin has. This is of much importance, as it has been shown that the heart tension, or strength, is dependent on blood supply to an extraordinary degree. If an agent causes general vasoconstriction it means that the heart must contract against an increased resistanee, and if the constriction of the coronary vessels is pronounced, the blood supply of the heart may be diminished despite high aortic pressure.

P. Maas has shown dilator and constrietor nerve fibers for the coronary vessels, but we can not study blood supply of the heart when the vessels are under central control in the mammal.

Strophanthin possesses the typical digitalis aetion; it can be prepared in constant and stable form, it is not expensive, it can be given for long periods without indueing cumulative effects (Fränkel having given it to a cat in just submaximal doses for ninety-two days). The effeetive dose lies much further from that which eauses cumulative effects than in the case of digitoxin. It is quite soluble in water, hence mueh quieker to act. This oeeurred in three hours as against forty-eight hours for digitoxin. It is much more active and less irritant than digitoxin.

Sollmann has suggested that it probably deserves the preference over digitalis, and it has been used with satisfaction in Franee, Holland and Belgium, but for some reason many species of seed, many of them inert, have been brought into Germany and the United States, and some tinctures were found to be but one-sixteenth as strong as others. This has caused the crude drug, its preparations and its pure principle to fall into disrepute.

ANTIARIN.

This substance is of such extraordinary power that 1-10,000 of a milligram causes slowing of the frog's heart and 1-1,000 mg. causes systolic stand-still, being apparently 250 times as active as digitoxin.

Hedbom studied its aetion and that of antiarigenin—which he found but slightly toxic to the mammalian heart, though differing from antiarin only in the loss of a molecule of glucose. The extraordinary difference in the activity of these principles suggest that they possess an active nucleus so combined that it enters into more effeetive combination with the sensitive apparatus of the heart in some cases than in others, and it seems probable that further research may discover means of modifying some of the many more aetive principles of this type.

OBSTACLES TO USE OF DIGITALIS.

The greatest obstacle to the use of digitalis and its preparations arises from their variability, due to differences in methods of colleetion and preservation.

It has been shown that leaves gathered in the proper season quickly dried, cut up, dried thoroughly in a vacuum and hermetically sealed, will undergo but little change in a year. We should, therefore, demand leaves which have been thus preserved and physiologically tested on the frog's heart, with the date of the test stamped on the paekage, as is done with sera.

Kobert tested leaves which had thus been dried and made into tablets with sugar of milk and stareh, finding them effective.

This may appear as too eomplicated for praetiee, but there is no reason why such leaves should not be sold very much cheaper than the nostrums which are being so much lauded as possessing all the virtues and none of the objectionable features of digitalis.

414 East Twenty-sixth Street.

PHARMACOLOGY OF VERATRUM.*

HORATIO C. WOOD, JR.
Demonstrator of Pharmacodynamics, University of Pennsylvania.
PHILADELPHIA.

I firmly believe that if pharmacologists, instead of spending their time investigating eommercial synthetics would direet their energies to more careful study of pharmacopeial remedies, the world would be greatly benefited. A splendid example of the general ignoranee concerning drugs which we eall "well-known" is found in the ease of the veratrums. When the statement is made in standard works on pharmaeology, that the aetive principle of *Veratrum viride* is veratrin, and that this plant is useful only as a local application, it becomes evident that there is room enough for more accurate knowledge even among those who devote their attention espeeially to the study of drugs.

Before eonsidering the properties of *Veratrum viride* I would like to discuss for a moment the question of the identity of *Veratrum album* with this plant. The Eighth Revision of the U. S. Pharmaeopeia has reeognized *Veratrum album* as equivalent to *Veratrum viride,* making one title, veratrum, to refer to both plants. I shall not go into the diseussion of the botanieal relations of green and white hellebore, as this question seems at present impossible of final deeision. It may be dismissed with the

* Read in the Section on Pharmacology and Therapeutics of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

statement that the majority of botanical authorities seem to hold the plants, not as specifically distinct, but as varieties; the differences between the two being only such as might be expected from different soils and climatic conditions.

While the alkaloidal contents of the two plants are in a general way very similar the alkaloid veratrin or cevadin, of which traces are discoverable in *Veratrum viride,* seems to be entirely absent from the European variety, so that it can not be claimed that their chemical compositions are identical. Moreover, it would seem that the relative proportion of the various alkaloids common to both plants is different. The reported cases of poisoning seem to show that vomiting and purging are more frequent and more pronounced after *Veratrum album* than by *Veratrum viride;* in other words, that the European variety contains more of the irritant principle, be it a resin or the acrid alkaloid rubijervin. In a study of the comparative effects of the two rhizomes, in 1899.[1] the conclusion was reached, that although, as a rule, the white hellebore was somewhat the more toxic of the two, the differences between them were no greater than might exist between individual specimens of *Veratrum viride.*

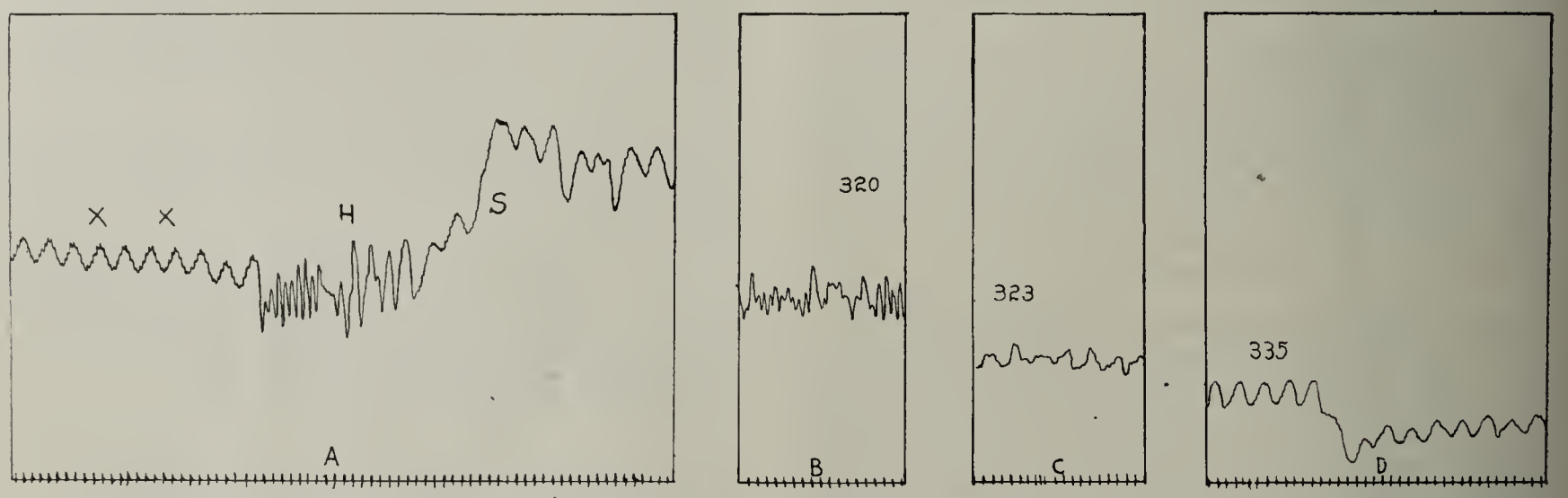


Fig. 1.—Atypical effects of *Veratrum viride.* A. This shows the rise frequently seen after a large dose of *Veratrum viride;* (x) indicates injection of 1 c.c. 25 per cent. solution of *Veratrum viride* (0.25 gm.). Both pneumogastric nerves have been cut, the animal crurarized and artificial respiration employed. H. Heart rapid. S. Slight convulsion. B. Five minutes later. C. Eight minutes later. D. Twelve minutes later. No drug has been given.

I believe, however, that the recognition of the two plants as identical was progressing backward.

Frequent observations of the effects of *Veratrum viride* on the circulation, as well as systematic studies of the drug, have impressed steadily on my mind the irregularity and uncertainty of the effects of this plant. Frequently have I been quite at a loss to explain to my classes the extraordinary effects which have followed the injection of this drug. These differences are very evidently to be explained by varying amounts of one or other of the several alkaloids; to this question I shall revert shortly.

The effects of veratrum on the circulation of the normal animal differ entirely according to the size of the dose which has been administered. If into a dog is injected what might be spoken of as the therapeutic dose of the drug ordinarily there is produced a distinct slowing of the pulse with a moderate fall of blood pressure (Fig. 1.). These conditions last for a considerable period of time and are followed by a gradual return to the normal. With the large toxic dose there is produced a marked slowing of the pulse, sometimes even complete arrest of the heart, with a fall of pressure almost to the zero line; suddenly the pulse becomes enormously rapid and the pressure rises to a height very much beyond the normal and continues so for several minutes, until it rapidly falls immediately preceding death. During this period of elevation of pressure it will be noted that the respiratory movements, if present at all, are usually ineffectual, and there is very frequent asphyctic struggling of the animal. The rise of pressure is generally attributed to the asphyxia; I have, however, performed recently two experiments in which in spite of artificial respiration the same sequence of events occurred, so that I believe that there is another cause for this toxic rise of pressure which I shall mention later.

In view of the inequalities of the effects of veratrum evidently it would be preferable to employ its active principle were such principle known. There appear to be five alkaloids in the plant, of which veratrin is present in such small amount that it can have practically no part in the general effects of the drug; while pseudojervin seems practically inert. This leaves three alkaloids to which might be due the poisonous properties of the drug; these are jervin, rubijervin and protoveratrin.

In considering the question as to which of these alkaloids is due the activities of the plant, we must bear in mind the therapeutic use of the remedy. Although the eclectics attribute to American hellebore "adenagic" virtues, whatever that means, the regular profession employs it almost solely for its influence in reducing blood pressure and in quieting the heart. In other words, the therapeutic use of veratrum is to slow and soften the pulse and to lower the arterial pressure.

Of the three alkaloids which contribute to the action of the crude drug, protoveratrin is undoubtedly the most actively poisonous. According to the experiments of Eden,[2] the fatal dose for the rabbit of this alkaloid is 0.11 milligrams per kilo, approaching, therefore, aconitin in its toxicity. The symptoms produced by it are muscular weakness, a peculiar dyspneic type of respiration and frequently convulsions. The blood pressure, following the intravenous injection, may undergo a temporary reduction but eventually rises to a point very much above the normal, the pulse rate, in the meanwhile, being markedly reduced. If the vagi have been previously divided the primary fall of blood pressure does not occur, so that it is evidently due to the slowing of the pulse. If the dose has been large enough the stimulation of the inhibitory mechanism gives way later to a

1. H. C. Wood and H. C. Wood, Jr.: Amer. Jour. Med. Sci., May, 1899.

2. Arch. f. Exper. Path. u. Pharm., 1892, vol. xxix, p. 440.

paralysis. These changes in the circulation occur in curarized animals, with artificial respiration, and therefore, and quite independent of any disturbance either of the respiratory center or of the motor apparatus. Late in the poisoning there occurs a stage in which asphyxia fails to produce a rise of pressure, so that it would seem that finally the vasomotor centers become paralyzed.

In experiments in which the spinal cord was previously divided the drug was still able to produce marked elevation of the blood pressure. To sum up, protoveratrin is a primary stimulant to the pneumogastric nerve, to the cardiac muscle, and probably to the vasomotor center. A toxic dose paralyzes the peripheral vagi and the vasomotor centers and produces a peculiar arrhythmic condition of the heart. It is evident, therefore, that although this alkaloid is the most poisonous substance found in the plant it can not be held responsible for the therapeutic uses of the drug, since, in therapeutic dose, it is a stimulant to the heart, rather than a depressant. I believe that the peculiar elevations of pressure sometimes seen after the injection of large doses of *veratrum viride* may probably be attributed to the stimulant effects of protoveratrin; when only a moderate dose has been employed the proportion of this alkaloid is so small that it fails to modify the action of the drug and facts would seem to indicate that it is to jervin that veratrum owes its therapeutic value (Fig. 2).

A study of the comparative power of the alkaloid and the crude drug, however, throws grave doubt on this conclusion. Jervin appears to be present in the root of *Veratrum viride* in the proportion of from 0.1 to 0.13 per cent. If it were principally to this alkaloid that the circulatory depressant influence of the plant is due jervin must be a substance of marked power. Such, however, is not the case. In my own experiments the intravenous injection of 0.02 Gm. of the alkaloid produced in a moderate-sized dog a fall of pressure amounting to only 10 millimeters of mercury, a drop almost negligible. The injection of 0.05 Gm. in two doses produced a fall from 180 to 155 millimeters, or a drop of about 15 per cent. In another animal of about the same size the intravenous injection of 0.25 c. c. of fluid extract of *Veratrum viride* produced a fall of from 200 to 160 millimeters. So far as my present evidence allows me to conclude, I believe that the quantity of jervin required to effect the circulation is about one-fifth of the dose of the rhizome of *Veratrum viride*. Evidently there must be some other principle which shares with jervin the responsibility for the action of this plant.

It is impossible for me to compare the fatal doses of this alkaloid and the rhizome because I have been unable

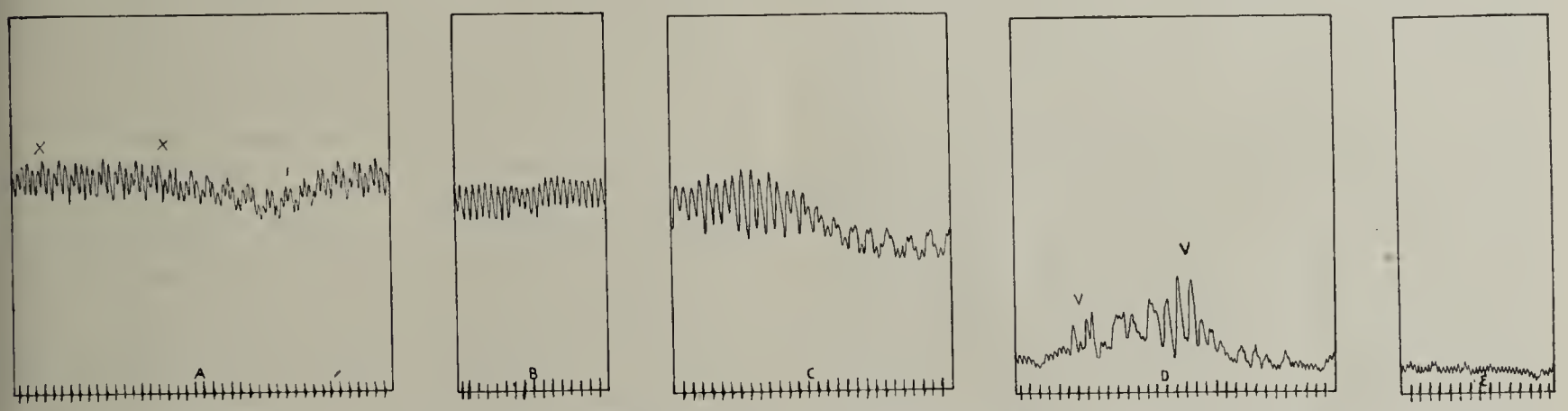


Fig. 2.—The physiological action of jervin. A, Five c.c. of 0.5 per cent. jervin (0.025 gm.) injected intravenously. B. One minute later. C. Fifteen minutes later, 12 c.c. of jervin solution injected. A total of 0.15 gm. has been injected. D. Fifteen minutes later, total of 0.18 gm. has been injected. V. Irritation of vagus. This shows the slight irritability of the vasomotor center on stimulation of the vagus.

may even favor the fall of pressure by slowing the pulse rate.

In 1874, an exhaustive study of jervin and veratroidin was made by H. C. Wood.[3] The substance known at that time as veratroidin seems to have been an impure form of rubijervin. Rubijervin is a comparatively feeble substance, present in very small quantities. Its dominant action is on the respiratory center, although it appears also to have some depressant influence on the heart muscle, as well as slowing of the pulse through stimulation of the inhibitory mechanism. It is present in the plant in the amount of 5 parts in 100,000.

Of the five alkaloids which have up to the present time been found in veratrum, we have excluded all save jervin as of therapeutic use. In the studies made by H. C. Wood, in 1874, it was found that this alkaloid produced a primary slowing of the pulse which later became rapid, with a progressive fall of the arterial pressure, due, he believed, in part to an action on the cardiac muscle and in part to the depression of the vasomotor centers; there was also a simultaneous or subsequent failure of respiration. These experiments I have very recently repeated with essentially similar results. These

3. Phila. Med. Times, vol. iv.

to kill a dog with it. In one experiment I injected into a dog weighing 9.6 kilos, 0.2 gm. of jervin (which was all of the alkaloid I had at my disposal) intravenously; it produced a very decided fall of pressure, from 180 millimeters to 65, but with no symptoms suggesting a probable fatal issue.

According to Eden, the minimum fatal dose of protoveratrin is 0.5 milligrams. Supposing that this alkaloid was present in the proportion of 0.03 per cent. in the rhizome of *Veratrum viride,* it would require 1.5 gm. of the crude drug to produce the fatal dose of protoveratrin. On the other hand, from the comparative studies already quoted, made by H. C. Wood and myself some years ago, we found the minimum fatal dose from hypodermic administration of the rhizome to be about 0.2 gm. In other words, if protoveratrin is the chief active toxic principle of *Veratrum viride* the quantity present is so small that the alkaloid would have to be seven times as active as even the extraordinary figures given by Eden.

From the above evidence it seems to me the following conclusions may safely be drawn:

First.—Neither veratrin nor rubijervin are present in *Veratrum viride* root in sufficient amount to be held responsible in any degree for the activity of the drug.

Second.—Protoveratrin, although an extremely poisonous substance, differs essentially in its effects from the veratrum rhizome, and, therefore, is not to be considered its active principle. Moreover, the proportions of it are too small to permit of its being considered the toxic ingredient.

Third.—Of the known proximate principles, jervin most nearly corresponds in its physiologic action to the crude drug, but is present in too small amount in proportion to its toxicity to be considered the chief active ingredient.

Fourth.—The evidence, therefore, seems to me conclusive that there is in *Veratrum viride* some active substance as yet undiscovered.

DISCUSSION

PAPERS OF DRS. HATCHER AND WOOD.

DR. S. P. BEEBE, New York, said that Dr. Hatcher spoke of Cloetta having prepared a preparation of digitalis, apparently a very effective one, which has most of the advantages and very few of the disadvantages of other extracts, yet there has been no detailed publication of the method by which this substance is made. A publication which says that it is made by a very complicated process after investigations lasting five years, Dr. Beebe thinks is a very flimsy excuse for not publishing full details. It is treating the pharmacologists of the world as if they were children. He thinks that Cloetta should receive a rebuke. He thought that the Section on Pharmacology and Therapeutics might pass a vote condemning Cloetta for doing what would be condemned among its own members.

DR. HENRY R. SLACK, La Grange, Ga., said that he had tried thyroid extract in a great many diseases, but in only two has he gotten any good results, in cretinism and in myxedema. Digitalis, he thinks, is the surest of all therapeutic agents. It is to be hoped, he said, that the investigation of the different alkaloids will continue and that it will finally be decided which one is the best to employ. Up to this time his experience with any individual alkaloid has been thoroughly disappointing. The clinical results obtained in his practice have come from the use of powdered leaves or from the infusion and some tinctures. The alkaloids, without exception, have been disappointing. In acute diseases strychnin, in his hands, has been of much more benefit. In chronic diseases of the heart digitalis has been and is the sheet anchor. Brilliant results are obtained from its use in chronic forms of heart disease, with general anasarca. Veratrum, he said, is used in the South very extensively in pneumonia. When there is high fever, flushed face, bounding pulse, doses of veratrum act like a charm to reduce the temperature.

DR. WILLIAM F. WAUGH, Chicago, regretted that Cloetta did not make plain his process of producing soluble digitoxin because in it he seems to have made two very remarkable discoveries. He has found the means of making digitoxin soluble, and effects are gotten within an hour. Dr. Waugh has not yet been able to make out any difference in the effect of digitoxin and digitalin. The two apparently are identical in effect. He agrees with Dr. Wood that veratrin is not the only active principle of veratrum. There is a decided difference between the action of veratrum and veratrin. Veratrin increases, to a certain extent, vascular tension by way of increasing directly the muscular force of the heart; but the two are identical in one action, that is, in opening the eliminants. In their effect of stimulating elimination Dr. Waugh has not been able to find any distinction between veratrin and veratrum. In the stomach and bowels, in doses far below the amount necessary to produce the toxic effect, either will irritate the stomach. Veratrin has a more powerful effect on the respiration. That might be a desirable thing in treating pneumonia. It remains for the clinicians to say how best to use it. Practically no difference is found in the clinical applications of the two. While veratrin is not the active principle of veratrum, over a great part of the field of action veratrin can be used as a substitute for the other.

DR. W. J. ROBINSON, New York City, was of the opinion that papers of this character are not proper papers to be read before the association. These papers are to be slowly and carefully digested. Physicians come to this meeting, he said, to learn something of practical value in their practice, and he doubts if any one got one grain of value from all the statements about veratrum. Apparently nothing is settled about this subject. About every statement Dr. Wood made he said, "*seems;*" "seems to be the chief alkaloids," "seems to be the chief principle," and so on. Dr. Robinson believes it is better that such papers be not read. They may be printed in the transactions, but not read. If they are printed and distributed beforehand, intelligent discussion can be had.

As to Cloetta, before passing censure on him, he said it would be well to be sure of our ground. So far as his recollection goes, Cloetta did not publish a paper on soluble digitoxin. He knows that it is used with remarkable results in many of the hospitals, and it seems generally to act within five minutes; in fact, in one minute its effects can be seen on the pulse. He has not used it himself, but he follows carefully the literature on new preparations, and so far all the reports on digalen are very favorable.

DR. REID HUNT, Washington, D. C., remarked that at least one member must have paid close attention to both papers, else he could not have discussed them so fully.

MR. M. I. WILBERT, Philadelphia, requested Dr. Robinson to refer him to the literature which describes this process. Dr. Waugh made a suggestion, he said, which he thinks has occurred to many others, that is, that digalen, this soluble digitoxin, has an action similar to German digitalin. If that be true, and it probably is true, it would suggest that digalen is not pure digitoxin, but a mixture of principles, similar to the German digitalin, and, therefore, is ordinary digitoxin made soluble by the addition of some of the other proximate principles of digitalis. This is also suggested by a sample of digalen, that he had in his possession, which contained insoluble material. Exactly what this insoluble material is he is not prepared to say, because the vial is still sealed, and he is looking for several others to have them tested subsequently. It is possible, however, that the addition of other materials to the digitoxin is made in small quantities, that the digitoxin may precipitate, and, being precipitated, be given in one dose with very fatal results. He simply suggested this as a possibility. He did not say that the insoluble material in this vial is digitoxin, but, if the mixture is digitoxin, soluble only under certain conditions, and precipitation occurs, that may prove dangerous.

DR. C. S. N. HALLBERG, Chicago, considered the papers appropriate and said that the papers demonstrated that there has been no scientific work done on the veratrums since the famous controversy of thirty years ago by Mitchell and Bullock in Philadelphia. It is a fact, as Dr. Wood stated, that veratrin is used promiscuously instead of veratrum. Dr. Waugh, he said, claimed that there is a decided difference between the action of veratrum and veratrin. That is another question. The point is this: The new Pharmacopeia has placed under the generic title *Veratrum* the two veratrums, *viride* and *album*. The question is, are physicians who have been using Norwood's tincture willing to let the pharmacist give a preparation of *Veratrum album*. Dr. Wood's paper announced to the physician that when he prescribes veratrum he gets the tincture of *Veratrum viride*. It has demonstrated that there has been no work done on veratrum of recent years. Nothing is known about the active principles of veratrum, and very little of the difference between the tincture of digitalis and the infusion. When the diuretic effect is wanted they are to-day the best representatives of this drug. *Digitalinum germanicum*, on account of the name, was all the rage four or five years ago. So he thinks Dr. Hatcher was perfectly justified in calling attention to Cloetta's preparation, telling what it is or what it is not. That is the kind of work that ought to be done in this Section.

DR. R. A. HATCHER, New York City, said he was better aware of the incompleteness of his paper than any of the audience, knowing what he had to leave out, but he thinks it is very important to call attention to the fact that we are prone, like sheep, to follow the German-made advice regardless of its application. It is astonishing to look over the literature

and find how highly this Cloetta stuff is lauded by men who quoted verbatim from the announcement of the manufacturers. Cloetta suggested some years ago that he believed that digitoxin would be rendered soluble by digitonin. By going back a few years and looking over the literature it will be found that digitalin was lauded just as Cloetta's product is to-day. After all, they go back to digitalis leaves. What probably happens is, the digitoxin is held in suspension by digitonin. Mr. Wilbert's suggestion that digalen is not pure digitoxin, but a mixture of principles, or else that decomposition products have been formed, suggests that here is something more dangerous than was supposed before, since it is possible to give a very large dose unwittingly by the use of digitoxin in a soluble form.

DR. H. C. WOOD, JR., Philadelphia, said that there is a plant known as *Theobroma cacao* from which is produced a popular beverage, cocoa. The similarity of names leads many students to believe that the chocolate plant is the origin of cocain. This ridiculous conclusion is no more absurd than that veratrin and veratrum viride are identical. Veratrum viride and veratrin have no connection, properly speaking, with each other.

FIBROID TUMORS OF THE UTERUS.

A STUDY OF THE DEGENERATIONS AND COMPLICATIONS IN TWENTY-TWO HUNDRED AND SEVENTY-FOUR CASES.

CHARLES P. NOBLE, M.D.

Surgeon-in-Chief, Kensington Hospital for Women; Gynecologist to the Stetson Hospital.

PHILADELPHIA.

(*Concluded from page 2003.*)

FIBROMYOMATA A CAUSE OF STERILITY.

Olshausen[44] states that women having fibroid tumors are often sterile. Among 1,731 married women there were 520, or 30 per cent., who were sterile. As the sterile women are those who most frequently come under the physician's observation, the true percentage of sterility is probably lower. Small subserous fibroids frequently prevent conception by distortion and displacement of the adnexa. Interstitial fibroids form a considerable hindrance to conception, through the changes in the endometrium and the deformity of the uterine cavity which they produce. Cervical fibroids and cervical polyps usually prevent conception, although there are exceptions to this rule.

The statements of Olshausen commend themselves to all those who have large experience in dealing with fibroid tumors.

THE INFLUENCE OF FIBROID TUMORS ON PREGNANCY AND LABOR.

Olshausen,[44] from the statistics of numerous writers, concludes that the position of the child *in utero* is considerably influenced by the presence of myomata in the cervix or in the lower uterine segment. For example:

Presentation.	Normal.	Fibroids.
Vertex	95 per cent.	54 per cent.
Breech	3.1 per cent.	24 per cent.
Transverse	0.6 per cent.	19 per cent.

He quotes numerous authors concerning dystocia in labor, complicated by fibroids. Süsserott collected 147 cases; in 20 the forceps were used; 8 mothers and 13 children died. Nauss had 19 forceps deliveries in 241 cases; there were 5 maternal deaths. The mortality from version in fibroids is startling. Defour states that in 35 cases, 21 mothers and 27 children died. In Süsserott's 20 cases. 12 mothers and 17 children perished. Nauss reports 26 cases with 20 maternal deaths.

44. Olshausen: "Myom und Schwangerschaft," Veit's Handbuch der Gynäk., 1897, vol. ii, p. 767.

J. Whitridge Williams[45] quotes Pinard as reporting 84 cases of fibroid tumor in 13,917 consecutive labors, or 0.6 per cent. Labor was spontaneous in 54, operative aid was required in 30, and the maternal mortality was 3.6 per cent. Williams states that submucous myomata, on account of the associated hemorrhagic changes in the endometrium, predispose to abortion or miscarriage. Pregnancy also influences the tumors, causing them to increase rapidly in size, more as the result of edema than of actual hypertrophy. The softened tumors, owing to the pressure of the growing ovum, undergo changes in shape, the pedicles may become twisted and gangrenous, and peritonitis may ensue.

At labor, the effect of the myoma depends on its size and situation. Generally speaking, subserous tumors have no great significance, except when their size leads to pressure symptoms. On the other hand, a pedunculated tumor may prolapse into the pelvis and give rise to serious dystocia. As a rule, interstitial fibroids of the lower uterine segment or cervix offer serious obstruction to labor. Fibroids in certain cases seem to predispose to placenta prævia and postpartum hemorrhage. In the puerperium, myomata not infrequently undergo degenerative changes—sometimes gangrene—if they have been subjected to prolonged pressure.

The results reported after forceps and version might be and probably would be improved by substituting the Porro operation, which would not only deliver a living child, but at the same time cure the woman of her fibroid tumor.

Lack of space prevents a further study of the relation of fibroid tumors to labor, but it is well recognized that in certain cases they produce death from dystocia, from accidents to the tumor (such as twisted pedicle, necrosis and infection of the tumor), and that one of the more serious risks of labor complicated by fibroid tumors is postpartum hemorrhage, as the presence of the tumor in the uterus interferes with the normal contraction and retraction of the uterus after the expulsion of the placenta. Nevertheless, there is a general consensus of opinion among those best qualified to judge that the relation of fibroid tumors to pregnancy is most marked in the production of sterility, and that unless unfavorably situated (that is, submucous and particularly in the lower segment of the uterus or in the cervix), women with fibroid tumors of moderate size will probably go through pregnancy and labor without serious trouble. I am not familiar with statistics dealing with a sufficiently large series of cases to state the actual risks entailed.

COMPLICATIONS OF FIBROMYOMATA OUTSIDE THE TUMOR AND UTERUS.

In addition to the deaths which would ensue from degenerations in the tumor and complications in the uterus as a result of fibroid tumors, in 252 women there existed the following complications outside of the tumor and uterus which would have proved fatal without operation in the series of 2,274 cases:

Dermoid cyst, suppurating	3
Dermoid cyst with twisted pedicle	1
Dermoid cyst, suppurating; sinus through abdominal wall from previous drainage operation	1
Ovarian cyst, suppurating	4
Ovarian cyst, twisted pedicle	2
Ovarian cyst, bilateral	16
Ovarian cyst, unilateral	115
Carcinoma of ovary	4
Papillary carcinoma of both ovaries	1
Abscess of ovary, bilateral	2
Abscess of ovary, unilateral	9
Tubo-ovarian abscess	2
Abscess of broad ligament	1
Pyosalpinx, bilateral	33

45. Obstetrics, New York, 1903, p. 574.

Pyosalpinx, unilateral	36
Pyosalpinx with tubo-ovarian abscess	2
Pyosalpinx and salpingitis	7
Hydrosalpinx with tubo-ovarian abscess	1
Salpingitis with tubo-ovarian abscess	3
Intestinal obstruction, chronic	7
Intestinal obstruction, acute	2
Total	252
	11 per cent.

Some other conditions would no doubt prove fatal in a certain percentage of cases, such as: Ectopic pregnancy, parovarian cyst, disease of the kidneys due to pressure, chronic anemia from hemorrhage, and intercurrent diseases superinduced by the poor constitutional condition of the patient. What the percentage of deaths would be from these various complications, which have been excluded from the table, is, of course, unknown, but it would be appreciable. In 1904, in analyzing 1,188 cases, it was stated that 18 per cent. of the patients would have died from complications outside of the tumor and uterus, as compared with 11 per cent. in this larger series, which indicates that the experience of different surgeons varies.

Conditions Outside of the Tumor and Uterus in the Writer's 337 Cases Which Would Be Fatal Without Operation.

Dermoid cyst with twisted pedicle	1
Dermoid cyst, suppurating; sinus through abdominal wall from previous drainage operation	1
Ovarian cyst, bilateral	3
Ovarian cyst, unilateral	24
Adenocarcinoma of the ovary	1
Papillary carcinoma of both ovaries	1
Abscess of ovary, unilateral	3
Abscess of broad ligament	1
Pyosalpinx, bilateral	10
Pyosalpinx, unilateral	6
Total	51
	15 per cent.

Conditions Outside of the Tumor and Uterus Which Would Be Fatal Without Operation in the Writer's Last 100 Consecutive Cases Subjected to Abdominal Hysterectomy.

Adenocarcinoma of ovary	1
Ovarian cyst, bilateral	2
Ovarian cyst, unilateral	6
Abscess of ovary	2
Pyosalpinx, bilateral	6
Pyosalpinx, unilateral	5
Abscess of broad ligament	1
Total	23
	23 per cent.

Thus, in my total experience, the estimated mortality from complications outside of the tumor and uterus, was 15 per cent., as compared with 11 per cent. for the mixed series of 2,274 cases, and in my last 100 abdominal hysterectomies it was 23 per cent., as compared with 11 per cent. in the total series. This would indicate that the cases coming under my care not only represent the average in gravity, but are worse than the average. This is true both of the degenerations and complications in the tumor and uterus, and also of the complications outside the uterus.

In discussions on this subject following the reading of some of my former papers, there was an attempt on the part of some to cause confusion by the claim that complications outside of the tumor and uterus have nothing to do with the question of whether or not fibroid tumors should be operated on. It is undoubtedly true that this question is secondary and relative, and not primary. It is none the less a fact that of the 2,274 women, upward of 11 per cent. would have died of the complications outside the tumor and uterus without operation, and in my own experience it is true of 15 per cent. in 337, and of 23 per cent. in the last 100 hysterectomies. Therefore, the existence of these complications does have a positive bearing on the percentage of cases in which operation is required in women having fibroid tumors. Not only complications which would be fatal, but also numerous other complications enumerated in the tables, would demand operation even if the fibroid tumors were not present. With the abdomen once opened one would be more than a confirmed upholder of the legends and traditions of the profession to remove the complicating or associated conditions and to leave the fibroid tumor, when both can be removed at the same time.

The same facts might be stated as follows: The complications outside of the tumor and uterus, or if the term is preferred, the associated conditions present in women having fibroid tumors, the diagnosis of which was secondary to that of fibroid tumor, and which was perhaps obscured by the presence of the tumor, and discovered only during operation on the tumor, or from the pathologic study of the specimens thereafter, which associated conditions, if neglected or treated by the expectant plan advised by the adherents of the classical position, would have resulted in the death of 11 per cent. of the 2,274 women.

Fibroid Tumors Producing Few or No Symptoms.

As indicated by the tables, at least two-thirds of all fibroid tumors are complicated. It is my observation that it is rare to encounter fibroid tumors which are not producing symptoms. If the tumors do not produce symptoms, the women do not consult a physician. Occasionally, of course, a pelvic examination is made for some other reason, such as to ascertain the cause of sterility, and in this way an accidental diagnosis of a fibroid tumor is made. But my experience fully bears out the teaching of the tables, that it is the exception for a fibroid tumor to be present and not to produce symptoms. At present I have under my care, or within my knowledge, eight women who have had small fibroid tumors for years, which have not grown and which have produced but few symptoms. All these women were advised to await events. In two of them trouble ensued: In one, a fibroid nodule became submucous and caused such active bleeding that it was necessary to do a hysterectomy at the age of 54, the operation incidentally curing a supposed neuritis in the left leg, which was merely a pressure symptom; in the other, a fibroid tumor became a polypus, was thrown off from the uterus without special pain, and was removed as a pedunculated growth within the vagina, the indication being hemorrhage. This patient still has a small subperitoneal fibroid about as large as an English walnut. Other cases of fibroid tumors have passed through my hands, refused advice, and disappeared from notice, but these eight cases include all those of which I have personal knowledge as to the relative innocence of these growths. Two of them have been driven to operation, and this may prove to be the result in the remaining six. I confess that I am still influenced by the traditions of the profession with reference to this particular group of tumors, and at the present time advise expectant treatment, with considerable doubt as to its justification.

Expectant Treatment in Uncomplicated Fibroid Tumors of the Uterus.

As shown by the tables in 2,274 cases of fibroid tumors, complications or degenerations existed in 1,553; that is, two-thirds were complicated cases and one-third were uncomplicated; also that in about half the cases the complications were such that an operation would be required had no fibroid tumor been present.

This represents the facts as to fibroid tumors when they come under the observation of the gynecologist.

The advocates of the traditional teachings concerning fibroid tumors will claim that this is true only of a class, and that many women having fibroid tumors do not consult a gynecologist, and that those who do not have no complications. Doubtless there is an element of truth in this claim, but, as stated elsewhere in this paper, it is far more than offset by the failure to record degenerations and complications in the reported series. So far as it is possible to arrive at truth by the statistical method, it is my own opinion that the table furnishes an under statement rather than an over statement of the facts. A careful reading of the list of degenerations in the tumor, the complications in the uterus, in the uterine appendages, in the ligaments of the uterus, and elsewhere in the abdomen, will convince the inquirer after truth that a large proportion of the women having fibroid tumors would require operation even if no fibroid tumor were present.

THE MORTALITY OF OPERATIONS FOR FIBROID TUMORS.

The risk of removing fibroid tumors by operation has steadily diminished with the development of gynecology. Recently Baldy[16] has reported his entire experience in operations on fibroid tumors, 250 operations with 21 deaths, or 8.4 per cent. mortality. In the last 105 operations there were 3 deaths, or 2.85 per cent. mortality.

Deaver[41] has reported 233 cases of operations (hysterectomy) for fibroid tumors, with 21 deaths, or 8.1 per cent. mortality. In the last 105 supravaginal hysterectomies there were 3 deaths, or 2.85 per cent. mortality.

In the Johns Hopkins Hospital Clinic (private communication) there have been 308 myomectomies with 14 deaths, 691 hysteromyomectomies with 22 deaths, or 3.6 per cent. mortality. In the last 100 cases of operation for fibroid tumor there have been 3 deaths, or 3 per cent. mortality.

In my own practice, in the last 100 cases of abdominal hysterectomy for fibroid tumor (from Dec. 22, 1900, to Feb. 26, 1906), there was one death. This death was caused by the distension of the intestines with gas, and paralysis of the heart. Autopsy showed neither peritonitis nor infection. Since Dec. 22, 1900, there have been performed 13 vaginal myomectomies, 2 vaginal hysterectomies for fibroid tumor, 11 abdominal myomeetomies and (from Feb. 26 to May 8, 1906) 6 abdominal hysteromyomectomies, without a death, making a total of 132 cases of operation for fibroid tumor of the uterus, with one death, or 0.75 per cent. mortality.

In order to estimate the present mortality of operations for fibroid tumor of the uterus, we may take the recent results at the hands of each of the surgeons quoted:

Baldy: 105 operations, 3 deaths.
Deaver: 105 supravaginal hysterectomies, 3 deaths.
Johns Hopkins Clinic: 100 abdominal operations, 3 deaths.
Noble: 132 operations, 1 death.
Total, 442 operations; 10 deaths; 2.26 per cent. mortality.

In estimating the comparative risks of fibroid tumors of the uterus pursuing their natural course with the risks of the removal of these growths, we have, on the one hand, a prospective mortality of from 15 to 20 per cent. from degenerations and complications in the tumor and uterus, together with the secondary effects of these tumors on the economy; and, in addition, a prospective mortality of 11 per cent. from complications present outside the tumor and uterus, or a total mortality approximating 30 per cent., to compare with the operative mortality of 2.26 per cent. It would seem that there could be no question as to which is the safer policy in the treatment of fibroid tumors, and that the prompt removal of these growths is the method to be chosen. On the other hand, the advocates of the traditional teaching might claim that as the tables indicate that only 30 per cent. of the patients would die without operation, the proper method of procedure is to operate on the 30 per cent., and to pursue an expectant plan of treatment in the remaining 70 per cent. Leaving aside the question of invalidism, which in my experience is present in a large proportion of cases of fibroid tumor, and considering only the prospect of the patient from the standpoint of the degenerations and complications in the tumor and uterus, if a woman in the group which it is proposed to treat by the expectant plan was told that under this method of treatment her chances to die of cancer of the body of the uterus were 2 per cent., of cancer of the cervix uteri were approximately 1 per cent., of sarcoma were approximately 1.5 per cent., of necrosis of the tumor were approximately 5 per cent., of cystic degeneration were 2.5 per cent., not to speak of the other less frequent fatal complications; while, on the other hand, she could have her tumor removed with the risk of 2.26 per cent., and could escape the months and years of semi-invalidism or invalidism otherwise entailed, I believe that no woman of sound mind would hesitate as to what her choice should be. Moreover, this does not represent the facts, since the most ultra representative of the classical school would operate on about half of the women because of complications or associated conditions outside the uterus, in addition to the number he would operate on on account of symptoms caused by the tumor.

It has been urged on me by various men, that, supposing all the facts with reference to fibroid tumors which have been given are true, that it is unwise to teach that these growths shall be removed unless they threaten life at the time they come under observation, on the ground that if this teaching is accepted, the occasional and inexpericnced operator will attempt the removal of these tumors with a high mortality. It seems to me that the proper reply to this teaching is that science deals with truth. If the facts are as they appear to be, we should accept them; and this is not modified by the patent fact that an untrained, inexperienced, or bad surgeon is far more dangerous than almost any type of tumor. It is a misfortune for the community that all those who practice surgery are not well trained, and that many are unwilling to serve a proper apprenticeship before attempting major surgery; but while this is patent and unfortunate, it should not prevent us from acknowledging the truth.

THE INFLUENCE OF TRADITION AND THE FORCE OF HABIT AND FASHION.

It is only necessary to read the title of this section to admit the influence of tradition, habit and fashion, in the practice of each and all of us. Some gynecologists will open the abdomen for a displacement of the uterus or of the ovary, will break up a few adhesions, or will remove an inflamed Fallopian tube, a hydrosalpinx, a parovarian cyst, a Graafian follicle cyst, or a corpus luteum cyst, or will remove the vermiform appendix in the interval, when the patient is in good health, and will do each and all of these things with a clear conscience and the feeling of duty well performed, but will dispute about the conditions under which a fibroid tumor should be removed. Nevertheless a fibroid tumor is many times more dangerous to life than any of these morbid conditions.

Those gynecologists who adhere to the traditional attitude toward fibroids claim that an operation should not

be done on a fibroid tumor because of what may happen in the future, and that operation is only permissible when life is threatened by the tumor, or when the symptoms present make life miserable or insupportable; yet the same men violate their supposed principles whenever they do an early ovariotomy or remove a vermiform appendix in the interval between attacks, or remove uterine appendages for inflammation in the intervals between the attacks of peritonitis. In other words, their attitude toward operation for fibroids is the result of the influence of custom and fashion. They have accepted early operation to avoid future trouble for the other morbid conditions enumerated, but have not yet recognized that the same principle is equally applicable to fibroid tumors.

THE IMPORTANCE OF ACCURATE RECORDS OF OPERATIONS IN THE STUDY OF FIBROID TUMORS.

In order to arrive at the facts concerning fibroid tumors, it is essential that the conditions found at operations shall be exactly recorded and that the specimens removed shall be studied from the pathologic standpoint, and the clinical diagnosis corrected by the laboratory findings. This must be done systematically in every case. If this were done by all gynecologists and surgeons, and if after two years the actual results of two years' work were published, enough material would be accumulated to decide practically every question concerning fibroid tumors. Therefore, I hope that enough men will be interested in the further study of this question to follow this method. In no other way can the facts be determined. It is my opinion that it will be found that cancer of the corpus uteri is a much more frequent complication of fibroid tumors than is believed at present. This may also be true of sarcoma, and it is certainly true of necrosis, cystic degeneration, pressure by the tumor on the urinary organs (bladder or ureters), and pressure by the tumor on the bowels.

THE ADVANTAGES OF EARLY OPERATION.

It seems to me that the evidence presented is an ample demonstration of the soundness of the conclusion at which I had arrived in 1894; namely, that "it is the part of wisdom to remove fibroid tumors so soon as they are discovered, unless in particular cases some sufficient reason exists to vary the general rule. In other words, that the principle of early operation which is now (1894) generally accepted with reference to ovarian tumors is equally applicable to the treatment of fibroid tumors." The existence of constitutional disease may render operation inadvisable because of the risk involved. The desire for child-bearing in a young and childless woman may properly influence the temporary postponement of an operation or decide the question in favor of a myomectomy rather than a hysterectomy. In other cases in which the tumor is small, and especially when it is subperitoneal, and in which the symptoms are slight, the question of operation is still debatable. Which is the more dangerous, operation, or the risks inherent in the natural history of such tumors? I believe myself that this question must be left to the future for decision, and that the decision will depend chiefly on whether or not cancer of the uterus occurs as frequently in this particular group of cases as in the whole series. Should this prove to be true, the question will be decided in favor of operation.

It also seems to me that the evidence presented demonstrates the soundness of the teaching that a fibroid tumor should be removed because of the dangers inherent in the natural history of the disease, and not because of the particular symptoms complained of when the woman comes under the observation of the physician.

Early operation offers the following great advantages over the expectant method of treatment:

1. It saves long years of invalidism or semi-invalidism.
2. It enables women to fulfil the duties which devolve on them instead of having their activities limited in the effort to reduce their symptoms to the minimum and to prevent accidents to the tumor.
3. It avoids the risks to life from the development of sarcoma in the tumor and from the development of cancer in the uterus, more especially in the corpus uteri.
4. It avoids the risks to life from degenerations in the tumor, such as necrobiosis, necrosis, secondary septicemia; cystic degeneration; such accidents as twisted pedicle; pressure on the urinary organs; pressure on the bowels; anemia, cardiovascular degeneration, thrombosis, phlebitis and embolism; malnutrition; and the greater liability to intercurrent diseases arising from lowered vitality, due to anemia or to malnutrition.
5. It greatly lessens the risks of operation. It is only necessary to contrast the risk of removing a fibroid tumor or of performing a hysterectomy for fibroid tumor in a relatively young woman with good general health and with none of the secondary ill consequences which arise from the continued development of the tumor, to similar operations on a woman reduced by hemorrhage, or suffering from malnutrition due to disturbances of the functions of the intestine, or on women having secondary cardiovascular or renal degenerations, to appreciate what is gained by early operation.

Early operation would probably eliminate, or certainly reduce to the minimum, deaths from embolism, which are relatively so common after operations when performed late in the natural course of fibroid tumors. The mortality from operation for fibroid tumors performed early would be reduced to 1 per cent. or less, as compared with probably 5 per cent. when the operation is performed under conditions as they exist at the present time.

I would suggest that the most important questions for discussion are:

1. Shall the gravity of fibroid tumors be estimated from the natural history of the disease, from the degenerations in the tumor and the complications arising in the uterus, with the secondary effects on the general economy caused by these growths; together with the complications outside of the tumor and uterus which exist in women having fibroid tumors; or, shall the gravity of the fibroid tumor be estimated by the symptoms in the particular case when the woman comes under observation?
2. The relative risks of fibroid tumors and the operation for their removal.
3. Shall small fibroid tumors which are growing but slowly, or not at all, and which are producing few or no symptoms, be removed?
4. Shall all other fibroid tumors be removed unless in the particular case there is some sufficient contraindication?

DISCUSSION.

DR. G. BETTON MASSEY, Philadelphia, said that Dr. Noble disarmed any criticism that might be made that figures sometimes lie by assuring his hearers of the correctness of these particular ones; but Dr. Massey thought that the proverb may rightfully apply to conclusions drawn from figures that are themselves correct. For instance, Dr. Noble classed among the degenerations which demand hysterectomy the following:

Fatty degeneration, which is a sign of spontaneous cure and a prelude to shrinkage; calcareous infiltration—a sign of arrested growth; hemorrhagic degeneration, which is invariably curable under the Apostoli treatment. The dangers of hemorrhagic fibroids, he said, have been greatly exaggerated. The late Dr. Goodell, of Philadelphia, assured Dr. Massey that he had never heard of a patient dying of such hemorrhages. Dr. Noble, he said, enumerated such conditions as intraligamentous protrusion of the tumor; a bump on the side toward the bladder; a bump on the rectal aspect, etc. Further on in this enumeration of alleged grave conditions requiring unsexing of the patient at the risk of her life are various simple uterine complaints from which most women suffer, and which are readily curable. Dr. Massey admitted that some of the complications mentioned first in these tables demand hysterectomy, but he asked that these conditions be diagnosed and operated on without subjecting every woman to an unnecessary operation. He did not think that the wrecks that result from the successful operations are worth the risks that necessarily attend this intervention between life and death.

DR. H. J. BOLDT, New York, said that in his opinion, based on a large series of cases, it is the second conclusion of the first paragraph which should decide whether or not to subject a patient to operation. There may be subjective as well as objective symptoms and both should be taken into consideration. It is true, he said, that a number of patients with myomata have malignant degeneration. The mortality attained by Noble, Kelly and others is unusually small. One per cent. is a very low rate of mortality. The danger from embolism or thrombosis does not alone rest with a large, but also with a small tumor, and it is just as likely to be found without operation. He has had two patients die on the table from a condition of that kind. Small fibrous tumors which are growing slowly or are producing no symptoms should be left alone. A fibroid tumor should always be removed if it produces symptoms interfering with the patient's well being, but fibroid tumors should never be removed if they produce no symptoms.

DR. J. H. CARSTENS, Detroit, said that if there is anything to criticise it is cervical cancer. If the patient has cancer and fibroid tumor, they are independent of each other, but when she has a tumor with sarcomatous degeneration, there is more or less danger of complications arising. The question for discussion, he said, is: "Shall we operate or not?" These patients live long, but there are other complications. For instance, a woman with a tumor who bleeds and bleeds is below par, and is liable to septic diseases of all kinds, and if she dies of pneumonia, that is blamed, but not the fibroid. If she contracts grippe, that is blamed and not the fibroid. If she had no fibroid she would not have had pneumonia or grippe, as she would have had the necessary resisting power to withstand them. Dr. Carstens had a woman come to him with a fibroid as big as his fist. It showed no symptoms; it caused nothing, and had her home doctor not found the tumor she would not have known she had it. She had not slept for two weeks; she was thinking of that tumor all day, and dreaming of it at night. She had no rest. She was suffering from this nervous condition from the effect on her mind. He advised her to have it removed and she consented. A day after the operation she was a changed woman. The second day she slept, something she had not done for two weeks. On the eighteenth day she left the hospital a new woman. The mental symptoms, he said, must be considered. Remove the tumor and the mental condition disappears. He has had fifty or more cases in the last year and a half, with no deaths. There should never be more than one death in a hundred, in his opinion.

DR. SETH C. GORDON, Portland, Me., referred to a paper which he read in 1894, in which he said that if symptoms are dependent on a fibroid, unless the patient is a young woman and exceedingly desirous of having children, he advises hysterectomy. He has seen no reason to change his opinion since then. In 1895 he read an additional paper, he said, in which he discussed the complications of fibroids, and he has not a word of retraction to make. He thinks that he is almost coeval and coequal with Dr. Noble in this work. Mundé said that he thought it was a horrible doctrine to teach. Lapthorn Smith, three years ago, said that he also thought it a horrible doctrine ten years ago, but he is now willing to confess that he was ten years behind Dr. Gordon. Dr. Gordon does not care what the mortality is if left alone. He is sure it is as much as after operation. It is wrong to allow a woman to carry a tumor around for years and to know she has it, together with the complications and troubles and sufferings connected with it. A large number are dependent on their daily labor for their daily bread. The difference between them is the difference of working in suffering and working in peace. Conservatism in surgery is for the conservatism of the woman's health. Conservatism does not mean anything to the patient if she does not get well.

DR. F. F. LAWRENCE, Columbus, Ohio, thinks that there is no greater curse than surgical tinkering. To attempt to deal with any form of neoplasm, on the theory that it is harmless, will sooner or later be classified as tinkering. A fibroid tumor is a neoplasm with many possibilities of danger for the patient. Even though the tumor may not produce direct symptoms, its insidious growth, its tendency to produce hemorrhage, a possibility of its suppurating or sloughing, the danger from pressure ultimately involving the kidneys—those things in themselves are sufficient to determine the wisdom of removal while the tumor is small. But, when to these is added such proof as Dr. Noble presented, and many, if not all surgeons, have seen occasionally, that the tumors frequently undergo malignant degeneration, it would seem that there should be little difficulty in determining action. The majority of surgeons have seen frequent deaths in appendicitis, because of the fallacious doctrine that the majority of cases did not need operation. The cause of death in the surgery of the appendix, and in extrauterine pregnancy, is the *dernier* operation. And *dernier* surgery is bad surgery. To wait in appendicitis or extrauterine pregnancy until the abdomen is full of blood or pus, and the patient septic, is not conservatism.

DR. HENRY O. MARCY, Boston, said that thirty years ago he had a patient suffering from a large uterine myoma. Besides general care, he encouraged the belief of relief from an early expected menopause. One day, after some years, the patient called to assure Dr. Marcy of her cure, but asked him to examine and tell her if her tumor was really gone. She had been under the care of Mrs. Eddy, who assured her that nothing abnormal remained. She might as well have asked if her head had disappeared, since she presented the appearance of one far advanced in pregnancy.

Dr. Marcy agreed with Drs. Gordon, Carstens, Lawrence and others that the way to cure the patient is to remove the cause of the suffering. In 1887 Apostoli came here and operated and every patient declared she was better, though they all gradually grew worse. That is another kind of that faith cure, a most dangerous thing with which to play.

PROF. A. VON ROSTHORN, Heidelberg, Germany, thought it a very difficult thing to decide on the question brought up by Dr. Noble. Those who studied surgery and gynecology about 1882, were brought up to favor conservative measures. They were taught that tumors which can be carried about for years, until the end of life, should be left alone, and that only now and then, in cases of extreme hemorrhage or degeneration or pyosalpinx, operation would be necessary, if those things interfered with the patient's well being. Because of this so-called conservatism a high mortality prevailed in this class of cases. Times have changed and every one is now able to do the work with less danger than during that early period. One extreme is a very little tumor which can just be found on examination which produces a series of symptoms that are unexpected from a growth of the small size and locality in which it originates. On the other hand, there are cases where the whole abdomen is filled with myomata which do not give rise to disagreeable symptoms. These are two extremes. The patient with the small tumor becomes worse and the other woman carries the larger tumor without pain or discomfort. It is difficult in the face of these conditions to advise operation in every case. Every one, he said, has seen degeneration and other dangerous things going on. In these cases conservatism undoubtedly would be bad. The teaching that these symptoms will disappear with the menopause must also be abolished. The cancer, which Dr. Noble attributes to endometritis, Dr. von Rost-

horn said, may also be the cause of the hemorrhagic status. He has seen very few combinations of carcinoma and fibroma. A third question is the social question. A wealthy person requires good health to live comfortably and a working person requires it to earn her daily bread.

Prof. R. Dührssen, Berlin, Germany, said that the most important points mentioned by Dr. Noble are true, according to his experiences. More patients with fibroid tumor die without than with the operation. In a series of 200 cases of myomata of the uterus he has observed that more patients died from anemia and from sarcoma than from the operation. He believes it is true, as stated by Dr. Noble, that when early operation is advised, the mortality will not be more than 1 per cent. Olshausen, who is strongly opposed to operation in cases of fibroid, says it is only necessary in 15 per cent. of the cases to do anything. Most patients afflicted with this condition believe that it is not dangerous. They all labor under the impression that the symptoms and conditions will disappear with the menopause, and on that account it is often very difficult to gain their consent to an operation. Most of the patients, therefore, come to operation in bad physical condition. The mortality, according to his experience, is very small. The best method is to tell the patient that she has a fibroid tumor, and that the mortality if not operated on is greater than the mortality after operation. This should invariably bring the consent of the patient, especially if she has any symptoms. It is important to keep these patients under observation, as it is possible for a fibroid to undergo sarcomatous degeneration, when an operation would be too late. The doctor who operates on a fibroid has a smaller responsibility than the physician who advises waiting, and if he gives such advice, it is necessary to keep the patient under supervision. He observed a case of rupture of the uterus in the scar from a previous fibroid operation, during pregnancy. If medical men consider the statistics as presented by Dr. Noble, they must agree that it is certainly scientific to advise operation in all cases of fibroid.

Dr. C. C. Frederick, Buffalo, N. Y., has done 177 operations for fibroid since April 1, 1902. The mortality has been 2.6 per cent. and out of these 177 patients two died within six hours, one death being caused by intestinal obstruction, and the other from a sloughing intrauterine fibroid, with a temperature ranging to 103 for a month before. Therefore, his mortality, excluding these cases, was 1.3 per cent. He mentioned this to controvert ideas and statements that the operation, whether it be hysteromyomectomy or simple myomectomy, is more dangerous for the patient than to let her alone. He believes that a woman is safer to have the fibroid out than she is to carry it. He has under his observation 7 or 8 women who are left out of 10 or 15 whom he has watched for years. They have tumors ranging in size from a fetal head to as large as his head. They have passed the menopause and have stopped bleeding, but have gone on through a semi-invalid course, and three of them have died from the degenerative changes that have gone on in their uterus. The others are pale and anemic and will die in a few years. Dr. Frederick believes as strongly as Dr. Noble does that a fibroid is a tumor no woman should carry. It goes through growth, adolescence and degeneration. When it comes to the period of adolescence, decay occurs and this will sap the vitality and the intercurrent diseases that usually arise are due to the presence of the debilitating fibroid. All those tumors that are in the substance of the uterine wall have a blood supply large enough for the tumor to grow, and there is a process going on not favorable to the woman and tending to invalidism and premature death.

Dr. W. H. Humiston, Cleveland, Ohio, said that up to five years ago he was conservative with a mortality of 5 per cent. Now he operates early on all cases of myofibroma and he has a *nil* mortality. He had a case of fibroid tumor in a maiden of 36 who became suddenly ill with severe pain in the abdomen. Her physician was called and found a large mass reaching nearly to the umbilicus. The woman was not aware that she had a growth. A diagnosis of fibroma of the uterus was readily made, together with a beginning local peritonitis. Ice bag and rest in bed for a few days was sufficient to relieve her of pain. Dr. Humiston advised operation and she readily consented as she had worried greatly over the fact that she had a tumor. She came at once to operation and no difficulties were encountered. Had she waited and suffered repeated attacks of peritonitis, this would have been a complicated case, with possibly a fatal result. Another case was a married woman, in good health, aged 38, who accidentally discovered a growth in the lower abdomen, reaching half way to the umbilicus. She came at once and a diagnosis of myoma of the uterus was readily made. Hysterectomy was performed, with no complications. The pathologist reported sarcomatous degeneration in one portion of the tumor. Procrastination here would have resulted in a fatality. Dr. Humiston advises early operation.

Dr. Edward Reynolds, Boston, believes that malignancy is more frequent in fibroid tumors than statistics show. As to the importance of operating on small fibroids, Dr. Noble said that the mortality of hysterectomy for fibroids is about 2¼ per cent., but this percentage, Dr. Reynolds said, includes operations on large tumors with complications. He believes that the mortality in that class of cases is far below 2 per cent. Also the dangers of pregnancy in the presence of fibroids must not be forgotten. No man can have a large and extended experience in obstetrics without having seen fibroids responsible for danger in pregnancy and labor, and this is another reason for getting rid of small fibroids in young women. He tells patients with small fibroids that if they leave the tumor alone they will have bad health and suffer constantly, and run a risk of dying from malignancy, which is greater than the risk from operation. The operative risk is more immediate, but once that has been avoided they are likely to live a long life as well women.

Dr. J. Wesley Bovée, Washington, D. C., speaking of the relation of fibroid tumors with carcinoma of the cervix, said there is one point, the relative proportion of carcinoma with and without fibroid tumors that will give something more definite as to the relative frequency. With cancer of the body of the uterus, carcinoma is increased tenfold in the presence of fibroid tumors. Surgeons are justified in deciding that it is due to the same relation between the fibroid and the new growth. He was in accord with Dr. Noble's deductions. He also called attention to the relation of fibroid tumors to conception and pregnancy. Hofmeier has given statistics showing that 11 per cent. of married women are sterile and that 25 per cent. of married women who have fibroid tumors are sterile. Abortions are common in the presence of fibroids. The dangers of hemorrhage, infection and other complications are great. Instead of 95 per cent. head presentations, in the presence of fibroid, there are only 54 per cent.; 28 per cent. breech presentations instead of 3 per cent., and 19 per cent. of transverse presentations instead of 1½ per cent. Surgeons do not wait for symptoms to operate in the case of ovarian tumors. If they find a woman with ovarian tumor they believe that operation is required. They believe the same thing in other conditions. If they find cancer of the cervix without symptoms, they would not delay because there are no symptoms, and Dr. Bovée believes the same treatment should hold in fibroid conditions of the uterus, because they do cause symptoms later. If the patient is operated on when the tumors are small she has the best chance for a good result.

Dr. C. P. Noble, Philadelphia, said that years ago when he discussed this subject, almost no one agreed with him. The change which has taken place in the discussion is most gratifying. He considered the evidence as to the serious nature of fibroids convincing to all with open minds. Eastman reported a series of 7 cases of so-called innocent fibroids: two died. Dr. Noble has had a number of cases which show the nonsense of this teaching. He recalled the case of a woman who had bled from the time she was 35 until she reached 57, and she was an invalid from then until she reached 67 years of age. She came to him because of intolerable bladder symptoms, because a calcareous fibroid had pressed so on the ureter as to destroy the right kidney, from which condition she died. Another woman bled from 35 to 55. Her fibroid became necrotic when she was about 70 and discharged into the bowel and she died of sepsis. In another case he told the woman if she would wait until the menopause she would be rid of her tumor. She returned when she was over 55 and said it had disappeared.

Three years after she was dying of carcinoma uteri, with involvement of the bowel. As to Dr. Boldt's advice to only operate for symptoms, and never because of what would happen in the future, Dr. Noble said that he (Boldt) violates that rule every time he takes out an ovarian cyst when the woman is not in immediate danger of her life; also every time he does an internal appendicitis operation; and every time he operates for pelvic peritonitis between the acute attacks. His position is a typical example of the influence of tradition and fashion in operating.

THE PROSTITUTION PROBLEM IN ITS RELATION TO LAW AND MEDICINE.*

LUDWIG WEISS, M.D.

Attending Physician to the Skin and Genito-urinary Service, German Poliklinik, Consulting Dermatologist, Hebrew Orphan Asylum.

NEW YORK.

Delving down into the depths of deepest depravity mankind is capable of sinking into is by no means a a pleasant or invigorating occupation. It is a rather ungrateful task to unearth and to draw to light conditions which some may think had better be left buried. Looking on this darkest side of human life, it reveals the frailty of human character with its unceasing strife between the dominant mind and carnal atavism. Just as the sunspots can not blot out the luminous life-giving properties of the most glorious of all stars, so will prostitution, dark and heavy as it rests on humanity, never be able to destroy the fate in its ultimate glorious destination.

Prostitution is as old as humanity itself. It is a mistake to maintain that barbarous peoples were not confronted with it. It did exist, although, paradoxical as it may appear, without their being conscious of it. Primitive people living in a state of nature possess a very undeveloped moral sense. The female, because of her frailer build, was considered inferior and looked on as a chattel. An absolutely uncurbed sexual life, a loose mating as a semblance of a temporary married state were the sexual characteristics of primitive man.

After the primeval status of herding, of clan and kinships—a period covering tens of thousands of years—tribal supremacy caused the foundation of communities and a semblance of social order. It is characteristic to notice that while men voluntarily surrendered their rights for the good of the common weal, they would not suffer themselves to be deprived of polygamy. Polygamy as transmitted from the barbarous people is the ever-present feminine factor in the political and sexual life of the ancients.

HISTORICAL DATA.

We find, as far as historical data are available, that kings, notables and the wealthy availed themselves of it and that women were consecrated to the temples of the different goddesses. It is a noteworthy point that this religious prostitution, a fallacious and fraudulent sacrifice of purity to the gods, did in reality serve for the perpetration of vices of the initiated ones. The "Virgins of the Sun" of ancient Peru were in due time mustered out without losing their standing. The "Hierodules" of the Babylonians and kindred nations, consecrated to the hideous Baal-Astarte and Moloch cult with its human sacrifices, is another instance of an enforced religious prostitution, out of which the hospitable one grew. Jeremiah narrates that their women sit around the temples, offering themselves to men, and Herodot relates that once in their lives they had to betake themselves to the shrine, and, sitting around with ropes wound around their heads, accept strangers happening to be in the town. Quintus Curtius states that fathers offered their daughters and men their wives to strangers, and that within a short stay of one month these customs almost ruined the army of Alexander the Great. Of a similar nature was the Apis, Isis and Osiris worship in Egypt. Among the ancient Semites, the Hebrews only understood the great importance of sexual hygiene, introducing repressive laws against prostitution. In Numbers v, 2, it is related that those having a flow issuing from their flesh were unclean and were compelled to go outside the camp until the flow stopped and stay there seven days longer. The mission of the Hebrews to spread monotheism made it imperative for them to preserve their strength and procreative power in its ceaseless battles with their heathen neighbors. But mankind is ever the same, with weak resistance in erotics they eventually became contaminated by their neighbors. Stringent laws were introduced; religious prostitution perversities and incest were punished by death. Profane prostitution was not directly punished, but children out of such were excluded from the commonwealth up to the tenth generation, a cruel and unjust law.

With the Greeks and Romans we also observe the usual development of profane from religious prostitution. The latter was idolized by works of art and glorified by the sages of the nation. Strange, freed women, and in a minor proportion native women, vied with each other to become priestesses of the shrine, calling themselves Aphrodite Urania, or servants of ideal love, in opposition to Aphrodite Pandemos, devotees of profane love. They, especially the former, were known as Hetaires, and were cultivated women, well versed in the arts and in lewdness. Pindar dedicated odes to them, Pericles languished in the arms of a Phryne, who, in turn, served as a model to Praxitcles' greatest creation, the statue of Aphrodite.

These women had no legal rights, they were compelled to live in special quarters, to wear special garb, and to pay for the franchise. The introduction by Solon of legalized prostitution was the outgrowth of a fallacious reasoning, prevalent yet, that its existence would protect respectable women. It was also directed against over-population. In Rome the Venus cult was the prototype of religious prostitution from which the profane one also developed. The Romans availed themselves of the doubtful advantage of computing the sexual vices and crimes of the then ancients into one composite dungheap of immorality. The ideal aspect of the Greek prostitution was here wanting. Collection of revenue was the chief purpose. They had their brothels (lupanaria and fornices) and free-living prostitutes (meretrices and prostibulæ). An erstwhile warrior nation soon became deprived under their degenerated and homosexually afflicted emperors. According to Martial and Tacitus, there was not a virtuous girl in Rome at that time. The legal status of these women was a very lowly one. The same iniquity which creates an article of lust and then condemns it to civic death was characteristic of the law at that time as it is to-day. Alexander Severus introduced a morals-police. Prostitutes and fallen free women had no right to dispose of their property, had no control over their children, no right to hold office. They could not give oath or make ac-

* Read in the Section on Hygiene and Sanitary Science of the American Medical Association, at the Fifty-seventh Annual Session, 1906. Other articles appeared on this subject Oct. 20 and Dec. 8.

cusation. Notwithstanding all these efforts, the evil could not be curbed.

As Rome became a world power, her civilization as well as her immorality permeated the conquered possessions. The descendants of the early Teutons, to whom religious prostitution was unknown, and whose chastity Tacitus extols, soon became contaminated. A decree of Baccarat I (A. D. 600) stipulates the penalty of being beaten with rods for prostitutes. Under the Merovings and Karolingians prostitution was a vagrant occupation, increased by pilgrimage to Rome and Jerusalem. The clergy and notables sank into the grossest immorality, and even Charlamagne, who in his "Capitularies" waged war against it, lived in polygamy. The loose morals of the Crusaders, who under the cloak of religion, ransacked and fired property and abused and raped women, were another fertile source of depravity. In the French Crusade of 1180 not less than 1,500 lewd women accompanied the soldiers. The army of the Duke of Alba marching against the Netherlands had with it 400 mounted and 800 prostitutes on foot marching in rank and file behind their own flag.

The naivest conception of prostitution was held by the medieval minds. To preserve the purity of the family and to collect revenue were the two incentives. The weekly revenue of seven German pfennigs from a brothel in Schwabach went toward the payment of the preacher. In 1482 the Bishop of Mayence complained that his income had been curtailed since the town kept the revenues from houses of ill-fame. And it is chronicled that in the sixteenth century the papal chamber collected 20,000 ducats yearly from the same source. When Emperor Sigismund, in 1414, visited Berne with a retinue of 800 horseguards, the freedom of the town houses was tendered them, which was highly acknowledged by the Emperor in a letter.

In spite of this toleration to the limit, the women of ill-fame were regarded as dishonorable and beyond contempt. Here, too, we again witness the old iniquity. These women lived under the jurisdiction of the hangman and their status was regulated to the smallest detail, but they were not absolutely outlawed. On the other hand, the same church which denied them a decent burial permitted them to worship in their edifice, and accepted, as did the cathedral in Ulm, a consecrated candle yearly from the proceeds of the town brothel. By this seeming inconsequence the church intended to point toward an ever-open door for salvation, and the state joined these sentiments by the erection of houses of refuge for repenting sinners.

These casual enumerations which could fill volumes are mentioned here to show that vice in the middle ages was regarded as nothing evil so long as it was kept within bounds. The main aim of this tacit toleration was to keep family life pure and decent women unmolested and the too willing adherence to the Galenic teaching that continence is dangerous.

With the reformation an ascetic trend took hold of the people. Luther waged a merciless war against houses of ill-fame. Henry VIII, in England, suppressed them. France, in 1560, abolished them, Berlin in 1607 closed them, in turn to be reopened, and abolished again.

At this time a hitherto unknown scourge, syphilis, decimated the terrified people, and the combination of both circumstances changed the people to lead a more moral life. This promising change was ignominously cut short by the outbreak of the Thirty Years War and later of the Seven Years War. The debauchery of the Crusaders came into existence again through the infuriated soldiery and uncurbed religious fanaticism of the population. The loose morals of the French courts under Louis XIV, XV and XVI and the Russian court under the Catherines contributed toward the immorality of that age. A reaction took place in the eighteenth century. Maria Theresa of Austria created the ill-famed morals-police ("Chastity Commission") to eradicate the evil. Its spies, however, misused their powers shamefully, as do the different vice-squads of to-day, and a well-meant but poorly-conceived effort had to be abandoned, as those of the Utopian moralists of to-day ought to be. Frederick III, in 1690, directed that all prostitutes be sent to the workhouse. It was all in vain. In 1700 the brothels were reopened again, closed again and finally abolished in 1854. The viewpoint of the authorities on the continent was then what it is to-day, namely, prostitution is an inevitable evil that must be tolerated and so supervised as to lessen its sad moral and hygienic consequences.

THE ADVENT OF CHRISTIANITY AND FACTORS IN PROSTITUTION.

We have seen in the foregoing fragmentary details humanity permeated through all ages and races by venal and illicit sexual life, and the evolution of prostitution from the pious to the profane form. With the advent of Christianity, sacrifices of life or virtue became extinct and devotion to God was evidenced by prayer, righteousness and morality. This last requirement however, was and is a sadly labile virtue capable yet of great improvement. The question then stands as follows: Is prostitution entirely eradicable? History has amply shown this to be impossible. There is present on one side an atavistic dormant propensity toward polygamy in man, a developmental defect as it were, mitigated by religion, education and self-control; and, on the other, an almost extinct inclination for polyandry in the female, present in an almost negligible quantity. Taking, then, this minor part as predestined, as a type which remains constant everywhere, probably caused by the survival of primeval cell types in the brain, we are enabled to account for the presence of that portion of the female factor in prostitution. Let us call this the anthropologic factor of the vexed question. A major part will include such women as possess only the slightest attributes of such stigmata; under favorable circumstances these remain innocuous, but under the influence of adverse socio-economic conditions may make the character one of lesser resistance. These I would call the circumstantial factors, yielding the occasional prostitute. Yet another part recruits itself from otherwise favorable conditions, girls who are attracted to prostitution by the luxury and ease it promises in opposition to the toil and meager returns of their vocation. The latter may be called the industrial factor, and its devotees, prostitutes by choice.

The male factor of prostitution is held to be the sexual hyperactivity of men, creating a demand which is met by a supply. This proposition is not absolutely correct, because I think this should be met, although not in an equalizing proportion, by the higher sense of morals in women developed in them through ages. Whatever minus remains between these two disproportionate traits must of necessity be imputed to men. Here is where the so-called social conscience must be awakened. There is reason to believe in the advent of a time—let us hope not too far distant—when the virus of this moral weakness will be so attenuated by the immuniz-

ing serum of a sublimer conception of sexual morals, that masculine vice may no longer play an integral part in the prostitution problem. Even after such a change to the better the feminine factor will not entirely cease to produce its quota, although this will be lessened.

WOMEN IN INDUSTRIAL LIFE.

Another source of prostitution is the entrance of women into industrial life. For centuries she was surrounded by home life and home industries. Then the spinning wheel gave way to the loom in factories, the needle yielded to the sewing machine, the individual worker changed into a "hand," producing in the factory a certain part of the whole. Women have entered the professions, arts and literature with success. She has gained independence, but is lost to family life and its beneficial influences. The strife for self-support has exposed her to dangers against which she must develop defensive measures. In competing with the male element she has demolished his inherent sublime adoration toward the sex and his indulgence toward her frailities. Besides this, the maintenance of the population is sadly encroached on. But these are transition stages, symptoms of new conditions, which will ultimately equalize themselves satisfactorily. Meanwhile the state does and must lend woman a helping hand by mercantile, factory and compulsory association and mutual aid laws.

HOUSING FACILITIES.

A further cause of prostitution are the poor housing facilities and lack of privacy in the dwellings of the poorer classes. The adolescent are involuntary witnesses of conditions which blunt their moral perceptions. The etiology and pathology of many cases of beginning waywardness can be found in this promiscuous cooping up in sunless, cheerless quarters. In some districts in New York the average is 3.7 rooms to a family. Of 13,657 families, 13,079 are without bathing facilities. Among 270 colored families in Brooklyn, there are, according to the Rev. Dr. Laidlaw, only 6 bath tubs and 231 families have no modern toilet conveniences. About 1,250 cubic feet of air is provided per room. The average size of a tenement family in New York is five, and sometimes there are boarders in addition. Among Italian garment workers from 2 to 3 families, making a total of from 10 to 15 individuals, occupy a single room. Of the 3,437,202 inhabitants of Greater New York, 2,372,-079 persons, or more than two -thirds of the population, live in 82,652 tenements. In one precinct not more than one mile square, 60 well-known centers of prostitution were found. By drastic penalties—a $1,000 fine—exacted from the landlord, this condition has been greatly ameliorated lately. In Berlin, two-thirds of all the dwellings contain two rooms at the utmost, and are inhabited by 1,286,903 people, that is two-thirds of the total population, numbering 1,827,477. In the same city 61,765 households had 98,022 lodgers, and 1,955 households contained in one single room, parents, children and lodgers up to ten, and sometimes those of different sexes. In Breslau there are 7,279, in Dresden, 6,708, in Hamburg, 5,843, such over-populated households.

In our country, where the police do not enforce reporting of every tenant, boarder or lodger as soon as he hires the premises, statistics on this point are not available and we have to depend on the census, which is taken every ten years.

CHILD LABOR.

From the ranks of minors a no small amount of prostitutes are recruited. The wretched children of the lowly poor, exposed in this way to the debasing influences of squalor and vice, are driven to the street by the necessity of earning money. The boys sell newspapers, the girls, if lucky, find employment at starvation wages, or else have to shift for themselves. Commingling with the other sex, without a moral backing of salubrious home influences, ill-fed and ill-clad, they fall victims to their own and their male associates. Here is where the unspeakable "cadet system" reaps its harvest.

Child labor is another source from which prostitution of minors develops. Child labor is on the increase in the United States. Where there were a few years ago 24,-000, now 80,000 are at work. The child-labor laws in various states are very different. In New York the minimum age limit is fourteen, in the South ten years. Congressional legislation, by establishing a national child-labor bureau, will remedy these abnormal condition.

EMPLOYMENT AGENCIES AND MIGRATION TO CITIES.

Employment agencies are another source of prostitution, especially for the immigrants. Their fraudulent advertisements, the practice of sending women to disorderly places or otherwise misleading them, has lately developed into a veritable "white slave mart" for the pandering of girls. In New York state much good will be done to better these conditions by the passage by the legislature of the Prentice bill.

The trend of migration to the large cities is another incentive to prostitution. The seduced country girl comes thither or leaves home, which to her means grinding drudgery without relaxation. Or she is driven away by the carelessness of her parents, or because of a cruel step-mother or a degenerate step-father. Often she is illegitimate and leaves when she is old enough to understand her position, which is cruelly thrown up to her. In other instances, laziness, vanity, levity or an inclination to overstep her station; occassionally a married sister in the city or the gold-brick tales of an already initiated woman tempt her or her continental immigrant sister to betake herself there. Here she is swallowed up in the maelstrom of pulsating city life. Fortunate she is if she obtains a position as a domestic, which these girls, however, dislike, or gets work in the industrial branches, if she is skilled. She usually becomes a starvation wageworker only able to engage a sleeping place amid squalor and poverty. A strike, a lock-out nullifies her scanty earnings. Life and body must be sustained and if the girl has a character of lesser resistance the occasional, and sometimes the professional, prostitute is created.

ABOLITION VS. REGULATION.

The infinitely complex make-up of our social fabric, necessarily incapacitates any attempt, even approximately, to enumerate the sources of the social evil. Cause and causation are so interwoven in an inextricable mesh-work of logical factors, of which only the crudest ones are perceptible to us, that the major part is beyond our power of observation. Just as our retina can not perceive the ultra-violet rays of the spectrum, so are our logical powers limited in certain directions. Anthropologic, religious, racial, climatic, moral, economic and social factors converge to bring forth the

prostitute. Where is the human mind that could penetrate into these depths and dissect and join together the sequences?

From a sanitary point of view prostitution must be regarded as the main source for the spread of venereal disease, a clearing house as it were, from, toward and through which courses in an unbroken vitiated stream the poison which inoculates the living, blinds the babe in entering this world and taints the yet unborn, stamping on the innocent countenance its stigmata of degeneration. In comparison to this all other modes of propagation are almost *nil*. Therefore, the sanitarian endeavors to minimize its dire consequences: the spread of venereal diseases.

The strife between abolitionist and regulationist is a useless battle between two well-meaning parties. The animosity, not to say intolerance, which is exhibited by the former and which almost wrecked the last Brussels conference, is significant of an over-passionate zeal which sees a heretic in every opponent. No such an over-ebullient warfare can be found in the ranks of the latter, mostly medical men. The chasm between the two factions is only an imaginary one. The sanitarian, especially the English and American, is an abolitionist in the sense that he too would like to see prostitution eradicated, where the abolitionist commands it to be.

Sanitarians know the inefficiency of regulation, the impossibility of controlling clandestine prostitution; the false security it lends; the arbitrary power it gives the police, and the impossibility for an inscribed woman to return into orderly society. In this country, attempts at regulation have signally failed. St. Louis tried it in 1872, and an attempt was made in Buffalo and Philadelphia in 1902. Detroit and Cincinnati have a regulation somewhat after continental plans. In the Philippines the issuing of a health certificate to a woman and the regular inspection of soldiers for the same purpose is in vogue. Venereal diseases have since diminished there. Here then the most fervid abolitionist finds his ideal materialized, inasmuch as both sexes are examined, but notwithstanding this, abolitionists indignantly oppose the general order.

It is in this rigid adherence to abstract reasoning the difficulties between the abolitionists and sanitarians commence. On the socio-economic factors both factions agree. The ethico-moral components of the question, however, are continually clashing with the sanitary-medical one. The sanitarian is imbued in no lesser degree than the moralist with the ideals of purity, but his attitude is a loftier one, because he stands nearer the reality, his standpoint is a godlier one, because he ministers to the dejected soul and diseased body. The "crucifixion of the flesh" could not even be accomplished by the apostles, according to Paul (Romans, 7, 25). It behooves, therefore, that the inflexible position of the moralist should give way to compassion, and to the conviction that under the existing social iniquities, human nature is slow to change from the inherited taint of ages. To regulate the social evil by exclusively ethical means is impossible. The virus that permeates society needs a quicker remedy. Moralists and sanitarians must meet by mutual concessions on a common platform. There are excellent points in each system, but better ones yet in a blending of both.

REMEDIES.

The remedies against the social evil can only be symptomatic and are just as manifold as its causes. We must try to apply to the enumerated causes, the antibodies that may neutralize the symptoms.

I have dwelt elsewhere[1] on some feasible modes of venereal prophylaxis, to which I direct the reader's attention.

The attitude of *law* to prostitution has been in part alluded to already. In the main the law of all civilized countries does not punish prostitution as such, but is punitive towards its correlates; the procurer and keeper of houses of ill-fame. It is the divergency between the high moral standard of marriage exacted by the Scriptures and the prevalent customs, brought about by the already mentioned developmental defects in man, which causes this unfortunate condition. The state does not recognize any other union and its consequences. It does this not for ethical reasons alone but for the selfish purpose of having the race perpetuated. In this, however, the state is inconsequently partial. The atavistic tendencies the state can not extinguish, the economic requirements for an early marriage it is powerless to grant. Yet with two negative premises the state has the temerity to exact continence until economic independence to enter marriage is reached. The consequence of this coercion is two-fold. Men would either be condemned to absolute sexual inactivity when the strongest of impulses throbs through their veins, which is impossible or, in order to avoid illicit intercourse, men would marry without possessing the maturity of age and the financial means for a promising union. This, of course, is a subterfuge. The state should discourage such marriages. In an investigated number of cases Lillian Brandt in her book, "Family Desertion," reports that in a group of 564 marriages, 30 per cent. of women and 10 per cent. of men married before they were twenty. Seven of the women were fifteen years old. In nine cases men had been forced to marry in order to legitimize the child. The children of such marriages are a burden to the community and the contracting parties will belong to the so-called social deficit. Such conditions give rise to meditation because they in turn will lead to prostitution. Moreover, not every marriage is a moral one. The so-called reason marriages, marriages by design, for money, by coercion, to gratify lust solely, marriages in which procreation is tabooed, which in a way resemble prostitution for its aim to satisfy mutuality only; the countless divorces indicate sufficiently that not everything that custom sanctions is moral. After all, custom is nothing but the acts which the majority of people practice and the sum total of uncodified rules, to which they voluntarily submit. A deed which is culpable is not necessarily an immoral one (political crime, duelling). Again, not everything that remains unpunished by law is necessarily moral (drunkenness, contracting deaths). Criminal law and moral law emanate in some respects from different viewpoints. The custodian of the first is the law, serving as a material check; that of the latter, ethics and morals, a metaphysical check. Both kinds of laws diverge at times.

It is painful to admit that prostitution is an inevitable and socially and physiologically an only too well-defined form of sex relations. Its survival alone testifies to it. I do not attempt to discuss its right of existence. I simply state the fact that it does exist. I further admit that it is a degenerative form of sexual life, degrading its participants and spreading venereal

1. "Venereal Prophylaxis That is Feasible," THE JOURNAL, A. M. A., Jan. 24, 1903.

diseases, a menace to progress and civilization, if its consequences are not stopped.

The state feels the weakness of its position and tacitly tolerates the inevitable evil, the punishment of which does not strictly lie in its province. The law should step in when vice exhibits itself in a provocative and indecent manner in person, print or lascivious illustrations. The state looks on the keeper of a house of ill-fame as a provoker of vice, consequently it punishes him as a purveyor of unlawful deeds. It does so with the hotel proprietor for an occasional rental of room for the same purpose. Even the private premises of the prostitute constitute a house of ill-fame in the eyes of the law. The tolerated, unpunished vice is made punishable at the very time it is practiced within four walls. What an inconsequence!

Where shall vice be consumated in order not to offend public decency? True, the state is not obliged to promote its practice, but, on the other hand, by persecuting it and hunting for it in its privacy, the state is driving prostitution to the street, from which it intended to make it disappear.

I advise, therefore, absolute non-interference unless public decency is interfered with. Through this wide moderation and limitation of its powers, the state need not fear the reproach of the moralist that it countenances the evil. This is a syllogism. The state deals with other transgressors, thieves, robbers, etc., why should it be accused of conspiracy with vice when it does not deal with its exponents, when it ignores them? When the state promises immunity to the state witness, it certainly bargains with vice. Why should its inactivity in this respect be thrown up to it?

Let the moralist and the sanitarian make peace with each other. Let the moralist not approach this question from an untenable and too transcendental ethical point of view, and let the sanitarian remember that sanitation and ethics are paramount and compatible with each other.

42 West Ninety-first Street.

ETIOLOGY OF THE SOCIAL EVIL.*

CHARLES CHASSAIGNAC, M.D.
NEW ORLEANS.

When I speak of prostitution I do not limit the term simply to the avowed prostitute, but I include equally the clandestine prostitute. If we want to go back to the actual cause—the prime cause, as I understand it—of prostitution we need not go into the details, as these have already been touched on both directly and indirectly in the other papers, but can say, broadly, it is civilization.

Prostitution is just as old as civilization, and will continue to exist as long as there exists what we to-day claim and boast of as civilization. I apply that fact in three ways:

1. *Men, guided by the prevalent usages of civilization, either can not or will not marry when the natural sexual impulse has attained its proper force and calls for mating.*

While I agree entirely with the spirit of the resolution which has been passed here, that continence is not incompatible with health, still I do believe most firmly that the individual is not absolutely in his normal state when unable to copulate in a natural way, to a reasonable extent, nor can we expect him to submit ordinarily to what I consider an unnatural condition: that is, that of constant repression of his natural impulses and desires, those which have been given him, after all, just as all his other functions have been bestowed on him. So, while I repeat, and I do not desire to be misunderstood, that continence is perfectly compatible with health, yet the individual is not at his best and is not living a perfectly natural, normal life if, after those instincts and functions have developed, he is unable or unwilling to indulge therein.

As long, consequently, as a man either can not or will not marry, owing to the demands that are made on him through the usages of civilization, so long will a certain proportion of individuals infringe on the normal laws; and, unfortunately, just as long as the demand remains sufficiently pronounced the supply will be forthcoming for the violation.

2. *On account of the usages and necessities of civilization, when men marry, or women, too, taking "man" in the generic sense, they either can not or will not follow the laws of natural selection.*

They can not or will not be guided simply by their natural desires and inclinations, but marriages are made on one side or the other, or both, for other reasons. That is, the individual selects a partner whom he or she thinks useful or an aid in other ways than simply the higher relationship which should exist between man and wife. I do not mean simply the sexual relation, but true companionship, the higher point, of course, and sexual union for the procreation of children, which is, after all, what marriage should be.

But so many other things come into play that either the man alone, not having the companion that he should, strays off, or (unfortunately) frequently the woman, too, who for various reasons has married a man (let us put it perfectly plainly, as we have to in speaking of these things), say, who is too old for her, will, sooner or later (a certain proportion of them), find a younger and a more fitting companion; of course, after the first fall future ones are progressively easier.

3. *The unnatural sexual lives that are often lived, due to the usages of civilization.*

Either on one side or the other, if not on both, there is a desire to prevent or interfere with the natural result of married life: that is, conception, the procreation of children, and as long as it becomes necessary for either one or the other, or both, to take steps to prevent this natural result I think we are leaving the door wide open to the stimulation of prostitution, because, especially with the male, those of us who have a large experience in the treatment of genitourinary diseases can say, I have no doubt, without any hesitation, that if the male is unable for any length of time continuously to indulge in normal sexual intercourse, but has to fall back on a more or less unnatural process at home, the time will come when he will manage to indulge in the normal way somewhere else. This may be very sad, it may be all wrong (I am not discussing that point), but it is a fact; it comes sooner or later.

Consequently we always come back to civilization as the true cause of prostitution. Any others, in my estimation, would be details and exceptions and should not count. The civilization of to-day leads us to live abnormal and unnatural lives, especially in regard to sexual matters. That is the cause of prostitution away down at the bottom.

---

* Read in the Section on Hygiene and Sanitary Science of the American Medical Association, at the Fifty-seventh Annual Session, 1906. Other articles appeared on this subject Oct. 20 and Dec. 8.

It is not for me to go into the question of the remedy, Others have already presented it; others will again consider this question. The subject assigned to me was simply to state the cause of the evil. It is a question, then, if all this be true, whether, through science, through education, through the efforts of the medical profession, we can (more or less imperfectly, I am afraid, always, at best) get people back to leading natural lives. If we do that, though the task is, I fear, next to impossible, it is, in my opinion, the only way that we can do anything to put a stop to or at least greatly diminish prostitution.

A PRACTICAL LESSON IN REGLEMENTATION.*

W. E. HARWOOD, M.D.
EVELETH, MINN.

The matter of restriction of venereal diseases was called to my attention six years ago, by the manager of the Minnesota Iron Company, which is now a part of the United States Steel corporation.

The company owned mines and employed men on the Mesaba and Vermilion Iron Ranges in Northern Minnesota. Hospitals were built and physicians were appointed to look after the sick and injured. The business policy of the management was to keep the mines constantly in operation.

All sanitary and hygienic matters received marked attention; epidemics were stamped out or controlled as soon as possible. The company owned a majority of the houses in which its employés lived, which fact gave it autocratic power.

Complaints reached the management that the efficiency of their working force was badly crippled by many of their men being "laid up on account of some woman disease."

As physician in charge of one of their hospitals, I was requested to make investigation and to devise means to assuage the difficulty. The inhabitants of the district were largely foreigners, with foreign habits and a meager knowledge of the English language. These facts, coupled with the use of different names and check numbers made the task of controlling the male disseminators extremely impracticable.

The houses of prostitution were located on company property, and if desired, could be removed; but this was not considered advisable. There being no law to regulate houses of prostitution, it was thought best to interview the keepers of these institutions. We found them very willing to co-operate with us in an effort to minimize the dangers of what was considered a necessary evil. Accordingly a system of inspection of the inmates was agreed on.

HOUSE AND INDIVIDUAL INSPECTION.

Previous to July, 1899, no attempt was made to detect venereal diseases in these houses, nor in any manner to control their inmates, other than to keep order by police regulations. Since the above date the women have been regularly and systematically examined. A brief history relative to their physical condition was taken; mouth, teeth, superficial glands, skin and scalp were inspected; a thorough examination of the vagina, vulvovaginal glands, tubes and ovaries was made; one or more glass slide specimens of urethral and uterine and vaginal secretions were also secured. These secretions were dried and placed in a marked envelope and taken to the hospital laboratory, where they were stained for gonococci by the use of eosin methylen blue and Gram's method. The results of the examination were filed on a history sheet for future reference. All women found diseased were prevented from soliciting patrons, and placed under treatment; those who could not be treated at the office were admitted into the hospital and kept there until all evidence of active disease had disappeared.

The male disseminators when found by the women, were advised to consult a physician and expelled from the house; the women were taught to recognize the diseases, and many displayed considerable skill in diagnosing both acute and chronic venereal affections.

When the male patients consulted the physicians, they were asked in which house they contracted their disease and to give the name of the woman.

Complaint was made against the house (if an inspected one), the woman was sent to the office for an examination; the man's name was taken for identification.

All indebtedness incurred by the women was borne by the keepers of the houses, and in a few instances, when it could be proved that the woman deliberately infected a patron, the man's medical bill, and occasionally his board while he was incapacitated, were settled for by the guilty woman. Every effort was made to keep the woman under observation; formerly the infected continued to solicit, or if so ill that their usefulness was impaired, they were disposed of in various ways. Many were sent to their homes, or to other similar boarding houses.

Many of the women, when forced from the houses, secured rooms in the town, to continue their vocations until deserted by their friends. In two instances the desertion was followed by attempted suicide, one of which was successful.

Unfortunately, the record of the first inspection was not attainable. The following records of inspection were taken March 31, 1904, and Dec. 27, 1905.

As this particular house had been under medical control for three years, the inmates were found in a much better condition than those examined at the time of the first inspection, July, 1899. Two-thirds of the inmates were found diseased at that time. The class of prostitutes found on the Iron Ranges could not be worse, many of them having been expelled from the larger cities physical wrecks. On arrival, when informed that they must submit to an examination, a few (who were probably infected) would refuse and depart. The women who were found diseased, were treated and cared for in the same manner as the old inmates. It was seldom that a woman was forced out on account of being diseased.

RECORDS OF INSPECTION.

The women examined on March 31, 1904:

CASE 1.—A recent arrival. There were found papular syphilides, erosion of the cervix and mucous patches in the mouth. She was restricted from soliciting and placed under treatment.

CASE 2.—Endocervicitis was found; no venereal disease was discovered.

CASE 3.—No venereal disease was discovered.

CASE 4.—No venereal disease was discovered by inspection; smear showed gonococci. The woman was prevented from soliciting and placed under treatment.

CASE 5.—Active syphilis was found. The woman was then under treatment. She had had gonorrhea one year previously.

CASE 6.—No venereal disease was discovered.

* Read in the Section on Hygiene and Sanitary Science of the American Medical Association, at the Fifty-seventh Annual Session, 1906. Other articles appeared on this subject Oct. 20 and Dec. 8.

CASE 7.—No venereal disease discovered. The woman had had metrorrhagia for two months. Curettement was advised.

CASE 8.—No venereal disease was discovered. The woman had had chancroids.

CASE 9.—No venereal disease was discovered.

CASE 10.—No active venereal disease was discovered. The woman had had syphilis six years previously.

CASE 11.—The woman complained of pain in the lower part of the abdomen. Examination discovered an enlarged right tube and a large exudate in the posterior cul-de-sac; pus was found in the urine. She had had syphilis. An operation was advised.

CASE 12.—No venereal disease was discovered.

Thirty-three per cent. of these women had active disease; 50 per cent. gave a history of venereal disease.

RECORD OF THIRTEEN WOMEN EXAMINED ON DEC. 27, 1905.

CASE 1.—This woman was admitted into the hospital Dec. 27, 1905. A hernial protrusion was found at the site of an operation performed in 1903. The woman was admitted to the house June 2, 1905, and remained free from disease until Dec. 16, 1905, at which time a slide specimen of uterine secretion showed gonococci. Slide specimen taken January 11, 12 and 13 showed absence of gonococci. Specimen taken on January 19 was negative for gonococci. This slide showed a specimen of *Trichomanas vaginalis.*

CASE 2.—This woman was admitted to the house Aug. 15, 1905. She had been ill for three weeks, but had been soliciting up to the time of admittance. Examination of a slide specimen showed the presence of gonococci. Patient was placed under treatment at the house. As her condition did not improve, she was sent to the hospital Sept. 27, 1905, where she remained for 23 days. Slide specimens taken three days in succession were free from gonococci and she was discharged. Examination Dec. 27, 1905, was negative for gonococci though endocervicitis was present.

CASE 3.—This woman was admitted to the house Jan. 24, 1905. A vulvovaginal abscess was found discharging pus which contained gonococci. The abscess was freely opened and the cavity cauterized. Examinations thereafter were negative for gonococci.

CASE 4.—This woman was admitted to the house Sept. 27, 1905. She gave no history of disease and was found free from it.

CASE 5.—This woman was admitted Dec. 20, 1905. A perirectal abscess was discovered; operation was refused. The abscess opened spontaneously. A slide specimen was negative for gonorrhea.

CASE 6.—This woman was admitted Jan. 24, 1905. She gave a history of syphilis three years previously. No evidence of disease was discovered. She remained free from disease Dec. 27, 1905.

CASE 7.—No disease was discovered.

CASE 8.—This woman was admitted Nov. 22, 1904. She gave a history of gonorrhea. She was found free from disease and remained so until Dec. 27, 1905.

CASE 9.—This woman was admitted Nov. 22, 1904. She gave no history of infection. She remained free Dec. 27, 1905.

CASE 10.—This woman was admitted Nov. 1, 1904. She gave a history of chancroids. No disease was discovered. On March 28 complaint was made. Examination was negative. She remained free from disease Dec. 27, 1905.

CASE 11.—This woman was admitted Aug. 15, 1905. There was no history of venereal disease. She remained free at the date of examination.

CASE 12.—This woman was admitted July 21, 1905. She gave a history of having had gonorrhea. No disease was discovered. Complaint was entered Dec. 11, 1905; a slide specimen for gonorrhea, the disease for which complaint was made, was negative.

CASE 13.—This woman was admitted Sept. 27, 1905. There were no complaints and no symptoms of disease. A slide specimen examined Jan. 5, 1906, showed gonococci. She left the house the next day.

Thirty-one per cent. of these women showed active disease and there was 61 per cent. with a history of disease.

STATISTICS.

The percentage of active cases found between the commencement of the statistics and the date of the last examination does not show much improvement, although allowance should be made for the greater number of diseases discovered which should naturally follow increased experience of the examiner. A comparison with the record of the inspection in 1899, would have been of greater interest.

The results of these two inspections may be taken as an average result of the many such, taken from March 31, 1904, to Dec. 27, 1905. They demonstrate the probability that sooner or later all the inmates of a house of prostitution will become infected; also the frequency of disease and its character, and the assistance given by the use of the microscope in determining it.

The following statistics comprise the results of the examination of seventy different women, from one of the four similar places, from March 31, 1904, to Dec. 27, 1905:

The number of cases of acute syphilis contracted while the women were inmates of this house was found to be one. The number of cases of syphilis contracted outside of this house, which came to it infected, was five.

The number of cases of acute gonorrhea contracted while the women were inmates of this house was five. The number of cases of acute gonorrhea contracted before entering this house was four. The number of women having complications of gonorrheal disease, contracted before entering this house was four. The number of cases found free from venereal diseases by inspection and microscopic examination of slide specimens, though all had endocervicitis, was thirty.

The number of women free from acute disease, though with history of infection, and many of whom bore evidence of the surgeon's knife, was 21. The number of cases having both syphilis and gonorrhea was six.

Total number was 70; total number of acute diseases, 15; total number of chronic diseases, 4. Percentage of cases with acute venereal disease, 21.3. Percentage of cases with history of venereal disease, 57.

Appreciating the possibility that many cases of disease escape detection. the above methods will be supplemented by the use of culture media.

I am indebted to my former assistant, Dr. J. P. Sedgwick, now of Minneapolis, who will place at my disposal the Wasserman culture medium.

Of the total number of cases occurring in my practice during the period of time covered by the statistics (less than two years), eleven were contracted at an inspected house; forty-eight at three houses not inspected. Nineteen patients contracted disease outside of any house of prostitution; thirteen contracted disease outside of the city.

AMOUNT OF VENEREAL DISEASE.

The ninety-one cases of venereal disease met by a physician who did not make venereal diseases a specialty, and in a community of a few thousand inhabitants, gives some idea of the enormous amount of venereal diseases to be found in more populous localities.

The fact was thoroughly appreciated that when we controlled the women we reached but one-half of the disseminators. One illustration of this fact brings to mind the case of a young woman recently married, who came to the hospital for treatment. She complained of a painful micturition and leucorrhea. When questioned she broke down, cried and finally stated her troubles. concluding with the statement that her husband accused her

of giving him something. Examination of the leucorrheal discharge demonstrated gonococci; she was informed of the nature of her disease and its dangers, also the probable source of the infection.

The theoretical and the practical sides of the subject of the restriction of venereal diseases are distinct. Of the necessity for making the attempt at restriction, there can be no doubt. All can recall instances where the young bride was doomed to invalidism, and in which physicians were morally responsible for the inevitable infection.

The registration of all venereal patients reporting for treatment, as a means of safeguarding against the dissemination of the infection, has been exploited as a valuable measure, but that it presents difficulties is illustrated by the following case: A young man of high standing, intellectually and socially, who being about to contract marriage with an equally refined and educated woman, paid his first and only visit to a house of prostitution. He was unfortunate and contracted syphilis, which broke out about the time of the expected ceremony.

The man was informed of the nature of the disease and the probable results should he marry; he placed himself under my care, with the admonition that if I should reveal his trouble he would shoot me. He was treated energetically until the time set for the postponed wedding. When informed that he must again postpone the marriage, he was desperate, stating that his reputation was at stake, the marriage must take place, etc. I was again cautioned, but he was told with positive assurance that if he did not inform the young lady I would. My advice was finally followed. They were married the year following, and lived without marital relation for two years. Three years after their marriage a healthy child was born.

A man informed me that he had lost his daughter, who was about to be married; that since her death he had learned that her intended husband was diseased and he thanked God that she had been spared the disgrace and probable suffering, had she lived and married.

Such experiences are of every-day occurrence, but when diseases so frightful in their results are permitted to continue without concerted action on the part of the medical profession, it seems that we are derelict in our duties toward the innocent victims.

There is decided opposition throughout the United States, especially by the ministers and teachers of sociology, to the examination of the prostitutes or to their recognition in any other way than to point them out to the young as examples of what will befall them should they err. An eminent authority on sociology states: "It seems to me that for the authorities to clear away as much as possible the dangers that surround sexual vice, is to put a premium on irregular sexual connections, as against the normal state of marriage. If the risks of vice are minimized by such a policy, the chief fulcrum is taken away from those who are bringing to bear on the young, deterrent pressure."

A reform mayor of the city of Virginia had his method; he closed all the houses, drove all the women out of town. The mayor was asked if he did not know that many of the women were yet in town. He stated that he had found a few but had his police drive them from the rooms. The facts are, the women who desired to remain, did so, and were protected if they had sufficient money to pay or to buy off the police. The remainder moved to the next town.

The attempted reform was not accomplished without trouble; the mayor received threatening letters which were soon followed by execution of the threats. His residence was partly demolished by dynamite; his barn and valuable horses destroyed by fire; blood was poured on his doorsteps. These atrocities, with the anticipation of future ones more terrible, kept his invalid wife and daughter in a state of fear, better imagined than described.

SUMMARY.

It is stated that venereal statistics are valueless when used to demonstrate the lessening of venereal diseases, and it is contended that they have but a local value. The deductions from my observation, show that though inspection did not prevent new cases from appearing, either in the male or female, it did decrease the ratio in direct proportion to the number of cases detected and treated.

As an example, in a house in the vicinity of the mines, seven out of eight inmates had syphilis. They were all using mercurial inunctions, though no attempt at restriction had been made prior to their inspection. In the present instance the practical success of the measures adopted was evidenced by the accomplishment of the original project for which they were adopted, as the endemic was controlled, with the result that at the present time the disability "on account of some woman's disease" is insignificant.

The results of practical methods carried out during the last six years in unlicensed houses would indicate that it is possible to lessen venereal diseases.

1. By thorough, frequent inspection by competent men of all houses of prostitution.

2. By placing acutely diseased women in a hospital and giving them the treatment their diseases demand, which would also facilitate the closer study of venereal diseases.

3. By the exclusion from the houses of diseased men.

4. By the registration of diseased women with the keepers of the houses.

5. By co-operating with the keepers until the present periodical extortion system is a thing of the past.

Relative to hospital expenses, it was suggested to the keepers that they collect a fixed sum each month from each woman, giving her a ticket of admission to one or more hospitals in the state, with which the necessary arrangements could be made.

Another phase of the subject, which makes restriction a difficult matter to accomplish, is the abhorrence which many medical men of esthetic tastes feel toward dealing intimately with prostitutes and their diseases.

This view point is responsible in a large measure for the relegation of the restriction of venereal diseases to men who are employed to do the inspecting simply for the pecuniary returns, and by whom moral or any other considerations are left entirely out of the reckoning.

The Designation of One's Associate in Medicine.—The term "assistant" is distasteful to many medical men who probably feel that one man is as good as another and would be a great deal better but for the lack of opportunity. The benevolent and diplomatic principal would speak of his "colleague." Some have even filched from the clerical profession the title "coadjutor." A well-intentioned old lady, on being asked whether she had seen her doctor, replied: "No, but he has promised to send his accomplice." How will "associate" do?—*Medical Times.*

RETROPERITONEAL CYSTS

DEVELOPING FROM THE WOLFFIAN BODY—PARAPANCREATIC CYSTS.*

FRANCIS D. DONOGHUE, M.D.
BOSTON.

The results of frequent surgical intervention in the upper abdomen has gradually changed our ideas regarding tumors and their development in this region. This change in our ideas is analogous to that which followed frequent operations on appendiceal and pelvic conditions.

In spite of frequent operations, cystic tumors developing in the region of the pancreas and having relationship with, rather than belonging to, that organ are still denominated pancreatic cysts.

That fetal remains may be found retroperitoneally is a well-known and accepted fact. That tumors develop from the middle and lower portion of the Wolffian body and tubules, as well as from the ducts of Müller, is also well known. In view of this knowledge, it seems strange that for such a long time retroperitoneal cysts, other than dermoid, have usually been designated by the name of the glandular structure with which they were most intimately in connection. The uncertainty that exists in the identification of embryologic remains, especially in cysts in which the lining cells may have undergone marked change from atrophy and fluid pressure, makes it necessary to depend for diagnosis on the anatomic position of a cyst rather than on mere microscopic examination of the wall. Another important diagnostic point is their resemblance to other growths.

To trace briefly the development of the Wolffian body will enable us better to understand the growth of tumors derived from its remains.

First, in the embryology of vertebrates, we have, as the primitive constituents of the urogenital system on each side, four parts: 1, the genital ridge; 2, the Wolffian ridge; 3, the Wolffian duct; 4, the Müllerian duct. Out of the Wolffian ridge there arise three primary organs: (a) The pronephros (head kidney), with its excretory duct, the Wolffian duct; (b) its place is taken by the mesonephros (Wolffian body), an amniote or primitive kidney; (c) both are replaced by the true kidney.

The Wolffian body develops on the side of the vertebræ and retroperitoneally.[1] Medially, it borders on the aorta and posteriorly on the posterior body wall. The Wolffian body extends down into the pelvis, its upper end extends up to the region of the liver and is united, together with the Wolffian duct, to the diaphragm. On the development of the kidney the Wolffian body retrogrades and the kidney finally develops in the position which it previously occupied.

The upper or sexual part (epoöphoron) is usually retained, and in the late fetal period suffers little change of location. The middle or sexual series of the Wolffian tubules, with the adjacent part of the Wolffian duct, becomes, in the female, an atrophic structure, known as the epoöphoron or parovarium, or organ of Rosenmüller.

The Wolffian tubules and the Wolffian body become, in the male, the system of excretory ducts of the testicle.[2]

The Wolffian body being situated in the tissue which furnishes the mesodermal elements of the mesentery, omentum and other abdominal organs, these structures are able to carry with them in their changes of location ectodermal cells, from which normally develop ovary, epidermis, hair, nails, entire nervous system, spinal ganglia; and mesodermal cells, from which normally develop peritoneum, smooth muscle fibers, fibrous connective tissue, cartilage, bone, blood, blood vessels, etc. Later these may produce structures resembling those which they were destined to form had they remained in their normal situation.

Inasmuch as the first surgical interference was devoted to the lower abdomen, every movable cyst of the abdominal cavity was diagnosticated and operated on as ovarian for many years, practically up to 1898. Later in the cycle of abdominal surgery, laterally placed cysts were considered nephritic, adrenal or splenic, and finally all the cysts of the upper abdomen were considered pancreatic, although the evidence of such origin has been, in most cases, of the very slightest.

In reporting a case which he called "multilocular cystoma of the pancreas, although no definite pancreatic tissue could be made out," Fitz[3] quotes as "cysts of the pancreas" several cases in which the evidence making a diagnosis of pancreatic cyst would be possible is conspicuous by its absence. They are as follows:

CIBERT'S[4] CASE.—This was a case of cystic tumor in the upper abdomen removed by Poncet from a woman, aged 26. The growth was first noticed six years before operation, and it increased slowly for four years. Just before operation, it was apparently the size of the head of an adult. The cyst, when removed, was found to have a wall in which smaller cysts, no larger than hazel nuts, were found. They were lined with cylindrical epithelium and the wall of the main cyst was traversed by ridges enclosing communicating space.

BOZEMAN'S[5] CASE.—This case showed a principal cyst holding two and one-half gallons of brown fluid, the wall was trabeculated and bore several secondary cysts, the size of hen's eggs. The walls were lined with cylindrical or polygonal epithelium and hardened section showed that the formation of the secondary cysts took place as in an ovarian cyst.

RIEDEL'S[6] CASE.—This case occurred in a woman who died in four days after the puncture of the cyst. The cyst had an adenoid projection from wall. Several globular spaces were found communicating directly with the interior, the space being lined with cylindrical epithelium, and others had papillary elevations as in ovarian cystoma.

MARTIN'S[7] CASE.—A woman, aged 50, had a cyst removed from the region of the pancreas. It was so large it filled the entire abdomen. Sixteen years before she expected labor. The cyst was found behind the transverse colon. The cyst was isolated, except at one end, and cut away. A portion of the wall contained a large number of cysts, varying in size from that of a hazel nut to a goose egg. All were lined with cylindrical epithelium, and no pancreatic tissue was found.

RANSOHOFF'S[8] CASES.—Ransohoff reports 159 cases of pancreatic cyst subjected to operation. Seventeen were of the type of cyst adenoma. Of the 159, all but thirty-four were sewed to the abdominal wall and drained, with but five deaths. In twelve, operation could not be completed; four of these patients died; in twenty-three there was total enucleation, with two deaths. There have been about thirty similar cases reported since.

The report of his second case follows the conventional diagnostic line. It was an epigastric tumor with resonance encircling it above and below. At the operation, the cyst was enucleated from its location and was found in such close relation to the pancreas that an examination of specimen showed a small piece of pancreas intimately incorporated with the external surface of the tumor. The tumor was withdrawn between stomach and colon and the gastrocolic omentum divided.

---

* Read in the Section on Obstetrics and Diseases of Women of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

1. Abel-Bandler: Gyn. Path., N. Y., 1901.
2. Heiser: Text-Book, "Embryology."
3. Fitz: Am. Jour. Med. Sci., 1900.
4. Cibert: Gaz. des Hôp., 1896.
5. Bozeman: N. Y. Med. Rec., 1882.
6. Riedel: Arch. f. klin. Chir., 1885.
7. Martin: Virch. Arch., 1890.
8. Ransohoff: Am. Medicine, July, 1901.

There was a thin, tough sac. Nowhere did there appear any infiltration of connective tissue with the epithelium. Completely healed in three weeks.

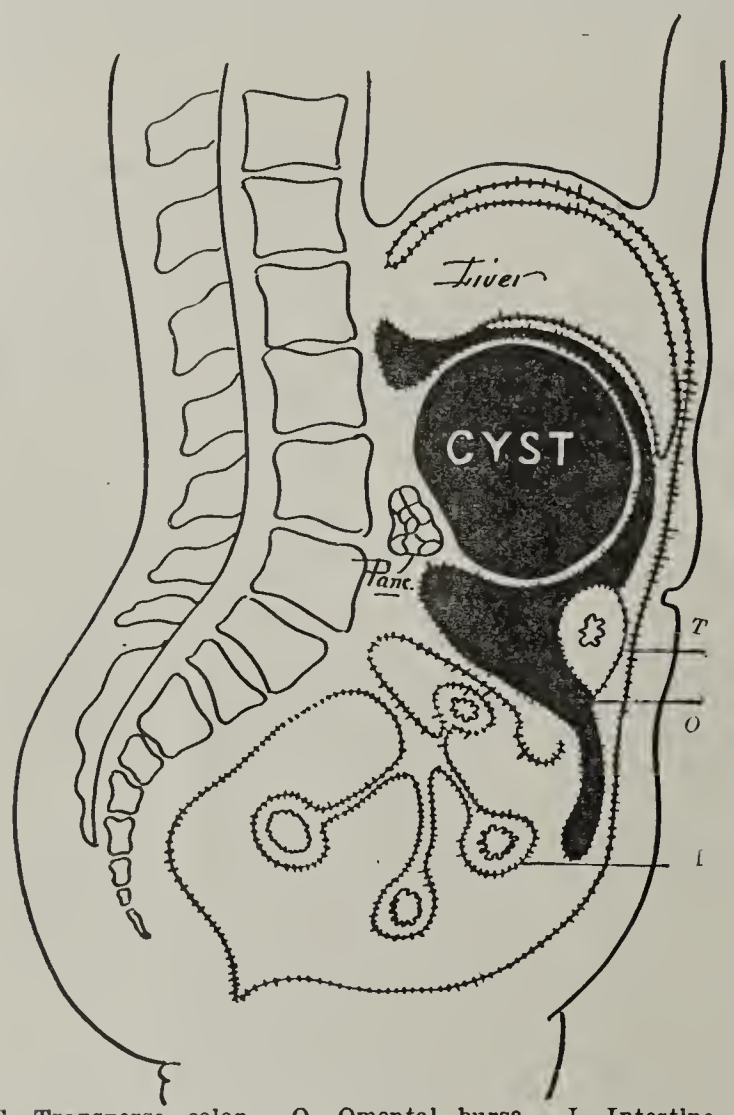
The following cases have apparently been diagnosticated pancreatic from their relation rather than from the presence of pancreatic tissue. They answer to all the characteristics of Wolffian body cysts:

Lohlein's[9] Case.—The cyst extended back to the spine and down into the pelvis, compressing the ascending and transverse colon, and had a fibrous wall. The contents consisted of a thin, yellow, mucus-like fluid.

Obalinski's[10] Case.—Obalinski described a retroperitoneal cyst with a wall composed of firm connective tissue and elastic tissue. There were liters of clear, watery fluid. He refers to an article by Petryowski, in which similar cases are reported, and the origin from the Wolffian body or Müllerian duct suggested.

Carter's[11] Case.—Carter cites a case of a thin-walled cyst attached to spine in left lumbar region.

Morris's[12] Case.—This was a case of a woman who was delivered of a malformed fetus. She had at the time a tumor, independent of the uterus, which was subsequently diagnosticated as a cyst of the pancreas. The cyst ruptured spontaneously into the intestine, effecting a cure of all symptoms.



T. Transverse colon. O. Omental bursa. I. Intestine. The dashed line indicates the peritoneum.

Pean's[13] Cases.—This author made personal observation of three cystic tumors and found them all attached to the posterior wall of the abdomen. They appeared to have got between the layers of the omentum secondarily in the process of growth.

Pitchford's[14] Case.—"Alice P., aged 29, single, had noticed a tumor gradually increasing in size for past two years. There was little inconvenience from its size until about five weeks before operation. Her only complaint was of some increase in dyspepsia and pains in the abdomen and back.

"*Examination.*—Examination showed tumor mesially placed and lying, for the most part, in the hypogastric region, about one-third only being in the epigastric region. The general contour was ovoid, the narrow end being upward; its size was about that of a cocoanut. It was freely movable upward and to the right, but less so to the left and downward. The tumor was dull on percussion all over; it was surrounded on all sides by a band of resonance. The urine was normal.

"*Operation.*—Operation showed uterus and appendages normal. The great omentum was found to be stretched out over the tumor. The transverse colon was found to be displaced downward by the tumor. The growth projected through that part of the great omentum which lies between the stomach and the transverse colon. It was also behind the parietal peritoneum of the lesser sac. The tumor was shelled out of its bed with comparative ease. The sides were found to be bound to the posterior abdominal wall by connective tissue. Incision closed without drainage and patient left hospital in sixteen days. The growth was of the nature of a multilocular cyst and had a common wall of tough connective tissue, the thickness varying from 2 mm. to 6 mm.

"*Microscopic Examination.*—This showed the main tissue of the cyst walls to consist of bundles of fibrous tissue packed in varying degrees of closeness. In the fibrous tissue were foci of more actively growing connective tissue. In some places these young connective tissue cells appear grouped in heaps below the lining epithelium; in this way are formed low eminences, projecting into the cavity of the cyst. In two of the sections typical gland tissue was encountered.

"*Remarks.*—This multilocular cyst tumor developed behind the peritoneal covering of the posterior wall of the lesser peritoneal cavity. There can, I think, be little doubt that it was derived from the pancreas, being developed, probably, very early in life in some outlying fragment or accessory portion of the gland.

"If this theory is correct, it is interesting to note that pancreatic properties were entirely absent from the cyst contents. The simplicity of construction and the absence from the tumor of cartilage, bone, striped muscle or skin organs preclude, I think, the suggestion of teratoma. More suggestive of a pancreatic origin than mere anatomic position are, however, the characters of the traces of glandular tissue found in the specimen."

Chartle's[15] Case.—"A woman, aged 45, had a fixed cystic swelling, occupying the hypogastric and left iliac regions, but not involving the pelvis. There was resonance in front. Three years' history of growth. The cyst contained a fluid of brown color and tufts of papillomatous tissue could be seen microscopically. The wall of the cyst was covered by epithelium, arranged in a slightly papillomatous manner. The cyst was behind the sigmoid and between the layers of its mesocolon."

McMurtry's[16] Case.—This case shows "a cyst, having its origin in the colonic mesentery on the left side, and when it had extended to the right it had grown at the expense of the wall of the tumor. It occupied the entire upper left quadrant of abdomen. It was a serosanguineous cyst of the mesentery, arising in the colonic mesentery near the left kidney. The sac, which was very thin, was enucleated."

Cartledge's[17] Case.—A woman, aged 45, had a large, freely movable cyst in left side of abdomen, immediately under the rib. It could be pushed downward and simulated the location and feel of a cyst of the left uterine appendage. It had a thick wall and was enucleated. It weighed six pounds; the contents were like rich chocolate.

Cysts of the omentum and mesentery are more apt to be confounded with ovarian tumors than retroperitoneal cysts. These have been fully considered by Dowd,[18] Ayer[19] and Porter.[20] There is unanimity of belief that in this class of cases cysts develop from embryologic remains.

9. Lohlein: Berl. klin. Wochft., 1889.
10. Obalinski: Wien. klin. Wochft., 1891.
11. Carter: Brit. Med. Jour., January, 1883.
12. Morris: Lyon Médical, September, 1901.
13. Pean: Bull. de la Soc. d'Anat., 1848.
14. Pitchford: Trans. Path. Soc., London, 1903.
15. Chartle: Med. Press., March 1, 1905.
16. McMurtry: Louisville Mon. Jour., 1904-05.
17. Cartledge: Trans. South. Surg. and Gyn. Soc., 1902.
18. Dowd: Annals of Surg., 1900.
19. Ayer: Amer. Jour. Med. Sci., January, 1906.
20. Porter: Annals of Surg., March, 1906.

The following cases reported as retroperitoneal cysts simulating cyst-adenoma of kidney or floating kidney also evidently developed from Wolffian body remains:

KRUSEN'S[21] CASE.—This is a case of cyst of the kidney simulating ovarian cyst.

A woman, aged 34, had a mass which had been growing for three years and was very movable. She had dragging pain, relieved by lying down. Urine was negative. Cyst was the size of an ordinary football, occupying the right side of the abdomen and having no connection with the uterine appendages. It was retroperitoneal and the walls were thin and tense. The fluid was clear and colorless.

"On examination it was found to be connected with the right kidney, which was considerably atrophied. It resembled a cyst of the right ovary with a long pedicle."

ELDER'S[22] CASE.—A case of paranephritic cyst simulating a floating kidney.

A single woman, aged 30, had a tumor which had developed some time in the past six years. During this time she had various attacks of pain in the right side of the abdomen, accompanied by nausea and vomiting. Examination showed a tumor the size and shape of a kidney, moving freely with respiration, and movable into the different quadrants of the abdomen. Urine was normal. Operation revealed a retroperitoneal cyst, independent of the kidney. The cyst was found to be divided into three loculi, which communicated with each other. The wall was composed of fine, fibrous connective tissue and enclosed a straw-colored fluid.

PAWLIK'S[23] CASE.—A woman, aged 43, was supposed by Pawlik to be suffering from hydronephrosis, although urine was normal in quantity and quality. The operation showed pararenal cyst, unconnected with kidney.

The grouping by Dowd[18] of hydatid, chylous dermoid and other cysts of a similar nature under the head of embryologic tends to simplify our understanding of these tumors. As cystic tumors have been identified as originating in all parts of the Wolffian body tract, except the upper, a logical step would be to group under the head of retroperitoneal Wolffian body cysts all cysts of the upper abdomen in which development from glandular organs can not be conclusively demonstrated.

LOCKWOOD'S[24] CASE.—Lockwood was the first clinician to suggest the real cause of the development of these cysts. He reports a case, with remarks.

The patient was a woman, aged 20, in whom an operation disclosed a cyst as large as an ostrich's egg, behind the descending mesocolon. Urine was normal. The colon lay to its outer side, but had no connection with it. After the removal of the cyst, the ureter, which lay behind it, came into view. The cyst itself lay among loose connective tissue, back of the peritoneum. It was unilocular, and filled with a chocolate-colored, semi-fluid mass, consisting of fibrin, blood pigment, and cholesterin. Microscopic examination showed contents to be simply altered blood clots. No glandular structure was found.

In attempting to account for cysts, he says: "The suprarenal body may be developed from the Wolffian body, but, at all events, it is continuous with it until a late period of intrauterine life. At this period the lower end of the Wolffian body is already becoming converted into the epididymis and other structures about the testis; in the female it is becoming epiovarian or parovarian. Thus it is evident that between the suprarenal body and the ovary or testis, there is, along the course of the ureter, a part of the Wolffian body which has hitherto been unaccounted for. How long this persists or what may be its ultimate fate is unknown.

"Now it is so notorious that the part of the Wolffian body which is in relation to the ovary and testis is prone to give rise to various kinds of cysts, that it does not seem unreasonable to assume that the remaining part, viz., along the ureter, may do so likewise, and I venture to suggest this is the origin of the cyst which I have just described."

DUNNING'S[25] CASE.—A married woman, aged 25, had a lump in the left side, under short ribs and complained of occasional attacks of pain. The diagnosis was hydronephrosis. When at rest, the tumor occupied a position just below the stomach.

Operation.—Operation revealed a large tumor, with dense, fibrous capsule. From main cyst, forty or fifty smaller cysts projected into and filled the main cavities. They were filled with slightly turbid, tenacious, mucoid material. "It is called a pancreatic cyst because it occupies the position usually occupied by such a cyst, and is attached to the pancreas."

Pathologic Report.—"While this adenomatous tissue is not typical of pancreatic tissue, it might pass for such. We have failed to demonstrate the presence of the two most positive signs of the pancreatic origin. It has, however, been the custom to classify cysts occupying a similar position and attached to the pancreas as pancreatic cysts."

In their work, page 202, Robson and Moynihan[26] state: "Unless a careful postmortem examination is made, the origin of the tumor of the pancreas can not be proved, for if the growth begins in the suprarenal capsule in adhesion to the pancreas, it is probably found very early on the left side, and at the operation a portion of the pancreas may have to be removed."

Dunning says: "In my case, I think the suprarenal capsule origin may be excluded, because when at rest, it was two or three inches removed from the site of the suprarenal gland and kidney. Neither could the case be described as a cyst of the omentum as it lay entirely behind the omentum."

Lloyd[27] says: "Because the examining finger enters a cavity containing fluid behind stomach, at the bottom of which the pancreas is felt, there is no reason to call it cyst of the pancreas," and he suggests the term pancreatic pseudo-cysts for bursitis of the lesser peritoneal cavity with tumor formation. The method of formation of pseudo-cysts and the fact that they have no definite cellular wall structure suggests, as several writers have pointed out, that when the pancreas is injured there is an effusion of blood and pancreatic secretion in the lesser cavity of the peritoneum (or from gallstone disease some obstruction to foramen of Winslow may arise, especially if there is severe cholecystitis and gangrene) which seals (closes) the foramen of Winslow. The fluid continues to irritate, so that very soon the cavity is fully distended. This causes at first a rapid tumor formation, which afterward enlarges very slowly. This occurs below and behind stomach and large intestine.

As the fluid pours out into pre-existing space, the tumor takes the shape of lesser peritoneal cavity, being deepest above and toward the left in the direction of the spleen. The treatment really consists in incising through the thin peritoneal covering and stitching the walls of the cavity to the abdominal wall. "In these cases, the anterior wall which is incised is scarcely thicker than the normal gastrocolic omentum.[28] The transverse mesocolon may be so thin as to allow leaking of fluid which causes general peritoneal symptoms.

COOMBES AND NASH'S[29] REPORT.—In connection with a report of a case of their own Coombes and Nash also report twenty-five cases which they call traumatic pancreatic cysts, in which there is effusion into the lesser peritoneal cavity. In this table, twenty-three occurred in males and two in females. Youngest male, two; oldest male, fifty-eight. One woman, aged 23, had suffered three years. The cause of the trouble was a fall from a great height.[30] The other woman, aged 20, had suffered one year. Cause of trouble was a blow on the chest by a swinging door.[31]

21. Krusen: Am. Medicine, January, 1906.
22. Elder: Montreal Med. Jour., 1905.
23. Pawlik: Arch. f. klin. Chir., vol. liii, p. 571.
24. Lockwood: Trans. Path. Soc., London, 1898.
25. Dunning: Am. Jour. Obst., 1905.
26. Robson and Moynihan: "Diseases of the Pancreas."
27. Lloyd: Brit. Med. Jour., 1892.
28. Blayney: Trans. Royal Acad. Med., Ireland, 1904.
29. Coombes and Nash: Lancet, 1901.
30. Reigner: Berl. klin. Wochft., 1890.
31. Boyd: Clin. Jour., February, 1900.

Twenty-nine cases, including eleven males and eighteen females, with an average of 36, were non-traumatic. The seven cases in which they found that excision was attempted or performed, suggesting a definite wall, were all in females.

ROLLESTON'S[32] CASE.—This was a case of acute pancreatitis, which gave rise to a localized peritonitis, with effusion, occupying the lesser sac of the peritoneum. He remarks that, "It is noteworthy that this peripanereatic cyst resembled closely a true pancreatic cyst, both in its position and relations and in the chemical and digestive properties of its containing fluid. It is impossible to be certain whether a cyst in this situation is pancreatic or peripancreatic, merely from clinical examination, and difficult, even if the case is operated on, unless a piece of the wall is removed and examined microscopically for the presence or absence of pancreatic tissue. A point which might be useful is the presence or absence of fat necrosis. Its presence would be strongly in favor of a peripancreatic cyst secondary to pancreatitis, since it does not seem to occur in true pancreatic cysts. What the relative frequency of peripancreatic effusions secondary to pancreatitis and of the pancreatic cysts really is, it is difficult to determine. Clinically, the term pancreatic cysts is used to cover both."

If it is reasonable to believe the theories advanced as to the formation of pseudo-cysts, it is also reasonable to believe that pressure from a tumor developing under the postparietal peritoneum may lead gradually to the changes in the pancreas which it is claimed are set up by direct and sudden violence.

AUTHOR'S CASES.

The conclusions arrived at in this paper are based on a consideration of reported cases and on three cases of cystic tumor developing in the epigastrium which have been under my charge. Two of these cases I saw while acting as an assistant to Dr. S. J. Mixter. Both of these cysts had a definite wall and appeared between stomach and transverse colon and were treated by enucleation. The third case, which I report in full, was under my charge last year.

Patient.—Mrs. S., married, aged 45, was born in Massachusetts and had had no previous illness, except measles when a child.

History.—Her father was alive, aged 88. Mother died of pneumonia at 54. Two sisters died during infancy. One brother died at 49 of Bright's disease. Three brothers and one sister are alive. She was married at 19, and has two daughters, ages 25 and 27. She has had no trouble during pregnancy or during delivery and no miscarriages.

Catamenia was always regular and painless up to May, 1904, when she was unwell six weeks in succession. She has been unwell only once since. Ten years ago, while taking some wood from one house to another, she slipped on the stairs, and thought at the time she had a strain, but this apparently got well, as she made no further complaint. During the latter part of the summer of 1904, she had "stomach trouble." She had nausea and distress after eating.

She was examined carefully by a physician, who found nothing to suggest anything other than indigestion. Stomach trouble continued, with gradual loss of flesh, amounting in all to about thirty pounds. On getting up in the morning she always felt fine, but as the day went on nausea increased. She was troubled with nausea in the morning after breakfast and vomiting after dinner and supper.

In September, 1904, she noticed a bunch in the abdomen for the first time. It was movable from the right side to the median line, along the lower costal border.

Some time after this she tripped and fell, and following this, there was a constant increase in the size of the swelling. At Christmas she was confined to her bed for two or three days on account of severe indigestion. She was also slightly jaundiced at this time. Her bowels were constipated and she found that the less she ate the better she felt. Her complexion became sallow and yellowness of eyes persisted for some time. The urine was normal in quantity and constituents. The constant growth of the tumor caused her to call Dr. J. A. Magee, of Lawrence, in February, 1905, and a few days after his first visit, I saw her in consultation on February 8.

Examination.—The story of the case was related as above, and examination showed a pale, poorly-nourished woman, who showed the effects of a marked loss in flesh. Examination of heart, lungs and pelvic organs was negative. There was no edema of extremities. Abdominal walls were very lax. In the upper left abdomen, in the region of the gall bladder, was a tense, fluctuating tumor. It was as large as a man's head, and moved with respiration. It was movable in all directions, but most so toward and beyond the median line to the left. There was dulness above and to the outer side, with resonance below and to the left. As the woman changed her position in the bed, the tumor changed its position. But, as she lay on her left side, the zone of movement seemed toward the left and up toward the ensiform cartilage.

Diagnosis.—The diagnosis rested between a cyst of the gall bladder, pancreas, mesentery, or a hydronephrosis.

Operation.—Operation was advised, and was performed on Feb. 14, 1905, at the Elliot Hospital. In the operation I was assisted by Dr. Magee and Dr. Emil Ruppel, of Lynn.

Incision extending from opposite the end of the ninth rib to a point just below the umbilicus, was made through the right rectus muscle. When the peritoneum was incised, a large, glistening cyst of the same apparent nature and appearance as a parovarian, was seen. The liver was pulled down in a thin, broad band over the upper portion of the tumor. The gall bladder was to its outer side and behind. There was no area or evidence of fat necrosis. The stomach was just visible at left end. An incision was made through the peritoneal attachment to the liver and the cyst was shelled out in a similar manner to the enucleation of a gall bladder in cholecystectomy.

The cyst was found covered by two layers of peritoneum and on turning cyst up and going through the gastrohepatic omentum, the cyst which had a fairly firm fibrous wall was enucleated back to the top of the pancreas, which could be felt. One or two large blood vessels, which made something of a pedicle, were ligated and the cyst removed entire.

During the operation an occasional large blood vessel was tied.

After the enucleation, the cavity from which the cyst came was practically devoid of fluid or bleeding. The abdomen was closed without drainage, and the patient made an uneventful recovery, going home on the sixteenth day. The stomach symptoms disappeared after the third day and have not returned.

Postoperative History.—In the year following the operation, her complexion cleared up and she has regained her original weight. I saw her the first of May of this year and she is entirely well. She has not had an unfavorable symptom since leaving the hospital.

Microscopic Examination.—Dr. W. F. Whitney of the Harvard Medical School reports the specimen to be "similar to the ones removed by Dr. Mixter, being a thin-walled cyst, presumably from remains of the Wolffian body and resembling a parovarian cyst."

Dr. W. P. Graves, of the Free Hospital for Women, made a further examination and reports as follows:

"Wall is made up of pure fibrous tissue which contains areas of round-cell infiltration. There are also areas of large palely-staining cells which are apparently collections of endothelial cells. Scattered through the fibrous tissue are smooth muscle fibers. The wall is vascular and contains numerous capillary blood vessels which have a thick, prominent, endothelial lining. The interior surface of the cyst is lined by epithelium. In places this epithelium consists only of a single cuboidal layer. In other places the epithelium is heaped up in cuboidal or polygonal forms. In still other places the epithelium at the surface has a distinct tubular formation. Beneath the epithelial lining is a well-marked zone of cytogenous tissue and this structure together with the occasional appearance of tubular epithelium gives a suggestive glandular appearance. In

32. Rolleston: Trans. Path. Soc., London, 1898.

no instances could the epithelium be found to be ciliated. Diagnosis: Retroperitoneal cyst."

SUMMARY OF DIAGNOSTIC POINTS.

To summarize some of the diagnostic points:

A cyst developing from Wolffian body remains develops back of the retroperitoneum and may push the stomach in any direction or may develop behind and push forward the aorta and vena cava.

True cysts of the pancreas would not be likely to do this on account of its relations.

The greater the amount of substance secreted and the greater the amount and the number of products from the displaced ectodermal or mesodermal cells the larger the cyst.

Lateral mobility has been considered diagnostic of mesenteric cysts, but mobility is also characteristic of most tumors of the upper abdomen, which do not develop directly from a glandular organ.

"A ferment which converted starch into sugar has been found absent from undoubted pancreatic cysts,"[26] "and has been found in abdominal cysts not connected with the pancreas."[33]

Slowly developing obstruction to the pancreatic duct or from interstitial changes may cause cystic degeneration of that organ.

Pancreatic cysts are finely fixed and do not attain large size.[34]

It may be considered that there have been, under the head of pancreatic cysts, three forms described: 1. The small, true, firmly fixed cyst of the pancreas, which is accompanied by glandular destruction, and rarely presents as a tumor in the living. 2. The thin-walled, friable pseudo-cysts which are full of pigmented material. Efforts to remove these have been generally unsuccessful, so they have been treated by drainage. They present below stomach, with areas of tympany above and below. 3. A thin, fibrous-walled cyst of large size, containing, as a rule, cholesterin fluid; freely movable, and can be enucleated; resembles closely a parovarian cyst and develops in close relationship to the pancreas. The first are true pancreatic cysts; the second, pseudo-cysts or omental bursitis; the third are Wolffian body cysts, and stand in the same relation to the pancreas as do parovarian cysts to the ovary; or if another descriptive name is needed, these might be called parapancreatic cysts.

Aspiration should never be performed on account of danger of infection, either from puncture of some hollow viscus, or from disseminating cyst contents.

CONCLUSIONS.

The clinical picture of a cyst developing behind the peritoneum, from embryologic remains, depends on the relations it finally assumes.

Cysts from the Wolffian body are not uncommon in women.

Movable cysts presenting in the epigastrium have usually been called pancreatic, although true cysts of the pancreas are rare (especially in women) and are rarely movable.

Developing in the region of the kidney, they may be mistaken for hydronephrosis or may extend so low as to be considered ovarian.

Retroperitoneal cysts are usually benign, unaccompanied by symptoms other than those of a mechanical nature.

409 Marlborough Street.

33. Morton: Brit. Med. Jour., 1903.
34. Douglass: Trans. South. Surg. and Gyn. Soc., 1902.

TETANUS NEONATORUM.

A SECOND REPORT OF A STATISTICAL STUDY.†

JAMES M. ANDERS, M.D., LL.D.
AND
ARTHUR C. MORGAN, M.D.
PHILADELPHIA.

A second paper on the study of the incidence of tetanus in the United States is herewith presented. Special attention has been given to the subject of tetanus neonatorum, and the literature from 1850 to 1906 (covering reports of cases found in the "Index-Catalogue of the Library of the Surgeon-General" in Washington from 1850 to 1892, and in the *Index Medicus* from 1892 to 1906 inclusive), has furnished 1,276 cases. with a report of 31 original ones, collected by us from direct correspondence with hundreds of observers all over the

TABLE 1.—MORTALITY OF TETANUS IN CENSUS YEARS AS SHOWN BY U. S. VITAL STATISTICS.

	1870.		1880.		1890.		1900.	
	Tetanus Neonatorum.	Total Cases.	Tetanus Neonatorum.	Total Cases.	Tetanus Neonatorum.	Total Cases.	Tetanus Neonatorum.	Total Cases.
Alabama	28	52	86	108	79	96	23	84
Arizona	....	....	....	....	....	....	....	3
Arkansas	4	8	16	25	7	15	1	11
California	7	19	....	11	9	29	7	36
Colorado	1	1	1	2	2	6	....	8
Connecticut	1	9	3	20	13	18	9	25
Dakota	....	....	....	1	....	....	....	....
Delaware	....	3	....	3	1	7	....	2
District of Columbia	2	6	9	10	52	58	9	12
Florida	4	11	26	35	27	33	26	100
Georgia	16	27	38	60	42	62	19	65
Idaho	....	1	....	....	....	....	....	....
Illinois	5	26	24	63	63	100	36	126
Indiana	4	13	17	40	10	34	11	67
*Iowa	3	8	3	13	10	15	....	38
Kansas	2	2	3	9	4	9	3	26
Kentucky	14	36	21	51	49	64	11	44
Louisiana	374	507	149	178	268	299	106	291
Maine	....	2	....	2	....	6	....	9
Maryland	14	31	15	24	36	46	16	64
Massachusetts	2	18	7	17	6	9	3	31
Michigan	1	6	3	8	13	31	7	33
Minnesota	1	3	8	12	7	13	2	38
Mississippi	34	48	47	61	19	29	2	22
Montana	....	....	....	....	....	....	....	1
*Indian Territory	....	....	....	....	....	....	....	3
Missouri	88	166	33	59	180	200	57	100
Nebraska	1	1	....	4	....	6	3	16
Nevada	....	....	....	2	....	....	....	....
New Hampshire	....	1	....	8	....	1	....	3
New Jersey	6	19	16	35	68	80	38	94
New Mexico	....	1	....	3	....	2	....	....
New York	58	112	14	50	99	146	57	204
North Carolina	7	13	39	54	12	18	8	46
North Dakota	....	....	....	....	....	2	1	2
Ohio	7	40	10	43	45	77	10	86
Oklahoma	....	....	....	....	....	....	....	....
Oregon	....	....	....	2	....	1	....	1
Pennsylvania	9	60	21	70	35	74	21	168
Rhode Island	....	3	3	6	2	5	2	9
South Carolina	29	42	26	31	106	114	67	99
South Dakota	....	....	....	....	3	3	....	2
Tennessee	25	46	52	84	35	58	6	47
Texas	183	212	212	256	126	157	11	136
Utah	....	....	....	....	....	1	1	4
Vermont	1	3	1	3	....	....	....	3
Virginia	43	65	43	61	47	65	15	66
Washington	....	....	....	1	....	....	....	1
West Virginia	....	1	2	7	4	9	....	5
Wisconsin	1	5	6	10	12	21	7	28
Wyoming	....	....	....	....	....	....	....	....
50 Largest Cities	....	....	762	995	....	....	....	....
Total	975	1627	1716	2537	1491	2019	595	2259

† Read in the Section on Diseases of Children of the American Medical Association at the Fifty-seventh Annual Sesstion, June, 1906.

* The figures for 1900 are furnished by the Bureau of the Census, Division of Vital Statistics, Washington, and are incomplete for the non-registration states, which are Alabama, Arizona, Arkansas, California, Colorado, Delaware, Florida, Georgia, Idaho, Illinois, Indian Territory, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maryland, Minnesota, Mississippi, Missouri, Montana, Nebraska, Nevada, New Mexico, North Carolina, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, South Carolina, South Dakota, Tennessee, Texas, Utah, Virginia, Washington, West Virginia, Wisconsin and Wyoming.

country, giving a total number of 1,307 cases, which form the basis of our studies and deductions.

In our first paper[1] we note the following:

A perusal of Table 3 cannot help but impress every reader with the appalling mortality of tetanus neonatorum, and herein, indeed, lies a great work in a concentrated endeavor to lessen the fearful ravages of the condition in the newborn.

The subject is discussed under various names, trismus nascentium, tetanus infantum, nine days fits, and others, but we have chosen to limit this paper to the study of tetanus neonatorum, occurring in the newborn, from infection through the umbilicus.

Table 1, which also appeared in our previous article, gives the mortality from tetanus neonatorum for the census years from 1870 to 1900, inclusive, or a total of 4,778.

The frightful mortality of this disease, resulting from carelessness and ignorance in the vast majority of cases, demands the earnest attention of the medical profession, sociologists and humanitarians.

TABLE 2.—DISTRIBUTION OF CASES REPORTED BY STATES.

Alabama	30	Massachusetts	5
Arizona	..	Michigan	34
Arkansas	3	Minnesota	5
California	8	Missouri	12
Colorado	2	Mississippi	5
Connecticut	39	Nebraska	2
Delaware	..	New York	22
District of Columbia	371	North Carolina	1
Florida	1	New Jersey	1
Georgia	6	South Carolina	3
Idaho	..	Pennsylvania	190
Illinois	138	Texas	47
Indiana	2	Tennessee	16
Iowa	1	Rhode Island	2
Kansas	1	Virginia	2
Kentucky	6	Vermont	8
Louisiana	274	Wisconsin	1
Ohio	6	All other states reported	499
Maine	3		
Maryland	60	Total	1307

It will be noted that no state of any considerable population is exempt from tetanus neonatorum, but in some states, particularly at the south, or where there is illicitry and a low standard of morals, it prevails most extensively.

WIDESPREAD DISTRIBUTION OF TETANUS NEONATORUM.

In a paper read before the Royal Irish Academy in 1789, Dr. Joseph Clark makes the following statement, based on his connection with the Dublin Lying-in Asylum. He says:

At the conclusion of the year 1782, of the 17,650 infants born living in the lying-in hospital of this city, 2,944 had died within the first fortnight, i. e., every sixth child. The disease in 19 cases out of 20 was tetanus neonatorum.

From the time that the wards were better ventilated by reason of Dr. Clark's observations in 1782 to the time of the preparation of his paper, 8,033 infants were born in the hospital, while only 419 had died, being about 1 to 19. In the town of Fulda, Germany, in 1802, Dr. Schneider saw six cases in fourteen days, while a midwife in the same place states that she had seen more than sixty cases in nine years.

Tetanus neonatorum has been terribly fatal in various parts of the world. For years it was endemic to the island of Heimac, Iceland, to such an extent as almost to depopulate that section. It was very fatal in the island of St. Kilda, off the coast of Scotland, up to within a few years ago, when by no other measures than simple aseptic dressing of the umbilical cord, the cases were reduced to almost *nil*. G. Miron[2] states that in Bucharest, 233 children die of tetanus neonatorum every year, and in the entire district of Roumania 14,807 succumb to this disease annually. An emulsion prepared from the umbilical cords and injected into mice after the culture method of Wright, showed the presence of tetanus bacilli and spores.

OCCURRENCE OF TETANUS NEONATORUM AMONG THE NEGROES.

The unhygienic living of the negroes of the south, among whom this disease makes great ravages, is best described by Dr. Greensville Dowell:[3]

When called to see their children, we find their clothes wet around the hips, and often up to the armpits with urine. The child is thus presented to us, when on examination, we find the umbilical dressing not only wet with urine, but soiled likewise with feces, freely giving off an offensive, urinous, and fecal odor, combined with a gangrenous fetor, arising from the decomposing matter due to desiccation of the cord.

The same author[4] states:

In New Orleans, in 1860, the death statistics show that tetanus neonatorum was the most fatal of all diseases except phthisis.

Hartigan[5] quotes Grier of Mississippi on the "Negro and His Diseases" as follows:

The first form of disease which assails the negro race among us is trismus. No statistical record, I suppose, has ever been attempted, but, from my individual experiences, I am almost willing to affirm that it decimates the African race on our plantations within the first week of independent existence. I have known more than one instance in which, of the births for a year, one-half became the victims of this disease, and that despite the utmost watchfulness and care.

CAUSATION.

Former theories as to the cause of tetanus neonatorum have been entirely disproved since the demonstration of the tetanus bacillus of Nicolaier in 1884. Many subsequent experiments, which prove this disease to be specific in origin, have also been made. The theory advanced by Dr. J. Marion Sims, in 1846, that tetanus neonatorum is of centric origin, depending on pressure exerted on the medulla oblongata, by inward displacement of the occipital bones, at birth, has been entirely controverted. Moschion, who lived in the first century of the Christian era, stated that stagnant blood in the umbilical vessels sometimes produced a dangerous disease in the newborn infant, and it is supposed that he referred to tetanus infantum.

TABLE 3.—SEASONAL OCCURRENCE OF TETANUS NEONATORUM.

	No. of cases.		No. of cases.
January	12	August	8
February	10	September	14
March	24	October	9
April	5	November	9
May	6	December	7
June	11		
July	18	Total	133

SEASONABLE OCCURRENCE OF TETANUS NEONATORUM.

According to our collective investigations as set forth in Table 3, the months of March, July, September, January and June give the largest number of cases, the five months showing a total of 60 per cent. This apparent departure from the usual rule of adult tetanus may be explained by the fact that the weather the year round in the southern states is warm, and compares with the summer temperature of the northern states.

1. THE JOURNAL A. M. A., July 29, 1905.
2. Allg. W. Med. Ztg., March 13, 1906, vol. li, No. 2, p. 118.
3. Nashville Jour. Med. and Surg., 1863.
4. Galveston Med. Jour., 1867, vol. xi, p. 595-599.
5. "Lockjaw in Infants," 1884.

AGES OF PATIENTS IN CASES OF TETANUS NEONATORUM.

That the appellation "nine days' fits" is not a misnomer is proved by Table 4, which shows the greatest number of cases to occur on or before the ninth day, corresponding to the time of the dropping off of the cord, thus leaving an open wound to favor infection; the susceptibility then rapidly decreases.

TABLE 4.—AGES OF PATIENTS IN TETANUS NEONATORUM CASES.

Age in Days.	No. of Cases.	Age in Days.	No. of Cases.
Less than 1 day	..	..	..
1	7	8	22
2	8	9	12
3	19	10	11
4	10	11	3
5	19	12	7
6	22	13	1
7	21	14	5
Nine days or less			146 cases.
Less than 15 days			173 cases.
Between 9 and 15 days			27 cases.
Between 6 and 9 days			77 cases.
Less than 6 days			72 cases.
Over 15 days			23 cases.

Table 5 indicates at a glance in a general way the range by days of the period of incubation and its relation to the mortality rate of this disease, which is 57.2 per cent.

TABLE 5.—INCUBATION TO MORTALITY.

Incubation, days.	Cases.	Deaths.	Recoveries.
One day or less	18	7	11
2	11	9	2
3	18	13	5
4	14	12	2
5	17	15	2
6	30	18	12
7	24	16	8
8	24	12	12
9	10	2	8
10	11	4	7
11	3	2	1
12	3	1	2
13	1	0	1
14	5	0	5
15	0	0	0
Over 15 days	12	4	8
Total cases	201	115	86

INFECTIOUSNESS.

Some local epidemics prove its terrible infectiousness. In 1901 there were 32 deaths from tetanus in Baltimore. Of these, 25 were of tetanus neonatorum in children under twenty days old, all of them in the hands of midwives; 12 of them were within a few blocks of each other and all from one midwife. In Maryland, in 1902, there were 58 deaths from tetanus, of which 33 were of tetanus neonatorum.

Kleiner[6] reports a case of tetanus neonatorum in a twin, which was immediately isolated from the mother and the other child. In four days the child was brought back to the mother, who insisted on having it. Five days later the second child developed tetanus; both eventually recovered.

REPORTS OF OCCURRENCES OF TETANUS NEONATORUM, REPORTED BY PERSONAL CORRESPONDENCE WITH DOCTORS AND BOARDS OF HEALTH, AND CULLED FROM THE LITERATURE.

Wilhite,[7] of Pennsylvania records three cases of tetanus neonatorum occurring in triplets, two of whom died and one recovered. O. A. Fleisburg[8] reports the case of a Jewish boy, circumcised on the eighth day, who developed tetanus neonatorum three days later, with suppurating wound. The rite had been performed in the usual manner; he died on the thirteenth day of life and the fifth day of the disease.

6. Gross Medical College Bulletin, 1895.
7. Am. Jour. Med. Sciences, 1875, vol. lxix, p. 375.
8. Northwestern Lancet, Feb. 15, 1889, p. 44.

In Vermont, from 1900 to 1904, 34 persons died from tetanus, of which 7 occurred in infants. In Santa Clara County, Cal., 7 deaths from tetanus occurred between 1900 and 1905, inclusive, of which one was in an infant. R. B. Gilbert[9] reports the following deaths from tetanus neonatorum:

New Orleans, 249 cases, 1 year of age.
Cuba, 369 cases, 2 years of age.
Jamaica, 25 per cent. of the mortality in the negro population every year from tetanus neonatorum.

In Philadelphia, during the ten years ending with 1881, there were 311 deaths from traumatic tetanus, and 166 of tetanus neonatorum, of which 81 were males and 85 females. From 1898 to 1902, inclusive, there were 123 deaths from tetanus in Michigan, of which 32 were of tetanus neonatorum. In Springfield, Ill., in 1902, there were 144 deaths from tetanus, of which 33 were under one year of age. In 1903 there were 125 deaths from tetanus; of these 60 were under one year of age. In 1904 there were 136 cases, of which 37 were of tetanus neonatorum.

In Maine, in 1903, there were three deaths from tetanus neonatorum. The superintendent of vital statistics of Connecticut writes us under date of Sept. 15, 1905, as follows:

Its occurrence in the recent five years has averaged only 7.6 per cent. of the cases annually, and they were scattered through 168 towns of the state, showing no preference for any particular locality. In 104,676 births in the five years (1900-05), only 38 deaths were ascribed to that cause.

Dr. William C. Woodward, health officer of the District of Columbia, Washington, D. C., writes:

I beg to submit the following statement relative to the mortality in the District of Columbia, from tetanus neonatorum since 1890:

Year.	White.	Col.	Total.	Year.	White.	Col.	Total.
1890	17	31	48	1897	8	12	20
1891	8	30	38	1898	14	13	27
1892	16	33	47	1899	5	9	14
1893	15	20	35	1900	11	10	21
1894	5	17	22	1901	12	7	19
1895	11	12	23	1902	7	9	16
1896	8	9	17	1904	3	4	7

Total cases, white, 145; colored, 226; all, 371.

In considering the prevalence of this disease among the white people as compared with its prevalence among colored people, you may fairly consider that the white population in the District of Columbia is twice that of the colored population. It may be of interest also to know that no new midwives have been licensed in this District since 1896, except after examination.

INTERESTING POINTS IN CONNECTION WITH ORIGINAL CASES REPORTED.

In Case 1 delivery was by midwife. Doctor was not called until seventh day.

In connection with Case 3 Dr. Louis Fischer, New York, says he has seen other cases in the practice of midwives and careless physicians who disregarded asepsis.

Case 4, reported by Dr. Bullard, was one with umbilical infection seen years ago. Recovery. No data appended.

In Case 5 dry, high temperature, 110 F., was supposed cause, in an apparently extra healthy child under good conditions. Parents were well kept; there were other children; confinements had been easy.

In Case 6 the nurse previously engaged could not be gotten, and an old negress was secured. She was untidy and lived over

9. American Practitioner and News, vol. xxxvi, 1903, p. 288.

TABLE 7.—ORIGINAL CASES REPORTED TO AUTHORS.

Case No.	Reporter.	Year.	Month.	Sex and Race.	Age.	Infection Atrium.	Incubation. Days.	Duration. Days.	Mortality.	Serum Treatment.	Local and General Treatment.
1	J. Henry Barbat, San Francisco.	1892	. . .	. . . .	7 d.	Umbilical Cord.	7 d.	2 d.	1		
2	C. C. Gratiot, Shullsburg, Wis.	1903	Nov.	F. W.	9 mos.	?	13 d.	3 d.	1	10 c.c. every six hours.	Ear kept thoroughly aseptic with nitrate of silver.
3	Louis Fischer, New York.	1905	Sept.	F. W.	2 d.	Umbilical Cord.	?	5 d.	1	5 c.c. on third day.	Hot bichlorid to umbilicus. Eliminative treatment.
* 4	J. W. Bullard, Pawnee, City, Neb.										
5	W. T. Freeman, Needles, Cal.	1905	July.	F. W.	. . . .	Umbilical Cord.	1 d.	few hours.	1	. . . . .	Ice water to head; cold baths. Liq. ammon., amyl., nit. inhalations.
6	Samuel E. Woody, Louisville, Ky.	1893	. . .	M. W.	New Born.	Umbilicus. . . .	7 d.	3 d.	1	. . . . .	H_2O_2 cleansing. Potassium brom. and chloral with chloroform inhalations.
7	J. P. Furniss, Selma, Ala.	1905	July.	M. C.	10 d.	?	9 d.	6 d.	1	10 c.c. on third day.	Bromid and calomel in milk.
8	G. B. Forcue, Waco, Texas.	1897	. . .	F. C.	14 d.		not stated.	6 d.	1		
9	B. W. Goldsborough, Cambridge, Mass.	1898	. . .	M. W.	8 d.	Umbilical Cord.	few days.	10 d.	0	Started tenth day. —10 c.c.	Cord injected with 1-1000 bichlorid and boric acid used; sod., brom. and chloral also used.
10	E. T. Brady, Abingdon, Va.	1895	Jan.	F. W.	7 d.	Cord.	?	2 d.	1	. . . . .	Nitrate silver and tinct. iodin. Morphin, chloral and bromid per rectum; chloroform by inhalation.
11	F. C. Goldsborough, Baltimore.	1901	Sept.	M. W.	10 d.	Umbilicus. . . .	8 d.	2 d.	1	mcxviii - day of onset.	Chloral.
12	George B. Kalb, Erie, Penn.	1887	. . .	M. W.	7 d.	Umbilicus. . . .	. . . .	few days.	1		
13	J. W. Brandon, Clarksville, Tenn.	1897	. . .	M. W.	5 d.	Umbilicus, . . .	5 d.	2 d.	1	. . . . .	Antiseptic dressings, bromids and chloral.
14	J. W. Brandon, Clarksville, Tenn..	1899	. . .	F. W.	3 d.	Umbilicus. . . .	d.	2 d.	1	. . . . .	Antiseptics, bromids and chloral.
15	F. H. Long, Madison, Neb.	1905	Jan.	M. W.	6 d.	Umbilicus. . . .	6 d. ?	4 d.	0	. . . . .	H_2O_2 locally, also bismuth sub-nit.
*16	J. G. Eberle, Fort Smith, Ark.										
17	R. C. Massenburg, Towson, Md.	1886	. . .	M. W.	6 d.	Umbilicus. . . .	6 d. ?	2 d.	1		
*18	J. Henry Barbat, San Francisco.										
*19	G. K. Vanderslice, Phoebus, Va.										
*20	Louis Fischer, New York,										
21	G. B. Forcue, Waco, Texas.	1889	. . .	M. W.	10 d.	Umbilicus. . . .	10 d.	2 d.	0		
22	W P. Beall, Greensboro, N. C.	. . .	. . .	C.	. . . .	. . . . .	. . . .	. . . .	1		
*23	Dan Millikin, Hamilton. Ohio.										
24	Wm. Simpson, San José, Cal.	1901	. . .	F. W.	11 d.	Umbilicus. . . .	11 d.	. . . .	1		
25	J. H. Tebbetts, Bollister, Cal.	1883	. . .	. . . .	7 d.	Umbilicus. . . .	7 d.	. . . .	1		
*26	J. W. Grisard, Winchester, Tenn.										
27	H. E. Conley, Cannon Falls, Minn.	1903	Sept.	M.	16 d.	Cord.	16 d.	. . . .	1		
28	J. T. Asbury, Wabasha, Minn.	1903	Nov.	M.	16 d.	Cord.	16 d.	. . . .	1		
29	W. H. Rowe, St. James, Minn.	1903	Feb.	. . . .	8 d.	Cord.	8 d.	. . . .	1		
30	E. D. Keyes. Winona, Minn.	1903	June	M.	6 d.	Cord.	6 d.	. . . .	1		
*31	S. L. Lee, Carson City, Nev.	1905									

* See notes appended.

a stable in an alley near the patient's house; probable source of infection.

Dr. J. P. Furniss, Selma, Ala., reporting Case 7, says: "Rarely met with except in negroes and practice of midwives." While registrar of vital statistics (20 to 30 years), there was an average of eight cases annually. Population then 8,000, but lately it has diminished.

Cases 13 and 14 occurred in the same family, the only cases Dr. J. W. Brandon had observed in fifteen years.

Case 15 was the only case recovered in three years' practice.

Case 16 was reported by Dr. Eberly, who saw six cases at different times, all occurring in the practice of negro midwives among negro infants. All developed within a week after birth, and all terminated fatally.

Case 18, reported by Dr. Barbat, was a case in a baby seven days old, which was due to infected umbilicus. Delivery by midwife. Baby died in two days.

Case 19, reported by Dr. Vanderslice, of Phoebus, Va., was a case in the practice of a midwife.

Case 20, reported by Dr. Fischer, who saw ten cases during service at German Poliklinik, with a history of continued spasms since birth. They belong to the poor, where faulty hygiene exists.

Cases 3 and 21 both occurred in the practice of negro midwives, the cord not being treated properly.

Case 23, reported by Dr. Dan Mullikin, resulted from mutilation of the groin with blunt hook, during a difficult instrumental delivery.

Case 26, reported by Dr. Grisard, who saw two cases in thirty-five years; none in past eighteen years. No data appended.

Case 31 was the only case seen by Dr. Lee in Nevada in thirty-five years.

DURATION TO MORTALITY.

Table 6 shows that of 129 cases lasting five days or less, there were 95 deaths, or a mortality of 72.1 per

TABLE 6.—DURATION TO MORTALITY.

Days.	Cases.	Deaths.	Recoveries.
One or less.	37	34	3
2	38	30	8
3	25	11	14
4	15	9	6
5	14	11	3
6	5	4	1
7	10	4	6
8	4	2	2
9	0	0	0
10	6	1	5
11	1	0	1
12	6	2	4
13	0	0	0
14	1	1	0
15	5	0	5
Over 15 days	22	4	18
Total cases	189	113	76

cent. Of 60 cases lasting over five days, 18 died and 42 recovered, or a death rate of 30 per cent. These figures closely parallel our general observations in adult tetanus.

SUGGESTIONS AS TO PROPHYLAXIS.

Dr. J. F. Hunter, secretary of the Mississippi State Board of Health, writes:

It would be impossible for me to give you the localities from whence these cases arise. I should judge, however, that most of them were instances in which midwives attended rather than the doctors. Our law requires all physicians to undergo an examination before the State Board of Health before they are allowed to practice in the state of Mississippi, but no examination is required of midwives, who are negroes, as a rule, and attend many cases of labor in the country. Of course, they are not aseptic, not even knowing the principles of aseptic measures. I think that if all places had a law requiring midwives to stand an examination, we could have a much less mortality from tetanus neonatorum.

In the light of our accurate, scientific knowledge of this disease, the education of persons, directly or indirectly concerned with the care of confinement cases, should be insisted on, especially as to the necessity for rigid, aseptic, hygienic care of the umbilical stump, and its treatment along the same rigid lines as any other surgical wound. To this end, a law in every state requiring registration of midwives should be enacted.

Our medical colleges should teach this phase of the matter with greater earnestness than is now being done. The subject of the tetanus bacillus, which at present is dismissed in a line or two, should be more fully presented. State boards of health should issue circulars of information for the guidance and direction of midwives and others who attend these cases. Charity societies and other philanthropic institutions should also take up the question and thus cause a widespread dissemination of the simple measures necessary for the prevention of this dread disease.

DISCUSSION.

DR. R. B. GILBERT, Louisville, Ky., said that since very few patients ever recover in cases of tetanus neonatorum, the subject ought to be studied with very much more care than it is. He doubts whether tetanus neonatorum is due to the poisons on the surface, and thinks it rather due to the septic matter internally. He has seen only two patients get well and the recoveries were within two months of each other. The treatment outside of irrigation with a normal salt solution was potassium bromid and chloral hydrate.

DR. WILLIAM T. WATSON, Baltimore, referred to a typical case in which he had removed at autopsy the umbilicus and all the thoracic viscera and sent them to the Johns Hopkins Hospital Laboratory, where they were carefully examined, but the tetanus bacillus was not found. He asked Dr. Anders in how many of his cases the tetanus bacillus was found.

DR. JAMES M. ANDERS, Philadelphia, said that in the group of cases referred to, examination of the cord showed the presence of the tetanus bacillus. There were only a few cases in which this test was carefully and accurately made. In the majority of the cases reported the diagnosis was based on the clinical findings.

Thyroid Tumor and Dysmenorrhea.—Giorgi relates in *Ginecologia* for August 31, the case of a young woman who had suffered for years from very painful and irregular menses. Enlargement of the thyroid gland was first noticed at 13, and at 15 the thyroid began to increase rapidly in size. At 17 this circumference of the neck was 45 cm., and the thyroid was extirpated, leaving only the upper part of the right lobe. The tumor proved to be an adenoma with multiple nodules. Menstruation has been regular and free from pain during the two years since, commencing the second month, after the operation.

Clinical Notes

HYMENOLEPIS NANA AND HYMENOLEPIS DIMINUTA, WITH REPORT OF CASES.

WILLIAM H. DEADERICK, M.D.
MARIANNA, ARK.

HYMENOLEPIS NANA.

Synonyms: Tænia murina, Tænia nana, Tænia ægyptica; Diplacanthus manus, Hymenolepis nana, Hymenolepis murina.

The dwarf tapeworm was found in man for the first time by Bilharz, in Cairo, Egypt, in 1851. He recovered a "countless number" of them at a postmortem on a boy who had died of meningitis. In September, 1904, Ransom[1] was able to collect from the literature 118 cases of *Hymenolepis nana* infection of man. The geographic distribution of these cases is as follows: Egypt, 3; England, 1; Italy, 75; Servia, 1; Russia, 3; Germany, 4; Siam, 1; Japan, 2; North America, 24; South America, 4. I have been unable to find any cases recorded in North America other than the above mentioned by Ransom.

The 24 North American cases are distributed as follows:

Philadelphia, 1872, Spooner[2]	1 case.
Galveston, Texas, 1902, Moore[3]	1 case.
Charleston, 1902, Stiles[4]	1 case.
Macon, Ga., 1902, Stiles[5]	3 cases.
Washington, D. C., 1903-4, Hygienic Lab.	12 cases.
Amarillo, Texas, 1903, Magnenat	4 cases.
Fort Porter, N. Y., 1904, Hallock[6]	2 cases.

Hallock's cases were probably imported, as they occurred in soldiers who had returned from the Philippines just eight and nine months previously.

Description of Parasite and Ova.—The dength of *Hymenolepis nana* is variously given by observers as from 2.5 to 40 mm.; the breadth of mature proglottides, from 0.5 to 0.9 mm., and the number of segments, from 100 to 200. The head is subglobular, elongated, possessed of a retractile rostellum surrounded by a single row of hooklets numbering from 22 to 30, and has 4 suckers. The neck is slender and unsegmented. The segments of the strobila gradually increase in breadth toward the posterior extremity, the last 15 to 40 proglottides being usually stuffed with ova. Occasionally a sterile segment is seen between two fertile ones. The genital pores are single, near the anterior border of the segment and usually on the left side. Each oviparous segment contains from 80 to 180 ova. The ova are round or oval, measuring, according to different observers, from 26 to 58 micro-millimeters in diameter. Ransom's measurements were from 36x32 to 56x42 micro-millimeters. Miura and Yamazaki found the average of nine ova to be 50.7x42.9. Between the outer membrane and the inner one which encloses the embryo is a hyaline substance which surrounds the latter like a wide halo. Within the embryo can usually be distinguished five or six hooklets lying parallel or radially. A few very delicate filaments may commonly be de-

1. Ransom: "An Account of the Tapeworm of the Genus *Hymenolepis* Parasitic in Man," Bull. No. 18, Hyg. Lab. U. S. Public Health and Marine-Hospital Service, Washington.
2. Spooner: Amer. Jour. Med. Sci., vol. lxv, p. 136.
3. Moore: Med. News, Feb. 6, 1904.
4. Stiles: "Illustrated Key to the Cestode Parasites of Man," Bull, No. 25, Hyg. Lab. U. S. Public Health and Marine-Hospital Service, Washington.
5. Stiles: "Prevalence and Geographic Distribution of Hookworm Disease in the United States," Bull. No. 10, Hyg. Lab. U. S. Public Health and Marine-Hospital Service, Washington.
6. Hallock: THE JOURNAL A. M. A., vol. xlii, p. 891.

tected arising from the opposite poles of the inner membrane and permeating the hyaline substance. The average of several specimens from my cases was: entire length of worm, 18 mm.; scolex, length .36 mm., breadth .28 mm.; length of hooklets, 14 microns; diameters of suckers, 86 microns; breadth of neck, 0.14 mm.; length of mature proglottides 0.15 mm., breadth, 0.57 mm. Ten ova averaged: outer membrane 50x42 microns, inner 32x30 (Fig. 1).

The only immediate hosts yet determined are the rat and probably man; the definite hosts are man and certain species of rats and mice. Direct infection from man to man seems possible. The length of life of individual worms is undetermined, though ova may persist in the feces during periods varying from two months to two and a half years. The number of worms present in a single individual may reach from 4,000 to 5,000.

"*Hymenolepis nana* is much more common among children than among adults, and males are more often infected than females. From five to ten years seems to be the age most frequently affected" (Ransom).

Symptoms.—A wide variety of symptoms has been attributed to infection with *H. nana.* Of these the following are of most frequent occurrence: increased or

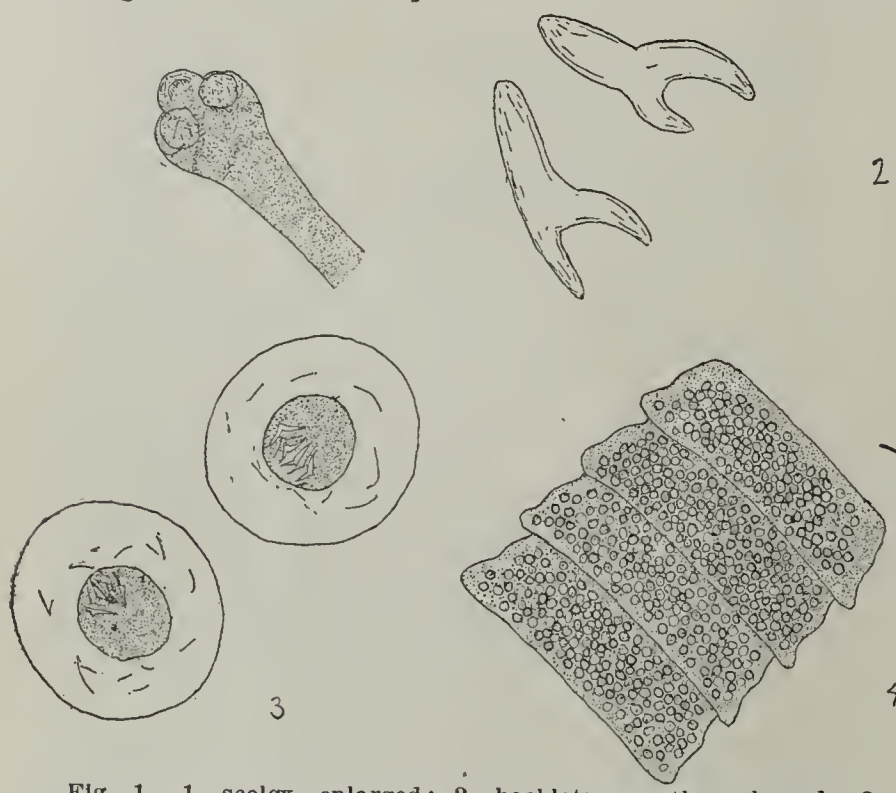


Fig. 1.—1, scolex, enlarged; 2, hooklets, greatly enlarged; 3, ova, greatly enlarged; 4, proglottides containing ova, enlarged.

diminished appetite, dyspepsia, vomiting, abdominal pain, diarrhea, constipation, spasms, paralysis, epilepsy, strabismus, diplopia, headache and dyspnea. The symptoms are sometimes severe.

Diagnosis.—The diagnosis is established solely by the discovery of the parasite or its ova in the feces.

Treatment.—The only remedy of value in the treatment of *Hymenolepis nana* is male fern. Manson[7] makes the statement that the worms are readily expelled by this agent, but an analysis of the cases in which the results of treatment by male fern were verified by subsequent microscopic examination of the feces shows that more than one treatment is usually necessary. There are 22 cases in which the results were thus followed up. Of these there are only 5 cases in which no ova were found after one treatment with male fern; in 6 cases two treatments were necessary; in 5 cases three doses were needed; in 1 case four or five treatments were administered; in 4 cases, after one dose, the ova were still present, but no further treatment is recorded; in 1 case after "several" treatments the ova persisted in the feces, and in 2 of the cases in which three doses were given the ova were yet found after the last dose. The drug should, of course, be given only after thorough purgation by salines.

The detection of the worm in the feces after anthelmintic treatment is sometimes very difficult. There are 30 cases in which the results of the search for the worm are recorded. In 7 of these, or nearly 25 per cent., no worms were found. Moore[3] adopted the plan of putting small quantities of the fecal matter in a clear glass beaker filled with water.

Hallock[6] describes his method as follows: "The method which has proved most satisfactory in finding the parasites is to dilute the stool with a considerable quantity of water, and then to run it out in a very thin layer on a large plate of window glass having a black background and placed in a strong light, the examination being made with a large reading glass. The worms appear as very minute translucent or opalescent shreds not unlike mucus, and the greatest care is required lest they be overlooked."

I used a large flat baking pan known in the South as the "biscuit pan." This I painted black and at one end punctured a row of small holes so that the diluted feces might be retained or released without agitating.

The following constitute cases Nos. 25, 26, 27 and 28 in North American literature. The patients did not come to me for treatment, but were discovered in the routine examination of feces during an investigation which I was making as to the frequency of uncinariasis in this section. The discovery of four cases during a limited investigation leads me to concur in the opinion of Stiles and of Moore that this parasite is commoner than hitherto regarded.

Fig. 2. — *Hymenolepis diminuta.* Part of mature proglottid containing ova, enlarged.

I am indebted to the work of Ransom for much information, to Dr. Stiles for the identification of specimens and to Dr. Bean for assistance at Lagrange.

CASE 1.—A. B., white, female, aged 7, was born in Montgomery County, Texas, where she lived two or three years when her father moved to Luling, in Caldwell County. Two years later they moved to Orange, Texas, where they lived four months. In September, 1903, they left Orange in a wagon for Lee County, Arkansas. On this trip they passed through the northwest corner of Louisiana, making a stop of a month at Ruston. After staying in Lee County for four months they moved to Bradley County, Ark., where they remained until December, 1905, when they returned to Lee County.

Personal History.—She had the usual diseases of childhood, chills every year or two, and malarial fever while living in Orange. She has been pale and delicate since a small child and has spasms every time she has a slight fever. She had several chills this summer, the last one on June 27, 1906, and had spasms with each one. All this year she has complained of pains in the stomach, has recently had several attacks of diarrhea and has been vomiting independently of the chills she has had. Her appetite has always been good, occasionally ravenous, especially for the past few weeks. She has always been slow in recuperating from even a mild sickness. Examination of the feces on July 14 showed an average of six ova of *Hymenolepis nana* to the cover-glass preparation.

Examination.—July 19, 1906: General development was normal, weight 46; mental condition bright, probably above

7. Manson: "Tropical Diseases," New York, 1903.

average; temperature, 98.6; pulse, 96, regular, tension normal; there was marked pallor. Perspiration was profuse on slight provocation. There was no edema. The muscles of the arms were flabby, those of the legs were developed The conjunctival vessels were visible; pupils reacted to light and accommodation. Appetite was ravenous, she "eats all the time." Tongue was anemic, not coated. Flatulence and nausea were present and there was pain in the epigastric region; enteralgia and marked meteorism were also present. Bowels were regular. Heart was negative; no precordial pain or palpitation. There was dyspnea on slight exertion; no dizziness or syncope. The patellar reflex was diminished. Spleen and liver were normal. Urine was negative.

Blood: Hb. 90 per cent., leucocytes, 9,400, red cells, 4,600,000. Differential leucocyte count: small lymphocytes, 25.5 per cent., large lymphocytes, 5 per cent., polymorphonuclears, 58 per cent., eosinophiles, 11.5 per cent.

Treatment.—She was allowed only liquids on July 19, and was given a full dose of salts at bed time. On the morning of July 20, she was given 20 drops of oleoresin of male fern at 8 o'clock and at 10 another saline.

Result.—The stools were examined at 5 p. m. and about a tablespoonful of *H. nana* recovered. Some of these worms were sent Dr. C. Wardell Stiles, who confirmed the diagnosis (9922 U. S. P. H. and M. H. S.).

Subsequent History.—The father repeated the malefern July 26 and August 8; microscopic examination of the feces showed 16 ova to the cover-glass preparation.

On August 15, after preparation by salines, 20 drops of male fern were given on an empty stomach and a large number of worms were expelled. From a partial count I estimate that at least 500 were passed as a result of this, the third treatment.

On August 18 she had a rise of temperature to 104; blood examination showed estivoautumnal rings and the fever responded to quinin after 36 hours. This was the first time she ever had fever without "spasms."

On August 22, fecal examination was negative.

On September 5, I learned that the child was gaining flesh and looks better than she has ever looked.

CASE 2.—R. G., colored, male, aged 10, was born in Clarksdale, Miss., where he lived until 5 years ago when he moved to Lagrange, Lee County, Ark.

History.—He has had occasional chills and fever and three years ago had otitis media which discharged for several months. He has corneal opacities in both eyes and occasionally has enlarged cervical lymphatics, both dating from an attack of measles in infancy. In July, 1906, he had dysentery which lasted for 10 days.

Appetite is good, regular, not ravenous. He suffers often with nausea and occasionally vomit He complains at times of dizziness and headache and often of dyspnea.

Feces: An examination of the feces showed from 2 to 10 ova of *Hymenolepis nana* to the cover-glass preparation.

Examination.—Aug. 5, 1906. Development slender. Temperature, 98.4; pulse, 100. There was no edema. The muscular system was normal. He had pain in epigastric region and enteralgia; meteorism was marked. Bowels were regular. Heart was negative. Liver and spleen were normal.

Blood: Hb., 90 per cent.; small mononuclears, 17 per cent.; large mononuclears, 5 per cent.; polymorphonuclears, 62 per cent.; cosinophiles, 15 per cent.

Treatment.—Male fern given between two doses of salts expelled a number of *H. nana.*

August 24: Examination of the feces showed a few ova of *H. nana.* I was unable to obtain subsequent specimens of feces.

CASE 3.—M. T., white, female, aged 11, was born in St. Francis County, Ark., where she lived until 5 years of age, when her father moved to Lagrange, Ark. She had a continued type of fever at the age of 2 and has had an occasional chill since.

History.—Her appetite varies from ravenous to none. She has had frequent nausea and occasionally vomiting for the past four years. She has had frequent headache.

Examination.—Aug. 5, 1906. Patient was undeveloped for her age. Temperature was 98, pulse, 84. There was marked pallor; no edema. The muscles were flabby. There were pain and tenderness in the epigastrium and enteralgia. There was marked tympany. Bowels were regular. Liver and spleen were negative.

Urine: Color, reddish yellow; acid reaction, specific gravity, 1,030, no albumin or sugar. Microscopic examination was negative.

Blood: Hb., 70 per cent.; small mononuclears, 13 per cent.; large mononuclears, 23 per cent.; polymorphonuclears, 55 per cent.; eosinophiles, 9 per cent.

Feces: Examination of the feces showed from 4 to 10 ova of *H. nana* to the cover-glass preparation.

Treatment and Result.—Male fern was administered August 6. Owing to a misunderstanding the stools were not preserved for examination. August 24, microscopic examination of feces showed a few ova of *H. nana.* The treatment was directed to be repeated but I could not obtain a further specimen of the feces.

CASE 4.—T. F., white, male, aged 5, was born and raised at Lagrange, Ark.

History.—He was never sick until July, 1904, when he began having chills and fever and was ill until December, 1904. On the second day of this illness he had a convulsion. His father, who is a physician, suspecting that he had worms, has frequently given him santonin and calomel. He passed an ascaris last fall. For the past two months he has rarely eaten any breakfast and when he has done so he has invariably vomited it. At such times he would complain of dyspnea and choking. He has had occasional attacks of diarrhea for two years. His mother noticed stomatitis and edema of ankles about a week ago. Appetite varies from ravenous to none. He complained of pains in abdomen a good deal for a week. He has nausea every morning. He has frequent headache and dizziness, also dyspnea.

Examination.—Aug. 5, 1906: Development is small; muscles are flabby. Temperature was 98; pulse, 100. There was moderate pallor. Bowels were loose, mild diarrhea. There was marked meteorism. Heart was slightly irregular, otherwise normal. Liver and spleen were normal.

Urine: Specific gravity, 1032, acid reaction, small amount of albumin, no sugar. Microscopic examination was negative.

Blood: Hb., 80 per cent.; small mononuclears, 13 per cent.; large mononuclears, 16.6 per cent.; polymorphonuclears, 43 per cent.; eosinophiles, 26 per cent.; mast cells, 1.4 per cent.

Feces: Microscopic examination of the feces disclosed an extraordinary number of ova of *Hymenolepis nana.* In two cover-glass preparations in which the ova were counted 101 and 102.

Treatment and Result.—On August 5 he was given 20 drops of male fern between two doses of salts. He vomited the male fern in 15 minutes.

August 9: The male fern was given at 6 a. m. as before; an action of the bowels at 12 m. was negative.

August 25: Fecal examination negative.

September 10: Dr. F., the child's father, wrote me: "He is not troubled any more with sick stomach, his appetite is good, no symptoms whatever of worms and looks better than he has for the past twelve months."

HYMENOLEPIS DIMINUTA.

Synonyms: Hymenolepis diminuta, Tœnia diminuta, T. leptocephala, H. flavopunctata, T. flavopunctata, T. flavomaculata, T. minima, T. varesina (Fig. 2).

In 1858 Weinland first described a case of *Hymenolepis diminuta* occurring in man. The parasites were recovered in 1852 from a healthy infant, 19 months old. Two fragments labeled as coming from man were found in the museum at Alfort, France, by Railliet before 1810 and were identified as *H. diminuta* by both Railliet and Zschokke.

Braun[8] describes the parasite as follows: "This species measures 20 to 60 cm. in length and up to 3.5 mm. in breadth; there are from 600 to 1,000 segments. The head is very small (0.2 to 0.5 mm.); it is club-shaped

8. Braun: "The Animal Parasites of Man," New York, 1906.

and has a rudimentary unarmed rostellum; the neck is short; the mature segments are 3.5 mm. in breadth, 0.66 mm. in length; the eggs are round or oval (0.060-0.070:0.070-0.086 mm.). The egg shell is yellowish and thickened, with indistinct radial stripes; embryonal shell double, thin; the outer one somewhat pointed at the poles; oncosphere 0.028-0.036 mm."

The following is a synopsis of cases which have been reported in man:

Alfort, France, by Railliet before 1810	1 case.
Boston, 1842, Weinland	1 case.
Philadelphia, 1884, Leidy	1 case.
Varese, Italy, 1884, Parona	1 case.
Catania, Sicily, 1887-8, Grassi	1 case.
San Paulo, Brazil, 1893, Lutz	1 case.
Pisa, Italy, 1895, Sonsino	1 case.
Rio Janeiro, Brazil, 1896, Magalhaes	1 case.
Centuripe, Sicily, 1900, Previtera	2 cases.
Philadelphia, 1900, Packard	1 case.

Grassi induced a case experimentally in a man by feeding him cysticercoids, but this has no place in a series of clinical cases.

Of the above 11 cases, 3 were in males, 4 in females, and in 4 the sex is not recorded. The ages were 19 months, 20 months, 2.2, 3, 11, 12 and 40 years, the ages of three patients not being recorded. According to Ransom, the number of worms present in each individual varied from 1 to 4. No symptoms were present in any of the cases which could be referred to the parasites.

The diagnosis is made by the discovery of segments of the worm or its ova in the feces.

Any anthelmintic or merely a cathartic is usually successful in expelling the parasite. In the 11 cases santonin was used twice, male fern twice, calomel once; the worm was expelled without medicine once, and the anthelmintic used is not recorded in five cases.[9]

The following case, like the preceding ones of *H. nana,* was discovered accidentally while making routine examinations for ova of uncinaria.

Patient.—J. W., white, male, aged 8, has never been outside of Lee County, Ark. and has been an unusually healthy child, never having had any sickness but a few chills. The only abnormality his parents have noticed has been a ravenous appetite, slight nausea and pain in epigastrium for two weeks.

Examination.—His general development is good; the muscles are well developed. Weight was 54 pounds. Temperature was 98; pulse, 90. His color was good. There was no edema, but some meteorism. Bowels were regular. Spleen and liver were normal. Urine was negative.

Blood: Hb., 100 per cent.; small mononuclears, 23 per cent.; large mononuclears, 17 per cent.; polymorphonuclears, 53 per cent.; eosinophiles, 7 per cent.

Feces: Examination of the feces on July 28, 1906, showed about 10 ova of *H. diminuta* to the preparation.

Treatment and Result.—July 30, after a saline the night before, he was given 25 drops of oleoresin of male fern. The stools were examined by me about 4 p. m. and the parasites recovered. The father told me that one of the long fragments was expelled by the salts before the male fern was given. There were four long fragments measuring 12, 17, 21 and 25 cc. respectively, and ten shorter fragments from 2 to 7.5 c.c. Unfortunately, no head was found. I judge that there were originally three or four parasites. The specimens were identified for me by Dr. Stiles. (U. S. P. H. and M. H. S. No. 9923). The average of 10 measurements of ova gave: Outer membrane, 70x75 microns, inner membrane, 35x40. Some were slightly bile stained, others perfectly clear. No radial striations were observed. The largest proglottides measured in length 0.47 mm., breadth, 2.75 mm.; medium ones measured in length, 0.57 mm.; breadth, 1.59 mm.

On August 4, the feces were examined and no ova found. The father reported entire relief from the mild symptoms present before treatment.

9. Other authorities which may be consulted on this subject are: Von Jaksch: "Clinical Diagnosis," London, 1899; Musser: "Medical Diagnosis," Philadelphia, 1904; Boston: "Clinical Diagnosis," Philadelphia, 1904; Hensel and Weil: "The Urine and Feces in Diagnosis," Philadelphia, 1905; Daniels: "Laboratory Studies in Tropical Medicine," Philadelphia, 1903; Packard: THE JOURNAL A. M. A., vol. xxxv, p. 1551.

THE TREATMENT OF OSTEOMYELITIS WITH IODOFORM BONE PLUGGING.*

GEORGE MORRIS DORRANCE, M.D.
Assistant Instructor of Surgery in the University of Pennsylvania; Surgeon to the Out-patient Department of St. Agnes Hospital.
PHILADELPHIA.

The usual methods employed in the treatment of osteomyelitis had given such poor results in my own and in the work of others that I was led to try the iodoform plugging recommended by Moorhof. The methods of treating osteomyelitis are practically the same up to the point of filling the cavity.

The methods of filling the cavity are as follows:

1. With iodoform gauze. This has given very poor results, usually requires numerous operations and too frequently amputation of the limb.

2. Senn's method of filling the cavity with decalcified bone chips dusted with iodoform powder and allowing it to fill with blood clot. In this method the chips are frequently extruded and the cavity usually becomes infected.

3. Schede's method of filling the cavity with blood clot has had some success, but the clot very frequently becomes infected and the patient is worse than before the operation.

4. Neuber's method of tacking the skin to the bottom of the cavity is the best of the above methods, but it leaves an unsightly scar and can be applied only to the superficial bones.

5. The method of plugging with iodoform, first used by Moorhof[1] in 1903. The material used consists of finely pulverized iodoform powder 60 parts, spermaceti and oil of sesame, each, 40 parts. These ingredients are slowly heated to 100 C. and when allowed to cool they solidify and remain solid at the temperature of the body. Before using the mixture it is heated to 50 C., being stirred constantly to keep the iodoform evenly distributed. At this temperature it can be poured into the cavity, where it solidifies immediately.

The plugging does not act as a foreign body, but possesses the medicinal properties of iodoform, without causing toxic symptoms. It is gradually absorbed and replaced by granulations and in from 3 to 4 months by new bone. This point can readily be shown by the use of a skiagraph. The day following the operation there is a slight rise of pulse and temperature.

TECHNIC.

The preparation of the cavity is the first step. The bloodless method must be employed when possible so that the cavity can be made sterile and dry. When the iodoform bone plugging is to be used, the opening in the bone need not be larger than is necessary to permit the removal of the sequestrum and the thorough cleansing of the cavity. The periosteum must be carefully

* Read before the Philadelphia County Medical Society, Oct. 10, 1906.

1. Deuts. Zeitschr. f. Chir., 1904, vol. lxvi, p. 589.

preserved, as it makes an important covering for the iodoform plug. After removing the sequestrum and all the diseased bone, the cavity is washed, dried and thoroughly swabbed with phenol. After two minutes the phenol should be wiped out and the cavity washed with alcohol, then thoroughly dried, as the moisture will prevent the iodoform plugging from penetrating every crevice in the bone, which is necessary for the success of the treatment.

The methods of controlling the hemorrhage within the cavity are: Hot air under pressure, weak solution of dioxid of hydrogen (3 to 5 per cent.), adrenalin chlorid, or packing with gauze.

The melted iodoform mixture is then poured in and when hardened the periosteum and other tissues are closed with catgut sutures, a dry gauze dressing is applied and held in place by a bandage, after which the tourniquet is removed. When there is a good periosteal covering no drainage is necessary, but when the soft parts come in contact with the plugging it is advisable to provide temporary drainage by means of strands of catgut or small strips of rubber tissue. When the tissues can not be approximated the plugging is covered with rubber tissue and dressed as above. In most cases when drainage is not employed, primary union is secured, but in a few cases there will be some oozing of serum between the stitches for a few days, after which union takes place. When drainage is employed union usually takes place immediately after the drain is removed. The treatment is not appropriate for acute cases.

CASE 1.—Chronic tuberculous osteomyelitis of the tibia.

History.—Male, aged 27, had osteomyelitis for the past four years, during which time he was operated on sixteen times by nine surgeons, each time the cavity was enlarged and after the sixteenth operation his condition was worse than at the beginning. The methods of filling the cavity with iodoform gauze, bone chips, and blood clot were tried, but failed in each instance.

Operation.—On July 14, 1905, I operated on him at St. Agnes Hospital and used two ounces of iodoform plugging. The wound was closed except for a small drain of catgut. A few small pieces of the plugging came away when the drain was removed on the third day. The wound was entirely healed on the sixth day and has remained so.

CASE 2.—Chronic tuberculous osteomyelitis of the tibia.

History.—Male, aged 7. The duration of the disease was two years. He was operated on twice by other surgeons who used iodoform gauze packing. When he came under observation there was a sinus discharging a large amount of pus.

Operation.—On Oct. 9, 1905, I operated on him and poured into the cavity one ounce of the iodoform plugging and closed the wound without drainage. The wound healed by first intention and there has been no return of the disease.

CASE 3.—Septic osteomyelitis of the ulnar following a compound fracture.

History.—When the patient, a man, came under observation he had a sinus, leading down to necrosed bone, which had been discharging pus for three months.

Operation.—On Oct. 6, 1905, I exposed the ulnar, reflected the periosteum, removed a sequestrum, cleaned and dried the bone cavity and poured in four drams of the iodoform plugging and sutured the periosteum and soft tissues in place without drainage. The wound healed by first intention. The patient has had no return of the disease.

CASE 4.—Osteomyelitis of the tibia following a compound fracture.

History.—When first seen the patient had two sinuses which led down to necrosed bone.

Operation.—On Sept. 24, 1905, I exposed the tibia, removed a sequestrum, cleansed and dried the cavity in the usual manner and poured in nine drams of the iodoform plugging, closed the wound with the exception of a small cat-gut drain, which was removed on the second day. The wound was entirely healed on the fourth day and has remained so.

CASE 5.—Typhoid osteomyelitis of the sixth rib, right side, of four months' duration.

History.—Three months before, the patient, a man, came under observation he was operated on and the cavity was packed with iodoform gauze, since which time he has had a sinus.

Operation.—On Dec. 28, 1905, I exposed the rib and prepared the cavity in the usual manner but on account of oozing, the cavity was packed with gauze. After twenty-four hours the packing was removed and one ounce of the plugging was poured in and the wound closed without drainage. There has been no return of the disease.

CASE 6.—Typhoid osteomyelitis of the inferior maxilla.

History.—Male, aged 6, three months after recovery from typhoid fever developed osteomyelitis. During the following four months he was operated on five times, and each time the cavity was packed with iodoform gauze. When he came under observation he had several scars on the face and neck, and a sinus leading down to a cavity on the inner surface of the angle of the inferior maxilla.

Operation.—On Aug. 15, 1906, at St. Agnes Hospital, I exposed the bone, cleansed the cavity in the usual manner, but on account of hemorrhage was obliged to pack the cavity with iodoform gauze. Thirty-six hours later the gauze was removed and the cavity was filled with the iodoform plugging. The wound was dressed with plain sterile gauze, and was entirely healed on the sixth day and has remained so.

From a study of these cases it is evident that the treatment of osteomyelitis, by the iodoform plugging, which has given uniformly good results, is far in advance of any method previously described,[2] and is the only treatment worthy of consideration.

1716 Locust Street.

A DRESSING AFTER HARE-LIP OPERATION.

ALFRED S. TAYLOR, M.D.
NEW YORK CITY.

After a hare-lip operation the two things desired are prevention of tension on the sutures and continuous cleanliness of the wound, both of which conduce to primary union with the minimum of scar tissue and, therefore, the best cosmetic result.

Most of the dressings published have the disadvantage that the devices for relieving tension lie directly across the wound and not only cause undesirable pressure on it, but also interfere with its proper and frequent cleansing. Moreover, if the tension device is removed for a dressing, its support is lost just at the time when the child is sure to cry and struggle hardest.

The dressing described below is very simple and obviates all the disadvantages mentioned. I first used it on a patient at the Vanderbilt Clinic in 1901, and, so far as I know, it was an original idea.

The dressing consists of two narrow strips of adhesive plaster (about 3/8 inch or 1 cm. wide), starting well down on the cheeks, crossing each other over the bridge of the nose and passing well out on the forehead. Originally a little square of gauze was used to protect the bridge of the nose and the inner ends of the eyebrows from the plaster, but the later dressing is a great improvement. The plaster which would lie over the nose and eyebrow is cut on each side and folded under so that the adhesive surface is eliminated.

The illustration shows that, although the child is cry-

2. S. Hickman: Wiener klin. Wochschr., 1901, p. 537; also the Lancet, Jan 21, 1905: also Moore: THE JOURNAL A. M. A., May 20, 1905; and Aug. 4, 1906.

ing vigorously, she can cause no pull on the upper lip. The tension device is entirely distinct from the wound dressing proper, is constant in its action and one application usually sufficcs for the entire period of wound healing. The nutrition of the lip is not interfered with from pressure. The wound is always accessible for observation, dressing or cleaning. A separate dressing may be applied to the wound, although my own preference has always been to leave it entirely uncovered and to

New method of dressing after hare-lip operation to secure cleanliness and to prevent tension.

have the nurse keep it clean and prevent the child from rubbing his fists into it.

If desirable, breast feeding may begin at once, although feeding with a medicine dropper causes less disturbance to the wound. Tension is so completely prevented that there is almost never any wound reaction. The eyes are partially closed, but the device allows ample space to keep them clean.

152 West Fifty-seventh Street.

AN INTERESTING CASE OF ACRANIUS.

H. H. THOMPSON, A.M., M.D.
NOBLESVILLE, IND.

While cases of this nature are not exceedingly rare, I am induced to report this one on account of the number of days that the child lived and the reflex phenomena observed during the child's life.

Parental History.—The father is white, a native of Indiana, aged 28, a junkman, apparently strong and healthy. He uses alcohol and tobacco in moderation. Eight years ago he had a very aggravated attack of gonorrhea, attended with sores on the penis (another physician informs me he later displayed evidences of syphilis, for which he treated him). The mother is a native of Indiana, aged 27, strong and robust, and gives no history of any serious illness. She has previously given birth to two children, both living. One, 5 years old, is an imbecile, with an inferior paraplegia, due to poliomyelitis anterior at fifteen months. The second child is healthy and bright.

History of Present Case.—On the morning of September 6 I was called to attend Mrs. B. in her third confinement. The course of her pregnancy had been uneventful, save that at about the seventh month she had slipped and fallen across a water bucket. This accident caused her pain for a few hours, but caused no manifestation of serious injury. On arriving at the house I found that the head had been born, and soon the delivery of the child and placenta was normally completed.

Description of Child.—The child, a boy, was perfectly formed in body, weighing 7½ pounds. The spine was perfectly developed, as were the neck and lower part of the face. The top of the head, from the supraorbital ridge following backward, from about one to two centimeters (.4 to .8 in.) above the hair line was wanting. The edges of the bones were inverted, and the center of the space, about 5 by 7 centimeters (2 by 3 inches) was occupied by a highly vascularized membrane. The eyes, large and bulging, were placed at an angle with the plane of the face, giving the typical "frog-head" appearance. The baby breathed immediately and its heart action was normal, but it did not cry. However, when being washed and dressed it kicked lustily, and gave a peculiar sort of moan. All of this ceased when it was laid down, but as soon as it was touched or handled it would move and moan vigorously. We tried putting it to the breast at the usual time, for the mother had plenty of milk, but it could not nurse. This was tried several times, but unsuccessfully. Then we tried feeding mother's milk with a spoon, but could only get down one or two spoonfuls out of many. This I attribute to the lack of ability to coördinate the muscles of the cheeks and throat. We managed, however, to keep it alive for eight days.

Its good respiration and heart action, and movements of hands and feet show that the medulla must have been present, even though movements occurred only after stimulation and were apparently purely reflex. The absence of a well-defined cry, and the inability to nurse show the want of any centers of coördination. The accident during pregnancy could have no bearing on the etiology of the case, as the malformation must have dated to the first month of fetal life, when the brain segments were in process of formation. May the luetic taint of the father be held responsible as a factor in the etiology?

I can find no case in the literature exactly similar to this, as these cases are usually accompanied by some other malformation, such as spina bifida, cleft palate, harelip, etc. Neither can I find any record of such a child living so long as eight days.

AINHUM.

JAMES A. ROLLS, M.D.
WATROUS, N. M.

In June of the present year I treated the following case of ainhum which I think sufficiently unusual to be worthy of record:

Patient.—J. L., colored, aged 38, day laborer, father and mother both Africans, came complaining of a painful toe.

Examination.—Examination revealed a thickened ring of epithelium which encircled the base of the fifth toe of the left foot. Removal of the superficial epithelial débris showed that this ring had decidedly encroached on the tissues of the toe, the distal part of which was somewhat enlarged and globular, while the base looked as if a ligature were very tightly applied. After a day's rest the pain entirely disappeared, showing, as is usual in these cases, that it was due entirely to traumatism, to which the unwieldy toe easily lends itself.

Operation.—The constriction occurred at the proximal interphalangeal articulation, and amputation at this point resulted in the patient's early return to work.

The patient thinks "there has been something the matter" with the toe for about eight years, but knows of no similar condition in any member of the family.

New and Non-Official Remedies

THE FOLLOWING ARTICLES HAVE BEEN TENTATIVELY ACCEPTED BY THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR INCLUSION IN THE PROPOSED ANNUAL, "NEW AND NON-OFFICIAL REMEDIES." THEIR ACCEPTANCE HAS BEEN BASED LARGELY ON EVIDENCE SUPPLIED BY THE MANUFACTURER OR HIS AGENT, BUT TO SOME EXTENT ON INVESTIGATION MADE BY OR UNDER THE DIRECTION OF THE COUNCIL. CRITICISMS AND CORRECTIONS ARE ASKED FOR TO AID IN THE REVISION OF THE MATTER BEFORE FINAL ACCEPTANCE AND PUBLICATION IN BOOK FORM.

THE COUNCIL DESIRES PHYSICIANS TO UNDERSTAND THAT THE ACCEPTANCE OF AN ARTICLE DOES NOT NECESSARILY MEAN A RECOMMENDATION, BUT THAT SO FAR AS KNOWN IT COMPLIES WITH THE RULES ADOPTED BY THE COUNCIL.

W. A. PUCKNER, SECRETARY.

(*Continued from page 2013.*)

THEOCIN.

A name applied to synthetic theophyllin (see Theophyllin).

Manufactured by Farbenfabriken, vorm. Friedr. Bayer & Co., Elberfeld, Germany (Continental Color & Chemical Co., New York). German patent No.138,444. U. S. patent applied for. U. S. trademark.

THEOPHYLLIN.

1,3-DIMETHYL-XANTHINE.

Theophyllin, $\begin{matrix} N(CH_3).CH:C.NH \\ | \qquad\qquad | \\ CO.N(CH_3)—C:N \end{matrix} \diagdown CO =$

$C_7H_8O_2N_4$, is an organic base isomeric with theobromine; it is found in small amounts in tea and is also made synthetically.

It is a white, odorless, crystalline powder, having a bitter taste, and melting at 268° C. (514.4° F.). It is soluble in 180 parts of water at ordinary temperature and in 85 parts at 37° C. (98.6° F.), sparingly soluble in alcohol, insoluble in ether. It forms easily soluble compounds with ammonium and potassium, a less soluble salt with sodium, but a freely soluble double salt with sodium acetate (Acet-theocin-sodium).

It responds to the murexid test. Addition of tannin to a solution of theophyllin produces a precipitate soluble in an excess of the reagent. It is soluble in an excess of sodium hydroxide solution (difference from caffeine). On addition to solution of theophyllin in sodium hydroxide of a solution of sulphanilic acid 0.5, hydrochloric acid 5.0, water 100, to which a few drops of a ½ per cent. solution of sodium nitrite have been added (diazo test), a red coloration is produced (distinction from caffeine and theobromine).

Actions and Uses.—Theophyllin is a powerful diuretic, claimed to surpass all other remedies of this kind, increasing not only the amount of liquid, but the solids in the urine as well, the secretion of urine being sometimes very copious. The diuretic effect, however, is not prolonged and its administration is, therefore, advantageously followed by one of the theobromine derivatives having a weaker, but more persistent, action. It occasionally produces gastric disturbances and renal irritation has also been reported. It is claimed that these may be obviated by the use of acettheocin-sodium (which see) instead.

It is recommended in cardiac affections, nephritis, dropsy, etc.

Dosage.—0.2 to 0.35 Gm. (3 to 5 grains) in warm tea.

THERMODIN.

PHENACETIN-URETHANE. ACETYLPARETHOXY-PHENYL-URETHANE.

Thermodin, $C_6H_4(OC_2H_5).(N(COOC_2H_5)(CH_3CO)) = C_{13}H_{17}O_4N$, is a compound of acetphenetidin (phenacetin) and ethyl carbamate (urethane).

It is prepared by the action of ethyl chlorocarbonate on paraphenetidin by which parethoxyphenyl-urethane is formed which is converted into the acetyl compound by heating with acetic anhydride.

It forms colorless, odorless and tasteless crystals, melting at 86° to 88° C. (186.8° to 190.4° F.). It is practically insoluble in cold water (1:2600); soluble in 450 parts of boiling water.

If 0.5 Gm. of thermodin, 5 Cc. sulphuric acid, and 5 Cc. of alcohol are mixed and warmed gently, the odor of ethyl acetate is developed. A solution of 0.5 Gm. of thermodin in 5 Cc. of sulphuric acid on the addition of 0.2 Gm. of sucrose, assumes a red color, becoming more luteuse on standing (distinction from neurodin). If 0.5 Gm. of thermodin is boiled with 3 Cc. of hydrochloric acid during one minute, then mixed with 5 Cc. phenol solution 1:20, and a solution of chlorinated lime added, an onion red color appears which changes to blue on supersaturation with ammonium hydroxide. 0.1 Gm. of thermodin dissolved in 1 Cc. of sulphuric acid should form an almost colorless solution. 0.1 Gm. of thermodin should, on ignition, not leave a weighable residue.

Actions and Uses.—Thermodin is an analgesic, antipyretic and antiseptic.

It is recommended as a mild and reliable antipyretic in typhoid fever, pneumonia, influenza, tuberculosis and febrile conditions in general, and is said to be free from unpleasant by-effects.

Dosage.—0.3 to 0.6 Gm. (5 to 10 grains) as an antipyretic; 1 to 1.3 Gm. (15 to 20 grains) as an analgesic.

Manufactured by E. Merck, Darmstadt (Merck & Co., New York). U. S. trademark

THIOCOL.

POTASSIUM GUAIACOL-SULPHONATE.

Thiocol, $C_6H_3(OH)(OCH_3)(KSO_3)1:2:6 = C_7H_7O_5KS$, is the potassium salt of ortho-guaiacol sulphonic acid.

It is prepared by sulphonating guaiacol at a temperature not exceeding 70° to 80° C. (158° to 176° F.) with concentrated sulphuric acid, converting the guaiacol sulphonic acid produced into the barium salt, and this by double decomposition with potassium sulphate into the potassium guaiacolsulphonate.

It is a colorless, crystalline powder, neutral or faintly alkaline, odorless, and having a faint bitter, followed by a sweet taste. It is readily soluble in water, slightly soluble in ordinary alcohol, but insoluble in absolute alcohol and in ether or oils.

Its aqueous solution is not precipitated by barium chloride; ferric chloride produces an intense violet blue color, which disappears on the addition of ammonia, or of concentrated solution of alkali chlorides or sulphates.

Actions and Uses.—Thiocol is said to be non-irritating to the mucous membranes of the digestive tract, readily absorbed and is claimed to promote appetite and improve nutrition.

It is recommended in pulmonary tuberculosis, acute and chronic bronchitis, pneumonia, whooping cough, emphysema of the lungs, etc., as a means of relieving expectoration, diminishing night sweats and improving nutrition.

Dosage.—0.3 to 1.3 Gm. (5 to 20 grains), in solution with orange syrup or in tablets.

Manufactured by F. Hoffmann-LaRoche & Cie, Basel, Switzerland (The Hoffmann-LaRoche Chemical Works, New York). U. S. patent No. 650,218. U. S. trademark No. 32,562.

TONOLS.

Tonol is a name applied by E. Schering to identify the glycerophosphates of his manufacture.

The following are mentioned: Calcium (or lime) tonol (calcium glycerophosphate, Schering), Iron tonol (iron glycerophosphate, Schering), Lithium tonol (lithium glycerophosphate, Schering), Magnesium tonol (magnesium glycerophosphate, Schering), Manganese tonol (manganese glycerophosphate, Schering), Potassium tonol (potassium glycerophosphate, Schering), Quinine tonol (quinine glycerophosphate, Schering), Strychnine tonol (strychnine glycerophosphate, Schering).

Certain combinations of these tonols are supplied under the names "duotonol," "quartonol" and "sextonol," which see.

Action, Uses and Dosage.—These are described under glycerophosphates (which see).

Manufactured by Chemische Fabrik auf Actien, vorm. E. Schering, Berlin (Schering & Glatz, New York). U. S. trademark No. 45,418.

(*To be continued.*)

Naming of Carbon Compounds.—Sulphones are compounds containing the group $(SO_2)''$, thus diethyl-sulphone is $(C_2H_5)_2SO_2$. Sulphonic acids: Compounds containing the group $(SO_2.OH)'$ are derived from sulphuric acid, $OH.SO_2.OH$, by abstraction of $(OH)'$, thus phenol-sulphonic acid is $C_6H_4(OH)(SO_2.OH)$.—*Pharm. Rev.*, September, 1906.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

103 Dearborn Avenue . . . . Chicago, Ill.

Cable Address . . . "Medic, Chicago"

Subscription price.....Five dollars per annum in advance

[*For other information see second page following reading matter.*]

SATURDAY, DECEMBER 22, 1906.

THE VENEREAL PERIL.

The papers and discussions of the symposium on venereal disease and on the duty of the medical profession to womankind, given at Boston last June and published in this and previous issues of The Journal,[1] deal with a subject that is seldom thus publicly discussed, but which is none the less one on which the enlightened opinion of the medical profession should be in evidence. In the ever-needed reforms here indicated the medical profession must necessarily be the leading factor. That large portion of mankind which is not influenced by purely moral considerations or that needs an unmoral stimulus to self-control, can be reached to a large extent by medical instruction, and the latter certainly will be a valuable adjunct to the higher arguments with the weak and the weaker wilful transgressors.

The spread of venereal diseases is largely through ignorance, and there is doubt whether physicians have done all that could have been done in this matter. There have been too many, even in our profession, who have taken the so-called "man of the world" view of the question, and their counsel has been in some cases distinctly bad. Since Noeggerath, however, published his paper on the dangers of gonorrheal infection there has gradually developed a very marked change in medical opinion in regard to that disease. While his ideas were perhaps considered as extreme, they contained so much truth that there are few, if any, who will nowadays ignore them. We have also widened our views as to the dangers of syphilis, though it may be that the old ostrich policy of wilful blindness is still in evidence in the attempts to belittle its agency in the causation of such disorders as paresis and tabes, and we can not say yet that we have an exhaustive knowledge of its capacities for evil to mankind.

Although the medical profession is, or certainly ought to be, thoroughly alive to the physical evils of immorality, the general public is still largely in a state of ignorance. If, as claimed by some authorities, 75 per cent. of the special diseases of women that call for medical or operative relief are due to gonorrheal infection, and if this infection exists or has existed (and we can often not tell when it ceases to exist) in 70 or 80 per cent. of the young men of our large cities, as some authorities declare, the condition of affairs is certainly a sufficiently formidable one. Although the percentages are doubtless overestimated, the fact that they seem to be justified to some observers is bad enough. How, except through ignorance, rational men will subject themselves to the risk of incurring diseases that involve such consequences is hard to see. The difficulties of publicity are obvious, but if the evil is to be checked it will have to be largely through popular education by parents, teachers, clergymen, and especially by physicians. The general unanimity of this opinion among medical men who have given due thought to the subject is very evident in the papers and discussions of the symposiums, and the propositions as to how this is to be brought about are well worthy of consideration. The tone of the speakers is gratifying and encouraging, and signifies a determination to spare no effort in attempting to solve the problem.

How far all the legal measures that are proposed, and that are said to be in actual existence to a certain extent in some parts of the country, will be effective will have to be decided by experience, but they cannot be even enacted, much less adequately enforced, without an educated public sentiment behind them. Notification, without needless publicity, should certainly be a legal requirement, as it is in other far less dangerous infections; the successful enforcement of this regulation would depend on physicians, and their attitude as regards the law should not be in doubt.

Within the past few years we have seen the public aroused in regard to the perils of tuberculosis; the movement is still in progress and intolerant zeal may even need to be checked if the popular interest in the matter increases as it seems likely to do. The evil of venereal disease is just as great. It may not cause so much direct mortality but its evil effects on the welfare and happiness of society are much greater. With the present drift of modern civilization these are accentuated; the increasing migration into cities, the stress of life, making early marriages less frequent, the tendency in our mixed population to neglect the higher moral considerations and to undervalue religious instruction, all help to increase the evil.

It is the duty of the medical profession to take the lead in this movement for the enlightenment of the public regarding the ravages of these two preventable diseases. In fact, here and there in different parts of the country county societies are already at work, as we have noticed in our news columns on several occasions. The work done by the societies referred to is usually in the form of distributing leaflets and in limited public meetings. We have before us a leaflet issued by the Scott County (Iowa) Medical Society entitled, "Circular of Warning for the Young and the Uninformed," which, as we understand it, is circulated freely. There is but one objection to this circular and that is that it is intended for both men and women. It would be better if the

1. Oct 20 and 27 and Dec. 8 and 22, 1906.

German plan to which we referred some time ago were adopted and leaflets prepared separately for circulation among the two sexes. To repeat, it is a question of education, and everything that will enlighten the public in regard to the matter is worthy of encouragement.

SHAW ON THE OPSONIC INDEX.

Bernard Shaw has written a play entitled "The Doctor's Dilemma," in which we learn that many eminent physicians and surgeons have but little to do.[1]

The plot revolves about a pathologist who has discovered a vaccine for tuberculosis which, if used with proper regard to the opsonic index, will cure the disease. This mode of treatment is still in the experimental stage, and it has thus far been possible to prepare only enough vaccine for ten cases. These have been carefully selected and are all in St. Ann's Hospital awaiting its application. There is a beautiful lady who would devote her fortune and her years to smoothing the rough path of some man of genius. She haply attains this amiable ambition in being the wife of Dubedat, an artist. (She believes she is his wife; but, as the artist is a complicated rascal, she and the audience are left in doubt.) This very altruistic lady adores Dubedat as a man and worships him as an artist; but he is dying of consumption. Will the pathologist save him? At first he refuses, but presently complies, being impressed by her appeal that, although Dubedat is immoral as a man, his artistic achievements are delighting and benefiting (!) the world. The pathologist then comes to wonder whether the life of Dubedat (a combination of artist and blackguard—a sort of up--to-date Benvenuto Cellini) is, after all, worth saving; whether it would not be kinder to her that he should die before her illusions are destroyed. While the man of science hesitates there comes to him an old fellow-practitioner—a good man, but quite a nonentity and in no danger whatever of setting the world on fire—who has developed phthisis. The problem is further complicated when the pathologist finds that he has fallen in love with the lady, and that somewhere among the subliminal strata of his consciousness he has been nurturing the hope of marrying her in the event of the artist's death. What is he to do? He solves the dilemma by treating and curing his fellow-practitioner and by handing Dubedat over to a fashionable physician who has the reputation of bungling badly in his practice. Dubedat dies in a bath chair, after making an artistic profession of faith and inducing his wife to promise to marry again speedily, for the reason that a sorrowing widow has always shocked his esthetic sense. Immediately on his death the pathologist asks the widow to marry him, confessing that when he put the artist in the hands of the fashionable bungler it was in the full expectation of an early demise, and he calls himself a murderer. The lady is shocked, especially that a gentleman as old as the pathologist should have dreamed that she would marry him, and announces that she has already remarried. Curtain.

The informed physician will surely require no extended consideration of this sketch. He will find it diverting in ways not intended by the playwright. But the portrait of the pathologist will astonish those who have studied the work of Wright, whose achievements bid fair to rank with those of Jenner and Reed; especially will it astonish those fortunate ones who heard his recent lectures on the opsonins in various institutions in this country.

On the whole, Shaw does not appear to be successful as a critic of the men and methods of modern medicine. Abuses have from time to time existed in our calling, as in all others, and men like Hogarth, Molière, Dickens and Daudet have revealed them sanely and comprehendingly and with salutary results. No doubt there are abuses to-day which might fairly be set forth, but Bernard Shaw—vegetarian, anti-vaccinationist, antivivisectionist, antimoralist, extremist and paradoxist—is hardly the man for the job.

1. See editorial in British Medical Journal on "Opsonins on the Stage," Nov. 24, 1906.

THE RELATION BETWEEN SUPPURATIVE SPHENOIDAL SINUSITIS AND INTRACRANIAL AND OCULAR INFLAMMATIONS.

Careful anatomic investigation would often make clear the mode of origin of many an obscure infection. In the presence of inflammatory intracranial disease attention is quite commonly given to the ear as the possible primary focus, and, while it is realized that infection of the cranial cavity may take place by way of the nose, the frequency of this mode of invasion is perhaps not generally appreciated. As a matter of fact, collections of pus in the various accessory nasal sinuses are not uncommon, especially in association with inflammatory affections of the cranial cavity. Of the sinuses the maxillary is the one most frequently involved, the sphenoidal being next in frequency. Attention is called to the importance of this subject by Dr. St. Clair Thomson,[1] who reports a case of acute suppurative basic meningitis and one of thrombophlebitis of the cavernous sinus secondary to purulent inflammation of the sphenoidal sinus, and terminating fatally. In addition, he has been able to collect from the literature 40 cases of like character. The lesions found after death comprise meningitis alone in 17 cases, thrombosis of the cavernous sinus in 4 cases, thrombosis and meningitis in 13 cases, meningeal septicemia in 2 cases, intracranial abscess, encysted abscess of the dura mater, hemorrhagic encephalitis, phlebitis of the cavernous sinus, intracranial hemorrhage and suppurative encephalitis, each 1 case.

The symptoms of suppuration of the sphenoidal sinus

1. Brit. Med. Jour., Sept. 29, 1906, p. 768.

are often vague and in large part the same as those due to the presence of pus in any of the other accessory cavities of the nose. The most common is a purulent catarrh, frequently postnasal. There also may be loss of the sense of smell or subjective sensation of a disagreeable odor. Pain or neuralgia may be absent, intermittent or severe. Occasionally it resembles migraine. It may be frontal, occipital or temporal, or even may be referred to the opposite side of the head. Sometimes it is referred to the ear, but its most characteristic situation is deep behind the eyes. Fever is absent in chronic cases, but is generally present in acute or complicated cases. The general health is disturbed in greater or lesser degree as a result of absorption or from the penetration of pus into the respiratory or digestive tract.

The bacteriologic findings have been varied. Pure cultures of streptococci have been obtained from the sphenoidal sinus and from the thrombus in the cavernous sinus or the pus at the base of the brain; pure cultures of staphylococci from the sinus and from the blood; pure cultures of pneumococci from the pus of the sphenoidal sinus and the meninges; the *Diplococcus lanceolatus* not only from the sinus and the meninges, but also from the bony wall of the sinus itself, and a streptothrix from the meningeal pus. Micrococci have been seen in fluid removed by lumbar puncture, grouped in pairs, and in diplococci, or in chains in the pus from the sphenoidal sinus.

Extension of disease from the sphenoidal sinus to the cranial cavity may take place by way of diseased bone or the veins or the lymphatics. Among other conditions to which suppuration of the sphenoidal sinus may give rise are relapsing cystitis, choroiditis, glaucoma, exudation into the sheath of the optic nerve, retrobulbar optic neuritis.

When the diagnosis of pus in the sphenoidal sinus can be made, the orifice of the sinus should be enlarged and the cavity drained. The Roentgen rays may be useful both in diagnosis and in treatment.

REGISTRATION OF VITAL STATISTICS.

Notwithstanding that correct registration of vital statistics is recognized as necessary in all civilized countries, it is remarkable that the laws of most of our states still remain so imperfect in principle or so faulty in execution that they can not be included in the registration area recognized by the United States census authorities. Eleven states were included in 1900 and five more were added in 1906, making the total 16, including the District of Columbia. The list of states not yet admitted includes some of the most important in the union and comprises over 60 per cent. of the population of the whole country. If the population of cities in non-registration states which have effective systems of registration be deducted there still remains 51.5 per cent. of the population of the country not properly provided with a system of registration of vital statistics. The Census Bureau has issued a pamphlet, which will be sent free to any physician requesting a copy, describing the unsatisfactory methods formerly in use in Pennsylvania with the reasons for their failure and giving the present law on the strength of which the state has been accepted as included in the registration area. Of the laws providing for registration in Pennsylvania, the original one, enacted in 1851, was in many respects excellent and superior to its successors, but failed chiefly for two reasons: It attempted to secure returns indirectly through the county authorities, instead of directly to a central bureau through responsible deputies, and it did not require death certificates as a necessary preliminary to burial or removal of the dead body. County registration is foredoomed to failure and compulsory death certificates are essential to secure the registration of all deaths. The present law provides for deputies of the central bureau in every village who are responsible directly to the central body. Dr. Cressy L. Wilbur, chief statistician, and who has charge of the Division of Vital Statistics at Washington, is trying to secure the aid of medical men in bringing about a uniform system of registration of vital statistics, and should have the coöperation of the medical profession in this work.

PHYSICIANS AND THE DAILY PRESS.

The healthy distaste exhibited by all honorable physicians toward the use of the daily press by practitioners as a means of self-advertising, has led to a somewhat anomalous condition. The physician, who should be a leader and a teacher in matters relating to the physical welfare of the public, has, because of this sensitiveness with regard to the use of the press, hidden his light under a bushel and left the public to grope in the dark; small wonder then if the people follow will-o'-the-wisps in the form of advertising quacks. An exchange[1] urges physicians to do their plain duty; for the people, it says, "are eager to be taught; they have always heard the word gladly. That following of false prophets which so excites our scorn is in a measure our own sin, for we have held our knowledge too much like oath-bound mystery, and have not heeded the children's cry for bread." There are two objections that may be raised to this method of enlightening the public. One is the opportunity such a course would offer to pseudo-scientific medical men to exploit individual methods and theories, the other is the possibility of the self-advertising physician rushing into print without adequate regard to time or season. Both of these objections, however, can be, and in some cases have been, easily met by the appointment of press committees in the various units of medical organization. There is no doubt, as the writer previously quoted says, that "many of the chief mysteries of practical medicine are now simplified down to the average layman's understanding" and failure to impart this is "to default on our lawful contribution to the general good." Particularly is it true that along the line of public hygiene and experimental medicine "the rate of future progress depends very largely on our activity

1. "The Faculty and the Newspapers," Maryland Med. Jour., November, 1906, p. 448.

in propagating medical knowledge among the people." With the increased requirements for admission to schools of medicine the physician of to-day should be eminently fitted to write on things medical—the ability to express in clear and simple English the basal facts of medicine being a presupposed qualification.

MUSCULAR RHEUMATISM AND ENDOCARDITIS.

The increase in our knowledge of muscular rheumatism has not been coincident with our increase in knowledge of the articular form. We are still quite in the dark as to the etiology of the disease, and we are still, no doubt, classifying under the head of muscular rheumatism a variety of different conditions. There are many facts in the history of the disease, or, at any rate, of some varieties, which suggest an infection, a view expressed by Leube a good many years ago. The occurrence at certain seasons, the not infrequent presence of prodromal symptoms, the fever which at times occurs, and the wandering involvement of many muscles, all speak for this interpretation. The occurrence of lesions in the internal organs, such as endocarditis, has not been emphasized, but there is reason to believe that these complications are not so very infrequent. Bechtold[1] has recently studied the statistics of the Würzburg Hospital, and has found a large number of cases of muscular rheumatism in which there were signs of heart disturbance: impure tones, murmurs, increased heart dulness, and accentuation of the second pulmonic sound. Out of these about 1 per cent. showed evidence of endocarditis, definitely to be referred to muscular rheumatism. Evidently this condition is more serious than we are wont to regard it so far as its effect on the circulatory system is concerned.

PARENTAL CO-OPERATION IN THE MEDICAL INSPECTION OF SCHOOLS.

That the parents are primarily responsible for the health of the child is generally acknowledged, but hitherto they have been made to feel this responsibility only in relation to contagious diseases. The need of co-operation on the part of the parents for the success of the medical inspection of schools is well brought out by a recent writer.[2] The need of care of the child's health, directly for the child's sake and indirectly for the sake of society, is now being insisted on by those who are inaugurating school inspection. The recommendations of medical inspectors are often disregarded by the parents, not because they do not care for the health of the child, but because they have relatively little faith in the school physician and are ignorant of the significance of the defects and diseases to which their attention has been called. It is evident that this phase of school inspection can have but indifferent success unless the parent is instructed and interested in the nature and objects of medical inspection. The value of parents' associations in this, as well as in other respects, is illustrated by the experience of the parent-teacher associations in Boston, which were established by the conference committee on moral education. The first was organized in May, 1905, the second last November, and the other two later in the year. The aim is to bring the home and the school together; to instruct the parents concerning the care of their children, and to promote the social interests of the neighborhood. The second object has been carried out by lectures, five of which were on the physical development of the child and two on the moral welfare. These lectures have proved an efficient agency for giving medical instruction to the parents. That they have helped the medical inspector in the performance of his duties, by making inspection a live issue in the community, is proved by the personal testimony of Dr. Fairbanks, who says that parents' associations have been of material assistance to medical inspection in the schools. In addition to these lectures, demonstrations have been given showing how to care for sick children. No doubt local conditions in some communities require modifications of the plan adopted in Boston, but the general idea of interesting parents in the protection of the health of their children at school and at home is worthy of extended adoption.

1. Münch. med. Wochft., 1906, vol. liii, p. 2189.
2. Fanny T. Andrews, Charities and the Commons, Nov. 24, 1906.

Medical News

CALIFORNIA.

In Peril of Fire.—Dr. Fitch C. E. Mattison, Pasadena, was severely burned about the head in extinguishing a fire which broke out in the room adjoining the operating room of the Pasadena Hospital.

Surplus Relief Funds.—It is stated in the daily press that one-half of the $4,000,000 still said to be on hand for the relief of San Francisco refugees may be used in the establishment of a general hospital in San Francisco.

Do Not Seek Publicity.—At the regular monthly meeting of the Stanislaus Medical Society held at Modesto, November 13, the members of the society agreed to abide by the section of the Principles of Medical Ethics of the American Medical Association referring to publication of reports of medical cases by the lay press.

Physicians Must Register.—The failure of physicians in Los Angeles to comply with the ordinance requiring them to register at the city clerk's office has resulted in the sending out of 92 notifications to delinquents that they must call at the health office within ten days and register on penalty of complaints being entered against them in the police court.

Personal.—Dr. Walter Lindley has been elected mayor of Los Angeles.——Dr. Edwin Z. Hennessey has been reappointed one of the directors of the Napa State Hospital and the board has elected him as its president.——Dr. Charles G. Levison, president of the San Francisco Policlinic, was given a farewell dinner November 27, on the eve of his departure for Europe. ——Dr. William D. Babcock has been elected dean of the Medical College of the University of Southern California, Los Angeles.——Dr. Charles E. Dorrance has been appointed a member of the board of health of Bishop, vice Dr. J. S. McQueen.——Dr. Adolph J. Kahn, Napa, fell from his bicycle November 24, and sustained severe cuts of the head.——Dr. Owen R. Stafford, Los Angeles, has been appointed health officer of Los Angeles County.

Hospital Notes.—The Mammoth Copper Company has commenced work on a hospital to cost $10,000.——St. Caroline's Hospital Association has been incorporated at Redding with a capital stock of $15,000, to erect a two-story brick hospital in that city. Dr. Ferdinand Stabel and Dr. J. Thornton Rohm, Redding, are on the board of directors of the company.——A hospital for epileptics under state or local management is being planned for Los Angeles.——It is reported that the Southern Pacific Railroad has purchased a site in San Francisco for $200,000, on which it will erect a hospital to cost about $250,000.——A permit has been granted by the Oakland board of works for the erection of a three-story frame struc-

ture for the Oakland Central Hospital, to cost $32,000.——The Pacific Coast Hospital Association has been incorporated in Oakland with a capital stock of $25,000.

COLORADO.

Personal.—Dr. W. R. Kidwell, Pueblo, was thrown from his bicycle, November 30, fracturing a rib and sustaining injuries that confined him to his bed for several days.——Dr. John W. Cline, Florence, has been appointed local surgeon for the Denver & Rio Grande Railroad, vice Dr. James W. Rambo, resigned.

Smallpox.—An epidemic of smallpox is reported to be raging in Las Animas County and the State Board of Health has taken charge of the situation in response to an urgent appeal from the county physicians and the county commissioner.——There are reported to be 26 cases of smallpox in the Trinidad pesthouse and many cases outside. The Board of County Commissioners of the county has ordered that the county physicians shall cause to be vaccinated every person in the county who has not been vaccinated.

GEORGIA.

Will Not Sell Cocain.—The druggists of Brewton have voluntarily pledged themselves not to sell cocain to anyone except on the presentation of prescription.

Physician Shot.—Dr. William Cawhern, Atlanta, was shot and seriously wounded by Albert R. Thomas, an employé of the Seaboard Air Line, December 4. Dr. Cawhern's assailant has been held by the grand jury on the charge of assault with attempt to commit murder.

Personal.—Dr. William D. Travis, Covington, is reported to be critically ill.—At the meeting of the United States District Examining Board at Macon, Dr. Robert B. Barron was elected president and Dr. Obadiah C. Gibson, secretary.——Dr. Rufus D. Dorsey has been elected to fill the vacancy on the medical board of Grady Hospital, Atlanta, caused by the death of Dr. Charles D. Hurt.

ILLINOIS.

Correction.—Dr. Nicholas H. Kern, Thawville, requests The Journal to state that the announcement of his marriage in The Journal, December 15, was an error.

Communicable Diseases.—The New Trier High School at Winnetka has been closed on account of a threatened epidemic of scarlet fever.——On account of the prevalence of smallpox in Galesburg, no child is allowed to attend school unless it has been properly vaccinated.——The scarlet fever situation in Tuscola is said to be improving.

Southern Illinois Association Meeting.—The Southern Illinois Medical Association, in its meeting at Shawneetown, elected the following officers: President, Dr. Charles C. Grizzell, De Soto; vice-presidents, Drs. James W. Hamilton, Mount Vernon, and George S. Rainey, Salem; secretary, Dr. Edgar E. Fyke, Centralia, and treasurer, Dr. Alexis T. Telford, Olney. The meeting next year will be held in McLeansboro.

Chicago.

Benefits for Hospitals.—As the result of the lecture by Burton Holmes December 3, about $9,000 was raised for the Provident Hospital.——The total receipts of the "Streets of Paris" are reported to have amounted to more than $70,000, of which about $40,000 is expected to be available for the Passavant Hospital, the beneficiary.

Personal.—Dr. Charles W. Behm, chief of the disinfection bureau of the department of health, who has been seriously ill with diphtheria, is reported to be convalescent.——Dr. Robert H. Babcock has been appointed a member of the consulting staff of the County Hospital, vice Dr. Fernand Henrotin, deceased, and Dr. George Paull Marquis a member of the staff, vice Dr. Horace M. Starkey, retired. Dr. Joseph A. Capps succeeds Dr. Babcock and Dr. Joseph C. Beck will take the place made vacant by the promotion of Dr. Starkey.—— Dr. Henry B. Favill has been elected president of the Municipal Voters' League.

INDIANA.

Hospital Incorporated.—The Goshen Hospital and Training School has been incorporated. The medical and surgical services will be furnished by the Elkhart Medical Society.

Rosenthal Estate.—By the will of the late Dr. Isaac M. Rosenthal, Fort Wayne, an estate of $75,000 has been left which is bequeathed to his children in equal parts, excepting that his medical library and surgical instruments are devised to his son, Dr. Maurice I. Rosenthal.

Irregular Practitioners Fined.—The "Rev." Dr. Charles H. McLain, alias "Schlatter," a healer, was fined $25 and costs at Bloomington, Ind., for violation of the medical practice law. The fine was paid and the healer left for Bedford.——We are informed that Dr. William H. Gray was fined $25 at Michigan City, November 27, for practice of medicine without a license. He is said to have admitted that he had no license.

Infectious Diseases.—The State Board of Health has received word that scarlet fever is prevalent at Straughan's Station, Henry County.——The German school, Logansport, has been closed on account of the prevalence of diphtheria. Ten students of the institution are said to be ill with the disease.——South Bend is in fear of a smallpox epidemic. It is estimated that at least 5,000 individuals have been vaccinated, the majority being children and employés of large factories.——Diphtheria is reported by the State Board of Health to be prevalent throughout the state.——During November more than 200 cases of measles have been reported in Richmond, with one death.——Fear of smallpox has led the county health board to close the public schools of Miami.

MARYLAND.

State Hospital Report.—The report of the Springfield Hospital for the Insane shows that it has now 738 patients.

Smallpox.—Five cases of smallpox are reported near Utica and many persons were exposed before the nature of the disease became known. The public schools have been closed.

Site for State Sanatorium.—On the invitation of Dr. A. Barr Snively, Waynesboro, Pa., the governor, a party of physicians, architects and others inspected a number of sites on South Mountain, Washington County, December 7, with a view to selecting a site for a state sanatorium for tuberculosis.

Staff Changes.—Dr. George Wells has been re-elected chief of the medical staff of the Annapolis Emergency Hospital and the following consulting surgeons have been appointed: Drs. Thomas S. Cullen, Joseph C. Bloodgood, James Bordley, Jr., St. Clair Spruill, Harvey G. Cushing, T. A. Ashby and B. B. Browne, Jr.

Medical Association Meets.—At the meeting of the Talbot Medical Association, held at Easton, December 5, Dr. Edward R. Trippe, Easton, was elected president; Dr. Robert A. Dodson, St. Michaels, vice-president; Dr. Alexander B. Hayward, Easton, secretary and treasurer, and Dr. James A. Stevens, Oxford, delegate to the Medical and Chirurgical Faculty of Maryland.

Baltimore.

Vaudeville for Hospital.—The vaudeville presented recently at the Maryland Theater, realized $1,500 for the Hospital for Crippled and Deformed Children.

Reception for Osler.—A reception in honor of Dr. and Mrs. William Osler was given at the residence of Dr. and Mrs. Harvey Cushing, December 10.

Frenkel in Baltimore.—Dr. H. S. Frenkel of Heiden, Switzerland, delivered an address in the Section on Neurology and Psychiatry of the Medical and Chirurgical Faculty of Maryland, December 5, on "Treatment of Locomotor Ataxia by Systematic Exercise." On the previous evening, Professor Frenkel was entertained at the University Club.

New Method of Milk Analysis.—A new method for the analysis of milk, devised by Dr. Thomas R. Boggs, is use in the Johns Hopkins Hospital, is announced. It is claimed that by this method the proteids are estimated to within 0.3 per cent. "Diluted milk is precipitated with phosphotungstic acid in hydrochloric acid and the volume of the precipitate is read off in an ordinary Esbach albuminometer."

New Organism Discovered.—Dr. Samuel T. Darling, formerly pathologist at the Baltimore City Hospital, but more recently connected with the Board of Health Laboratory in Panama, passed through Baltimore December 9, on his way to Europe. He claims to have discovered a new pathogenic organism in three persons who are suffering from emaciation, enlargement of the spleen, etc. He has named the organism "*Histoplasma capsulata*," but no name has as yet been given to the disease to which it is supposed to give rise.

Personal.—Dr. John R. Carr, now in Europe, has been elected a member of the staff of the Union Protestant Infirmary.—— Dr. William H. Welch has been re-elected a trustee of the Carnegie Institution.——Dr. Robert F. Miller has been given six months leave of absence from the Johns Hopkins Hospital and will study abroad. Dr. J. W. Churchman takes his place; Dr. W. S. Baer, formerly assistant, has been made associate in the orthopedic department; Dr. Henry T. Hutchins has been appointed resident gynecologist, vice Dr. Steven Rush-

more, who has moved to Boston; Dr. Samuel Woolman has been appointed an externe in medicine and Dr. H. K. Beal has been appointed fourth assistant resident physician.——Dr. Samuel T. Darling sailed for Europe December 12.——Dr. J. Buck has gone to Jamaica.——Dr. Thomas H. Bucklin has been elected president of the Paint and Powder Club.

MICHIGAN.

Communicable Diseases.—Deaths from typhoid fever in October numbered 156, more than in any other October since 1901.——An outbreak of typhoid fever is reported at Mancelona.——Physicians continue to report outbreaks of "Cuban itch."——Bangor, Van Buren County, is reported to have about 150 cases of scarlet fever.

MINNESOTA.

Communicable Diseases.—The typhoid fever epidemic which has been so severe at Hibbing since September, is abating, as there are no more than 12 cases there at present. Since September 6, 286 cases have been reported to the health authorities ——The scarlet fever situation in Spring Valley is improving, and the board of health is now confident that the spread of the disease has been checked.——At Virginia there are 4 cases of smallpox, all of which developed within a week. All the patients are from the lumber camps north of the city.—— Smallpox is said to be prevalent in Camp 35 of the Tower Lumber Company on Lake Vermilion, and the camp is held in quarantine.——Five cases of smallpox have been located in the western part of Stearns County, near Sauk Center, and there are three cases in one family southwest of that place. ——The quarantine of the camp of the Minnesota Cedar Company, near Funkley, has been removed.

MISSOURI.

Hospital Saturday.—The receipts for Hospital Saturday, December 1, in St. Louis, exceeded by $3,000 the amount received last year. The total contributions for the day were $20,546.09.

Germs Forbidden in Mails.—The St. Louis postoffice has notified the city bacteriologist that in the future cultures of diphtheria, typhoid and tuberculosis germs will not be accepted for transmission by mail.

Gasoline Isolation Boat.—A gasoline launch has been purchased by the health department of St. Louis, which will be used for the transportation of patients suffering from contagious diseases to the quarantine station, located two miles south of Jefferson Barracks.

Hospital Notes.—The new infirmary for the Lafayette County farm, near Lexington, is practically completed and will be ready for occupancy some time this month.——The Burge Deaconess Hospital, Springfield, a two-story frame building with 18 rooms, 12 of which are furnished and equipped for patients, was opened for public inspection, November 29.

University Medical School.—The executive committee of the board of curators of the Missouri State University, on November 27, decided to offer the junior and senior years of the medical school connected with the university, to Kansas City, provided certain conditions which had been imposed were met. The curators insist on a bonus of $100,000 and a committee consisting of citizens and the Kansas City alumni of the university has been appointed to discuss the means for obtaining this amount.

NORTH CAROLINA.

Personal.—Dr. Thomas A. Mann, health officer of Durham, who has been seriously ill at the Watts Hospital, is reported to be convalescent.——Dr. William D. Witherbee, Charlotte, has been appointed professor of orthopedic surgery in the North Carolina Medical College, vice Dr. H. Stokes Monroe, removed to Columbus, Ga.——Dr. L. P. Sorrel, who was elected coroner of Wake County declined to qualify on account of pressure of other work.——Unfavorable reports are received concerning the condition of Dr. P. L. Murphy, superintendent of the State Hospital for the Insane, Morgantown, who recently underwent operation in Baltimore.——Dr. James McKee, Raleigh, superintendent of the State Hospital for the Insane, has returned to his duties after an absence on account of ill health.

NEW JERSEY.

Personal.—Dr. C. Jerome Mossinger, Collingswood, who was arrested at Philadelphia, charged with performing a criminal operation, was released by the Magistrates Court November 24.

Anti-Tuberculosis Society Organized.—At a meeting of physicians in Millville, a Society for the Prevention and Relief of Tuberculosis was organized. Dr. Samuel D. Bennett was elected president.

Trace Water Pollution.—At a conference between the sewage commission and Bridgeton officials, December 1, steps were taken to urge the city to overcome the pollution of the streams in its vicinity. The commission reported that samples of water had been taken from the Cohansey at various points, beginning at Bridgeton and continuing over two miles to the Greenwich oyster beds. This was analyzed to determine the presence of organisms, but not necessarily of typhoid germs. In the water taken from the river at Bridgeton there were large quantities of bacilli present. The proportion decreased until at Greenwich it appears there were only about 200 to the cubic centimeter. It is claimed that the sewage of Bridgeton is carried to these oyster beds and infected the oysters.

NEW YORK.

A Hospital at Tuxedo.—A new hospital is to be built during the coming season at Tuxedo for the residents of Tuxedo Park. The hospital will be under the supervision of Dr. E. C. Rushmore and will be equipped with a full staff of physicians.

Communicable Diseases.—An epidemic of diphtheria has caused the closing of the public schools of Windmere, Long Island, where 7 cases with 2 deaths have been reported.—— At the Church Home, Buffalo, 14 cases of scarlet fever are reported.

County Medical Association Election.—The Rockland County Medical Association held its annual dinner and election December 5. Dr. Charles Kline, Nyack, was elected president; Dr. Sanford Suffern, vice-president; Dr. Robert F. Feltner, Pearl River, secretary, and Dr. George A. Leitner, Piermont, treasurer.

Sanatorium not Sanitarium.—Dr. Herbert Maxon King, physician in chief of the Loomis Sanatorium, calls attention to an error in the change notice of the corporate name of the institution, in THE JOURNAL of December 8. The change should be from the Loomis Sanitarium for Consumptives, to Loomis Sanatorium.

Personal.—Dr. Earl G. Danser, Buffalo, medical examiner for Erie County, has recovered from a serious attack of septicemia.——Dr. Byron B. Havens, Penn Yan, has been appointed jail and court house physician.——Dr. Charles H. W. Auel has been elected vice-president of the Buffalo German Hospital.——Dr. Spencer L. Higgins, assistant surgeon at the Hospital for the State Soldiers' Home, Bath, has resigned to enter the Medical Department of the Navy.——Dr. D. P. Card, Utica, who was appointed assistant surgeon at the Soldiers' Home and Hospital, Bath, resigned after five days to accept a position in the Manhattan State Hospital, Ward's Island, and Dr. C. Foster, junior physician at the State Hospital, Central Islip, Long Island, has been appointed to fill the vacancy.——Dr. Edward C. Koenig, North Tonawanda, has been appointed medical examiner for the postoffice department for the district.——Dr. Harry R. Gaylord, Buffalo, fell on an icy pavement December 4 and sustained a fracture of the leg.

New York City.

Personal.—A Kings County Hospital ambulance collided with an Ocean Avenue car on December 13 and the ambulance surgeon, Dr. Albert, received injuries which it is feared will prove fatal.

Smallpox on Steamer.—The Hamburg-American steamer *Blucher* was detained at quarantine because of a case of smallpox discovered in the second cabin. The passengers occupying the same compartment with the patient were also detained at Hoffman Island.

Medical Student Dies.—Jacob Tararosky, Brooklyn, a student at the College of Physicians in the City of New York, is reported to have killed himself by taking carbolic acid, December 3. He had made a special study of tuberculosis and, it is said, became inoculated with the disease.

Suicides.—During the three months ended November 24, 191 suicides were reported, an average of more than two a day. Of the total number, 55 selected shooting as a means of death; 20 died by carbolic acid; 20 hanged themselves; 17 chose asphyxiation; 1 took Paris green; 9 jumped from high places, one leaped in front of a train and one used chloroform.

Contagious Diseases.—There were reported to the sanitary bureau for the week ended December 8, 356 cases of tuberculosis, with 162 deaths; 276 cases of diphtheria, with 32 deaths; 155 cases of measles, with 5 deaths; 149 cases of scarlet fever,

with 9 deaths; 72 cases of typhoid, with 15 deaths; 52 cases of whooping-cough, with 10 deaths; 8 cases of cerebrospinal meningitis, with 2 deaths; 147 cases of varicella, and 13 cases of smallpox, a total of 1,228 cases and 235 deaths.

New Home for Cripples.—At the annual meeting of the officers and directors of the School for Crippled Children it was reported that on account of lack of space the society had been obliged to turn away hundreds of crippled children. A new four-story building in Water street has been planned as a home for crippled children which will be equipped with a dispensary, baths, roof-garden and light and airy class rooms, which will be open for occupancy by the first of September.

Personal.—Drs. W. C. Cramp, H. L. Hobker, Leroy J. Smith and A. J. Heitlinger have been appointed receiving physicians at Bellevue Hospital. They serve on shifts of six hours, in the reception room to receive patients and assign them to the proper wards.——Dr. Joseph L. De Verona, house surgeon to St. Catherine's Hospital, Brooklyn, was tendered a farewell reception and banquet December 3, at which he was presented with a set of surgical instruments.——Dr. H. Beeckman Delatour, superintendent of the Brooklyn Ambulance Hospital and attending surgeon at St. John's Hospital, is reported to be seriously ill with typhoid fever.

OHIO.

Medical Staff Appointed.—The medical staff of the Cincinnati City Hospital has undergone the following changes: Dr. William D. Porter has been appointed obstetrician, vice Dr. William H. Taylor, resigned and Dr. James W. Rowe, Mark A. Brown, Henry E. Griewe, Arch I. Carson, Carl Hiller, H. H. Hines and Frank E. Fee, have been made assistants. In all the other departments the old staff has been reappointed.

Laboratory Endowed.—Mr. H. M. Hanna and Col. O. H. Payne, have each given $100,000 to the Western Reserve University, Cleveland, for the building, equipment and endowment of a laboratory of experimental medicine in the medical school. Dr. George N. Stewart, head of the physiologic department of the University of Chicago, has been elected the first incumbent of the chair of experimental medicine in the university.

Councilor District Society Meeting.—The thirty-sixth annual meeting of the Eighth District Medical Society was held in Zanesville, December 5. Dr. Edmund C. Brush, Zanesville, was elected president, and Dr. W. E. Wright, Newark, secretary. The society adopted resolutions setting forth that the state institutions for the insane, the epileptic, the blind, etc., should be presided over by physicians skilled in the special practice of medicine applicable to these diseases and favored an examination by a competent board into the qualifications of applicants for positions in these institutions.

Personal.—Dr. Alvah S. McClain, Cleveland, school physician for the Sixth ward, has resigned.——Dr. Charles H. Bogman, Zanesville, is reported to be seriously ill.——Dr. John H. Tressel, Alliance, is ill at his home.——The residence of Dr. Samuel S. Wilson, Xenia, was seriously damaged by fire and water, November 11.——Dr. John H. Criswell, Marion, who has been seriously ill, is reported to be improving.——Dr. Harris G. Sherman has been elected president of the Cleveland Medical Library Association, vice Dr. Dudley P. Allen; Dr. David H. Beckwith, vice-president; Dr. Henry L. Sanford, secretary; Dr. William E. Bruner, treasurer, and Dr. Carl A. Hamann, librarian.

PENNSYLVANIA.

Insane Hospital Crowded.—On account of the overcrowded condition of the State Hospital for the Insane, Norristown, 470 patients are sleeping in the corridors. There are at present 2,500 inmates of the institution. At a meeting of the trustees of the hospital December 7, it was decided in view of the overcrowded condition, to ask the legislature for appropriations aggregating $416,000 to enlarge the institution. Among the items are: Two ward buildings, $100,000; home for men nurses, $75,000; building for convalescent men, $60,000; chapel and amusement hall, $50,000; additional farm land, $30,000.

Philadelphia.

Bequests.—By the will of the late Elizabeth Anderson, two properties at 1516 and 1519 South Seventeenth Street, are bequeathed to the Philadelphia Home for Incurables. The entire estate is valued at $77,671. After a bequest of a private residence, the balance of the estate is directed to be converted into cash to permit of the following bequests to be made: To the Presbyterian Home for Widows and Single Women, $6,000; to the Presbyterian Hospital, $5,000 to endow a free bed to be known as the Elizabeth Anderson free bed; to the Philadelphia Home for Incurables, $500; and after making several other bequests, charitable and private, the balance of the estate is left to the American Oncologic Hospital, with instructions that a tablet be erected to the memory of the donor.

Health Report.—The total number of deaths reported for the week ended December 14, was 500. This is a decrease of 16 from the preceding week and a decrease of 9 from the corresponding week of last year. The principal causes of death were: Typhoid fever, 24; measles, 2; pertussis, 3; diphtheria, 5; consumption, 59; cancer, 30; apoplexy, 30; heart disease, 59; acute respiratory disease, 55; peptic ulcer, 4; enteritis, 18; hepatic cirrhosis, 9; appendicitis, 6; Bright's disease, 37; suicide, 1; accidents, 22; marasmus, 6, and unknown, 5. There were 272 cases of contagious disease reported, with 29 deaths, as compared with 307 cases and 29 deaths reported for the previous seven days.

Blockley Residents Meeting.—The ex-residents and residents of the Philadelphia Hospital held their twentieth annual meeting and banquet on December 14. Dr. Edward L. Duer presided and Dr. Edward E. Montgomery was toastmaster. Dr. W. M. L. Coplin, Director of the Department of Health and Charities was the guest of honor and responded to the toast: "Blockley as it is and will be." The following officers were elected for 1907: President, Dr. Edward L. Duer; vice-presidents, Drs. Horatio C. Wood and Roland G. Curtin, and secretary, Dr. Edward R. Stone.

Hospital Bids Opened.—The bids presented to Dr. W. M. L. Coplin for the erection of the scarlet fever and diphtheria departments of the new contagious disease hospital varied from $785,982 to $908,878, and the time required to complete the buildings, from ten to nineteen months. The sum of $891,500 is available for the purpose from the $16,000,000 loan of March, 1903.

Election of Officers.—The following officers were elected at the meeting of the Kensington Branch of the Philadelphia County Medical Society, December 7. Chairman, Dr. Henry G. Godfrey, and clerk, Dr. William T. Hamilton.

VIRGINIA.

Physician Acquitted.—Dr. Bushrod L. Sparks, Charlottesville, charged with criminal malpractice in July last, was acquitted by the jury, November 24.

New Hospital.—A new hospital is to be established in Berkley ward, South Norfolk, and an option has been secured on a residence to be remodeled as a hospital at a cost of from $6,000 to $7,000.

Medical Faculty Election.—The Petersburg Medical Faculty held its sixty-first annual meeting November 15 and elected the following officers: President, Dr. John Mann; vice-presidents, Drs. William W. Gill and W. Preston Hoy; recording secretary, Dr. Leverette S. Early, and court medical, Drs. J. Bolling Jones, William E. Harwood, Frank W. Hains, E. Leavenworth McGill and James E. Smith.

CANADA.

New Association Formed.—The Ottawa Valley Medical Association has been formed and embraces the counties of Renfrew, Lanark and Carleton in eastern Ontario.

Elections to the Medical Council.—Dr. R. J. Gibson, Sault Ste Marie, Ont., has been elected from his district to the Ontario Medical Council; Dr. J. S. Hart for Toronto West; Dr. J. H. Cormack for St. Thomas' district, and the following to represent the homeopathic practitioners: Drs. E. T. Adams, A. P. Hardy, C. Jarvis, Toronto; Dr. Lutton, St. Thomas, and Dr. Henderson, Strathroy.

Committee on Association Meeting.—The following local committee has been appointed in Montreal to undertake the conduct of the annual meeting of the Canadian Medical Association in that city next year: Drs. Shepherd, Blackader, Lachapelle, England, Wm. Gardner, Roddick, Armstrong, W. F. Hamilton, Shirres, St. Jacques, Harwood, De Martigny, Garrow, Reddy, Boulet, Monod, Mercier, Villeneuve, Aubrey, Hingston; Birkett and Ridley McKenzie, *ex officio*.

Opsonic Therapy at the Toronto General Hospital.—Dr. George W. Ross, who worked for some time under Sir Almroth Edward Wright of London, has recently been conducting successful experiments in the Toronto General Hospital in opsonic therapy. Dr. A. H. Caulfield, the pathologist to the hospital, has been associated with him. During November some 25 cases were successfully experimented on. Dr. Ross is now in New York, at the Rockefeller Institute, while Dr. Caulfield will soon go to London, at Sir Almroth's request, to assist in experiments being carried on there.

Hospital News.—During October Toronto paid various hospitals in the city for charity cases $4,169.50. Of this sum Grace Hospital got $306; Hospital for Consumptives, Gravenhurst, $209; Hospital for Consumptives, Weston, $511.50; St. John's Hospital, $13; St. Michael's Hospital, $1,305; the General Hospital, $1,319.50; the Western Hospital, $505.50.——The revenue from the maintenance account of the Ontario asylums or provincial hospitals for the current year totals $150,370.29. This represents the pay patients' fees and is a considerable increase over that of previous years. For 1905 the amount was $123,253.83, and in 1904, $90,841.39.

The Legal Status of Osteopaths.—The Court of Appeal of Ontario has given decision on the state case from the Ontario government as to whether or not an osteopath could legally practice his profession in Ontario, deciding that there was not sufficient or proper evidence before them to pronounce thereon. It is understood that a bill will be presented at the next meeting of the Ontario legislature to enable osteopaths to treat those people whom they think they have a right to treat. There are about eight qualified osteopaths practicing in Toronto. It is not definitely decided what steps the Ontario medical profession will take in the matter.

FOREIGN.

Copley Medal Goes to Metchnikoff.—The Royal Society in London has awarded the Copley medal this year to Metchnikoff of Paris.

Damage Suit for Leaving a Cotton Swab in Wound.—The Swiss courts recently acquitted a surgeon who was sued for damages by a patient on whom he had performed an operation for goiter and had left a cotton swab in the wound. Tedious suppuration and paralysis of the right vocal cord resulted and the patient claimed substantial damages. Drs. E. Burckhardt of Basle and Valentin of Berne testified that a wad of cotton soaked with blood resembles human tissue so closely that, under the circumstances, its being overlooked should not be regarded as malpractice. The surgeon was consequently acquitted.

Organization of the Profession in Bohemia.—The *Prager med. Wochschr.* for November 29 brings the full text of the constitution and by-laws of the new organization of the physicians of German Bohemia to promote their material interests, founded on the same lines as the German *Leipziger Verband.* The preliminary meeting to elect officers and ratify the constitution is to be held at Prague, December 26. The profession has been organizing for the purpose in local branches throughout the country, and the success already realized sustains the claims of the promoters of the movement that "the profession is becoming united and strong" by the organization already accomplished.

LONDON LETTER.

(From Our Regular Correspondent.)

LONDON, DEC. 9, 1906.

The Prime Minister and Infantile Mortality.

A deputation representing the National Conference on Infantile Mortality, which was held in June, as previously stated in THE JOURNAL, waited on the prime minister, Sir Henry Campbell Bannerman, and the president of the local government board to urge the necessity of government action in reference to infantile mortality. Bailie Anderson of Glasgow submitted resolutions passed by the conference which were to the effect that the education department should add to the present teaching in hygiene given to senior girls, instruction in the rearing of infants; that sanitary authorities should establish depots for the supply of pure modified or sterilized milk; that all births should be notified to health officers; that the period of abstention from factory work of one month, as now imposed on mothers, be extended to at least three; that all preparations sold as food for infants should be certified by a government analyst as non-injurious, and that there should be more effective supervision of dairies, milkshops and cowsheds. The prime minister said that he and Mr. Burns are deeply impressed with the importance of the subject. The evil is simply appalling, for 120,000 babies died last year in England and Wales. While the standard of health of the community is improving the death rate of children is becoming worse. He thought the first and most important reform should be to secure better conditions of maternity; that the child should be well reared. The president of the local government board, Mr. John Burns, also delivered a sympathetic reply, referring to great good which had been done by supplying sterilized milk. In one district, within the range of the special milk supply, the infantile death rate was 58 to 100 as compared with the rate of 150 to 273 among a similar class outside that area.

Singing for Soldiers.

At a meeting held at Aldershot Surgeon-General Evatt pleaded strongly for the cultivation of singing in the army and navy. He pointed out the value of singing in preparing the lungs for the strain put on the internal organs by physical training. He also referred to its value as a recreation. He read a number of letters from high military officers—the duke of Connaught, Lord Wolseley, Sir Evelyn Wood, Admiral Seymour and Sir A. Keogh, director-general of the Army Medical Corps—approving of his suggestion, as did some eminent musicians also. An address was delivered by Dr. A. Summerville, inspector of music of the board of education, who said that nothing trained men to work together better than music and rhythm. An executive committee, for the purpose of forming a soldier's musical society, was created.

Anthrax Investigation at Bradford.

An Anthrax investigation board in the manufacturing town of Bradford, where most of the cases occur, has issued an annual report which is far from encouraging. A temperature of 300 F. (dry heat) must be maintained for three hours to kill anthrax spores. Such a temperature would destroy hair used for manufacturing purposes.

Pharmacology

United States Pharmacopeial Trustees' Affairs.

The board held a special meeting at Philadelphia, December 8. Messrs. Charles E. Dohme, J. H. Beal, S. A. D. Sheppard, H. M. Whelpley and J. P. Remington were present; Chairman Dohme presided.

S. A. D. Sheppard, Chairman Special Committee on Rice Memorial Volume, reported distribution of paper bound volumes of the Pharmacopeia among the colleges of pharmacy.

Dr. H. M. Whelpley reported as representative of the trustees at the funeral of Albert E. Ebert, a late member of the board. The chairman appointed a committee consisting of H. M. Whelpley, S. A. D. Sheppard and J. P. Remington to prepare resolutions on the death of Mr. Ebert. Dr. J. H. Beal was appointed to investigate the cost and feasibility of having prepared large crayon portraits of Albert E. Ebert to be suitably inscribed and presented by the board of trustees as a memorial of Mr. Ebert to colleges of pharmacy belonging to the American Conference of Pharmaceutical Faculties.

SPANISH PHARMACOPEIA.

Joseph P. Remington, chairman of special committee, reported that 250 typewritten pages of the Spanish translation of the Pharmacopeia had been prepared. The work of translation is being done by Professor Diaz, of the University of Havana.

The secretary of the board, Dr. Murray Galt Motter, was instructed to call the attention of the presidents of the pharmaceutical associations to the copies of the Pharmacopeia which have been placed at their disposal for use as prizes.

OFFICIAL ORGANS CHOSEN.

The *Bulletin* of the American Pharmaceutical Association and THE JOURNAL of the American Medical Association were adopted as official organs of the board of trustees.

CORRECTIONS TO THE PHARMACOPEIA.

Joseph P. Remington, Chairman of the Committee of Revision, was authorized to have the plates cut and necessary corrections made in the text of the U. S. Pharmacopeia before further copies are printed. Mr. Remington reported a hearing given representatives of manufacturing chemists and a committee from the N. W. D. A. in conference with some of the subcommittee chairmen of the Committee of Revision. The meeting was held December 6. The Committee on Revision was authorized to publish any corrections that are made in such a manner that the sheets can be inserted in copies of the Pharmacopeia now in use. Chairman Remington was authorized to act as the agent of the board of trustees in promulgating such corrections.

VACANCY IN BOARD OF TRUSTEES.

The secretary of the convention, H. M. Whelpley, was instructed officially to inform the officers of the convention and members of the board of trustees of the vacancy in the board caused by the death of Albert E. Ebert, and to call for nominations and then for a vote on the nominees to fill the vacancy.

SUPPLEMENTS TO THE PHARMACOPEIA.

A communication from Thomas F. Main, chairman of a special committee of the Northwestern Druggists' Association, requesting the publication of annual supplements to the United States Pharmacopeia was received and the secretary of the board was instructed to acknowledge it with the thanks of the board and to state that, while the board is without authority to issue annual supplements, the propriety of publishing the supplement provided for by the convention is now under consideration.

DELEGATES TO CONVENTION OF 1910.

A communication from the St. Louis Chemical Society, signed by the corresponding secretary, C. J. Borgmeyer, suggesting that chemical societies of the United States be invited to send delegates to participate in the deliberations of the convention of 1910, was read and will be given careful consideration.

The board adjourned subject to the call of Chairman Dohme, after adopting a motion favoring St. Louis as the place for the annual meeting in May, 1907.

Henry M. Whelpley,
Secretary, U. S. P. Convention.

Correspondence

The Dangers of the X-Ray.

Philadelphia, Dec. 14, 1906.

To the Editor:—In The Journal, December 8, Dr. William Allen Pusey makes some comments on my article entitled "The Attitude of the Clinician in Regard to Exposing Patients to the *X*-Ray." I fully appreciate the fact that controversial correspondence is of practically no value to the profession at large, and I assure you that I shall not again, through the correspondence columns, trespass on your space in reference to this subject. I do so in this instance, not in the hope of altering Dr. Pusey's personal views, but because, like himself, I am actuated by a desire that my opinions be not put in a false light through inaccuracy on the part of myself or others.

Dr. Pusey does me the undeserved honor of classing me with scientific men, and then immediately robs me of this agreeable distinction by accusing me of historical inaccuracy and, apparently also, of unfairness toward such work as that which he inaugurated in the treatment of leukemia and Hodgkin's disease. His very emphatically expressed opinion that the dangers I referred to do not exist, I need not discuss, for my article is sufficient evidence that I belong to the large group of persons that consider the views that Dr. Pusey expresses and reiterates to be at present entirely unsafe and at variance with what appear to be well demonstrated facts. The actual frequency with which these dangers are encountered is a matter that neither Dr. Pusey nor I can, as yet, determine.

The charge, however, that I was inaccurate and unfair, I prefer not to pass in silence, because I had a serious purpose in writing the article under discussion, and I desire that any influence it might exert be not impaired by a suspicion that I had a wholly inadequate knowledge of the subject on which I wrote. Furthermore, while I consider that there should be a clear recognition of the dangers, other than burns, that are associated with the use of the *x*-ray and that the utmost care should be used to avoid them—as is already done conscientiously by many *x*-ray operators that I know. I believe, too, that in occasional instances dangers will inevitably be encountered, in spite of great care, yet I am aware that in some degree these same things can be said of most therapeutic agencies that have a very pronounced effect, and I should, of course, hold no one culpable if, in using an agent known to have valuable effects, untoward accidents occurred—providing he were not ignorant of known dangers and had not neglected to take precautions against them. I am desirous that the *x*-ray should be made as useful in therapeutic and diagnostic ways as can be safely done, and I fear that Dr. Pusey's letter, if not remarked on, would in a reactionary way do much more to produce an epidemic of hysterical fear than could my own article, if the latter were read, not with undue indignation, but with comprehension of the fact that I am not an enemy of the use of the *x*-ray. I consider, on the contrary, that knowledge of its valuable effects will simply be obscured by indignant denial of the existence of dangers that appear to be unquestionable, while it will be furthered by cautiously and carefully excluding these dangers as far as possible, leaning, when in doubt, toward excessive caution rather than in a contrary direction. This, I think, is, to a calm observer, made plain in my article.

As to the charges of inaccuracy and unfairness, it is the latter that I most regret, because, while I have no fondness for inaccuracy, I have still less regard for unfair methods of supporting an argument. The charge, too, may appear to have some truth in it in this instance, unless one thinks for a moment of the manner in which therapeutic agents are at present usually studied before conservative physicians use them freely on human subjects. Dr. Pusey, in his charges, does not at all take into account the methods at present employed by the skillful pharmacologist.

The latter part of Dr. Pusey's letter consists chiefly of a denial of the occurrence of the gravest dangers of which I wrote; but I may be permitted to direct his attention to the fact that even though he denies the correctness of all the reports that he may see in literature, it does not necessarily follow that it is inaccurate for any one else to believe any of them. He makes a veiled but unfortunate demand for the details of the three cases of violent general reaction of which I stated I had the records. In modest appreciation of his evident fondness for the literature, I need merely refer him to the "Transactions of the Association of American Physicians," vols. xx and xxi, where they are already in print in brief form. It is desirable, however, that he should know that none of these patients had exposures severe enough to produce burns.

In reply to the earlier part of his letter, in which he more directly accuses me of lack of consideration of the literature of the subject, I would beg him to note that support of his contention is built on distortion of my language. I did not discuss "the idea or the possibility" or the "fear" or the "dread" of *x*-ray dangers—words that he appears mistakenly to consider the equivalents of those that I used—but the "realization" and "recognition" of the danger of harmful effects on the general organism. These, and many other words in my article, were chosen with some care, because I anticipated criticism; and if their actual meaning be considered it will, I think, be apparent to everyone acquainted with the literature that they do no violence to historical facts. Indeed, as I comprehend the present situation, Dr. Pusey even yet, neither realizes nor recognizes the dangers that I especially discussed—in fact, he denies that the literature shows a single instance of such dangers—but, nevertheless, through making his words and mine equivalent—he takes me to task for not having learned from the literature that they were realized and recognized "from the time that the first *x*-ray burn occurred."

It is, however, not a mere question of words. Dr. Pusey evidently believes that I had overlooked the literature to which he refers, and which he considers to contstitute thorough studies of the effects of the *x*-ray on the tissues. He is in error on this point. Scholtz' work, to which he refers, was a valuable investigation of the effect of the *x*-ray on the tissues of the skin and on bacteria. His observations concerning the effects on the deeper tissues, which had negative results, were trivial in number and character; and, further, his conclusions, which he describes in a few lines, have since been, in some extremely important particulars, most definitely controverted. Oudin, Barthélemy and Darier, in their well-known paper, published in 1897, made no studies of the lesions in

other tissues than those of the skin. There are, as he says, no more important articles published before 1903 in which tissue changes are discussed. Neither these authors, nor any others, made serious studies of the more profound effects of which I wrote, except that a number described grave and even fatal symptoms in animals after severe exposures, but no serious studies were made to determine what lesions caused death.

I am, of course, not at liberty to burden you with an extensive review of the literature on the subject; and it is unnecessary. I may, however, say that so far as the point under discussion is concerned, Dr. Pusey will find that Rodet and Bertin, in 1898, and a number of authors afterward (Scholtz among them), apparently demonstrated (though many questioned this) that severe *x*-ray exposures may kill animals, while clinicians, and particularly *x*-ray operators, had anxiously suspected that some disquieting general symptoms observed by them were due to the *x*-ray, and had strongly urged caution. There was no study of the effects on the deeper-lying organs, that deserves any serious consideration, until 1903, when Albers-Schonberg directed attention to the effects on the generative organs, and it was not until 1904, when Baermann and Linser described the effects on nitrogen-metabolism, and Heineke published his extensive description of the remarkable lesions that may occur in some of the organs of the interior of the body and proved clearly that death may be produced by severe exposures, that there was any real knowledge, gained through experimental study, of the influence that this agent may exert on the general organism. Warthin's work appeared later than Heineke's, but he deserves practically equal credit, since it was done independently and almost coincidently.

Before Albers-Schonberg's work appeared, and therefore still longer before Heineke's and Warthin's were published, clinicians and *x*-ray operators had used the *x*-ray in the treatment, as I said, of all manner of conditions; and even before 1902, contrary to the opinion that Dr. Pusey sems to have gained, the literature shows that it had been used in a large variety of conditions, including, in addition to many skin affections, various kinds of painful affections, and likewise acute and chronic infectious diseases, and other deep-seated disorders. This, as I stated, was hazardous, and was not in accordance with the usual methods followed at present in studying therapeutic agents; and while it was done with humane intent, we have now acquired sufficient knowledge to demonstrate that it is not justifiable to proceed further without greater caution.

Dr. Pusey appears, unfortunately, to consider that I struck individuals afoul in aiming at the general preciptancy with which the *x*-ray has been used. I admit that it is difficult to strike in any direction without hitting something, if the object chances to be within range; but if I did tacitly include among practices that are somewhat hazardous the treatment of leukemia and Hodgkin's disease with the *x*-ray, I did not do so without having given due consideration to the reason that first led the originator of this method to practice it. Indeed, his reason for using the *x*-ray in these diseases appealed and still appeals to many clinicians, of whom I am one, as a brilliant suggestion, and the equally remarkable results of the treatment led us to an extensive use of it. We have since realized that it would have been more in accordance with our customary methods if we had first demanded some knowledge of the way in which these especially marvelous effects are produced, and of the dangers that sometimes appear as a consequence of this profound action; but while we now recognize that the practice is associated with hazards, the responsibility for any ill-effects falls not on one individual; it is, on the contrary, pretty widely distributed in various countries, and I would beg Dr. Pusey to observe that there were many in the boat when the storm broke, and that I cried *peccavimus*, not *peccavistis*. It is probably desirable that the treatment of leukemia and of Hodgkin's disease by this means should be continued, using proper caution; and it is to be hoped that more nearly permanent effects may some time be produced, and that we may learn to avoid the dangers, for there are few conditions in which danger from this treatment seems more imminent than in leukemia, good as the temporary effects often are. It is certainly desirable that some other therapeutic uses of the *x*-ray that are already established be continued, and that new uses be found; but it is equally desirable, as I have already said, that there should be a calm but definite appreciation and an increasing knowledge of the dangers that pertain to the use of this agent.

DAVID L. EDSALL.

Priority in Publication.

CHICAGO, Dec. 12, 1906.

To the Editor:—Will you favor me by publishing the following letter from Dr. Watkins, together with my statement of the case, both of which I submit herewith:

Dr. E. C. Dudley:

My Dear Doctor:—In THE JOURNAL of the American Medical Association for Nov. 17, 1906, I note an article by you on "The Utilization of the Broad Ligaments in Complete Descent of the Uterus," etc. I quote the following from your paper:

"I propose a new operation, the essential factor of which is the utilization of the broad ligaments as supports of the pelvic floor without removal of the uterus."

In your paper I am given no credit for this operation, although it was described in the *Medical and Surgical Report* of St. Luke's Hospital for the year 1905, which was published in the early part of 1906, and in which you and I contributed articles, and also in *Surgery, Gynecology and Obstetrics*, June, 1906. In those publications I advocated separation and suture of a portion of the base of each broad ligament in front of the cervix as one of the modifications for the operation I described for the "Treatment of Cases of Extensive Cystocele and Uterine Prolapse."

I beg leave to again call your attention to the following extracts from my paper:

"This modification is made by severing a portion of the base of each broad ligament from the cervix and by suture of the free ends of the broad ligaments together in front of the cervix. The remainder of the operation is the same as above described."

"If it is inadvisable to render the patient sterile, the operation may be modified by leaving the body of the uterus free in the abdominal cavity and by suture of the anterior vaginal wall to the round ligaments and to the lower surface of the uterine body. In exceptional cases the base of each broad ligament may be severed and united in front of the cervix as described above."—*Medical and Surgical Report* of St. Luke's Hospital for the year ending September 30, 1905, and *Surgery, Gynecology and Obstetrics*, June, 1906.

Thanking you in advance for making the necessary corrections in THE JOURNAL of the American Medical Association, I remain, very sincerely yours,

THOMAS J. WATKINS.

December 3, 1906.

In compliance with the above request and in order to show that I have called no other man's work my own and for the information of those, if such there be, who perchance may be interested, I take pleasure in making the following statement:

The transactions of St. Luke's Hospital for 1905 were published, not early in the year as alleged, but about April 8, 1906. *Surgery, Gynecology and Obstetrics* for June, 1906, was published June 19. I find on consulting these two publications that they contain an article by Dr. Watkins descriptive of an operation for descent of the uterus and cystocele, which operation is entirely different from that described by myself. I find also that there is wedged into a paragraph where any one without careful reading might overlook it, a short statement of three or four lines to the effect that in exceptional cases the base of each broad ligament may be severed from the sides of the uterus and united in front of the cervix. This procedure, which embodies the essential principle of the operation for descent described by myself, obviously was introduced in the paper of Dr. Watkins as an incidental suggestion only. It was not included even among the illustrations of this otherwise profusely illustrated paper. The suggestion, however, although appearing in such form, furnishes, so far as it goes, valid ground on which may be based a clear title to priority of publication. But after this has been said it is proper to take into account the following significant facts:

1. I discussed the illustrations for the procedure in question with the artist who made the drawings, Mr. J. K. Parker, in November, and gave him the preliminary sketches early in December, 1905. Moreover, I freely discussed the method as early as December, 1905, and frequently thereafter, with internes and assistants at St. Luke's Hospital, and with numerous other professional friends, so that months before any publication by either of us the fact of my having in preparation a paper on this method was known to many people.

2. In February, 1906, two months before the first publication by Dr. Watkins, I gave my article to THE JOURNAL of the American Medical Association for immediate publication, but on request, withheld it temporarily from publication in order that it might be read at the June session in Boston, and might

thereby become part of the transactions. The paper accordingly was read and illustrated with lantern slides on the sixth of June, 1906, precisely thirteen days before the appearance of the June number of *Surgery, Gynecology and Obstetrics.*

Until the above letter reached me I was not aware that any one ever had made any mention of the procedure. Had I known of this accidental priority of publication I would, of course, have introduced into my own article the substance of the above statement. E. C. DUDLEY.

Medical Forgeries—The Hagen Burger Case.

KINGSTON, ONT., Dec. 8, 1906.

To the Editor:—The senate of Queen's University, at a meeting held Dec. 6, 1906, instructed the registrar to erase the name of Gotfried Leonard Hagen Burger from its list of graduates.

The minute of the senate will be of interest to your readers and is as follows:

The Senate of Queen's University, having met in conjunction with the Medical Faculty to consider questions which have arisen in connection with the degrees of Doctor of Medicine and Master of Surgery conferred on Mr. G. L. Hagen Burger by the said Senate, in September, 1904, find as follows:

First: That the degrees of Doctor of Medicine and Master of Surgery granted to the said Mr. Hagen Burger by the Senate of Queen's University were obtained in part after examination and in part on the credit of certain documents and certificates produced or referred to by him.

Second: That one of these documents, namely, a certificate from the State Board of Medical Examiners of Montana was founded on and required for its validity the possession of a regular degree in medicine obtained from some university or other institution authorized to grant such degrees.

Third: That the degree which Mr. Hagen Burger presented to the State Board of Medical Examiners of Montana was a degree purporting to be conferred on him by Kiel University.

Fourth: That the said degree from Kiel University has been ascertained beyond doubt to be a forgery.

In view of the findings, the Senate of Queen's University declare and adjudge that the degrees of M.D. and C.M. obtained by Mr. Hagen Burger from Queen's University were founded on documents which were invalid and they do hereby cancel these degrees and withdraw from Mr. Hagen Burger all right to use of them.

A recital of the evidence would encroach unreasonably on your space. Permit me only to say to our graduates and friends that although many difficulties arose in securing definite and adequate evidence, Professor Patchett's investigations in Germany during the past summer proved the forgery and enabled the senate to act. J. C. CONNELL, Dean.

Book Notices

DIET IN HEALTH AND DISEASE. By J. Friedenwald, M.D., Clinical Professor of Diseases of the Stomach in the College of Physicians and Surgeons, Baltimore, and J. Ruhräh, M.D., Clinical Professor of Diseases of Children in the College of Physicians and Surgeons, Baltimore. Second edition, thoroughly revised and enlarged. Cloth. Pp. 728. Price, $4.00 net. Philadelphia: W. B. Saunders Company, 1906.

This volume is intended for the practitioner, the student and the nurse. The authors have accomplished with marked success the adaptation of the work to these different classes. The student will find in it a clear statement of the principles of dietetics, while the practical application of these principles in the treatment of different diseases occupies about two-thirds of the book and forms a reliable guide to the physician in selecting the diet and to the nurse in preparing and administering food. Digestion and the nature and composition of food are first discussed and the results of recent investigations are fully set forth, so that the work may be said to be well up to date. Occasionally one sees evidence that newer knowledge has not modified older statements as when the results of Chittenden's investigations, indicating that the amount of proteid required is far lower than has been supposed, is followed by the objection to a vegetable diet that the proteid requirements can not be supplied without the consumption of an excessive quantity of food. Certainly vegetarian dietaries can be arranged which will give the necessary amount of proteid according to these lower standards without the use of an excessive amount of other elements. In view of Chittenden's results it is probable that the vegetarian question needs reinvestigation. The food value of alcohol is discussed in the light of Atwater's experiments with an assumption that alcohol may be a valuable food. The authors quote Abel's investigations as showing that the action of alcohol is to reduce blood pressure if it produces any effect and then say: "In conditions of heart weakness and arterial relaxation alcohol stimulates the heart, tones up the arteries and tends to bring about a normal condition." Whatever may be the final decision as to the therapeutic value of alcohol, such a contradiction between experimental results and clinical experience does not seem possible; one or the other is wrong, and it is probable that with more exact methods of measurement of blood pressure, etc., clinical observation will fall into line with scientific experimentation.

In the treatment of typhoid fever conservative feeding is recommended. Milk is made the basis of the diet, and the principal additions to it are in carbohydrates in the form of gruels, etc. The treatment of gastrointestinal diseases is the usual one. In hyperchlorhydria a largely proteid diet is advised and little is said of the use of fats, while the carbohydrates are condemned. In pneumonia large quantities of water are advised without reference to the possibility of overburdening the right heart by the volume of the blood. The recent views with reference to the amount of water to be allowed in nephritis are adopted and the treatment of dropsy by the removal of salt from the food is noticed and commended as useful in some cases. The feeding of infants and children is fully considered and methods for the home modification of milk are described. The book closes with dietaries for public institutions, recipes, dietaries, and useful tables of chemical composition of American foods and rapid reference diet lists for various diseases. On the whole, we believe that for practical purposes the medical man will find this work one of the best on dietetics.

MINOR MALADIES AND THEIR TREATMENT. By L. Williams, M.D., M.R.C.P., Physician to the French Hospital; Assistant Physician to the Metropolitan Hospital, etc. Cloth. Pp. 383. Price, $2.50 net. New York: William Wood & Company.

The minor maladies dealt with by the author are colds, coughs, sore throats, indigestion, constipation, diarrhea, vomiting, giddiness, rheumatism, neuralgia, headache and goutiness. Some of these may seem to be beyond the pale of minor maladies, and it is somewhat surprising to see a chapter devoted to insanity. The forms of insanity dealt with are, however, milder cases which might yield to proper home treatment. The book is an amplification of lectures delivered by the author and aims to supply detailed information on subjects with which the ordinary text-book necessarily deals in a cursory manner. The aim of the book in general seems to have been carried out. It is a pity, however, that a writer of a text-book should be so indissolubly wedded to the use of nostrums as this author seems to be. The following is a partial list of those which appear in his pages: Glycothymoline, hazeline, neboline, nepenthe, phenazon, sanitas, terrol, paroleine, cascarine le prince, mesotan, bromidia, antiphlogistine, etc. These in some cases enter into the prescriptions and must be regarded as essential parts of the author's treatment, while in other cases their composition is explained and substitutes recommended on the ground that the originals are too costly. If this is the only argument, it will have little weight with physicians who wish for their patients the best, and the favorable mention given to the nostrum is likely to greatly extend its use. A medical lecturer should take care not to encourage in his students the habit of nostrum prescribing any more than he would the use of alcohol, however much he may be addicted to employing them himself. The recommendation of nostrums in such a volume and for such complaints is the more to be deprecated, as it is in such cases that the greatest tendency to repetition and self medication is to be expected. The patient with pneumonia or typhoid fever is not tempted to economize on medical attendance by the use of proprietary medicines, but when he is once given something for his catarrh it is natural that he should continue its use not only for the same disease, but also for the diseases indicated on the labels or in the literature accompanying the original package. The slight ailments are the ones also in which the physician accepts most readily the aid of the nostrum manufacturer in order to escape the labor and trouble involved in unraveling the puzzling tangle of symptoms and framing an intelligent

and discriminating prescription. In addition, it seems as if the author's dignity is somewhat compromised by this too ready resort to ready-made formulæ, as even minor ailments demand that he who treats them should be sufficient master of his weapons to frame his own prescriptions and to know thoroughly the amount and character of the remedies he is using.

CLINICAL THERAPEUTICS. A Handbook on the Special Treatment of Internal Disease. By A. C. Croftan, Associate Professor of Medicine, Medical Department, University of Illinois, etc. Cloth. Pp. 626. Price, $5.00. Chicago: Cleveland Press, 1906.

This work is constructed from the standpoint of the physician at the bedside and, hence, gives unusual attention to the details of therapeutics. The feeding and bathing, the technic of all mechanical and physical means of treatment, as well as the use of medicines, the choice of climate and resorts and the indications for surgical intervention, are all discussed. In view of the fact that organic nervous diseases can not be influenced by treatment and that functional affections of the nervous system can best be treated in special institutions, the author has thought fit to omit them except so far as they can be included with the sections dealing with other systems. The treatment advised by the author does not appear to differ, in any marked respects, from that usually given, although in some cases modified by the results of his personal experience. The make-up of the book is liable to excite some adverse criticism. The prescriptions are a curious mixture of Latin and English, sometimes in the same prescription, but with rare exceptions the Latin genitive appears to have been utterly ignored. The absurd terms "iodide of potash" and "iodide of soda" are frequently used. There seems to be no uniformity in regard to the use of the final "e" in the names of the alkaloids, as we find "atropin" keeping company with "morphine." These are minor blemishes and do not detract from the real merits of the book.

WALSH'S PHYSICIAN'S COMBINED CALL-BOOK AND TABLET. Monthly Form. Thirtieth edition. Flexible Leather. Price, $1.50. Washington, D. C.: Published by Ralph Walsh, M.D., 1824 H. St., N. W.

This visiting list permits of an itemized record of all daily visits, office consultations, etc., so arranged that the patient's indebtedness can be instantly computed. Pages for obstetric and vaccination engagements, for cash receipts, addresses and other essential details of which the physician's memory may be relieved, are in evidence. A revised dose table and much general information make the book a valuable one.

THE PRACTITIONERS' VISITING LIST FOR 1907. A pocket-sized book containing memoranda and important data, and ruled blanks for recording the details of practice. Flexible leather. Price, $1.25. Philadelphia: Lea Brothers & Co., 1906.

Lea's visiting list is one of the old standbys in this class of annuals, this being the twenty-first year of its issue. It is unnecessary to say more than that it is keeping up its reputation as being one of the best visiting lists offered to physicians.

Insurance Fees and Lodge Practice

County Societies and the Insurance Examination Fee Question.

The following county societies, in addition to those already noted in THE JOURNAL, have adopted resolutions asking their members to resist the reduction in insurance examination fees. They are given by states.

Clark County (Arkansas) Medical Society.
Santa Barbara County (California) Medical Society.
Riverside County (California) Medical Society.
Santa Cruz County (California) Medical Society.
Marin County (California) Medical Society.
Pueblo County (Colorado) Medical Society.
Ware County (Georgia) Medical Society.
East Idaho District Medical Society.
Pike County (Illinois) Medical Society.
Decatur (Illinois) Medical Society.
Champaign County (Illinois) Medical Society.
Winnebago County (Illinois) Medical Society.
Vermilion County (Illinois) Medical Society.
Cumberland County (Illinois) Medical Society.
Fort Wayne (Indiana) Medical Society.
Boone County (Iowa) Medical Society.
Rice County (Kansas) Medical Society.
Stafford County (Kansas) Medical Society.
Queen Anne County (Maryland) Medical Society.
Dodge County (Minnesota) Medical Association.
Flathead County (Montana) Medical Society.
Broadhead County (Montana) Medical Society.

[We are also in receipt of a circular announcing that the physicians of Missoula, Ravalli and Sanders counties, Montana, have pledged themselves to make no examination at the reduced rate, the agreement being signed by every regular physician in the three counties.]

Jackson County (Mississippi) Medical Society.
Adams County (Mississippi) Medical Society.
The Medical Society of the County of Genesee (New York).
North Dakota Medical Association.
The Academy of Medicine of Cincinnati (Ohio).
Licking County (Ohio) Medical Society.
The Central Willamette (Oregon) Medical Association.
Aiken County (South Carolina) Medical Society.
White County (Tennessee) Medical Society.
Hood County (Texas) Medical Society.
Medical Association of Milam County (Texas).
Bostrop County (Texas) Medical Society.
Skagit County (Washington) Medical Society.
Grant County (Wisconsin) Medical Society.

The Fremont County (Colorado) Medical Society adopted resolutions which went into effect April 1. Under date of November 19 the secretary, Dr. Royal C. Adkinson, writes:

> I am informed that there is one man in Canon City, Colo., who signed the resolution, that has continued to make examinations at the old rate, but he is not a member of the county society. There is also one man here in Florence who is not a member of the society, and who refused to sign the resolution, who is making examinations for any price. He has received my appointment as examiner for the Mutual Life, the New York Life and the Phoenix, and my appointment has been recalled. On the other hand, some of the lesser companies are paying me $5 for examinations which I formerly made for $3.

The Carroll County (Georgia) Medical Society took action May 15. Under date of November 3 Dr. J. F. Cole, secretary, writes:

> Our resolutions are meeting with good results. The insurance companies have worried over the matter considerably and about all of them have agreed to our fees. Those who do not will have to quit business in Carroll County. The members of the Carroll County Medical Society are as a band of brothers—shoulder to shoulder, standing together as firm as a rock—not one of them has backslidden. . . . We do not allow any man or corporation to set our fees.

The Schoolcraft County (Michigan) Medical Society took action July last. Under date of November 23 Dr. G. M. Livingston, secretary, writes:

> The medical fraternity of this county stands pat on our insurance resolutions as adopted last July. As a result of our attitude toward the old line life insurance companies, a number of us, including myself, have been requested to resign our positions as local examiners. This we have done heartily for the sake of "the cause" and to show what we can do. No "insurance doctors" have so far entered the field, and my opinion is that no work is being done by the various companies in Schoolcraft County. We hope to keep in touch with the general movement for recognition in this matter, and believe as they do down in Kentucky that "United we stand, divided we fall."

The McLeod County (Minnesota) Medical Society adopted resolutions July 12. Under date of November 2 Dr. P. E. James, secretary, writes:

> In response to yours of the 31st ult. regarding progress of fight with insurance companies, I can say that to my knowledge the profession of our county stick to schedule of fees as already sent you.

The Robertson County (Tennessee) Medical Society adopted resolutions June 7. Under date of November 1, Dr. B. F. Fyke, secretary, writes:

> The resolutions went into effect July 1, and were fought on the field of the Modern Woodmen of the World and have gained the victory. Every physician is standing on his honor, where he was placed, and meeting the issue with a determination to overthrow the monopoly. The examiners of a few companies have been dismissed or dropped from the roll of examiners but no one has been secured to succeed them. One company long doing business in this county promptly

raised the examination fee from $3.00 to $5.00 and is paying it without complaint. A little diplomacy on the part of the medical societies is all that is needed to carry out the resolution in country districts.

On May 1 the Dunn County (Wisconsin) Medical Society adopted resolutions requesting its members to make no examination for any old line life insurance company for less than $5.00. Under date of November 9, Dr. F. E. Butler, secretary, writes as follows:

> In reply to your inquiry as to how our county members have held together regarding resolutions on insurance fees, will say that I think in one or two instances the resolutions were not lived up to, but on the whole it has been very satisfactory indeed, and conditions are improving. All members who received blank to be filled out accepting reduced fees either returned blank unsigned or paid no attention whatever to it. No member makes a fraternal insurance examination for less than $2.00, which resolution was passed in December, 1905.

Resolutions passed by the Ninth Ohio District Medical Society appear on page 2109, this issue.

Contract Insurance Work—The Experience of Warren, Pa.

Warren, Pa., Dec. 1, 1906.

To the Editor:—The profession must oppose contract work because, 1, It tends to lower fees; 2, it disrupts organization; 3, in the hands of corporations its aim is to supply the cheapest kind of service. A certain casualty company of Philadelphia known as the General Accident Assurance Corporation enlisted the factories in our town in the effort to compel their employés to be insured, both for accident and disease, taking one dollar a month out of the individual's pay. As an incentive to do this the employers were guaranteed against damages "on employers' liability."

Physicians were consulted by the company but the Physicians' Association of Warren refused to allow any one of its members to take the position of "insurance doctor." The "insurance doctor" is obliged to attend the insured employé free of charge but any assistance he requires must be paid for by the insured.

A man was imported, all kinds of inducements were held out to him. He was given a salary of $75 a month and hired for one year, but as the rest of the physicians refused to recognize him, and assistance from neighboring towns proved expensive, and the membership decreased, the doctor was given a week's notice and discharged. Again the physicians of the town were asked to take the position and one member of the association took it, conditionally, at the regular fees, but he was made to give it up or suffer professional ostracism.

The company then said they would break up the "doctors' trust" at any expense and a new man, just graduated, was imported at an increased salary; the membership still further diminished, the doctor's association appealed to the trades unions, it appealed to the new doctor himself and now he is going to leave. The membership will decrease still further and only two firms are connected with it.

Be firm with the members of your own organization, stand together, ostracise the man who would lower and disrupt the organization, and the corporation that is intent on commercializing medicine will be obliged to give up. An employé should have the liberty of chosing his own physician. Here the men were compelled to join the insurance club and employ the physician it furnished. This is good for the insurance company and for the employer. He escapes all liability and can afford to retain old and unsafe machinery or cheap unskilled help. The doctor who works for the company must make as little as possible of the injury or sickness so as to save the company from paying too large a benefit. He must take the company's side in damage suits and must belong to it soul and body.

The Physicians' Association offered to treat the men for the company allowing each man to employ his own physician. This they would not consent to, they must *own* the physician.

If there must be medical clubs and yearly contracts with hospitals, etc., let all the physicians be in it. Let the medical association receive the benefit. Ten Dollars a year will purchase accident and health insurance, and two dollars a year, from healthy individuals, may be sufficient for medical services, at least, insurance companies now thrive on it.

If necessary arrangements can be made with insurance companies for the insurance end of the scheme and if the insured can have his choice of the doctor, the contract evil would come to an end.

M. V. Ball.

Marriages

William Michael Hartman, M.D., Good Hope, Ill., to Miss C. M. Donaldson of Dayton, Ohio, at Macomb, Ill., December 1.

Frank B. Littlewood, M.D., New Rochelle, N. Y., to Miss Amy Bolton of the Borough of the Bronx, December 4.

William T. Lindsay, M.D., Madison, Wis., to Miss Bertha Almeda Shepard of Battle Creek, Mich., November 14.

Leonard S. Hughes, M.D., contract surgeon United States Army, to Miss Argyra Kaston, at Omaha, Neb., recently.

Jesse Wright Hamer, M.D., Clio, S. C., to Miss Clara Louise Yingling, at Westminster, Md., November 28.

A. M. Gustave de Monsabert, M.D., Windom, La., to Miss Noemi Picheloupe of Cade, La., November 9.

J. Walter Fahrner, M.D., to Miss Grace Huntington, both of Joliet, Ill., at Grand Rapids, Mich., recently.

Thomas J. Maloney, M.D., St. Paul, Minn., to Miss Martha L. Rich of Hastings, Minn., recently.

Henry B. Spruance, M.D., to Miss Natalie Porter Simpson, both of Wilmington, Del., December 4.

Harvey Field Newhall, M.D., Lynn, Mass., to Miss Marie Louise Hixon of Boston, November 6.

Willis J. Kirkbride, M.D., Fountain, Mich., to Miss Zola Pullman of Freesoil, Ohio, recently.

Russell R. Burt, M.D., Terre Haute, Ind., to Miss Leah Pinter, at Brazil, Ind., December 4.

Melville Silverberg, M.D., to Miss Augusta Abenheim, both of San Francisco, December 2.

John H. Cooper, M.D., Topeka, Kan., to Miss Bess Powers of Portis, Kan., November 29.

Deaths

William James Herdman, M.D. University of Michigan, Department of Medicine and Surgery, Ann Arbor, 1875; a member of the American Medical Association; in 1896 chairman of the Section on Medical Jurisprudence and Neurology; a member and ex-president of the American Electro-therapeutic Association; a member of the American Academy of Medicine and once a member of the council; a member of the faculty of the University of Michigan Department of Medicine and Surgery since 1875, where he served successively as demonstrator of anatomy from 1875 to 1889, as professor of pathologic anatomy from 1890 to 1892, as professor of practical anatomy from 1882 to 1890, and thereafter as lecturer on medical jurisprudence in the law department and as professor of diseases of the mind and nervous system in the department of medicine and surgery; one of the most prominent neurologists and electro-therapeutists of America; a prolific writer on educational electro-therapeutics and medical topics; chief surgeon of the Ann Arbor Railroad; died at a private sanitarium in Baltimore, December 14, a few days after a surgical operation, aged 58.

Charles C. Bradley, M.D. Bellevue Hospital Medical College, New York City, 1867; a member of the American Medical Association, Iowa State Medical Society and Delaware County Medical Society; a member of the One Hundred and Thirty-sixth New York Volunteer Infantry during the Civil War; surgeon of the Illinois Central Railroad, and for almost 40 years an esteemed and successful practitioner of Eastern Iowa, died at his home in Manchester, December 8, from general anasarca, after an illness of several weeks, aged 64.

William Meisburger, M.D. University of Buffalo, Medical Department, 1887; a member of the American Medical Association, the Erie County Medical Society and the Roswell Park Medical Club; for two years house surgeon at the General Hospital, Buffalo, and then for about four years first assistant physician at the Milwaukee Hospital for the Insane, Wauwatosa, Wis., died at his home in Buffalo, N. Y., December 8, after an illness of a year, aged 41.

William Cunningham, M.D. Saginaw Valley Medical College, Saginaw, Mich., 1897; health officer of Bay City and formerly mayor; at one time publisher of the Alpena *Evening Echo*; a land commissioner in Oklahoma and United States deputy marshal in the west, and a graduate of the law department of the University of Michigan, died at his

home in Bay City, Mich., from heart disease, after a prolonged illness, aged 50.

John Fairley Ashcraft, an undergraduate at the Hospital College of Medicine, Louisville, in the class of 1907, but licensed to practice by the Board of Medical Examiners of Arkansas in 1906, and in practice for only about two months, died at the home of Dr. W. S. Steward, with whom he was associated in practice, at White Oak, Ark., October 26, from acute yellow atrophy of the liver, after an illness of 12 days, aged 25.

DeWitt C. Howell, M.D. University of Michigan, Department of Medicine and Surgery, Ann Arbor, 1881; of Onaway, Mich.; for many years chief surgeon of the Detroit & Mackinac Railway; a member of the American Medical Association, and one of the most prominent practitioners of Michigan, died at Harper Hospital, Detroit, November 22, from cerebral hemorrhage, following an operation for malignant disease of the stomach, aged 51.

George Frederick Townsend, M.D. Jefferson Medical College, Philadelphia, 1858; a practitioner of medicine in St. Anthony, Minn., in 1859; a member of the school board and supervisor of schools of Minneapolis; for several years government physician to the Chippewa Indians; more recently city physician of Calais, Maine, died at his home in Calais, December 3, from pneumonia, after an illness of two days, aged 72.

Sylvester W. Turner, M.D. Medical Institution of Yale College, New Haven, Conn., 1846; a member of the American Academy of Medicine; state examiner for the Yale Medical School from 1873 to 1876; chairman of the board of directors of the Chester Public Library, and one of the oldest practitioners of Connecticut, died at his home in Chester, December 9, from senile debility, aged 85.

Henry Lawrence Sheldon, M.D. College of Physicians and Surgeons in the City of New York, 1851; assistant surgeon United States Navy from April 17, 1856, to July 5, 1861, and assistant surgeon United States Army from July 26, 1861, to July 1, 1886, when he resigned, died at Lakewood, N. J., September 28, from cerebral hemorrhage, after an illness of three days, aged 74.

Eugene Brooks, M.D. Baltimore Medical College, 1894; a member of the American Medical Association; major and surgeon of the National Guard of N. C., assigned to the Third Infantry, and state grand regent of the Royal Arcanum, and a prominent practitioner of Reedsville, N. C., died at his home December 1, from pneumonia, after an illness of three days, aged 33.

Charles I. Hoffman, M.D. Jefferson Medical College, Philadelphia, 1870; a member of the Carbon County Medical Society, the Lehigh Medical Society and the Medical Society of the State of Pennsylvania; formerly poor director of Carbon County, Pa., and school director of Wetherly, died at his home in Lebanon, Pa., November 27, aged 59.

A. M. Gustave de Monsabert, M.D., Tulane University of Louisiana, Medical Department, New Orleans, 1902; a member of the American Medical Association and of the Louisiana State Medical Association; a practitioner of Windom, St. Martin's Parish, La., died suddenly in New Orleans, November 12, from angina pectoris, aged 36.

Augustus C. Bournonville, M.D. Jefferson Medical College, Philadelphia, 1847; who was in charge of the hospitals of Philadelphia during the Civil War, and later was connected with St. Joseph's and Jefferson hospitals, died at his home in Philadelphia, from heart disease, September 3, after a long illness, aged 79.

Alfred Edward Meyer, M.D. College of Physicians and Surgeons in the City of New York, 1893; a member of the Alumni Association of the City Hospital, and assistant in clinical surgery in the New York Policlinic, died at his home in New York City, December 5, after a prolonged illness, aged 40.

Daniel Charles McLaughlin, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1905; resident physician at the Philadelphia Hospital, died at his home in Philadelphia, from tuberculosis, December 6, after an illness of several months, aged 25.

Henry Cotton Jones, M.D. Worcester (Mass.) Medical College, 1856; said to have been the oldest practitioner of Westchester County, N. Y.; a member of the national and county homeopathic medical societies, died at his home in Mount Vernon, December 4, aged 73.

Charles R. Taylor, M.D. University of Louisville, Medical Department, 1889; local surgeon for the Louisville & Nashville Road at Brownsville, Tenn., and a member of the board of health of Haywood County, died at his home in Brownsville, November 29.

Isaac Campbell Anderson, M.D. Hospital College of Medicine, Louisville, 1896; died at his home in Gate City, Va., December 5, from hemorrhage, two days after the severing of an artery in his right arm, said to have been accidental, aged 48.

John W. McConnell, M.D. Medical Department, Arkansas University, Little Rock, 1884; local surgeon of the Rock Island Railroad at Booneville, Ark.; a member of the city council, died suddenly in Booneville, from heart disease, November 26, aged 51.

August B. Storch, M.D. Medical Department of the University of Iowa at Keokuk, 1863; surgeon of the Estes Home Hospital, Keokuk, during the Civil War, died at his home in Washington, D. C., November 30, after an illness of 16 months.

Benjamin Harris, M.D. Miami Medical College, Cincinnati, 1888; formerly of Antigo, Wis., was shot by Amasa C. Campbell of Antigo, in a law office in Chicago, December 7, and died from his injuries two days later, aged 45.

Alfred Wild Gardner, M.D. College of Physician and Surgeons in the City of New York, 1890; died at his home in New York City, December 10, from thrombosis consequent on an operation wound, aged about 45.

Morris Frazee, M.D. Medical Department of the University of Iowa, at Keokuk; one of the best known practitioners of Indian Territory, died at his home in Vinita, November 6, from cerebral hemorrhage, suddenly, aged 69.

Alston Jones Whitfield, M.D. Tulane University of Louisiana Medical Department, New Orleans, 1883; died at his home in San Luis Potosi, Mexico, August 15, from pleurisy after an illness of four days, aged 46.

Livingston L. Dexter, M.D. Bellevue Hospital Medical College, New York City, 1863; a resident of Wapello County, Iowa, for forty years, died on his farm south of Ottumwa, November 25, from asthma, aged 72.

Steven D. Gustine, M.D. Tulane University of Louisiana, Medical Department, New Orleans, 1896; coroner of Jefferson parish, La., died at his home in Kenner, from an overdose of poisonous medicine, November 24.

Allen W. Fitts, M.D. Louisville (Ky.) Medical College, 1878; of Charlotte, N. C., was accidentally shot while hunting, November 22, in Sharon Township, Mecklenburg County, and died a few hours after, aged 54.

E. R. Bacon, M.D. Chicago Medical College, 1873; a school director of Lowell, Ind., for 11 years and for 13 years a member of the local pension board, died at his home in Lowell, recently, from nephritis.

Philip L. Baillargeon, M.D. Detroit (Mich.) College of Medicine, 1897; formerly of Albuquerque, N. M., died in Los Angeles, Cal., November 27, from rheumatic endocarditis, after an illness of one month.

George S. Hull, M.D. New York Homeopathic Medical College and Hospital, 1872; medical examiner for Bristol, Conn., died at his home in Bristol, December 4, from nephritis, after a long illness, aged 59.

Andrew Jackson Hayslett, M.D. Jefferson Medical College, Philadelphia, 1858; a surgeon in the Confederate service during the Civil War, died at his home in Lexington, Va., December 7, aged 77.

Joseph Francis Quinn, M.D. Long Island College Hospital, Brooklyn, N. Y., 1885; a retired practitioner of Brooklyn, died at his home in that city, November 26, after a brief illness, aged 41.

Felix Grundy Sitton, M.D. St. Louis Medical College, 1864; a veteran of the Mexican War, and the oldest practitioner in Boone County, Mo., died at his home in Ashland, December 2, aged 84.

John David Thorley, M.D. Jefferson Medical College, Philadelphia, 1871; died at his home in Harrisburg, Pa., November 12, from tuberculosis, after an illness of six years, aged 58.

John Henry Trent, M.D. Long Island College Hospital, Brooklyn, 1876; died at his home in Brooklyn, December 6, from pneumonia, after an illness of one week, aged 60.

Alpheus Toms, M.D. Medical College of Indiana, Indianapolis, 1872; a veteran of the Civil War, died at his home in Goshen, Ind., from epilepsy, December 7, aged 65.

Charles Manning Rust (Examination, Massachusetts), of Winchester, Mass.; a veteran of the Civil War, died in a sanatorium, November 23, after a long illness, aged 61.

Jacob Huggins, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1860; died at his home in Newberne, Ala., November 21, aged 80.

Ira P. Coller, M.D. Michigan College of Medicine and Surgery, 1903; died at his home in Detroit, December 2, from septicemia, after a long illness, aged 41.

Cornelius Hogan, M.D. Hahnemann Medical College and Hospital, Chicago, 1882; died at his home in Chicago, December 7, after an illness of two weeks.

Wilson M. Ligon, M.D. Medical College of Georgia, Augusta, 1853; died at his home near Riddle's Bridge, Cleburne County, Ala., December 2, aged 77.

William J. Luck, M.D. Medical College of Virginia, Richmond, 1857; died at his home in Middleburg, Va., December 3, from senile debility, aged 71.

John J. Rooney, M.D. Long Island College Hospital, Brooklyn, 1897; of Coney Island, died at Nanuet, N. Y., November 24, aged 32.

George Monroe Emrick, M.D. Chicago Medical College, 1873; died at his home in Chicago, December 12, from acute nephritis, aged 53.

Almert H. Blossom, M.D. Medical College of Ohio, Cincinnati, 1889; of Miamisburg, Ohio, died in Cincinnati, December 1.

Philander Jacobs, M.D. Columbus (Ohio) Medical College, 1883; died at his home in Jackson, Ohio, November 29, aged 53.

Queries and Minor Notes

Anonymous Communications will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish name or address will be faithfully observed.

SKELETONS AND MODELS.

Dr. F. W. Simpson, Florissant, Colo., asks for addresses of American firms that prepare skeletons for study. He says: "I am particularly anxious to obtain a first-class human skull that is carefully disarticulated so that each bone of the head can be studied separately and the internal and middle ears exposed in perfect condition. You will do me a great service if you will also provide me with the addresses of firms who turn out first-class anatomic models such as are prepared by Mon. Vasseur Tramond, of Paris, France, only in regard to the skull it is important that the bones are not perforated for contrivances to hold the head together."

"BAD ENGLISH."

Columbus, Ohio, Nov. 12, 1906.

To the Editor:—It seems to be the universal tendency of busy Americans to eliminate superfluous letters and also superfluous words, and possibly the tendency is not, on the whole, a bad one. The present wave of spelling reform emphasizes the desire of the people to eliminate superfluous letters. When a doctor says that his patient has "no temperature" (which was criticised by Dr. W. W. Keen in The Journal, Nov. 10, 1906), the expression grates on one's ears and is clearly improper, and yet we all know what is meant and it serves to eliminate at least two words. So far as my own observation goes this special elimination is of comparatively recent origin, but I think it is growing in popularity and very likely will finally be accepted as proper.

I have noticed for a good many years the growing use of the word "case" as equivalent to "patient." One sees this constantly in print, and hears it in medical society discussions and in ordinary professional conversation. I am inclined to think that this use of the word has come to stay, and although I have always tried to avoid it, as being perhaps in bad form, I am afraid that it is useless to object. Indeed, I am afraid that those who object have perhaps more to contend with than they anticipate.

The Century Dictionary, as the seventh meaning of "case," gives the following: "A person who is peculiar or remarkable in any respect: as, a queer case," etc. In the Standard Dictionary the third meaning given is: "Med. and Surg., An example, instance, or condition; sometimes a subject of disease or injury: * * * Two cases are waiting." Webster goes perhaps even further in his third definition: "(Med. and Surg.) A patient under treatment."

According to the authorities, therefore, it would seem that we might even say that "three cases recovered and one died." If we can thus enlarge the use of the word it seems to me it will be a distinct advantage as saving a good deal of unnecessary circumlocution. J. F. Baldwin.

Answer.—With a scientific training and an education that continually emphasizes the value of precision and simplicity, the physician certainly should be in accord with all rational effort for the elimination of superfluous letters and words. This same training, however, should make the physician careful to have his terms exact. Simplicity should never be secured at the cost of ambiguity. Take our correspondent's first example: Instead of saying "no temperature," which he admits "grates on one's ears and is clearly improper," why not say, "no fever," which is correct, scientific and eliminates more letters than does the objectionable phraseology defended by him. The English language is embellished with a wonderful labyrinth of enlarged meanings, perplexing to the child and to the foreigner, but often delightful in their possibilities for the imagery of the poet and the subtleties of the humorist, but it is certainly well to draw the line against metonymy and synecdoche, in scientific writing. The commendable endeavor of anatomists to have the scientific world decide on one name for each structure, instead of using many synonyms, is an illustration of the need of the times. Why not simplify this word "case" by restricting its use to what it means in medicine—the clinical unit presented by patient, history and findings? Let us avoid making one word do duty in a confusing number of different situations. When "case" is used for a person, it should be as a figure of speech. We all know the patient who seems to be a "case"—perhaps because of the rarity of his disease, or perhaps because he presents a typical case. He bears the earmarks of inherited predisposition, the imprint of poor environment, and—in the imagination of the physician, completely absorbed in studying him—there is plainly visible in the background the confirmation obtained by stained sections secured after autopsy. All these things make up a "case" that overshadows the ego of the individual. In such a patient, the word "case" may be used as a figure of speech, but if so, let it only be in such cases in a colloquial way and not in scientific writing.

The Public Service

Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending Dec. 15, 1906:

Kirkpatrick, Thos. J., asst.-surgeon, granted ten days' leave of absence.

Brooks, Wm. H., asst.-surgeon, arrived at Newport News, Va., from Cuba, on 30 days' leave of absence.

Shimer, Ira A., asst.-surgeon, reports arrival in Washington, D. C., from duty at Ancon, Canal Zone, Panama.

Carter, Wm. F., surgeon, leave of absence extended 30 days.

Clark, John A., asst.-surgeon, reports for temporary duty at Fort Oglethorpe, Ga., Dec. 9, 1906.

Lamson, Theo., ast.-surgeon, ordered to Fort Bliss, Texas, for duty.

Harris, Jesse R., asst.-surgeon, ordered to Fort Assinniboine, Mont., for duty, and granted 20 days' leave of absence.

Brown, O. G., asst.-surgeon, ordered to Fort Robinson, Neb., for duty.

Burkart, John L., contract surgeon, relieved from further duty at Fort Sheridan, Ill., and ordered to Fort Wayne, Mich., for duty.

Holmes, Thomas G., contract surgeon, relieved from duty at Fort Wayne, Mich., and ordered to Fort Meade, S. Dak., for duty.

Hammond, William G., dental surgeon, granted an extension of one month to his leave of absence.

Stone, Frank P., dental surgeon, left Fort Sam Houston, Texas, and arrived at Fort Clark, Texas, for duty.

Long, Charles J., dental surgeon, ordered for temporary duty to Fort Assinniboine, Mont., 40 days; Fort William Henry Harrison, Mont., 30 days; Fort Missoula, Mont., 30 days; Fort Yellowstone, Wyo., 30 days; Fort Keogh, Mont., 30 days; Fort Lincoln, N. Dak., 30 days.

Navy Changes.

Changes in the Medical Corps, U. S. Navy, for the week ending Dec. 15, 1906:

F. M. Furlong, surgeon, detached from the Bureau of Medicine and Surgery, and to duty at the Naval Hospital, Boston.

Wright, B. L., surgeon, detached from the *Columbia* and ordered to the Naval Hospital, New York, for treatment.

Johnson, M. K., surgeon, to duty at the Naval Hospital, Norfolk, Va.

Grove, W. B., surgeon, detached from the *Iowa* and ordered to duty at Newport News, Va., in connection with fitting out the *Minnesota* and for duty on board that vessel when placed in commission.

Grow, E. J., surgeon, detached from the *Ohio* and ordered home to await orders.

Lumsden, G. P., surgeon, when discharged by the Naval Medical Examining Board, Washington, ordered home to await orders.

Oman, C. M., P. A. surgeon, detached from the Naval Hospital, Norfolk, Va., and ordered to the *Ohio*.

Bishop, L. W., P. A. surgeon, detached from the *Dubuque* and ordered to the *Iowa*.

Heiner, R. G., asst.-surgeon, detached from the *Scorpion* and ordered to the Navy Yard, Washington, D. C.

Dessez, P. T., asst.-surgeon, detached from the Marine Barracks, Washington, D. C.; to duty Naval Hospital, Boston.

Gill, J. E., asst.-surgeon, detached from the Navy Yard, Washington, D. C., and ordered to the *Dubuque*.

May, H. A., asst.-surgeon, detached from the *Iowa* and ordered to the *Indiana*.

Reeves, I. S. K., P. A. surgeon, detached from duty at the Naval Hospital, Boston, and ordered to the *Scorpion*.

Hart, G. G., acting asst.-surgeon, detached from duty at the Marine Recruiting Station, Atlanta, Ga., and ordered to duty with the Marine Recruiting Party at Dallas, Texas.

Traynor, J. P., P. A. surgeon, detached from duty on board the U. S. R. S. *Southery*, Navy Yard, Portsmouth, N. H., and ordered to duty at the Navy Yard, Boston.

Ryder, C. E., Assistant surgeon, detached from duty at the Navy Yard, Boston, and ordered to duty at the Navy Recruiting Station, Omaha.

Chapman, R. B., asst.-surgeon, ordered to duty at the Navy Yard, Mare Island, Cal.

Shaw, H., asst.-surgeon, detached from duty at the U. S. Naval Hospital, Naval Home, Philadelphia, and ordered to duty at the Naval Hospital, Pensacola, Fla.

Grieve, C. C., asst.-surgeon, detached from duty at the Navy Recruiting Station, Omaha, and ordered to duty on the U. S. R. S. *Southery*, Navy Yard, Portsmouth, N. H.

Foster, T. G., asst.-surgeon, detached from the *Chicago* and ordered to the *Charleston*.

Morse, E. T., pharmacist, detached from duty at the Naval Medical School Hospital, and ordered to duty at the Naval Dispensary, Navy Yard, Boston.

Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ended Dec. 12, 1906:

Williams, L. L., surgeon, detailed as member of Revenue Cutter Service retiring board in Baltimore, Dec. 10, 1906.

Cofer, L. E., P. A. surgeon, temporarily relieved from duty at Honolulu, and directed to report at Ellis Island, N. Y., for temporary duty.

Methewson, H. S., P. A. surgeon, directed to proceed to Detroit for special temporary duty, on completion of which to rejoin his station at Cleveland, Ohio.

Amesse, J. W., P. A. surgeon, granted leave of absence for seven days from Dec. 3, 1906, under Paragraph 191 of the Regulations.

Frost, W. H., asst.-surgeon, detailed as member of Revenue Cutter Service retiring board in Baltimore, Dec. 10, 1906.

Cleaves, P. H., acting asst.-surgeon, granted leave of absence for twelve days from Dec. 13, 1906.

Hume, Lea, acting asst.-surgeon, granted leave of absence for thirty days from Nov. 27, 1906.

Lyall, R., Acting asst.-surgeon, granted leave of absence for three days from December 3, under Paragraph 210 of the Regulations.

Rodman, J. C., acting asst.-surgeon, granted leave of absence for five days from Dec. 12, 1906.

Wakefield, H. C., acting asst.-surgeon, granted leave of absence for seven days from Dec. 5, 1906, under Paragraph 210 of the Regulations.

Gibson, R. H., pharmacist, granted leave of absence for seven days from Nov. 26, 1906, under the provisions of Paragraph 210 of the Regulations.

Brown, F. L., pharmacist, granted leave of absence for ten days from Dec. 22, 1906.

Thomas, A. M., pharmacist, granted leave of absence for five days from Dec. 1, 1906, under Paragraph 210 of the Regulations.

BOARD CONVENED.

A board of medical officers was convened to meet at Seattle, Wash., on call of the chairman to make a physical examination of an alien reported to have trachoma. Detail for the board: Passed Assistant Surgeon J. H. Oakley, chairman; Assistant Surgeon H. G. Ebert, recorder. Dec. 12, 1906.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended Dec. 14, 1906:

SMALLPOX—UNITED STATES.

Florida: Duvall County, Jacksonville, Nov. 25-Dec. 1, 1 case; Madison County, Nov. 25-Dec. 1, 1 case.
Illinois: Nine counties, Oct. 1-31, 88 cases, 3 deaths; South Bend, Nov. 25-Dec. 1, 10 cases.
Iowa: General, Nov. 1-30, 1 death.
Louisiana: New Orleans, Nov. 25-Dec. 1, 2 cases.
North Carolina: Greensboro, Nov. 25-Dec. 1, 1 case.
Ohio: Toledo, Nov. 18-24, 1 case.
Utah: Salt Lake City, Nov. 1-30, 1 case.
Washington: Spokane, Nov. 25-Dec. 1, 1 case.
Wisconsin: Milwaukee, Nov. 18-Dec. 1, 26 cases.

SMALLPOX—FOREIGN.

Africa: Cape Town, Oct. 23-27, 2 cases.
Canada: Nova Scotia-Cumberland County, Nov. 5, epidemic.
Ecuador: Guayaquil, Nov. 1-15, 23 deaths.
France: Paris, Nov. 18-24, 8 cases.
India: Calcutta, Oct. 21-27, 3 deaths.
Italy: General, Nov. 15-22, 5 cases; Milan, Nov. 9-15, 1 case.
Mexico: Veracruz, Nov. 18-24, 1 case.
Persia: Chiraz, Sept. 1-30, present; Guiarrouz, Sept. 1-30, present.
Turkey: Constantinople, Nov. 12-18, 1 death.

YELLOW FEVER.

Cuba: Havana, Dec. 5, 3 cases; Cruces, Dec. 5-11, 3 cases.
Ecuador: Quayaquil, Nov. 1-13, 4 deaths.
Mexico: Veracruz, Nov. 20-26, 1 case.
West Indies: Barbadoes, Dec. 7, 1 case, on S. S. *Maranhense*.

CHOLERA.

India: Bombay, Nov. 7-13, 3 deaths; Calcutta, Oct. 21-27, 28 deaths; Rangoon, Oct. 28-Nov. 3, 2 deaths.

PLAGUE.

Egypt: Alexandria, Nov. 4-12, 2 cases; Minieh Province, Nov. 4-11, 1 case; Port Said, Nov. 4-11, 2 cases, 2 deaths; Suez, Nov. 1-15, 1 case, 1 death.
India: Calcutta, Oct. 21-27, 10 deaths.
Japan: Formosa, general, Oct. 1-31, 32 cases, 23 deaths.
Mauritius: Oct. 19-Nov. 3, 50 cases, 39 deaths.

Society Proceedings

COMING MEETINGS.

American Association of Anatomists, New York City, Dec. 27-29.
Am. Laryn., Rhin. and Otol. Soc., Providence, R. I., Jan. 5, 1907.

NINTH OHIO DISTRICT MEDICAL SOCIETY.

Annual Meeting, held at Ironton, Nov. 8, 1906, in Joint Session with the Central Tri-State Association.

The President, DR. CHARLES PARKER, in the Chair.

Officers Elected.

The following officers were elected for the ensuing year: President, Dr. J. L. Gahm, Jackson; secretary-treasurer, Dr. J. S. Rardin, Portsmouth; censor, Dr. L. F. Rousch, Pomeroy.

Welston was chosen as the next place of meeting.

Life Insurance Fees.

A committee, composed of Drs. L. D. Allard, A. Robinson, J. S. Rardin and John E. Sylvester, was appointed to draft suitable resolutions relative to the reduction of fees by life insurance companies, and their report was adopted, as follows:

WHEREAS, A number of the American life insurance companies have recently made under the plea of economy, a reduction in the fees paid their medical examiners, and

WHEREAS, Recent official investigations of these companies have shown astounding extravagancies in the expenditure of the policy holders' money and that these investigations have shown no shadow of misconduct in any of their medical departments, and,

WHEREAS, Many fraternal beneficial societies in general have provided ridiculously small fees for most comprehensive examinations, and

WHEREAS, The stability and integrity of any life insurance organization is directly dependent on its medical department, requiring the highest professional skill and judgment and

WHEREAS, A skilled and capable physician can not afford to make a complete physical examination and detailed report of an applicant, including urinalysis, for a fee less than five dollars, therefore be it

Resolved, By the Ninth Ohio District Medical Society, in annual session, that it views any reduction in fees for complete physical examination for life insurance, under five dollars as unwarranted and a reflection on the stability of such organization, and that it urges the members of this society to decline to make examinations for a less fee, and that we, one and all, exercise our influence with prospective insurers to select a company that pays a sufficient fee to maintain a capable medical department, thus protecting the policy holders from excessive death rate.

The following papers were read and discussed: "The Early Management in Acute Intestinal Obstruction and the Operative Treatment in Late Cases," by Dr. H. J. Whitacre, Cincinnati; "Mastoiditis," by Dr. C. M. Hams, Huntington, W. Va.; "Pelvic Tumors and Their Differentiation," by Dr. C. F. Kline, Portsmouth; "Appendicitis in Private Practice," by Dr. Lester Keller, Ironton; "Contract Practice and Life Insurance Examinations," by Dr. O. U. O'Neill, Ironton; "Malaria," by Dr. E. M. Foster, Portsmouth.

SOUTHERN MEDICAL COLLEGE ASSOCIATION.

Annual Meeting, Held at Baltimore, Dec. 10, 1906.

The President, DR. CHRISTOPHER TOMPKINS, Richmond, Va., in the Chair.

Membership.

All of the medical colleges belonging to the Association were represented except the Fort Worth Medical College and the Medical College of Alabama. The resignation of the University College of Medicine at Richmond, Va., was presented and accepted. The following colleges were elected to membership: Medical Department of Southwestern University, Dallas, Texas; Medical Department of the University of Georgia, Augusta; Medical Department of Epworth University, Oklahoma City, Okla.

The following applications for membership were filed, to be acted on a year hence: College of Physicians and Surgeons, Atlanta; Mississippi Medical College, Meridian, Miss., and the Medical Department of the University of Arkansas, Little Rock.

Postpone Advanced Standard.

An amendment to the Constitution, looking to the making of the minimum preliminary educational requirement a high school diploma or its equivalent, was carried over until the next meeting.

The meeting was harmonious, and the outlook for further advancement good.

The president, in his address, advocated more rigid preliminary educational requirements. Hereafter the association will meet in connection with the Southern Medical Association in October of each year.

Election.

Dr. Christopher Tompkins was re-elected president; Dr. G. C. Savage of Nashville, was re-elected treasurer and secretary, and Dr. James B. Bullitt, Jr., of Oxford, Miss., vice-president.

AMERICAN PUBLIC HEALTH ASSOCIATION.

Thirty-fourth Annual Meeting, held in Mexico City, Mex., Dec. 3-7, 1906.

The President, DR. F. C. ROBINSON, Brunswick, Maine, in the Chair.

LABORATORY SECTION.

DR. H. W. CLARK, Boston, Chairman.

Leucocyte Content of Milk Drawn from Apparently Healthy Animals.

DRS. H. L. RUSSELL and CONRAD HOFFMAN said that the inauguration of standards based on the number of leucocytes in cow's milk, and the variation which is to be noted in the practice of different laboratories in the application of this method of examination has led to a critical study of the technical methods involved and a study of the variation to be observed in the milk of animals in which no pathologic condition could be noted. From an examination of standards it is evident that there is a wide range in the limits which are at present recognized as indicating the presence of pus in milk. The authors conclude that these limits are arbitrarily chosen, and data are altogether lacking at the present time which warrant the formulation of a proper scientific standard.

They present in this connection the results which they have obtained in the examination of milk drawn from cows showing no discoverable udder lesions, or previous history of garget. These results show that very wide variations are to be observed under natural conditions, and that not infrequently the leucocyte content of such milks (which, from a clinical point of view must be regarded as wholly satisfactory), is much in excess of the chosen standards. Further data are also presented indicating that physiologic leucocytosis may manifest itself in the milk of animals subjected to changes in environmental conditions such as can in no material way affect the wholesomeness of the milk supply.

The Comparative Value of Bacterial and Temperature Regulations for a City's Milk Supply.

DR. FRANCIS H. SLACK stated that both bacterial and temperature regulations should be enforced in large cities. The bacterial standard is the most comprehensive. Reaching back to the producer, it eliminates unhealthy cows, forces clean production, proper cooling and quick transportation. The temperature regulation requires those who deal in milk, within the city limits, to keep it at a temperature sufficiently low to prevent the multiplication of bacteria.

Liberation of Formaldehyd from Its Water Solution Through the Agency of Calcium Carbid.

DR. H. D. EVANS added formaldehyd to calcium carbid. It was found necessary to dilute the formalin solution one-half in order to furnish water enough to react with the carbid; the heat produced in the reaction causes the evaporation of the formaldehyd solution. The results of 675 tests of the method with various bacteria shows that good disinfection can be obtained, provided not less than 500 c.c. of formaldehyd solution be used to each 1,000 cubic feet of space to be disinfected.

The Action of Sunlight on Bacteria, with Special Reference to Bacillus Tuberculosis.

DR. JOHN WEINZIRL said that a large amount of work has been done on the problem of the action of sunlight on bacteria, practically no attention has been given to the question of the action of sunlight on *Bacillus tuberculosis*. The method employed was to rub a suspension of *Bacillus tuberculosis* on strips of sterile glazed paper, expose these to the sun, and subsequently inoculate the strips on egg medium when excellent growths were secured, if the culture was not killed. It was found that *Bacillus tuberculosis* was killed in about ten minutes of direct sunlight. Sunlight evidently possesses a much stronger bactericidal action than has heretofore been supposed and it is, consequently, a more important hygienic factor than it is generally held to be.

Some New Laboratory Devices.

DR. B. R. RICKARDS described an apparatus for shaking and centrifugalizing sputum specimens and a new collecting case for rabies.

A Study of House Disinfection and Reinfection.

DRS. STOKES and STUBBS attempted to show that reinfection is of less frequent occurrence after disinfection than when disinfection is omitted.

GENERAL SESSIONS.

Papers dealing with national and international sanitary problems were presented by Dr. Peter H. Bryce of Canada, and Drs. Eduardo Licéaja, Oscar J. Mayer and José Mesa Gutiérrez of Mexico.

To What Extent Are Infected Mosquitoes Present on Shipboard?

DR. ALVAH H. DOTY, New York, said that there can be no doubt that in the period of sailing vessels with their long stay in infected ports in order to secure full cargo, and their subsequent long return trips, infected and non-infected stegomyia frequently existed on shipboard. There is equally good evidence to show that the danger from this has gradually disappeared with the disappearance of the sailing vessel and the appearance of the steamship with the coincident changes in the conditions at foreign ports which formerly favored infection of vessels with the stegomyia. It is still possible for yellow fever to occur on shipboard due to the presence of infected mosquitoes, but it occurs in rare instances only.

The Diagnosis and Prevention of Yellow Fever.

DR. JOSEPH GOLDBERGER, Washington, D. C., called attention to the high percentage of polymorphonuclear leucocytes in yellow fever as compared with dengue. Attention was also invited to the practical bearing of the occasional occurrence of an early intermission in yellow fever. The occurrence of such an intermission in the fever for from three to twelve hours might lead to confusion with malaria, and a case of yellow fever might thus readily escape detection at a quarantine station.

Other Papers Read.

Papers dealing with various phases of malaria were presented by Drs. Lamicq, Loaeza and Brena, of Mexico.

Papers on tuberculosis were presented by Dr. H. A. Cowing of Indiana, Dr. Jesus Monjaras of Mexico, and Prof. H. L. Russell of Wisconsin.

DR. CHARLES HARRINGTON of Boston presented a paper on "The Milk Problem in Massachusetts." Dr. B. H. Stone of Burlington, Vt., read a paper on "The Relation Between Drinking Water and Typhoid Fever in Rural Districts." Dr. Crowder of Chicago read a paper on "Car Sanitation." Dr. Cressy L. Wilbur, Washington, D. C., discussed "The Conditions and Prospects of Vital Statistics in the United States."

The following resolutions were passed:

Resolutions.

WHEREAS, A correct registration of births, marriages and deaths is necessary to indicate not only the natural increase of population, but also the measure of the health conditions and the effectiveness of sanitary operations in any country.

WHEREAS, With the increase in numbers, wealth and age of the populations of the several states and provinces, the necessity for

evidence of births, marriages and deaths in cases of wills, pensions, insurance, crimes, etc., becomes daily of increasing urgency.

WHEREAS, Comparisons of the health conditions of different countries and districts and climates is only possible through the existence and study of such records.

WHEREAS, International comity and treaty stipulations not infrequently involve agreements touching the transmission of records relating to the births, marriages or deaths of individuals traveling or residing in foreign countries; and

WHEREAS, Such registration is imperfect or wholly wanting in some of the states of the countries registered in this Association, therefore, be it

Resolved, That the secretary of this association be instructed to transmit a copy of this resolution to the governors and boards of health of such states and provinces urging the desirability of effective legislation on this subject.

WHEREAS, The American Public Health Association is of the opinion, and has heretofore so expressed itself, that public health matters confronting the four countries embraced in this association can only be adequately administered by extending the powers and duties of their several chief executive and administrative health officers, and

WHEREAS, This association believes that such questions can only be satisfactorily dealt with by the establishment of a national department of health with a cabinet minister at its head in each country.

Therefore, this association, with a view to prosecute so desirable an end creates a committee consisting of three members from each of the four countries represented in the association and to be nominated by the president, the first-named member for each country to be chairman of that subcommittee and the chairman of the subcommittee of the United States to be its general chairman. This committee shall formulate what in the opinion of the Association should be the extent of the work, powers and duties of a national department of health and the subcommittee of any of the four countries shall take any steps deemed practicable by it to carry out the purpose of this resolution, and to this end be empowered to enlarge its committee as it may deem proper.

The members of the association and their wives were delightfully entertained at several receptions and excursions, among which may be mentioned the reception by President Porfirio Diaz and the subsequent excursion to Chapultapec Park.

Election of Officers.

The following are the newly elected officers of the association: President, Dr. Domingo Orvananos, Mexico; vice-presidents, Dr. Quitman Kohnke, New Orleans; Dr. R. M. Simpson, Winnipeg; Dr. G. T. Swartz, Providence; secretary, Dr. C. O. Probst, Columbus, Ohio; treasurer, Dr. Frank Wright, New Haven.

Atlantic City, N. J., was selected as the place of meeting for 1907.

CHICAGO MEDICAL SOCIETY.

Regular Meeting, held Oct. 24, 1906

The President, DR. GEORGE W. WEBSTER, in the Chair.

Renal Calculi.

DR. CHARLES L. MIX discussed the etiology and symptomatology. He said very little is known about the etiology. Renal calculus is not found commonly in children or in the very old. It is found in the period of life between extremes. While Senator maintains that renal calculi occur largely in the poor, many surgeons believe they are more common in the well-to-do or middle classes. Heredity has some bearing. It is held by some writers that a sedentary occupation predisposes to stones. Personally, the author thinks it has nothing to do with it. These calculi are more common in some parts of the globe than in others. They are common in India, quite common in Asia, and common in Egypt. So far as America is concerned, very little can be said with reference to the geographical distribution of renal calculus. It is as prevalent in one part of the country as in another. Phosphatic calculi occur only in alkaline urine; whereas the other types of calculi occur in acid urine. Renal calculi are the products of bacterial action and infection. It is probable that neoplasms of the kidney are capable of giving rise to stones without the media of bacterial action. The incident of stones in cases of neoplasms of the kidney is known. The two things together occur often enough to make one feel that there is probably some pathogenetic relationship between them. In all bacteriemic diseases it is possible for the bacteria to make their way into the kidneys and exert an unfavorable influence on the mucous membrane of the pelvis, give rise to a slight amount of catarrhal exudate, which may in turn serve as the nucleus of a stone. Tuberculosis of the kidney and stone of the kidney are not infrequently concomitant affairs, and it is probable that the nucleus for these stones lies in a blood clot which is surrounded by calcic oxalate, uric acid or urates. In the majority of instances he thinks it may be accepted as true that the bacterial origin of renal calculus is really the common and right one, although in a few isolated cases possibly other factors may be the cause of the development of renal calculi.

Surgical Treatment of Renal Calculi.

DR. ARTHUR DEAN BEVAN divided the cases into three groups. First, the cases in which surgical treatment is imperative; second, those in which it is desirable, but not imperative, and, third, those in which it is not desirable. In the first group he includes cases of calculus anuria. These cases are very rare. They present themselves under two general types, the purely obstructive, and the reflex anuria types. In the purely obstructive type there is obstruction of the kidney by calculous disease, or obstruction of the ureter of long standing on one side. Following that, the other kidney becomes involved, with obstruction of the remaining ureter. He has had the opportunity to study three of these cases. They are instances in which absolutely no urine was excreted for a period of days. Individuals with obstructive anuria have lived as long as twenty-one days without excreting a single drop of urine. Practitioners should keep in mind the differentiation between uremia and anuria.

The second type of calculous anuria is reflex anuria. Its existence has been denied by some, but personally he has no doubt that it really exists. The clinical picture is something like this: An individual has one healthy kidney, with the ureter of the other kidney obstructed by a calculus, and as a consequence great intrarenal tension develops. The obstructed kidney does not excrete any urine. The opposite kidney may not excrete any urine, except possibly by reflex action, on account of the result of the enormous intrarenal tension upon the affected side. In calculous anuria surgical treatment is imperative. The surgeon should wait in these cases, if possible, forty-eight hours before operating.

In the third group of imperative operations is the condition where we have an obstruction of the ureter on one side, not anuria, because the other kidney is secreting, but where from the evidence we are led to believe that we have an obstruction of the ureter on one side, and where it is possible that if this obstruction continues the integrity of the kidney may be menaced. Here, again, the question of time element is one of considerable importance. He has in these cases waited a week or longer before operating. He would wait longer than he would in a case of anuria, and has been fortunate enough to see that the stone was passed, and that even its own weight has not destroyed the secreting tissue of the kidney.

DISCUSSION.

DR. JAMES B. HERRICK said that he knew few diseases which present greater difficulties in making a positive diagnosis than renal calculus. Physicians not infrequently see cases with indefinite pains in the back, and even after the most careful and painstaking examination they are not able to tell whether or not a calculus is present. The differential diagnosis between gallstone colic and the pain of ulcer and that of renal colic is not always easy. Even though pain originates in the kidney, it is difficult in many instances to be sure that the pain and hematuria are associated with and caused by a renal calculus, so that it is only by a most painstaking examination and careful observation of patients that physicians are able to exclude such diseases as tuberculosis of the kidney, Dittl's crises, or obscure cases of so-called essential renal hematuria. The *x*-ray is a great aid to diagnosis. In fleshy individuals, in patients with uric acid stones, with very small calculi, he can readily see how the *x*-ray would fail to reveal them, and in some cases where he has been morally certain that a patient had calculus, the *x*-ray has not shown it, and the diagnosis has only been a presumptive one. Infection of the urinary tract, particularly of the pelvis of the kidney, was mentioned as a possible factor in causing stone.

DR. ARTHUR R. ELLIOTT said that there is no doubt, from a therapeutic standpoint, that a case of well-formed calculi

belongs to the surgeon, as there is nothing to be accomplished by solvent treatment in such cases. Until recently, he shared the belief and confidence in the results of *x*-ray examination that were expressed by Dr. Bevan; but within the last eighteen months he has had two cases operated on by surgeons of repute, which were positively diagnosed both from the urinary examination and by *x*-ray examination at the hands of a competent radiographer as instances of renal calculi, although a thorough exploration of the kidney in both cases failed to reveal any stone or stones. He referred to the urinary conditions which cause calculous formation. He made a plea for careful systemic treatment in the prophylaxis of these cases.

Dr. Carl Wagner reported a case in which a clinical diagnosis was made of stone in the kidney, but at the operation it was found that a long, hard appendix was the cause of the trouble. It was found hanging over the brim of the pelvis. The appendix was removed, also a stone which was found in one of the calices that acted as a ball-valve and had obstructed the ureter at its exit from the kidney.

Miscellany

Bier's Technic for Spinal Anesthesia.—A Berlin exchange, the *Med. Klinik*, Nos. 37 and 43, collected the experiences of a number of prominent surgeons who have used spinal anesthesia in hundreds of cases. Kümmel has applied spinal anesthesia in 700 cases, and has been particularly pleased with it in removal of kidney or appendix. With laparotomies the occasional annoying vomiting interferes with the success of the operation. He adds that it is contraindicated by septic processes which might spread to the meninges in consequence of the disturbance from the injection. Bier closed the symposium with an article describing his exact technic, his experience including more than 1,000 cases. The patient is seated on the side edge of the operating table, his legs hanging straight down, his head bent forward, the spine curved as in pronounced kyphosis but straight, without sideward bending. The skin of the lumbar region is rubbed with ether and bichlorid solution, and the patient is told that he will feel a prick in his back, but must keep sitting still. A Record syringe, graduated, with a capacity of 10 c.c., and the cannula with a short, slanting point and guide, are first boiled and then kept in alcohol. Just before using, the instruments are transferred to a solution of boric acid to remove the alcohol. The fused tube holding the fluid to be injected lies in the same solution. The tube contains the proper amount of the anesthetic, dissolved in 1 c.c. The neck of the tube is broken off and its contents are drawn up into the syringe. The piston is then cautiously pushed down until all excess over 1 c.c. is evacuated. The loaded syringe is then laid on a sterile towel and beside it the cannula and guide. The operator covers his disinfected hands with a towel and stretches it taut between the two crests of the ilium. The horizontal edge of the towel crosses the spinous process of the fourth lumbar vertebra. From this point the spinous processes are palpated and the injection is made between the second and third lumbar vertebræ, after spraying the skin with a little ethyl chlorid. The cannula with its guide is inserted directly in the median line, perpendicular to the spine, with its tip pointing slightly upward, toward the head. As soon as it has entered firmly into the interspinous ligament the guide is withdrawn and the cannula is pushed slowly onward. If it encounters bone, showing that it is in contact with a vertebra, it is drawn out a little and the direction slightly altered, pointing the tip a little up or down, but keeping always in the median line. If elastic resistance only is encountered, the needle is pushed cautiously farther in until cerebrospinal fluid emerges.from it. If it comes hesitatingly and scantily, he waits until it flows more freely, turning the cannula or pushing it in a little or pulling it slightly out to facilitate the flow of the fluid. The loaded syringe is then connected with the needle, without moving the latter. The piston is drawn slowly back and cerebrospinal fluid is aspirated into the anesthetic already in the syringe, which mixes with it, and the whole is then slowly injected into the spinal canal. Then the syringe and needle are rapidly withdrawn and the patient is placed in the dorsal decubitus. To induce anesthesia up to the arms the anesthetic can be dissolved in a large amount of fluid (6 to 10 c.c.). As admixture of water causes violent after-effects, he uses only the patient's own cerebrospinal fluid, injecting the whole, and has thus been able to perform operations even on the arms without pain. The anesthesia can also be made to extend higher by raising the pelvis, or both methods can be combined. He has already learned that major operations on the arms, such as amputations, and amputation of the breast, can be done under spinal anesthesia without pain, as he has frequently had occasion to establish. Kader has even performed operations on goiters under it. Testing the reflexes is a good way to determine the extent of the analgesia. The anesthesia generally extends as far as the reflexes are abolished after one or two minutes. As a rule, sufficient dilution of the anesthetic ensures high anesthesia even without raising the pelvis. The dangers of spinal anesthesia are threefold: 1, From the use of improper substances; 2, from overdosage; 3, from defective technic. Stovain has been abandoned by Bier on account of cases of subsequent paralysis. He is convinced that the instances of paresthesia, hyperesthesia, anesthesia and paralysis have been due almost invariably to blunders in puncturing and blunders in injecting. Consequently he urges strict adherence by the novice to the above technic. After he has had experience he may improve on it. The principal rules to be observed are: Never to inject the anesthetic until the cerebrospinal fluid is escaping in a rapid series of drops or in a jet. If this can not be secured by twisting or moving the tip of the cannula a little, it is better to withdraw it and make the puncture at another point. A final rule is that spinal anesthesia is not suited for out-patients, as the patient should remain in bed for at least twenty-four hours afterward. Bier's cautiousness is proverbial in Germany; although he was the one who first revived Corning's spinal injections, he warned against spinal anesthesia as too dangerous until the improvement in the technic banished these fears. He now concludes his communication with the statement that if the above precautions are observed he considers the possible dangers of spinal anesthesia as very slight.

Clean Newspaper Advertisements.—One of the most important and far-reaching questions which is before the general public to-day is the question of unclean advertising by the medical quacks in the daily papers. We have referred to this matter editorially[1] on several occasions. An editorial which appeared in a recent issue of the Cleveland (Ohio) *News* discusses this subject very ably, and we take pleasure in quoting from it. The writer of the editorial referred to says: "The public should demand clean advertising in newspapers. The newspapers should—and sooner or later they must—admit the reasonableness of this demand, and exclude from their advertising columns the filthy and the loathsome. No self-respecting citizen could possibly go about with a pocket full of indecent circulars, dropping one wherever he might call. Such a person would soon find himself regarded for what he was—morally unclean and a disgusting object of general suspicion. Is there any essential difference between such a man and a newspaper that befouls its columns with unclean advertisements? If there is, we fail to see it. It is time that there was a public awakening on this subject, and there is bound to come such an awakening."

"In these progressive days," continues the editorial, "cleanliness is an important watchword in every walk of life. The man or woman who buys goods of a mercantile establishment would not feel an impulse of self-congratulation on receiving soiled and filthy fabrics in response to orders. The proud father of a family would resist, with all the energy of his being, and all the indignation at his command, the delivery at his home of what was purchased as a clean and pure article, yet reeked with the germs of tuberculosis, or some other equally dreaded and loathsome disease.

"There can be no reasonable discrimination between the de-

1. The Journal, Dec. 1, 1906, p. 1834.

artments of financial investment. If there could be, the erdict would align that which brings moral contamination as f far more evil import than that which contaminates inani- iate materials and threatens physical ailment.

"Is it not a fact, then, that the worst menace to the home, ie family and the community in which it is received, is the oul newspaper, which, for a financial consideration, will load s columns with the germs of immorality and the filth of ental disease? The newspaper which thrusts unclean goods ito the home under cover of friendship, betrays its patron's nst and disgraces its field. The foul advertisement is a ime against the home, an insult to the legitimate advertiser hose announcement of creditable business must be associated, the same columns, with what is foul and disgraceful.

"When the public fully grasps the enormity of the offense ommitted by a newspaper in spreading before its readers the isgusting announcements of certain medical advertisers, the ewspaper agency for the dissemination of foulness will be oliterated. Throughout the country there has been a recent eneral awakening on this subject. Of all the things in the orld which should be free from filth is the daily visitor to ie home. Any man thrusting an obscene circular into the inds of a young woman would be kicked into the ditch by er enraged father. But such is the inconsistency of human ature that that same father would, perhaps, subscribe for a ewspaper for his own and his daughter's reading which con- ained identically the same objectionable matter. Why? Be- ause he has not thought about it. When he does think about he will stop it."

Treatment of Cholera and Various Bacterial Affections with uller's Earth.—THE JOURNAL mentioned some time ago tumpf's preliminary communication in regard to the remark- ole action of finely pulverized clay in various bacterial affec- ons. He has now published the detailed report of his experi- nces under the title: "A Reliable Method of Curing Asiatic holera and Severe Infectious Cholera Morbus, and the Im- ortance of Bolus alba (Kaolin) in the Treatment of Certain acterial Affections." J. Stumpf is professor of legal medi- ine at Würzburg, and his attention was early attracted to ie possible disinfecting virtues of clay by his observation that adavers exhumed after being buried in a clay soil were always a remarkable state of preservation in comparison to those other soils. He has been using the official, finely pulverized olus alba or porcelain clay in his practice during the last eight ears, with constantly increasing satisfaction. It seems to owe s efficiency in bacterial affections to its action in depriving e bacteria of a suitable culture medium, while mechanically rying them alive, as it were, and separating them from the ucosa and other tissues by a protecting, comparatively im- rmeable coating. He found it the best remedy he could use r extensive septic wounds, putrid leg ulcers and the like. ie odor was at once abolished and the inflammatory swelling duced. He refers to the fact that bacterial action is merely ow combustion, and nothing arrests combustion more effect- ally than a smothering layer of earth or clay. Dry clay has so the property of absorbing the moisture from organic sub- ances buried in it, and they become mummefied. Stumpf perimented on himself to determine the absolute harmless- ss of the finely pulverized clay taken internally in large nounts, and found that it was perfectly tolerated, as is also ident from the experience of the "earth eaters" of the tropics. e administered it in cases of cholera morbus with the result at the colics and tendency to vomit were at once arrested and e patients practically cured. The effect in the few cases of olera in which it was tried was almost instantaneous. The mptoms were arrested and the patients fell into refreshing ep. There was no mortality at the points where the bolus eatment was used, while the mortality was high elsewhere ring the last epidemic. The condition for its therapeutic ccess is that no food nor fluids, except water, be taken for ghteen hours, as otherwise the bacteria are provided with lture media in which they can proliferate. The dose is 125 n. of the most finely pulverized bolus alba, poured on top of lf a tumblerful of water. After the powder has sunk to e bottom of the glass it is thoroughly stirred in with a oon and the whole amount is drunk at once or within a few minutes. Infants are given 30 gm. of the bolus in 70 to 100 gm. water, and older children 60 gm. in 150 gm. water. After an interval of three hours the same dose is repeated. There need be no fear of taking too much as his long continued experiments have never shown any untoward by-effects. Recent experiments with dogs have demonstrated that they could tolerate large doses of arsenic when given in combination with 400 gm. bolus. These results encourage him in suggesting that the bolus might prove effectual in clinical cases of poisoning with metals or acids. He does not advise the use of the bolus in ordinary diarrhea, due to errors in diet, the ameba, etc., but advocates it in the severe forms of cholera morbus, Asiatic cholera, etc., and for putrid septic lesions. He has had practically no experience with typhoid patients, but thinks that the bolus is equally indicated here, given in time to protect against ulcerations.

Preventive Measures Against Malaria in Italy.—Dr. A. J. McLaughlin, in *Public Health Reports*, gives an interesting account of the measures taken against malaria in Italy from very early times.

The existence of malaria in Italy at a very early date is shown by a passage in Marcus Varro's "Re Rustica," who advises never to build houses in a malarial location, because in summer minute animals invisible to the naked eye enter the body from the air, producing terrible diseases. Malaria has been thought to bear the relation to the hydrographic condition of the soil because always associated with stagnant water.

The campaign against malaria dates back several centuries. In the time of the Spanish viceroy, Don Pedro de Toledo, the eminent Lettieri planned to reclaim the immense plain that extends from the foot of the Appenines to the gulf of Gaeta, between Miseno and the mouth of the Volturno. About a century ago a special bureau was created in Naples to study and execute works for reclaiming the malarial marshes. Their example was soon followed in all parts of Italy, sometimes with the aid of special laws. Concerted action was secured by the law of March 22, 1900. Works of special advantage to agriculture or hygiene are carried out by the government which, however, may delegate its rights to the province, commune, or societies of landholders. Other measures are executed and maintained by the proprietors.

The work for the redemption of marsh land resolves itself into an effort to control the course of the water. Efforts are made to prevent rivers overflowing their banks and to raise the level of the low land.

With the progress of knowledge of the disease, especially of its etiology, the necessity for further legislation arose. To avoid the high price of quinin the manufacture and sale was restricted by law (Dec. 23, 1900) to the government. It now costs about 48 cents an ounce to the public for bisulphate. The law of Nov. 2, 1901, combining the various measures for stamping out the disease provides for:

First—The determination of "malarial zones." A malarial zone is a territory in which several cases of malaria have been contracted, coincident with the presence of malaria bearing mosquitoes and of stagnant water.

Second—The administration gratis of quinin by employers to all employés working in a malarial zone. Physicians are obliged to report all cases of malaria and all deaths from pernicious malaria. In cases of doubt a postmortem examination must be made.

Third—Mechanical protection against mosquitoes. All habitations and buildings used by people in a malarial zone must be protected against the entrance of aerial insects by netting of wire or cloth over every aperture communicating with the exterior. The entrance shall be protected by a double door, closing automatically, and so arranged that the second door can not be opened except when the first door is closed. Chimneys are protected by caps and gratings of iron wire. These regulations are enforced from June 1 to December 1.

All the forces of the government are coördinated in this work. Valuable support and collaboration are received from the Society for the Study of Malaria and the Red Cross Society.

Although decreasing rapidly, malaria continues to be the

greatest affliction with which the Italian sanitary authorities have dealt, except trachoma. The energetic measures being carried out are bound to have, finally, the result hoped for, the extinction of malaria as an epidemic disease in Italy.

Scientific Preparation for Professional Work.—In an address delivered at the University of Nebraska last June, J. H. Long, of Northwestern University, stated that for some reason the idea prevails in most of the smaller colleges, and in some universities, that medical school chemistry is at best a weak imitation of science and that, therefore, any kind of an equivalent for it will be accepted. At one time there was some justification for this belief, but this is no longer warranted by the facts. Teachers of chemistry in the larger institutions are working hard to correct the false impression that chemistry taken as a college elective is a fair equivalent for the freshman chemistry as it should be given in a medical school. Long states that he has a well-grounded prejudice against elective chemistry based on 25 years' observations, and that in Northwestern University he has always urged the retention of general chemistry as a freshman study, and has struggled against the routine acceptance of credits given after easy elective courses. While he does not believe that first-year chemistry belongs in a medical school, he has continued to give the course, and he has heard other teachers say that they did the same thing. He said that students not making a specialty of organic chemistry can not be expected to become masters of the details of many of the synthetic preparations now offered to physicians, but that knowledge sufficient to detect some of the most glaring frauds can be obtained in the time available if this is properly applied. Many physicians knowing the danger attending the use of acetanilid will not prescribe it except in small doses, but the cunning manufacturer in advertising his product escapes the prejudices of the physicians by stating that the preparation contains phenylacetamide. Long states that there are instances on record of physicians ordering tablets containing acctanilid and at the same time ordering others containing phenylacetamide. As another example he mentioned the use of the term trimethylxanthin in place of caffein. This term, he said, is strictly correct, but the physician may not know that it is another name for caffein. These illustrations, Long said, are sufficient to show that the progress of internal medicine depends to a great extent on the physician's knowledge of chemistry. It is not enough, he declared, that the student complete ordinary routine courses in college chemistry in order to take up the new physiologic chemistry and follow such of its applications as have a bearing on scientific medicine; something more than this is necessary, and may be described as an all-around scientific interest. Some of the applications of chemistry are simple, but that chemical knowledge which leads to a comprehensive view of metabolism and other changes dependent on molecular alterations is not simple in the same sense. For this the student will need all his college course can give him, and his chemistry must be reinforced, or rather preceded, by courses in mathematics, physics and physiologic botany.

Acetylene Gas in Treatment of Rebellious Gonorrhea.—R. Ortega of Monterey, Mexico, announces in the *Gaceta Medica de Mexico*, No. 5, 1906, that he has been much pleased with the results of treating gonorrhea with a germicidal gas. The idea was suggested to him by his success with calcium carbid in the treatment of septic affections of the uterus, and the observation that the large amounts of acetylene gas generated in the organ seemed to do no harm. The gas was evidently eliminated in the respiration, as the breath smelled strong of it, but no injurious by-effects were noticed as the gas thus traversed the body. In treating an old, chronic gonorrheal affection, rebellious to all the usual measures, he became impressed with the possible benefits of a germicidal gas which would penetrate deeper into the tissues than any fluids. He therefore applied acctylene gas, using a Heinrich generator and introducing the gas, filtered through cotton, into the urethra through a rubber tube and nasal douche syringe tip. The urethra became distended as the gas was turned on, and soon after the odor of the gas became evident in the patient's breath. The injection was kept up for half an hour, and was repeated the next day. The patient then left town, but returned in a few weeks, enthusiastic over his "complete cure," and bringing a friend with intractable gonorrhea of long standing to take the "gas treatment." Ortega has had no further opportunity to apply the treatment, but his success in these 2 cases encourages him to urge others to give it a trial.

Medical Education and State Boards of Registration

COMING EXAMINATIONS.

OKLAHOMA Board of Medical Examiners, Guthrie, December 26. Secretary, Dr. J. W. Baker, Enid.

OREGON State Board of Medical Examiners, Portland, January 1. Secretary, Dr. Byron E. Miller, "The Dekum," Portland.

COLORADO State Board of Medical Examiners, Denver, January 2. Secretary, Dr. S. D. VanMeter, 1723 Tremont St., Denver.

WASHINGTON State Medical Examining Board, Spokane, January 2. Secretary, Dr. C. W. Sharples, Seattle.

MINNESOTA State Board of Medical Examiners, Old Capitol Bldg., St. Paul, January 2. Secretary, Dr. W. S. Fullerton, St. Paul.

NORTH DAKOTA State Board of Medical Examiners, Grand Forks, January 3. Secretary, Dr. H. M. Wheeler, Grand Forks.

RHODE ISLAND State Board of Health, State House, Providence, January 3-4. Secretary, Dr. Gardner T. Swarts, Providence.

UTAH State Board of Medical Examiners, Salt Lake City, January 7. Secretary, Dr. R. W. Fisher, Salt Lake City.

ARIZONA Board of Medical Examiners, Phoenix, January 7-8. Secretary, Dr. Ancil Martin, Phoenix.

ARKANSAS State Medical Board, State Capitol Bldg., Little Rock, January 8. Secretary, Dr. F. T. Murphy, Brinkley.

NEW HAMPSHIRE State Board of Medical Examiners, Concord, January 8-9. Regent, Dr. H. C. Morrison, Concord.

VERMONT State Board of Medical Registration, Montpelier, January 8-10. Secretary, Dr. W. Scott Nay, Underhill.

WISCONSIN State Board of Medical Examiners, Plankinton Hotel, Milwaukee, January 8-10. Secretary, Dr. J. V. Stevens, Jefferson.

SOUTH DAKOTA State Board of Medical Examiners, Sioux Falls, January 9-10. Secretary, Dr. H. E. McNutt, Aberdeen, S. D.

DISTRICT OF COLUMBIA Board of Supervisors in Medicine, Washington, January 10. Secretary, Dr. Geo. C. Ober, Washington.

ILLINOIS State Board of Health, Great Northern Hotel, Chicago, January 16-18. No applications received after January 5. Secretary, Dr. J. A. Egan, Springfield.

NEW YORK State Boards of Medical Examiners, Albany, January 29-February 1. Chief of Examining Division, Charles F. Wheelock, Albany.

Texas Eclectic April and October Reports.—Dr. L. S. Downs, secretary of the Texas Eclectic Medical Board, reports the examinations held at Fort Worth, April 26-28, and Oct. 8-9, 1906.

At the examination held April 26-28 the number of subjects examined in was 12; total number of questions asked, 120; percentage required to pass, 75. The total number of candidates examined was 25, of whom 20 passed and 5 failed. Of those appearing for registration credentials, 13 were registered and one rejected. The following colleges were represented:

PASSED. College.	Year Grad.	Per Cent.
Barnes Med Coll	(1905)	77.6
Eclectic Med. Univ., Kansas City	(1906)	85.8
Fort Worth University (1906) 75.2, 75.4, 79.3, 80, 82.3, 85.9, 86.3 Non-graduates, 75.3, 75.5, 76.3, 76.5, 78, 78.4, 78.5, 79.9, 80, 83.8, 89.6.		
FAILED.		
College of P. & S., Dallas	(1906)	65.5
Non-graduates	43, 61, 61, 69	
REGISTERED ON CREDENTIALS.	**Number and Year.**	
California Med. Coll., Ecl., San Francisco	(3, 1905)	
Bennett Coll., Ecl. Med. & Surg., Chicago	(1, 1878) (1, 1895)	
American Med. Coll., St. Louis	(1, 1906)	
Eclectic Med. Univ., Kansas City	(1, 1905)	
Eclectic Med. Inst., Cincinnati (1, 1891) (1, 1896) (1, 1904) (1, 1906).		
University of Tennessee	(1, 1900)	
University of Palermo, Italy	(1, 1903)	
CREDENTIALS UNSATISFACTORY.		
Twentieth Century Med. Coll., Oklahoma	(1, 1901)	

At the examination held October 8-9, the number of subjects examined in was 13; total number of questions asked, 130; percentage required to pass, 75. The total number of candidates examined was 6, all of whom passed. Fourteen were registered on presentation of satisfactory credentials, including one old practitioner. The following colleges were represented:

PASSED. College.	Year Grad.	Per Cent.
Tulane University	(1905)	85.
Memphis Hosp. Med. Coll	(1904)	78.5
Gate City Med Coll	(1905) 78; (1906)	78.
Undergraduates	77, 78	

REGISTERED ON CREDENTIALS.	Number and Year.
California Med. Coll., Ecl., San Francisco	(1, 1883) (1, 1895) (1, 1904) (2, 1905) (5, 1906).
Barnes Med. Coll.	(1, 1905)
Med. Coll. of Ohio	(1, 1893)
Eclectic Med. Inst., Cincinnati	(1, 1906)

Ohio June Report.—Dr. George H. Matson, secretary of the State Board of Medical Registration and Examination of Ohio, reports the written examinations held at Columbus, Cleveland and Cincinnati, June 12-14, 1906. The number of subjects examined in was 9; total number of questions asked, 90; percentage required to pass, 75. The total number of candidates examined was 205, of whom 200 passed and 5 failed. The following colleges were represented:

PASSED. College.	Year. Grad.	Per Cent.
Colorado School of Med.	(1896)	85.
University of Iowa	(1906)	79.
Kentucky University	(1904)	87.
Central Coll. of P. & S., Indianapolis	(1905)	84.
College of P. & S., Baltimore	(1906)	85.
University of Maryland	(1906)	89.
Baltimore Med. Coll.	(1905) 81; (1906)	84.
University of Michigan	(1901) 87; (1905) 91; (1906)	89, 92, 94
College of P. & S., New York	(1898)	88.
Woman's Med. Coll. of Kansas City*	(1887)	84.
University and Bellevue Hosp. Med. Coll.	(1899)	87.
University of Buffalo	(1904)	93.
Toledo Med. Coll.	(1906)	84, 84, 85, 85, 92

Cleveland Coll. of P. & S. (1906), the grades of 77, 81, 82, 83, 84 and 86 were reached by one each, 87 by three, 88 by four, 89 by three, 90 by one and 91 by two.

Starling Med. Coll. (1906), the grades of 75 and 80 were reached by one each, 81 by two, 82 by four, 83 by two, 84 and 85 by one each, 86 by three, 87, 88 and 89 by one each, 90 by five and 91 and 93 by one each.

Western Reserve University (1904), 79; (1905) 82, 89, 90; (1906) the grade of 81 was reached by two, 83 by one, 84 by two, 85 and 87 by one each, 88 and 89 by two each and 90, 91, 92 and 93 by one each.

Cleveland Homeo. Med. Coll. (1906), the grades of 76, 77, 78 and 80 were reached by two each and 87, 88 and 95 by one each.

Eclectic Med. Inst., Cincinnati (1906) 77, 78, 83, 83, 84, 84, 85, 89.

Miami Med. Coll. (1906), the grades of 84 and 87 wer reached by two each, 88 by one, 89 by four, 90 by two, 91 by three, 92 and 93 by two each and 94 by one.

Medical Coll of Ohio (1905), 89, 89; (1906) the grades of 80, 82, 83, 84 and 85 were reached by one each, 87 by five, 88 by two, 89 by five, 90 by two, 91 and 93 by one each and 94 by two.

Ohio Medical University (1906), the grade of 78 was reached by two, 79, 81, and 82 by three each, 83 by four, 84 by three, 85 by one, 86 by seven, 87 and 88 by three each, 89 by four, 90 by three, 91 by one, 92 by two and 93 by one.

University of Pennsylvania	(1905)	93.
Jefferson Med. Coll.	(1906)	88.
Med. Coll. of Virginia	(1906)	87.
University of Toronto	(1888) 87; (1893)	89.
University of Vienna	(1905)	91.
Helsingsfors University, Finland	(1900)	79.
Royal University, Naples	(1905)	77.

FAILED.		
Starling Med. Coll.	(1906)	72, 73.
Ohio Med. University	(1906)	74.
Toledo Med. Coll.	(1897)	38.
Royal University, Naples	(1905)	73.

*Extinct 1903.

The following questions were asked:

PHYSIOLOGY.

1. Describe a protoplasmic cell and its method of propagation. 2. What is a nervous reflex? Give one or more examples. 3. What is inhibitory nerve action? Give an example. 4. Define common and special sensation. Give the physiology of sight and taste. 5. Name some foods containing starch. What changes does starch undergo in the process of digestion? 6. Describe the growth of bone. 7. What is urea and what is its source? 8. What is the difference between the blood in the portal vein and that in the hepatic vein? 9. What is the office of the lymphatics? 10. What is the periosteum and its function?

ANATOMY.

1. Name the contents of the thorax. 2. Describe the urethra. 3. How many membranes cover the brain, and what are their main characteristics? 4. What muscles move the femur? 5. What branches are given off from the arch of the aorta? 6. Describe the clavicle. 7. Name the muscles of the eyeball. 8. Name the valves of the heart and give their locations. 9. Describe the spinal cord. 10. What is the office of the twelfth pair of nerves.

PHYSICAL DIAGNOSIS.

1. State the significance of tachycardia (frequent pulse), and the pathologic conditions in which it is found. 2. What is the condition of the pulse named brachycardia or bradycardia, and its pathologic meaning? 3. Give clinical significance of arrhythmia (irregular pulse), and its principal varieties. 4. Explain the significance of the presence of casts in the urine. 5. How can be determined the origin of hematuria? 6. Give pathologic significance of albuminuria. 7. Describe physical signs of mitral incompetency. 8. Describe the Widal test and its diagnostic value. 9. Give diagnostic indications from the character of cough. 10. State diagnostic significance from topographical occurrence of edema.

DISEASES OF WOMEN.

1. Name the varieties of vaginitis and give treatment of each. 2. Give symptoms, diagnosis and treatment of (a) rectocele; (b) cystocele. 3. Give etiology, diagnosis and treatment of prolapse of the uterus. 4. Give symptoms, diagnosis and treatment of retroversion of the uterus. 5. Give symptoms and treatment of chronic endometritis.

DISEASES OF CHILDREN.

1. Define rachitis and differentiate from osteomalacia. 2. Give symptoms and course of scarlatinal nephritis. 3. Differentiate varicella, variola and varioloid. 4. Give causes and treatment of enuresis. 5. Describe cholera infantum and give symptoms.

CHEMISTRY.

1. What is specific gravity. What is the specific gravity of oxygen? 2. Give chemical name and describe vitriol. Give formula of aqua fortis. 3. What is a deliquescent salt? An effervescent salt? A fluorescent salt? Anhydrous compound? 4. Give the formulæ for sulphuric acid, nitric acid, hydrochloric acid. 5. Give the chemical names for (a) lime. (b) calomel. (c) Paris green. (d) cream of tartar. Describe any one of these. 6. What are the chemical antidotes for poisoning by prussic acid? By arsenic? 7. Describe magnesium oxid. Sulphate of iron. 8. Give specific gravity of urine. Give carefully one test only in each case for earthy phosphates, albumin, sugar. 9. What are the constituents of cow's milk? What ordinary tests would you make to determine its purity? 10. What is "soft" and "hard" water? What ordinary chemical tests could you apply for determining the purity of water?

SURGERY.

1. Classify wounds and give treatment and prognosis of a punctured wound. 2. Describe bloodless treatment of congenital dislocation of hip. 3. Classify fractures and give treatment and prognosis of Colles' fracture. 4. Define sepsis and give general treatment. 5. Give surgical treatment for tubercular peritonitis. 6. When would you use a trephine and give an example? 7. Define aneurism and give treatment. 8. What are some of the surgical diseases of the kidneys? 9. Name some surgical diseases of the rectum and give treatment for two of them. 10. Give indications for opening the mastoid cells.

MATERIA MEDICA AND THERAPEUTICS.

1. What is hypodermoclysis? What indication is it intended to fulfill? What agents are employed? 2. Name the most important of the nitrites; how do they act? Give some indications for their use. 3. From what is adrenalin derived? What are its chief uses in medicine; how is it employed? 4. How is caffein obtained; what is its physiologic action? Give some of its therapeutic indications. 5. Describe briefly the action of aconite; name two drugs which have a similar action. 6. Name some of the more common agents employed for the purpose of promoting diuresis; give the manner of using them. 7. What remedies are employed for the purpose of stimulating the respiratory center? How do they act? 8. What is the action of the salicylates in rheumatism? How should they be given? 9. Write a prescription for a patient suffering from acute chlorosis. How is the hot pack employed? What are some of the indications for its use and what is the theory underlying it?

MATERIA MEDICA AND THERAPEUTICS (HOMEOPATHIC).

1. What are the important symptoms governing the selection of the similimum and are they diagnostic symptoms? 2. Define and give two examples of each of the following: (a) Palliative medicine; (b) curative medicine. 3. Differentiate aconite, belladonna and gelsemium in fever. 4. Give leading symptoms of causticum. 5. Differentiate the symptoms of three forms of mercury. 6. Differentiate kali carb. and bryonia in chest troubles. 7. What remedies do you rely on in first stage of pneumonia and give their leading symptoms? 8. What remedies do you rely on, principally, after consolidation of the lung has taken place in pneumonia and give their leading symptoms? 9. Name the alkaloids of five different drugs 10. Name three remedies, with their symptoms, that would be indicated in uremia.

MATERIA MEDICA AND THERAPEUTICS (ECLECTIC).

1. From what is podophyllum obtained? Compare action of podophyllin and calomel. 2. Describe hydrastis. Give various preparations, dosage and indications for its use. 3. What are the common and botanical names of aconite and its specific indications and medicinal dose? Give symptoms and treatment of poisoning by it. 4. Give indications for the use of acids and alkalies. 5. What are sedatives? Name four so-called special sedatives with their indications and dose. 6. What is the usual hypodermic dose of morphin? Of nitroglycerin? Of hyoscyamin? When are they contraindicated? 7. What objections are there to the prolonged use of the bromids? What plant preparations would you prefer to use instead? 8. What are diaphoretic powder, Dover's powder, emetic powder? What are their indications and doses? 9. Tell something of the iron preparations and their use and doses. 10. Give carefully the specific indications for the use of Rhus tox, nux vomica, asclepias, apis, apocynum.

PRACTICE AND PATHOLOGY.

1. Give pathology and diagnosis of tabes dorsalis. 2. Name some of the causes that give rise to uremia. 3. Differentiate symptomatically between alcoholism, cerebral hemorrhage and sunstroke. 4. Give diagnosis and treatment of acute miliary tuberculosis. 5. Briefly diagnose pneumonia. 6. What diseases may be indicated by emaciation, palor and cachexia? 7. Give symptoms and treatment of chronic interstitial nephritis. 8. Give pathology and treatment of erysipelas. 9. Give symptoms and treatment of angina pectoris. 10. Give etiology and treatment of bronchial asthma.

OBSTETRICS.

1. How should a patient be prepared for labor? 2. How, in labor, may the anterior fontanelle be distinguished from the posterior fontanelle? 3. Give a breach presentation with both legs of fetus extended, what course shall be followed. 4. Describe Schultze's method of resuscitating the new-born child. 5. What are some of the causes which may contribute to the formation of placenta prævia? 6. What inference is warranted, when engagement in the pelvis of the presenting part is long delayed, the labor pains being good? 7. What have you to say concerning the use of the postpartum douche? 8. Name some of the more frequent causes giving rise to maternal dystocia. 9. How should a patient in labor, puerperal stage, be catheterized? 10. What relation, if any, does disease of the nipples sustain to abscess of the breast?

Connecticut Eclectic Committee Adopts Standard.—Dr. George A. Faber, secretary of the Connecticut Eclectic Medical Examiners, reports that at a regular meeting in Hartford, November 13, 1906, the following resolution was passed:

WHEREAS, We, the Connecticut Eclectic Medical Examiners, believe that the best interests of the entire medical profession would be subserved by the universal adoption of a uniform standard of medical education, and

WHEREAS, In our opinion such uniform standard should be based on a preliminary education equal to that required for graduation at a first-class high school and graduation from a medical college requiring the attendance of four full courses of lectures; therefore be it

Resolved, That the standard recommended by the Council on Medical Education of the American Medical Association be, and the same is hereby adopted, as the standard of the Connecticut Eclectic Medical Examiners.

New Jersey October Report.—Dr. J. W. Bennett, secretary of the New Jersey State Board of Medical Examiners, reports the written examination held at Trenton, Oct. 16-17, 1906. The number of subjects examined in was 9; total number of questions asked, 90; percentage required to pass, 75. The total number of candidates examined was 37, of whom 27 passed and 10 failed. The following colleges were represented:

College.	Year Grad.	Per Cent.
PASSED.		
Baltimore Med. Coll.	(1905) 84, 78.9; (1906)	77.9
Johns Hopkins University	(1902)	78.1
College of P. and S., Baltimore	(1906)	81.9
Boston University	(1889)	81.9
Harvard Med. School	(1904)	83.8
University of Michigan	(1898)	83.5
Long Island College Hospital	(1906)	78.1
University of Pennsylvania,	(1901) 80.9; (1903) 84, 85.7; (1905) 86; (1906) 77.8, 82.5, 90.6.	
Medico-Chirurgical Coll., Philadelphia	(1906)	89
Jefferson Med. Coll.	(1905) 84; (1906) 76.1, 76.4, 76.8, 80, 86.3	
Hahnemann Med. Coll., Philadelphia	(1903)	82.6
Woman's Med. Coll. of Pennsylvania	(1905)	89.3
University of Virginia	(1904)	78.1
University of Naples, Italy	(1901)	76
FAILED.		
University of Kentucky	(1906)	67.1
University of Maryland	(1898)	72.4
College of P. and S., Baltimore	(1904) 70.1; (1906)	72.7
Baltimore Med. Coll.	(1905)	67.1
Boston University	(1904)	64, 71.9
Jefferson Med. Coll.	(1905) 0, (1906)	73.5
Hahnemann Med. Coll., Philadelphia	(1893)	64.2

South Dakota July Report.—Dr. H. E. McNutt, secretary of the South Dakota State Board of Medical Examiners, reports the written examination held at Watertown, July 11-12, 1906. The number of subjects examined in was 12; total number of questions asked, 90; percentage required to pass, 75. The total number of candidates examined was 25, of whom 15 passed and 10 failed. Seventeen reciprocal licenses were granted. The following colleges were represented:

College.	Year Grad.	Per Cent.
PASSED.		
Denver and Gross Coll. of Med.	(1906)	85.1
Rush Med. Coll.	(1903) 82.4; (1906)	78.6, 87.4
Northwestern University	(1906)	81.3
American Coll. of Med. and Surg., Chicago	(1904)	76.4
College of P. and S., Chicago.	(1903) 82.3; (1905) 75; (1906)	86.3
Atlanta Coll. of P. and S.	(1901)	75
University of Michigan	(1906)	77.3
Lincoln Med. Coll.	(1906)	83.9
Bellevue Hosp. Med. Coll.	(1897)	75.4
Jefferson Med. Coll.	(1906)	81
Imperial Royal University, Vienna	(1901)	81.1
FAILED.		
Bennett Coll. of Ecl. Med. and Surg., Chicago	(1901)	58.8
College of P. and S., Chicago	(1906)	64.9, 72.2
American Coll of Med. and Surg., Chicago	(1904)	70
Indiana Med. Coll.	(1905)	64.4
Keokuk Med. Coll.	(1894)	39.8
Hamline University	(1906)	72.5
Barnes Med. Coll., St. Louis	(1905)	65.6*
Lincoln Med. Coll.	(1906)	70.3
Jefferson Med. Coll.	(1906)	72.2

LICENSED THROUGH RECIPROCITY.

College.	Year Grad.	Reciprocity with.
Rush Med. Coll.	(1904)	Minnesota
Northwestern University	(1903)	Iowa
College of P. and S., Chicago	(1906)	Iowa
Sioux City Coll. of Med.	(1905)	Iowa
University of Iowa	(1904) (1905)	Iowa
Drake University	(1905)	Iowa
University of Michigan, Homeo. Dept.	(1899)	Minnesota
University of Minnesota	(1905) (1906)	Minnesota
Hamline University	(1906)	Minnesota
University Coll. of Med., Kansas City	(1906)	Iowa
Marion-Sims Coll of Med.	(1893)	Minnesota
College of P. and S., Wisconsin	(1902)	Minnesota
Trinity Med. Coll., Toronto, Canada	(1900)	Wisconsin
University of Christiana, Norway	(1892)	Wisconsin
Edinburgh University, Scotland	(1881)	Minnesota

* Second examination.

Wisconsin Reciprocity Report.—Dr. J. V. Stevens, secretary of the Wisconsin Board of Medical Examiners, sends us a report of physicians licensed through reciprocity at their meeting held Oct. 9, 1906. The following colleges were represented:

College.	Year Grad.	Reciprocity with.
College of P. & S., Chicago	(1904)	Iowa.
College of P. and S., Chicago	(1905) (1906)	Illinois.
College of P. & S., Chicago	(1902)	Nebraska.
Rush Med. Coll.	(1903) (1905) (1906)	Illinois.
Rush Med. Coll.	(1894)	Iowa.
Rush Med. Coll.	(1881) (1901)	Minnesota.
Hahnemann Med. Coll., Chicago	(1903) (1906)	Illinois.
Northwestern University	(1906)	Illinois.
American Coll. of Med. and Surg.	(1905)	Illinois.
American Med. Miss. Coll.	(1905)	Iowa.
Keokuk Med. Coll., Coll. of P. & S.	(1906)	Iowa.
Baltimore Med. Coll.	(1903)	Nebraska.
University of Michigan	(1904)	Iowa.
St. Louis Univ. (Marion-Sims-Beaumont Med. Coll.) Illinois.		(1906)
Ensworth Med. Coll., St. Joseph	(1903)	Nebraska.
Cincinnati Coll. of Med. & Surg.	(1895)	Illinois.
Jefferson Med. Coll.	(1904)	Michigan.
University of Palermo, Italy	(1900)	Connecticut.

Representatives from the following colleges were conditioned at either the January or July, 1906, examinations, but have since been licensed:

Hahnemann Med. Coll., Chicago	(1905)
Northwestern University	(1905)
Detroit Coll. of Med.	(1904)
College of P. & S., St. Louis	(1905)
Eclectic Med. Coll., New York	(1900)
Albany Med. Coll.	(1887)
College of P. & S., Milwaukee	(2, 1905)
Queen's University, Kingston, Ontario	(1905)

Utah October Report.—Dr. R. W. Fisher, secretary of the Board of Medical Examiners of Utah, reports the written examination held at Salt Lake City, Oct. 1, 1906. The number of subjects examined in was 8; percentage required to pass, 75. The total number of candidates examined was 11, of whom 8 passed and 3 failed. The following colleges were represented:

College.	Year of Graduation.	Anatomy.	Surgery.	Histology, Bacteriology, Med. Jurisprudence.	Materia Medica.	Pathology and Practice.	Chemistry.	Hygiene and Physiology.	Obstetrics and Gynecology.	General Average.
PASSED.										
Denver and Gross Coll. of Med.	1905	87	85	55	80	92.5	85	75	93	81.5
Indiana Med. Coll.	1902	85	85	65	90	85	95	75	90	83.7
Hahnemann Med. Coll., Chicago	1905	89	84	40	88	86	85	76.5	88	79.3
Coll. of P. & S., Chicago	1906	92	90	85	75	88	80	82.5	80	84.6
University of Kentucky	1903	90	85	75	75	80	75	72	75	78.3
Barnes Med. Coll., St. Louis	1899	79	79	75	75	90	50	72.5	80	75.6
St. Louis Univ.	1904	78	83	85	85	78	65	75	70	77.3
Univ. Med. Coll., Kansas City	1904	92	87	75	95	90	90	85	80	86.7
FAILED.										
Denver Med. Coll.	1892	87	75	75	75	75	35	70	80	71.5
Coll. of P. & S., Chicago	1894	81	78	40	75	75	40	67.5	70	68.1
Laval Univ., Quebec.	1901	83	78	40	75	71.5	70	62.5	75	69.3

Therapeutics

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulæ and outlines of treatment are answered in these columns.]

Gout Involving the Phalanges.

In the treatment of gout involving the phalangeal articulations, Shoemaker, in *Med. Bull.*, recommends the local application of oil of gaultheria in pure form for the relief of the pain.

To correct the intestinal disturbance the following combination is recommended:

℞. Strych. sulphatis.....gr. 4/5 | 05
Acidi hydrochlor. dil.....f℥ss | 15
Glyceriti pepsini q. s. ad.....f℥vi | 180

M. Sig.: Two teaspoonfuls in water after each meal.

For general nervousness and insomnia the following combination is recommended:

℞. Ext. cannabis indicæ.....gr. ¼ | 015
Ext. hyoscyami.....gr. ⅛ | 008
Camphoræ monobromatæ.....gr. v | 30
Olei theobromatis q. s..... |

M. Ft. suppos. No. i. Sig.: One such suppository to be inserted into the rectum four times a day.

Galvanic electricity, from 10 to 30 milliamperes, is advised once daily. After the acute symptoms have subsided Shoemaker recommends the following combination applied locally:

℞. Olei gaultheriæ |
Hydrargyri oleatis (25 per cent.), āā....ʒi 30 |

M. Ft. unguentum. Sig.: Apply to the fingers and toes several times daily.

Internally, at the same time, he advises the following:

℞. Strych. sulphatis.....gr. 1/60 | 001
Arseni trioxidi.....gr. 1/30 | 002
Ferri pyrophos. solubilis |
Quin. sulphatis, āā.....gr. iss | 09

M. Ft. pil. No. i. Sig.: One such pill after each meal and at bedtime.

In cases in which the bowels are constipated he advises the following combination:

℞. Massæ hydrargyri |
Ext. colocynth. comp. |
Pulv. jalapæ comp., āā.....gr. xx 1 | 30
Olei menth. pip.....m. i | 06

M. Ft. pil. No. xx. Sig.: One pill every night before retiring.

In order to stimulate the nervous and glandular systems silver nitrate is advised, given as follows:

℞. Argenti nitratis.....gr. ii | 12
Syrupi acaciæ.....fʒii 60 |

M. Sig.: One teaspoonful before each meal.

Later in the course of the treatment he recommends the following combination:

℞. Liq. acidi arsenosi.....fʒiss 6 |
Acidi hydrochlor. dil.....fʒss 15 |
Glyceriti pepsini q. s. ad.....fʒiii 90 |

M. Sig.: One teaspoonful in half a glass of water after meals.

The diet, according to Shoemaker, should consist of vegetables, milk and broths. Farinaceous foods such as rice, hominy, oatmeal, should be avoided, and the patient should be instructed to take outdoor exercise and to avoid excitement.

In the treatment of chronic gout, Minkowski, in an abstract in the *Practitioner*, recommends the following combinations:

℞. Tinct. colchici .....f3i 4 |
Potass. citratis .....3iss 6 |
Aquæ chloroformi q. s. ad.....fʒvi 180 |

M. Ft. mistura. Sig.: Two tablespoonfuls to be taken every four hours until the pain is relieved. Or:

℞. Tinct. colchici.....m. xx 1 | 2
Tinct. belladonnæ.....m. v | 30
Tinct. cimicifugæ.....m. vi | 40
Potassii bicarb.....gr. xii | 75
Infus. gent. co q. s. ad.....fʒi 30 |

M. Ft. mistura. Sig.: Two tablespoonfuls to be taken every four hours.

As local applications in cases of acute gout Yeo, in *Clin. Ther.*, recommends the following combinations:

℞. Morphinæ hydrochlor.....gr. x | 65
Linimenti belladonnæ.....fʒiii 90 |

M. Ft. linimentum. Sig.: One teaspoonful to be added to a tablespoonful of hot water and applied on lint. Or:

℞. Atropinæ .....gr. iii | 20
Morphinæ hydrochloridi .....gr. xv. 1 |
Acidi oleici.....ʒi 30 |

M. Ft. linimentum. Sig.: To be painted over the painful joint with a large camel hair brush and the joint wrapped in cotton wool. Or:

℞. Tinct. opii.....fʒi 30 |
Linimenti saponis .....fʒii 60 |

M. Ft. linimentum. Sig.: To be kept in contact with the affected joint on flannel covered with oil silk. Or:

℞. Ext. opii.....gr. xlv 3 |
Ext. hyoscyami .....3iss-ii 6-8 |
Adipis .....ʒi 30 |

M. Ft. unguentum. Sig.: The painful joints to be anointed with the ointment and covered with cotton wool.

In any case in which colchicum for any reason should not be administered, Yeo recommends the following mixtures containing salicylates:

℞. Sodii salicylatis.....3ii 8 |
Lithii salicylatis.....gr. xl 2 | 65
Potassii citratis .....3iv 15 |
Tinct. zingiberis.....m. xxx 2 |
Aquæ cinnamomi q. s. ad.....fʒviii 240 |

M. Sig.: Two tablespoonfuls every two or three hours until the pain is relieved, then every five or six hours.

If it is desirable to combine colchicum with an aperient, he advises the following combination:

℞. Ext. colchici.....gr. iii | 20
Res. podophylli.....gr. i | 06
Pil. colocynthidis et hyoscyami....gr. xxiv 1 | 55

M. Ft. pil. No. vi. Sig.: One pill at bedtime.

Mixtures for Infants (Continued).

Mistura salina aperiens:

℞. Magnesii sulphatis.....gr. iii | 20
Acidi infusi rosæ.....f3i 4 |

M. Sig.: To be given at one dose.

Mistura scillæ comp.:

℞. Oxymel scillæ .....m. ii | 12
Spts. etheris nitrosi.....m. ss | 03
Aquæ .....f3i 4 |

M. Sig.: To be given at one dose.

Mistura scorparii comp.:

℞. Potassii acetatis.....gr. i | 06
Spts. etheris nitrosi.....m. i | 06
Sol. ammon. acetatis.....m. v | 30
Aceti scillæ.....m. i | 06
Decoctio scorparii.....f3i 4 |

M. Sig.: At one dose.

Mistura senegæ comp.:

℞. Ammonii chloridi.....gr. ss | 03
Ammonii carb.....gr. ¼ | 015
Syr. tolutani.....m. vii | 50
Vini ipecacuanhæ.....m. i | 06
Infusi senegæ .....f3i 4 |

M. Sig.: To be given at one dose.

Mistura sodii citratis:

℞. Sodii citratis.....gr. iv | 25
Aquæ chloroformi.....3i 4 |

M. Sig.: To be given at one dose.

Mistura sodii et calcis:

℞. Sodii bicarb.....gr. ii | 12
Syrupi calcis.....m. v | 30
Aquæ anethi .....f3i 4 |

M. Sig.: To be given at one dose.

Mistura sodii sulphatis cum cascara:

℞. Sodii sulphatis.....gr. i | 06
Ext. cascaræ sagradæ liq.....m. i | 06
Glycerini .....m. v | 30
Aquæ cinnamomi.....f3i 4 |

M. Sig.: To be given at one dose.

PULVERES (POWDERS).

Pulvis alterativus:

℞. Sodii bicarb.....gr. i | 06
Pulv. rhei |
Hydrarg. cum cretæ, āā.....gr. ss | 03

M. Sig.: At one dose.

Pulvis bismuthi astringens:

℞. Bismuthi oxynitratis |
Acidi tannici, āā.....gr. i | 06
Pulv. cretæ arom.....gr. ss | 03

M. Sig.: To be given at one dose.

Pulvis bismuthi comp.:

℞. Magnesii carb.....gr. ss | 03
Bismuthi oxynitratis.....gr. i | 06
Pulv. cretæ arom.....gr. ss | 03

M. Ft. pulvis. Sig.: To be given at one dose.

Pulvis bismuthi cum opio:

℞. Bismuthi oxynitratis.....gr. vi | 40
Pulv. cretæ arom cum opio.....gr. ss | 03
M. Ft. pulvis. Sig.: To be given at one dose.

Pulvis calcii sulphidi:

℞. Calcii sulphuratæ.....gr. 1/10 | 006
Sacch. lactis.....gr. i | 06
M. Ft. puvis. Sig.: To be given at one dose.

Pulvis catharticus:

℞. Pulv. jalapæ co.....gr. i | 06
Hydrarg. chloridi mitis.....gr. 1/3 | 02
Pulv. zingiberis.....gr. ¼ | 015
M. Ft. pulvis. Sig.: To be given at one dose.

Pulvis conspersus zinci oxidi:

℞. Zinci oxidi.....ʒv 150
Pulv. amyli.....Oi 500
M. Ft. pulvis. Sig.: Apply locally.

Pulvis conspersus cum hydrargyro:

℞. Zinci oxidi
Acidi borici
Pulv. amyli
Hydrarg. chloridi mitis, āā.....ʒiv 15
M. Ft. pulvis. Sig.: Apply locally.

Pulvis hydrargyri aromaticus:

℞. Hydrargyri cum cretæ
Pulv. cretæ arom., āā.....gr. ss | 03
M. Ft. pulvis. Sig.: To be given at one dose.

Pulvis sodii phosphatis:

℞. Sodii phosphatis.....gr. iii | 20
Sig.: To be given at one dose.

Pulvis thyroideæ:

℞. Pulv. thyroideæ.....gr. 1/6 | 01
Sig.: To be given at one dose.

UNGUENTA.

Unguenta acidi carbolici et sulphuris:

R. Phenolis liq.
Ung. hydrarg. nitratis, āā.....ʒii 8
Ung. sulphuris .....ʒss 15
M. Ft. unguentum. Sig.: Apply locally.

Unguentum acidi salicylici cum bismutho:

℞. Acidi salicylici.....gr. xv 1
Bismuthi oxycarbon
Pulv. amyli, āā.....ʒi 4
Ung. zinci q. s. ad.....ʒi 30
M. Ft. unguentum. Sig.: Apply locally.

Unguentum flavum dilutum:

℞. Hydrarg. oxidi flavi.....gr. iv | 25
Lanolini .....ʒi 30
M. Ft. unguentum. Sig.: Apply locally.

Unguentum hydrarg. ammon. dil.:

℞. Hydrarg. ammoniati.....gr. v | 30
Ceri flavi
Olei olivæ, āā.....ʒss 15
Adipis q. s. ad.....ʒiss 45
M. Ft. unguentum. Sig.: Apply locally.

Medicolegal

SOME LEGISLATION OF 1906.

Provides for Annual Conference for Boards of Health.

Chapter 131 of the Laws of New Jersey of 1906 authorizes the Board of Health of the state of New Jersey to appoint a time and place for a conference, once each year, between the members of said board and delegates from the various local boards of health in the state, for the consideration of questions relating to the prevention of the spread of dangerous communicable diseases and the promotion of the public health. Each local board of health is authorized to appoint one of its members or officers or employés as a delegate from such board to attend every such annual conference, and the actual traveling and hotel expenses of each delegate so appointed shall be paid by the treasurer or other disbursing officer of the township or municipality within which such local board has jurisdiction, on presentation by the delegate of a certificate of his appointment and a bill of his expenses duly verified by affidavit.

New Provision for Abolishing Mosquito-Breeding Areas.

Chapter 134 of the Laws of New Jersey of 1906, going much farther than did the act of 1905, reported in the Medicolegal Department of the THE JOURNAL of Dec. 16, 1905, page 1903, makes it the duty of the director of the state experiment station to have all of the salt-marsh areas of the state surveyed and maps made indicating all of the mosquito-breeding places found on every such area, together with a memorandum of the method to be adopted in dealing with such mosquito-breeding places, and the probable cost of abolishing same. Likewise, surveys and maps shall be made of fresh-water swamps or other territory suspected of breeding malarial or other mosquitoes, at the request of any local board of health, which may be made on its motion, but must be made when petitioned for by ten or more freeholders. The proper local boards of health are to be informed of the mosquito-breeding places shown on the maps of salt-marsh areas, and notice given to the owners to abate them as nuisances, but if the owners fail to comply, the boards of health are to act. In all investigations made under the provision for the survey of fresh-water swamps or other suspected territory stated, the report to be made to the board of health requesting the survey shall state what mosquitoes were found in the territory complained of, whether they are local breeders or migrants from other points, and, in the case of migrants, their probable source, whether the territory in question is dangerous as a nuisance because of mosquito breeding, the character of the work necessary to abate such nuisance and abolish the breeding places, and the probable cost of the work. Said board must then proceed to abolish the breeding places found, under the general powers of the board, but may be assisted by the state.

Act to Regulate Private Institutions for the Insane.

Chapter 272 of the Laws of New Jersey of 1906 requires that all asylums, homes, sanitariums, sanatoriums, retreats, hospitals, institutions or corporations now operating or which shall hereafter operate as private enterprises and receive, care for and treat for compensation persons who are insane or suffering from mental disorders, shall have a license from the Department of Charities and Corrections of the State. An application for license must be accompanied by plans of the premises proposed to be occupied, describing the capacities of the buildings for the uses intended, the extent and locations of the grounds appurtenant thereto, and the number of patients of either sex proposed to be received therein. A careful inquiry shall then be made into the merits of such application, and it shall be ascertained if such facilities have been provided as will entitle the applicant to a license. Inspections shall also be made semi-annually, or oftener, if necessary. All such institutions shall have at least one resident physician, who has been regularly graduated from a reputable medical college or university, and such physician shall live in such institution or devote as much as four hours each day to the care and treatment of the patients in such institution.

Act Relative to the Appointment of School Physicians.

Chapter 502 of the Acts of Massachusetts of 1906 provides that the school committee of every city and town in the commonwealth shall appoint one or more school physicians, shall assign one to each public school within its city or town, and shall provide them with all proper facilities for the performance of their duties as prescribed in this act; provided, however, that in cities wherein the board of health is already maintaining or shall hereafter maintain substantially such medical inspection as this act requires, the board of health shall appoint and assign the school physician.

Every school physician shall make a prompt examination and diagnosis of all children referred to him as hereinafter provided, and such further examination of teachers, janitors and school buildings as in his opinion the protection of the health of the pupils may require.

The school committee shall cause to be referred to a school physician for examination and diagnosis every child returning

to school without a certificate from the board of health after an absence on account of illness or from unknown cause; and every child in the schools under its jurisdiction who shows signs of being in ill health or suffering from infectious or contagious disease, unless he is at once excluded from school by the teacher; except that in the case of schools in remote and isolated situations the school committee may make such other arrangements as may best carry out the purposes of this act.

The school committee shall cause notice of the disease or defects, if any, from which any child is found suffering, to be sent to his parent or guardian. Whenever a child shows symptoms of smallpox, scarlet fever, measles, chickenpox, tuberculosis, diphtheria or influenza, tonsillitis, whooping-cough, mumps, scabies or trachoma, he shall be sent home immediately, or as soon as safe and proper conveyance can be found, and the board of health shall at once be notified.

The school committee of every city and town shall cause every child in the public schools to be separately and carefully tested and examined at least once in every school year to ascertain whether he is suffering from defective sight or hearing or from any other disability or defect tending to prevent his receiving the full benefit of his school work, or requiring a modification of the school work in order to prevent injury to the child or to secure the best educational results. The tests of sight and hearing shall be made by teachers. The committee shall cause notice of any defect or disability requiring treatment to be sent to the parent or guardian of the child, and shall require a physical record of each child to be kept in such forms as the state board of education shall prescribe.

The state board of health shall prescribe the directions for tests of sight and hearing, and the state board of education shall, after consultation with the state board of health, prescribe and furnish to school committees suitable rules of instruction, test cards, blanks, record books and other useful appliances for carrying out the purposes of this act, and shall provide for pupils in the normal schools instruction and practice in the best methods of testing the sight and hearing of children.

Advances Age of Consent.

Chapter 24 of the Laws of Kentucky of 1906 amends section 1155 of the Kentucky Statutes fixing the age of consent by striking out of said section the word "twelve" and inserting in lieu thereof the word "sixteen."

Authorizes County Hospitals for Treating Tuberculosis.

Chapter 53 of the Laws of Kentucky of 1906 provides that in counties which contain a city of the first class there shall be created a board to be composed of ten persons, which shall be a body politic and corporate, and shall be known as the "board of tuberculosis hospital." The members of the board shall be appointed by the mayor of the city, who shall be ex-officio a member of the board. Said board shall have the power to organize and elect officers, rent or purchase, or to erect, and to conduct and maintain, a suitable hospital and ground for the treatment of persons afflicted with tuberculosis, and to make all needful rules and regulations with reference to the admission and discharge of patients and the conduct of the affairs of the hospital.

An Act to Establish an Epileptic Colony.

Chapter 48 of the Acts of Assembly of Virginia of 1906 recites that: Whereas, The existing state hospitals for the white insane are now taxed to their fullest capacity, and will be insufficient in the near future for the care of all such unfortunate persons; and whereas, there are in the said hospitals about 250 patients suffering from epilepsy, so environed as to be harmful to themselves and their associates; and whereas, there is probability of improvement and cures, under special hygienic surroundings, congenial employment, and scientific medical treatment, such as may be available at a separate colony, which appears to be the most economic, beneficial and satisfactory method of caring for epileptics; and whereas, it appears from the report of the commissioner of state hospitals that unless additional accommodations are provided it will be necessary in the near future to incarcerate in the jails a large number of insane and white epileptic citizens of the commonwealth, and that it is more economical and humane to treat such unfortunates in hospitals than in jails: therefore, be it enacted that the special board of directors of the Western State Hospital, under the supervision and control of the general board of directors of the state hospitals for the insane, be authorized and directed to erect on the tract of land in Amherst County, opposite the city of Lynchburg, devised to the said Western State Hospital by the will of Sidney R. Murkland, deceased, out of consideration for the kindly and humane treatment of his son at said hospital, all suitable buildings and appurtenances for the establishment of a colony for the reception, care, treatment, training and employment of 300 epileptic patients. When the buildings for the proper use and conduct of the colony, or a sufficient number of them, shall have been completed, equipped and furnished and ready for occupancy, the superintendent of the Western State Hospital shall, with the approval of the special board, designate from the corps of assistant physicians at said hospital a sufficient number of physicians, who shall be residents at said colony. Said general board shall have care and control of the colony as a part of said hospital, and the care, control and treatment of the patients committed to the colony, subject to the laws, rules and regulations governing the Western State Hospital.

Prohibits Expectorating in Public Places.

Chapter 302 of the Acts of Assembly of Virginia of 1906 enacts that no person shall spit, expectorate or deposit any sputum, saliva, mucus, or any form of saliva or sputum on the floor, stairways or on any part of any theater, public hall, or on the floor or any part of any railroad car or street car or steamboat, or on the floor or any part of any car of interurban or suburban railway, or of any other public conveyance in the state of Virginia, or on any sidewalk on any public street, alley or lane of any town or city in the state, under penalty of a fine of not less than $1 nor more than $5 and costs, and in default of payment, imprisonment not exceeding five days.

Current Medical Literature

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

Medical Record, New York.

December 8.

1 *Trypsin in Cancer. W. J. Morton, New York.
2 *Case of Bronchitis, with Remarks on Cough and the Perforated Zinc Inhaler. B. Robinson, New York.
3 *Etiology of Cancer. W. H. Dieffenbach, New York.
4 *Importance of the Early Diagnosis and Treatment of Epileptic Symptoms. F. M. Stites, Hopkinsville, Ky.
5 Late Results of the *X*-Ray Treatment of Cutaneous Epithelioma. C. M. Williams, New York.
6 *Etiologic Factors in Bone Tuberculosis in Children. C. Wallace, New York.
7 Sarcoma of the Nasal Fossa. R. H. Johnston, Baltimore, Md.

1. **Trypsin in Cancer.**—Morton recently instituted a series of experiments consisting of the consecutive use of trypsin in a series of about 30 cases of cancer, both hospital and private. Two of these, patients with facial cancer, are cured to date. In one case, a remarkable process of retrogression by degeneration and atrophy of a carcinomatous breast gland to final and curative obliteration, has been demonstrated microscopically. In all cases signs of amelioration in the progress of the disease have been observed. It has been demonstrated that both local and constitutional reaction may be produced by the use of trypsin. Enlarged glands have rapidly diminished in size. Trypsin has a decided effect, Morton declares, in reducing cancer cachexia, and in improving the general health. Even in severe cases of uterine cancer involving the associated pelvic organs, the disease may be brought to a halt. The influence of amylopsin seems to have had much to do with favorable results.

2. **Perforated Zinc Inhaler in Bronchitis.**—Robinson points out the benefits from the use of the perforated zinc inhaler. After 48 hours of this treatment the general symptoms were markedly less, and the pulse and heart action were greatly improved. The solution employed in the inhaler is composed of equal parts of beechwood creosote, alcohol and spirit of chloro-

form. In the case reported creosote internally, as well as coca and magnesia mixture, aided in bringing about the recovery. At first the inhaler should be worn a few minutes at a time, being reapplied every hour or two. Later it may be worn continuously one or more hours during the day and even during the night.

3. **Etiology of Cancer.**—Dieffenbach emphasizes the important part played by trauma, pressure, severe inflammations and constant irritations in the production of cancer.

4. **Early Diagnosis of Epileptic Symptoms.**—Stites declares that in all cases in which obscure mental or nervous symptoms tend to occur periodically with normal intervals, the possibility or probability of epilepsy in the form of psychic, Jacksonian or petit mal seizures should be considered, and careful study should be given to the symptoms.

6. **Etiologic Factors in Bone Tuberculosis.**—Wallace believes that the two strong factors which are instrumental in causing bone tuberculosis are inherited tendency, and insanitary and otherwise unfavorable environment. He pleads for a better education of sufferers from tuberculosis that they may guard against infecting children.

New York Medical Journal.

December 8.

8 The Principle of Top Milks. H. D. Chapin, New York.
9 Exophthalmic Goiter from the Standpoint of Serum Therapy. J. Ewing, New York.
10 Three Hundred Operations for Hernia. C. Pfister, New York.
11 *Compulsory Reports and Registration of Tuberculosis in the United States. W. H. Baldwin, Washington, D. C.
12 Psychical and Medical Treatment of Conditions Underlying Gastric Peptic Ulcer. M. R. Barker, Chicago.
13 Multiple Chancre; Case with Five Initial Lesions on the Penis. F. C. Knowles, Philadelphia.
14 Pyelonephritis. F. Fremont-Smith, Washington, D. C.
15 Relaxation of the Sacro-iliac Synchondroses. J. Dunlop, Washington, D. C.
16 *Disinfection of Physician's Hands. P. Shekwana, Iowa City, Iowa.

11. **Registration of Tuberculosis.**—Baldwin states that the growing knowledge of the nature of tuberculosis and the increasing interest taken in the subject is having its influence in adding to the number of cities requiring compulsory reports and registration of all cases of tuberculosis, and that the wisdom of what is logically the first step to be taken in the control of the disease is confirmed by experience when it has been attempted in the proper manner.

16. **Disinfection of Physician's Hands.**—Shekwana says that every practitioner should have with him a small bottle containing some disinfectant. As soon as he starts on his visits he should disinfect his hands in order to make them sterile. After he examines his first patient and leaves the house, he should put some of this disinfectant on his hands again in order to kill the bacteria which might have fallen on his hands from the first patient, and in that way he will avoid infecting the second patient with the first patient's disease, and so on. This system will make it very safe for the physician himself, his family, and for all those who come in contact with him. The disinfectant to be used is a matter of choice. Shekwana recommends the following disinfectants: A solution of bichlorid of mercury, 1 in 1,000, will sterilize the hands in from five to ten minutes. A solution of from 4 to 5 per cent. carbolic acid will act in from ten to fifteen minutes in a similar manner. A 2 per cent. solution of lysol will act in about ten minutes, and render the hands sterile.

Boston Medical and Surgical Journal.

December 6.

17 Major Symptoms of Hysteria. P. Janet, Paris, France.
18 *Two Cases of Rupture of the Liver. F. B. Lund and W. C. Howe, Boston.
19 Subcutaneous Rupture of the Liver. J. C. Hubbard, Boston.
20 Report of Milk Commission of the Suffolk District Medical Society. J. L. Morse, Boston.

18. **Rupture of Liver.**—In one case reported by Lund and Howe, a rupture of the dome of the liver which had caused extensive hemorrhage into the peritoneal cavity, was closed by five sutures of coarse silk passed by an ordinary large Hagedorn needle. Access to the dome of the liver was obtained by passing the left hand of the operator up under the diaphragm and drawing the liver downward and pushing it inward toward the median line. The ribs being lifted by the hand of an assistant, these coarse sutures could be placed and tied without difficulty. By the traction downward and inward on the liver the hemorhrage was checked, so that as the liver was held in the left hand, the sutures could be passed with the right. Then with the sutures held taut the liver was let go, and it was found that the bleeding was checked; the sutures were tied from above downward successively. The subsequent progress of the patient was so favorable as to lead Lund and Howe to believe that whenver feasible, ruptures of the liver should be closed with sutures rather than by gauze packing. In the second case the gauze packing was resorted to both on account of the extent of the injury and because the patient was in such poor condition as to contraindicate any method which consumed more than the shortest possible time. In spite of the unfavorable conditions the patient lived a week after the operation; the gauze packing was efficient in controlling hemorrhage, and the autopsy showed that the lines of rupture were covered with fibrin and blood clot.

Lancet Clinic, Cincinnati.

December 8.

21 *Injection Treatment of Syphilis. E. O. Smith, Cincinnati.
22 President's Address Before the First Councilor District Medical Society, Cincinnati. J. C. Larkin, Hillsboro, Ohio.

21. **Infection Treatment of Syphilis.**—Smith has used the following formula for a number of years with most excellent results:

℞. Hydrarg. bichloridi		
Acidi carbolici, āā.....gr. viii		50
Sodii chloridi.....gr. xvi	1	
Aquæ dest. .....ʒi	30	

M. Sig.: Fifteen drops of the solution contain one-fourth grain of the bichlorid. This should be kept in a dark bottle.

The gluteal region is to be preferred for the injection on account of the large pad of fat and the thick muscular layers. Treatment should be instituted as soon as positive symptoms develop. In cases of pregnancy, when the woman has had one or more miscarriages, the injection of one-fourth grain of bichlorid of mercury each week has a most satisfactory effect, as the woman will go to full term and be delivered of a healthy child. The advantages of the bichlorid of mercury with phenol over other preparations used in the injection treatment are: 1. It is practically painless. 2. The solution is so strongly antiseptic that with the proper aseptic care of the needle and skin abscesses never develop. 3. It is absorbed so completely that no nodosities remain. 4. It does not produce stomatitis or enterocolitis nearly so quickly as the other methods of injection treatment. 5. It is easily prepared by any practitioner.

St. Louis Medical Review.

December 1.

23 Treatment of Neuralgias with Injections of Alcohol. L. Hauck, St. Louis.
24 Pathologic and Clinical Diagnosis of Sarcoma. (To be continued.) M. G. Seelig, St. Louis.

Surgery, Gynecology and Obstetrics, Chicago.

November.

25 *Forty-eight Cases of Delivery by Abdominal Section. E. P. Davis, Philadelphia.
26 *Therapeutics of Retrodisplacement. E. E. Montgomery, Philadelphia.
27 Treatment of Tuberculous Glands of the Neck. J. H. Gibbon, Philadelphia.
28 *Lacerations of the Cervix Uteri. S. Coles, Philadelphia.
29 Relaxation and Atony of the Non-Puerperal Uterus Incident to Dilatation and Curettage. F. H. Maier, Philadelphia.
30 *Three Cases of Eclampsia with Recovery Without Delivery. C. Foulkrod, Philadelphia.
31 Insidious Affections of the Kidney in the Young. R. Gillmore, Chicago.
32 *Dystocia from Congenital Cystic Kidney of the Fetus. F. W. Lynch, Chicago.
33 Statistical Study of Deaths from Cancer in the City of Philadelphia, with Especial Reference to Cancer of the Uterus. P. B. Bland, Philadelphia.
34 *Case of Traumatic Asemia. J. C. DaCosta, Philadelphia.
35 *Relation of the General Surgeon to the Practice of Gynecology. J. M. Fisher, Philadelphia.
36 Tamponing the Puerperal Uterus. G. A. Ulrich, Philadelphia.
37 Bacteriologic and Histologic Study of Organs Removed from Tuberculous Subjects. R. C. Rosenberger, Philadelphia.
38 Irrigation and Drainage of Seminal Duct and Vesicle Through the Vas Deferens. W. T. Belfield, Chicago.
39 Lipoma of the Uterus. A. G. Ellis, Philadelphia.
40 Sacrococcygeal Tumor (Teratoma). W. W. Keen and W. M. L. Coplin, Philadelphia.

41 Case of Mummified Fetus of Thirteen Years Standing. P. B. Bland, Philadelphia.
42 Technic of Closing Lacerations in the Anterior and Posterior Segments of the Pelvic Floor and Perineum Immediately After Labor. G. A. Ulrich, Philadelphia.
43 Technic of Immediate Enterostomy. F. T. Stewart, Philadelphia.
44 Technic of Delivery by Abdominal Section. E. P. Davis, Philadelphia.
45 Operative Treatment of Carcinoma of the Rectum. J. C. Beck, Philadelphia.
46 Further Observations on Extensive Separation of the Periosteum in Displaced Bone Fragments. C. Beck, New York.
46½ Physiology and Pathology of the Abdominal Muscles. A. Rose, New York City.

25. **Delivery by Abdominal Sections.**—The clinical study of 48 cases of delivery by abdominal section by Davis suggests points concerning the choice of operation and the method for its performance. These operations were performed in one maternity hospital, three general hospitals, one private surgical hospital and two private houses. The indications for the operation were: Disproportion between mother and child in 42 cases; fibroid tumors of the uterus delaying labor or making it impossible in 2 cases; eclampsia, 3 cases; melancholia, breech presentation of the fetus, absence of labor pains, 1 case. Of these patients 13 were multiparæ and 35 primiparæ. Of the multiparæ none died, while 11 of the 13 had lost children in previous labors, and hence consented gladly to the operation with the hope of saving the child. Of these operations 36 were celio-hysterotomy, 18 were celio-hysterectomy, 3 were Porro operations, and 1 postmortem incision.

The patients who were uninfected at labor numbered 39, and among these there was one death, making a mortality percentage of 2.6. The patient uninfected before labor and dying after delivery was a negro woman with contracted pelvis, who, after labor, had signs of peritoneal infection. The temperature remained low, but the pulse rose steadily. On autopsy the uterus was found healed and sterile, but a diffuse peritonitis was present, caused by the *Bacillus proteus vulgaris*. It was thought that this might have resulted from the use of infected catgut to close the peritoneum, but a sample of the gut, on bacteriologic examination, was found sterile. Among these patients there were six who were undoubtedly infected at the time of labor by septic infection. In these cases the site of infection was the intestinal tract in one, the uterine lining membrane and muscle in four, a Fallopian tube in one. Of these infected patients three recovered and three died. In each fatal case a thorough autopsy was made, with bacteriologic examination when indicated. The patients who recovered, although infected, had the Porro operation in two cases, while in one patient the uterus, tubes and ovaries were removed more than a year after the Cesarean section.

Three patients with eclampsia were delivered by abdominal sections. Of the children born in these cases none died who was in good condition at the time of operation. The total number of deaths of children in 48 cases was 8. Of these, four were dead before delivery was attempted; one, as already described, died after postmortem delivery, of eclampsia, two weeks later; one child, born at seven months, died several days after birth, from inanition; one died from inanition and failure to assimilate food, a week after birth; and one died of bronchopneumonia, resulting from influenza, ten days after birth. No child perished during or immediately after the operation who was living or in good condition when the operation was performed.

26. **Therapeutics of Retrodisplacement.**—Montgomery emphasizes: 1. The discovery of retroversion or retroflexion in a patient is not necessarily an indication for its treatment. 2. The symptoms usually attributed to such displacements are due to the complications rather than to the displacement, and, consequently, these complications must be considered in deciding as to methods of treatment. 3. Ventrosuspension and ventrofixation during the child-bearing period should give place to suspension of the uterus by its round ligaments, and preferably by author's combination of the Simpson-Gilliam operations. 4. Dependence should not be given to the shortening of the ligaments alone, but the complicating endometritis, metritis and relaxed pelvic floor should be combated by appropriate measures, in addition to the suspension described. 5. Prolapse, in addition to the reduction in the size of the uterus by amputation of the cervix, by restoration of the pelvic floor and shortening of the round ligaments, should be supplemented, when necessary, by shortening of the retrouterine structures.

28. **Lacerations of the Cervix Uteri.**—From an experience in 181 cases of immediate closure of the cervix, good union was obtained by Coles in about 88 per cent., fair union in 11 per cent., and no union in about 1 per cent. The position and involution of the uterus was improved by the operation. There was no case of infection that could be attributed to the sutures, and operation did not cause the patient any inconvenience. Would the danger of infection be less, he asked, if this tear were left open for five days or two months, and would the health of the patient be as good as with the immediate closure?

30. **Patients with Eclampsia Recovering without Delivery.**—Foulkrod presents the record of three patients as evidence of the fact that certain selected cases of eclampsia can be relieved either wholly or partially without rapid and forcible delivery, by expectant eliminative treatment; still further, that such treatment offers as good, and in certain cases better, opportunity for both mother and child. In these three instances the mother recovered from the eclampsia, and active treatment had ceased before labor came on. In one the child was born healthy and is still alive; in another the child was born living and died in a few days; in the remaining instance the child was stillborn.

32. **Dystocia from Congenital Cystic Kidney of Fetus.**—Lynch reports a case in which was observed a twin pregnancy presenting the unique feature of cystic kidney and hydronephrosis of size sufficient to cause an obstacle to the birth of the first child.

34. **Case of Traumatic Asemia.**—Da Costa reports the case of a man who, as the result of a head injury, could not express his thoughts, either in writing or with the signs that he was accustomed to employ. He could understand signs made by others, but could not understand writing. He was angered by his own failures in making signs and in trying to write, and expressed his anger and disappointment with gestures; and made many efforts to give vent to ideas, but succeeded in expressing only two words by signs, these words being mere automatic expressions, and utterly inappropriate and unmeaning as replies. This condition was apparently due to pressure on the third right frontal convolution, and passed away completely on the relief of pressure. There was no sign of its existence after the anesthetic was recovered from.

35. **Relation of General Surgeon to Gynecology.**—Fisher claims that the practice of gynecology is not all surgical, and that which is surgical is more readily recognized and the necessary operative work is usually best done by those who are engaged in the daily examination of patients by digital and bimanual methods and who have mastered the intricacies of a proper technic in pelvic and abdominal surgery adapted to gynecologic cases.

American Journal of Surgery, New York.

December.

47 Tumors of the Larynx. J. F. Erdmann, New York City.
48 Appendicitis; General Observations, with Statistics to Date. F. W. McRae, Atlanta, Ga.
49 Intestinal Obstruction; Its Surgical Treatment. H. O. Walker, Detroit, Mich.
50 Syphilis of the Testicle. G. M. Muren, Brooklyn, N. Y.
51 Vesical Hematuria. L. Davis, Boston.
52 Cesarean Section in Country Practice. E. Lanphear, St. Louis.
53 *A New Method of Applying the Obstetric Forceps. J. A. Heatly, Schenectady, N. Y.
54 A Plea for Exploratory Incision in Suspected Depressed Fractures of the Skull. J. Wiener, New York.

53. **New Forceps Method.**—Heatly has used a method for over 15 years, for which he claims rapidity, safety and ease of performance; it is necessary to introduce only one hand, thus minimizing danger of infection and the forceps lock more easily. Everything being in readiness, forceps sterilized, patient prepared and anesthetized, the hands of the operator thoroughly disinfected, and the patient in the proper position, the operator, seated on a stool or chair with the forceps at hand, is ready to introduce the first blade. He passes the

left hand into and up in the vagina until the fingers touch the descending fetal head; then, taking the handle of the female blade (the left handle or right blade when forceps are locked) in his right hand, he passes the back of the blade along the palm of his left hand upward as far as necessary to include the head in the blades when locked. Then, by a turn or twist of the right wrist, the blade passes back of the head over the perineum and around to the opposite side of the fetal head (left side of the patient) into its proper place. The left hand still in the vagina, the remaining (male) blade is introduced very readily, the back of the blade being passed up along the palm of the left hand into its place. Then the blades are locked and delivery proceeds. In high operations the fingers are passed up until they lie between the inside of the uterus and the side of the head of fetus, then the forceps are introduced as described. If the operator is left-handed the operation is reversed.

The Medical Fortnightly, St. Louis.

November 26.

55 *Inhibition of the Asthmatic Paroxysm. A. Abrams, San Francisco.
56 *Postmortem Report of a Case of Rupture of the Stomach Due to Gastromalacia. J. A. Hartmann, St. Louis.
57 Man with Whom You Must Live. A. L. Benedict, Buffalo.
58 Pubiotomy and Its Relative Indications. E. B. Montgomery, Quincy.

55. **Inhibition of Asthmatic Paroxysm.**—Abrams claims that adrenalin subcutaneously only, is one of the most efficacious remedies for arresting a paroxysm of asthma. He employs the adrenalin chlorid solution (1 in 1,000) of which from 8 to 15 minims are injected. It is rarely necessary to repeat the dose. He has found it equally serviceable in many forms of dyspnea even when morphin was without effect.

56. **Rupture of Stomach Due to Gastromalacia.**—Hartman found the stomach collapsed, empty and markedly congested, its mucous coat was dark brown, there was an entire absence of rugæ; this even extending to its pylorus; its walls were very thin and slimy and were translucent when held to the light, showing an evident atrophy of the muscular coat. There were no evidences of gastric ulcers, past or present, but there was an irregular tear along the fundus, following the greater curvature and situated anteriorly to the gastro-splenic omentum; this was about four inches in length, the peritoneum was retracted from its edge, and at the edge the stomach wall was of the thickness of thin paper, and over the rest of the stomach was but slightly thicker. A chemical examination confirmed Hartman's opinion that death was due to the development of the condition by violence of diet. He was told that the deceased had not only used an acid diet, and that for a long time, but that she had been known to drink pure vinegar, and that at frequent intervals. Whether or not the rupture of the stomach occured before, at or after death, could not be determined. Hartman thinks that its cause may have been hemorrhage in the stomach, or an accumulation of gases. The presence of either may have occasioned her arising and going to the bathroom where, in falling, the stomach was ruptured, or the rupture might have occurred from the same cause even before she arose from her bed. He thinks it possible that there may have been a tear in the mucous membrane or that an artery ruptured in the stomach wall (the arteries being athcromatous) causing hemorrhage into the stomach, and that the weight of this blood and the effort of the stomach to get rid of it could have resulted in a rupture at the thinnest part, which in this case was at the fundus.

Western Medical Review, Lincoln, Nebraska.

November.

59 *Dynamic Effects of Antipneumococcic Sera in Pneumonia. J. S. Welch, Lincoln.
60 *Treatment of Placenta Prævia by Cesarean Section. A. P. Condon, Omaha, Neb.
61 *Forty-Three Consecutive Cases of Typhoid Fever Treated by the Sulphate of Copper Plan. J. F. Stevens, Lincoln.
62 *Medical Fees in Country Practice. W. O. Bridges, Omaha.

59. **Antipneumococcic Sera in Pneumonia.**—Welch summarizes his paper as follows: 1. The dynamic effects of antipneumococcic sera in pneumonia are so slight as to seem of no importance. 2. The toxemia and pneumococcic septicemia remain apparently unaltered by the use of the sera.

60. **Treatment of Placenta Prævia by Cesarean Section.**—Condon reports two cases of placenta prævia centralis in which he performed a Cesarean section successfully. He concludes that: 1. In placenta prævia centralis, when the child is alive and viable, the procedure indicated is Cesarean section. 2. The life of the unborn babe, when viable, is as much to be thought of as that of the mother. 3. The operation of Cesarean section can be done more quickly than dilatation, version and extraction. 4. The danger of a ruptured uterus and uncontrollable hemorrhage can be better overcome by section. 5. An obstetrician should not attempt a version unless he is capable of doing a Cesarean section.

61. **Typhoid Fever Treated by Sulphate of Copper.**—The treatment of the cases reported by Stevens consisted in the systematic use of sulphate of copper. A patient was placed on two-drop doses of a 6 per cent. solution of sulphate of copper in one-half glass of water every two hours, day and night. In case the stomach proved intolerant the dose was reduced to one drop in one-half glass of water every two hours. It occasionally happened that it was necessary to reduce the dose still more, making it only one-half drop once in two hours. The drops of a 6 per cent. solution contain about 1/8 grain of the sulphate. In point of fact the majority of the patients could take about one drop every two hours. Patients who were seen during the first two or three days of the onset of the disease received large colonic flushings of sulphate of copper solution once in three hours for two days. In these injections 5 grains to the quart were used. If this proved irritant, a less quantity was to be used in subsequent flushings. If the tongue became dry, which it seldom did, the copper solution was moderately acidulated with sulphuric acid.

The diet was uniformly buttermilk, a glass once in four hours. Between the buttermilk Stevens sometimes permitted soups to be given, carefully prepared, skimmed and strained. Fruit juices were invariably given following somewhat the desire of the patient as to which particular one. Tomato juice, a wineglassful every two hours or three, in the majority of cases proved to be very acceptable and certainly very beneficial. The temperature was reduced when necessary by general sponging and ice-bags to the abdomen. General nursing measures were instituted as individual cases demanded. When the disease abated, temperature became normal, tongue cleared, patient became bright, with conditions generally pointing to the immediate nearness of convalescence, the copper was dropped and the patient given 1/240 of a grain of strychnin once in three or four hours. After the temperature had been normal about eight or ten days the pulp of a baked apple, a little rice, tapioca, soft-boiled eggs, junket, blanc mange, etc., was gradually introduced into the diet until perfectly normal conditions called for the food of health. This entire list of cases was characterized by an evenness that was very gratifying.

62.—This article appeared in THE JOURNAL, Oct. 6, 1906, page 1065.

American Journal of Orthopedic Surgery, Philadelphia.

October.

63 *Intermittent Limping (Myasthenia Angio Sclerotica). R. W. Lovett, Boston.
64 *Treatment of Faulty Weight-Bearing in Weak and Flat Feet. R. B. Osgood, Boston.
65 Simplest Mechanical Method of Treating Coxitis and Its Results. A. Lorenz, Vienna.
66 *Effect of Pressure on the Curve and Rotation of the Spine. R. Soutter, Boston.
67 Congenital Deformity of the Spine, Etc. J. J. Clarke, London.
68 Cure of Congenital Pseudoarthrosis of the Tibia by Periosteal Transplantation. A. Codivilla, Bologna.
69 Was Percival Pott Really Entitled to the Honor of Having a Certain Spinal Disease Called by His Name? A. J. Steele.
70 Double Congenital Equino-Varus in Twins. J. T. Rugh, Philadelphia
71 Defect of Both Femoral Heads in a Chondrodystrophic Dwarf. A. H. Freiberg, Cincinnati, Ohio
72 *Simple Method of Correcting Pigeon-Toe or Inward Rotation of the Thighs. R. T. Tayler, Baltimore.
73 Simple Method of Recording the Torsion in Lateral Curvature. E. H. Braford, Boston.

63. **Intermittent Limping.**—Lovett reports three cases each illustrative of a type of this affection: 1. A young man with general arteriosclerosis or obliterating arteritis resulting in gangrene. 2. A man past middle age without conspicuous arterial change recovering from arterial obstruction. 3. A

woman with a venous rather than arterial disturbance more amenable to treatment than the other two cases. The treatment of absolute rest until the circulation is restored seems the safest course to pursue.

64. **Faulty Weight Bearing in Weak Feet.**—The conclusions drawn by Osgood from observation of five clinics, three of them covering a period of several years, are as follows: 1. A rigid arch supporter worn for several months, while relieving symptoms in the majority of cases, weakens the foot and tends to make the wearer dependent on it. 2. The prolonged use of such rigid supports in the great majority of cases is unnecessary, if proper treatment is administered at the appropriate time. 3. The aim of the surgeon should be to strengthen the weak structure, and not simply temporarily to relieve symptoms. 4. In the cases of simple weak foot the calcaneo-astragaloid articulation demands most attention. 5. In severe cases of long standing, operative measures may be more commonly employed and offer lasting relief. He says that the exercise treatment of weak feet is rational and desirable, although it is much neglected in private work, and practically unemployed in most hospital clinics.

A very simple and effective foot exerciser can be made from a piece of plank about a foot square with a light depression in which the heel rests. Screw hooks are placed at appropriate places on the edges, a webbing strap, to which a stout hook is sewn, is placed about the foot just back of the great toe joint. A wire string from 2 to 3 inches long is caught by one end to the hook in the plank edge and by the other to the hook in the webbing strap. By changing the insertion of the spring, resistive foot exercises may be taken in inversion, eversion, dorsal and plantar flexion and curling the toes. For dorsal flexion a block is added in order to gain more height from the floor for full plantar flexion. For plantar flexion an arch of stout wire with a loop in it for the attachment of the spring is inserted into two holes in the plank and allows the pull from above. While the spiral spring does not furnish the most perfect physiologic resistance, the appliance gives the patient a definite object, and accomplishes more than exercises without apparatus.

66. **Effect of Pressure on Curve and Rotation of Spine.**—As the result of 94 experiments made on two cadavers Soutter concludes that for the correction of high rotary curves, vertical positions may be employed advantageously; especially when the lower portion of the spine should not be affected by the treatment. For correcting rotation in which more correction is desired in front, supine position is most advantageous. For correcting rotation in which more correction is desired behind, the prone position is more advantageous. Head pull is especially helpful for high rotation sitting when a vertical position is desired. Suspension with toes touching is especially good for equal correction of both high and low rotation at the same time. A lying position is the most advantageous for getting the maximum correction with a minimum force. In the treatment of scoliosis it is desirable to have definite data on which to base the principles to be employed. The experiments proved, among other things, that rib pressure is capable of being utilized as a therapeutic measure in scoliosis.

72. **Method of Correcting Pigeon-Toe.**—The device employed by Tayler consists of a snug-fitting muslin pelvic band lacing in front, and on each side, about one or two inches below and posterior to the situation of the anterior superior spines of the ilia, are sewed buckles obliquely. This band is to be pinned with safety pins to the underskirt. Two strips of surgeon's adhesive plaster 1½ inches wide and from 4 to 6 inches long, have a piece of felt 1½ inches square and a buckle sewed on one end of each. These adhesives are then stuck on the back of the calf of each leg in a spiral manner so that the buckle and felt come to lie on the posterior inferior aspect of each internal condyle of the femora. The apparatus is completed by means of a piece of non-elastic webbing which is fastened in the two blocks on each leg following the direction of the sartorius and buckled sufficiently tight to effect the desired amount of outward rotation, preferably when the child is recumbent.

Chicago Medical Recorder.

November 15.

74 Running Ear and the Immediate Cure of Mastoid Suppuration. B. Holmes, Chicago.
75 Neurotic Vesical Retention of the Urine. E. N. Layton, Chicago.
76 *Lymphosarcoma of the Pharynx, Limiting the Motions of the Jaws and Axis by Invading the Prevertebral and Pterygomandibular Spaces. O. T. Freer, Chicago.
77 Neuritic Type of Progressive Muscular Atrophy. A. Church, Chicago.
78 Roentgen diagnosis of Nephrolithiasis. M. Reichmann, Chicago.
79 Management of the Second and Third Week of the Puerperium. H. Worthington, Oak Park, Ill
80 Management of the Third Stage of Labor. M. Whise, Chicago.
81 *Irrigation and Drainage of the Seminal Duct and Vesicle Through the Vas Deferens. W. T. Belfield, Chicago.

76. **Lymphosarcoma of Pharynx.**—Freer reports the case of a boy, aged about 14, with defective hearing, who began to snore in his sleep and to have gradually increasing difficulty in breathing through his nose, so that in the course of some weeks he had to keep his mouth open at all times to breathe. In spite of the suspiciously rapid development of this mass, its gross appearance so closely resembled that of a hypertrophied pharyngeal tonsil that it was deemed such and thoroughly removed with the pernasal forceps through the nose, perfect nasal respiration being established. Nasal breathing had remained perfect until two months after the operation, when the snoring and nasal obstruction reappeared, but never became so marked as before. The removal of the growth was followed by a discharge from the left ear, which has existed ever since. There was no improvement in the deafness at any time. Since the operation he has had occasional nosebleed, occurring about once in two weeks, the blood in some of these attacks flowing down behind the palate. He declined rapidly in strength and weight and had headache with vomiting in the morning at times. He began to notice difficulty in opening his jaws and in swallowing, symptoms which had persisted with increasing intensity ever since.

The tumor has a diffuse growth and infiltrates, the deeper parts out of proportion to its very moderate encroachment on the cavity of the pharynx. This infiltrative character of the tumor did not show itself until its return after its removal a year ago, as the first appearance of the neoplasm, deceptively resembled a large adenoid growth, had an entirely superficial character and occupied the site of the pharyngeal tonsil. On its recurrence the morbid growth not only reproduced in part the tumor in the nasopharynx, but directed its growth into the posterior pharyngeal wall, in this respect also occupying a region favored by outlying portions of adenoid vegetations. The character of the tumor had changed and instead of confining itself to the mucosa as does a lymphoid hypertrophy, it entered beneath it deeply into the submucous and muscular tissues behind and at the sides of the pharynx. The depth to which it infiltrates this region is shown by the patient's inability to rotate his head freely, to open his jaws more than half way, and by the fulness in the hollow behind the ramus of the jaw.

81.—This article also appeared in *Surgery, Gynecology and Obstetrics* for November, 1906.

Virginia Medical Semi-Monthly, Richmond.

November 9.

82 Appendicostomy. S. McGuire, Richmond.
83 Hydrorrhea Gravidarum. D. L. Field, Jeffersonville, Ind.
84 Artificial Dilatation of the Cervix and Os Uteri—Indications and Methods. G. T. Harrison, York, N. Y.
85 Necrosis of Inferior Maxilla Complicating Typhoid Fever. W. P. C. Hazen, Washington, D. C.
86 Passive Hyperemia in the Treatment of Tubercular Synovitis of Knee, and in Infected Contusions and Lacerations of Palm, with Fracture of the Third Metacarpal Bone. H. C. Wyman, Detroit, Mich.
87 Cure of Cystocele. C. R. Robins, Richmond.
88 Lymphatic System in Its Relation to Disease. W. L. Peple, Richmond.
89 Ambulatory Treatment of Intracapsular Fracture of Neck of Femur. S. Harnsberger, Catlett, Va.
90 Case of Serpiginous Ulcer. W. H. Ribble, Jr., Wythville, Va.
91 Operative Treatment of Deviated Septa. R. H. Wright, Richmond.

The Medical Fortnightly, St. Louis.

November 10.

92 Interesting Problems in Ear, Nose and Throat Practice. R. Barclay, St. Louis.
93 *Metabolic Aspects of Over-Feeding and of Under-Feeding. R. W. Webster, Chicago.

94 *Surgical Principles and Theories. F. F. Lawrenee, Columbus, Ohio.
95 *Clinical Psyehology. F. P. Norbury, Jacksonville, Fla.

93.—See THE JOURNAL, Nov. 24, 1906, page 1761.

94, 95.—See THE JOURNAL, Dec. 8, 1906, page 1944.

American Journal of Obstetrics, New York.
November.

96 *Diagnosis and Surgical Treatment of Injuries to the Diaphragm. J. Y. Brown, St. Louis, Mo.
97 *Kidney and Colon Suspension by Use of the Nephrocolic Ligament and Gerota's Nephroeolopexy Capsule. H. W. Longyear, Detroit.
98 *Technic of Kidney Fixation. J. H. Carstens, Detroit, Mich.
99 *Porro-Cesarean Section for Pregnancy, with Complicated Fibroids. J. F. Baldwin, Columbus, Ohio.
100 *Uterine Fibroids Complicating Pregnancy. M. Rosenwasser, Cleveland.
101 *Abdominal Section for Trauma of the Uterus. C. E. Congdon, Buffalo.
102 *The Rectum in Its Relation to Diseases of Women. H. O. Pantzer, Indianapolis.
103 *Trend of the Times in Appendicectomy. N. S. Seott, Cleveland.
104 *Points Commonly Contested in the Diagnosis and Treatment of Appendicitis. J. Price, Philadelphia.
105 *Chronic Dyspepsias Resulting from Pelvic and Abdominal Diseases, and Their Surgical Treatment. H. E. Hayd, Buffalo, N. Y.
106 *Intestinal Obstruction Due to Gallstones. M. F. Porter, Ft. Wayne, Ind.
107 *Points in the Diagnosis and Treatment of Accidental Hemorrhage. A. H. Wright, Toronto.
108 *Abuse of Purgatives. E. Walker, Evansville, Ind.
109 *A Consideration of the Factors Which Have Lowered the Operative Mortality and Have Improved the Postoperative Results. X. O. Werder, Pittsburg.

96, 102, 103, 104, 105.—See THE JOURNAL, Oet. 20, 1906, page 1324.

97, 98.—See THE JOURNAL, Sept. 29, 1906, page 1044.

99, 100, 101.—See THE JOURNAL, Oet. 6, 1906, page 1127.

106, 107, 108, 109.—See THE JOURNAL, Oet. 13, 1906, page 1219.

The Alienist and Neurologist, St. Louis, Mo.
November.

110 Coitus Interruptus and Coitus Reservatus as Causes of Profound Neuroses and Psychoses. D. S. Booth, St. Louis.
111 Non-Reason Founded Phobias of Neurasthenia. C. H. Hughes.
112 Erotic Symbolism. (To be continued). H. Ellis, Carbis Water, Lelant, Cornwall, England.
113 Illinois Legal Procedure in Marriage Annulment for Prior Insanity. J. G. Kiernan, Chicago.
114 Is Specialism a Psychic Advance or a Retrogression? H. C. B. Alexander, Chicago.
115 Psyehiatry and Neuriatry in the Medical Press. C. H. Hughes, St. Louis.
116 Mixoscopic Adolescent Survivals in Art, Literature and Pseudo-Ethies. (To be eontinued). J. G. Kiernan, Chicago.
117 Psychologic Studies of Man's Moral Evolution. (To be continued). A. S. Ashmead, New York.

Detroit Medical Journal.
November.

118 *Future of the Medical Profession. C. W. Eliot, Cambridge, Mass.
119 *Unity of Medical Sciences. W. H. Welch, Baltimore.

118, 119.—See THE JOURNAL, Oct. 6, 1906, page 1115.

New York State Journal of Medicine.
November.

120 Clinical Considerations of Acute Glandular Affections. M. W. Ware, New York.
121 Are Preservatives in Food Injurious to Health? E. E. Smith, New York.
122 Observations Regarding Variola and Vaccinia. J. D. Mars, Florida, N. Y.
123 Biologists in Public Schools, an Aid to Morals and Prosperity. H. C. Putnam, Providence, R. I.
124 History of the Medical Society of the State of New York. J. J. Walsh, New York.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificlal foods are omitted unless of exceptional general interest.

British Medical Journal.
November 24.

1 The Past of Dermatology in Edinburgh. N. Walker.
2 *Action of Salicylates in Acute Rheumatism. R. Stockman.
3 Recognition of Myelopathic Albumose in the Urine. T. R. Bradshaw.
4 *Rheumatic Fever and Amyloid Degeneration. J. M. Beattie.
5 *Myomectomy During Pregnancy and Labor at Term in an Elderly Primipara. A. Doran.
6 Congenital Laryngeal Stridor. D. R. Paterson.
7 *Unusual Case of Papilloma of the Larynx in a Child Treated by the Local Application of Formalin. A. Bronner.
8 Treatment of Uremia. E. Le Fevre.
9 Opsonins and Bacterial Vaccines. G. W. Ross.
10 *Action of Drugs in Vascular Hypertension. T. L. Coley.
11 Working Bulletin System for the Collective Investigation and Classification of the Newer Materia Medica. F. E. Stewart.
12 Drug Fallacies. W. E. Dixon.
13 Action of Drugs on the Uterus. A. R. Cushny.
14 *Alcohol as a Therapeutic Agent. A. D. Blackader.
15 *Id. S. J. Meltzer.
16 *Teaching of Materia Medica and Pharmacology. J. T. Halsey, T. McCrae and C. R. Marshall.
17 *Id. J. B. Bradbury.
18 Subperiosteal Abscess of the Forehead. V. Delsaux.
19 Laryngeal Disturbances Produced by Voice Use. M. Hunt.
20 Inflammatory Nasal Obstruction as an Etiologic Factor in the Production of Sputum. W. P. Porcher.
21 Thyrotomy and Laryngectomy for Malignant Disease of the Larynx. C. Jackson.
22 Congenital Stridor (Laryngeal and Tracheal). A. L. Turner.

2. Salicylates in Acute Rheumatism.—Stockman says that there can be no reasonable doubt that compounds of salicylic acid, or substances from which it can be formed in the body, have a specific action against the poison of acute rheumatism. It is evident that salicylates in acute rheumatism frequently exert an action too feeble to cut short that disease satisfactorily and this is most apparent when the inflammation is seated in the fibrous tissues connected with the muscles and joints, or in the valves of the heart.

4. Rheumatic Fever and Amyloid Degeneration.—Beattie reports four cases in which a necropsy was performed in support of the statement that acute rheumatism is a bacterial disease.

5. Myomectomy During Pregnancy.—In the case reported by Doran two subserous pedunculated growths springing from the posterior aspect of the inferior uterine segment, close to the left border of the uterus, were removed through an abdominal incision. The patient was 35 years of age, and carried the child to term. The child was saved and reared.

7. Unusual Case of Papilloma of Larynx.—Bronner's case is interesting and instructive from several points of view: 1. The sudden growth of the papilloma, probably after an acute attack of laryngitis. 2. The initial growth was large, pedunculated, not multiple, and situated below the vocal cords, and not on the cords, as in most cases. 3. The papillomata on the cords only appeared after the use of forceps. Was this due to traumatism and infection? 4. After the local application of formalin there was no recurrence.

10. Action of Drugs in Vascular Hypertension.—Coley concludes that the action of a drug on the normal circulation is not paralleled in cases of circulatory disease. Further, that the routine use of iodids of potassium or sodium will produce no effect in cases of marked hypertension. Arsenic may be of value in certain cases of arteriosclerosis of plethoric type, but more of its general than for its depressant action on the blood pressure. Among drugs, those increasing elimination are most logically employed. In many cases of hypertension the increased pressure is physiologic and should not be interfered with. The use of aconite or veratrum viride is scarcely justifiable for the purpose of reducing pressure, and if employed the cardiac strength must first be ascertained by a careful study of the systolic and diastolic pressure.

14. Alcohol as a Therapeutic Agent.—Blackader says that from the standpoint of a physician it appears that alcohol may be employed as food, replacing the carbohydrates and conserving proteid metabolism, in fever and in some other conditions associated with exhaustion of the nerve centers or an inability to digest or appropriate other nutriment. It places no task on the digestive organs, on the contrary, if used carefully it increases their secretion, thus favoring the digestion and absorption of other foods. In such conditions it may also have a favorable action on the hepatic cells, stimulating them to increased activity. Alcohol is not an efficient cardiac or respiratory stimulant to be used for long periods. In some conditions associated with a determination of blood to the interior of the body alcohol may be of considerable service by dilating superficial vessels and equalizing the circulation. In infections of all forms, alcohol should be used cautiously. Its action is dependent to a great extent on the condition of the gastric mucous membrane and portal circulation. Its employment demands much discrimination and careful and frequent observation.

15. Id.—Meltzer is of the opinion that the facts as they are known to-day are favorable to a judicious use of alcohol in disease. The vast experience of medical men proves that it does no harm to patients. The great majority of the clinicians who employ it in disease are convinced that it is beneficial to the patient. There are reliable experiments on record showing that alcohol supports the development of immunity in experimental infections. Recent experiments show that alcohol is capable of moderately stimulating the heart, and also of increasing blood pressure moderately. The main value of the influence of alcohol in disease with regard to the circulation is its activity in the direction of correcting the dangerous distribution of blood. Alcohol does not depress the vitality, but stimulates the inhibitory mechanism of the neuromuscular system, and thus assists the diseased body in obtaining the necessary mental and bodily rest. Alcohol assists in covering the expenditure of energy of the diseased body, and protects its tissues from breaking down. In health alcohol may be a poison, but in disease it is a beneficent drug. May we get rid of its misuse in health, and may we get rid of the opposition to it in disease.

16. **Teaching of Materia Medica and Pharmacology.**—Halsey suggests that materia medica and pharmacology should be studied after the student has completed his courses in chemistry and physiology. Careful selection as regards quantity to be taught and insistence on exact and complete study of this limited amount will give the best results. Didactic lectures, quizzes, demonstrations and laboratory exercises should all be used as methods of teaching. The value of practical work in dispensing and in study of drug actions is very great. The teacher of materia medica and pharmacology should constantly keep before himself and his students the practical bearing of these subjects on his field of future activity. Students and their future patients will never obtain the best results of the study of these subjects until the clinical teachers fulfill their obligation to show the student how to apply and make full use of his knowledge of drugs, their properties and their actions.

17. Id.—Bradbury says that the student's knowledge of therapeutics should not be tested until the end of his medical curriculum, when a separate examination should be given on prescriptions, dietetics, and the action of remedies in special diseases.

The Lancet, London.
November 24.

23 Evolution of the Streptococci. F. W. Andrewes.
24 History of the Study of Clinical Medicine in the British Islands. N. Moore.
25 Reciprocal Relations Between Affections of the Uterus and Its Appendages and the Rest of the Body. T. Wilson.
26 *Description of a Heart Showing Gummatous Infiltration of the Auriculoventricular Bundle. A. Keith and C. Miller.
27 Thirty-three Consecutive Hysterectomies. W. H. Richards.
28 Case of Myelopathic or Splenomegalic Polycythemia. F. P. Weber.
29 Two Cases of Perforated Gastric Ulcer Successfully Operated on. D. Macartney.

26. **Heart Showing Gummatous Infiltration.**—The heart of the man, whose case is reported by Keith and Miller, was reduced to the following condition: The superior vena cava was completely destroyed; the coronary sinus was involved in a cicatrix; the sinus of the left auricle formed a cicatricial ring; the interauricular and part of the interventricular septum formed a cicatricial lamina; the commencement and upper half of the main auriculoventricular bundle were completely destroyed, and the coronary arteries were partially occluded. Yet with the complete separation of the musculature of the auricles and ventricles there had been only passing syncopal attacks some thirteen years before, which was probably the date at which the auriculoventricular bundle was first invaded by the infiltration. There were no signs of heart failure, and there were no urgent symptoms of insufficiency of the heart's action.

Glasgow Medical Journal.
November.

30 A Plea for the Study of the Deaf Child and for the Teaching of Speech to the Semi-Deaf and Semi-Mute. J. K. Love.
31 Diffuse Hyperplastic Laryngitis and Pharyngitis of Congenital Syphilis. A. B. Kelly.
32 *Arteriovenous Aneurism of the Neck Caused by Gunshot Wounds. A. Young.

32. **Arteriovenous Aneurism of Neck.**—Young reports a case of aneurismal varix of the innominate artery and one of arteriovenous aneurism at the root of the right carotid which exemplifies the fact that the non-adoption of active surgical intervention in such lesions may be advised with all confidence, and with every hope of the patient attaining, by means of natural or spontaneous cure alone, to a very real and substantial degree of comfort and usefulness.

Dublin Journal of Medical Science.
November.

33 Bacterial Diseases in Plants. F. O'B. Ellison.
34 *Use and Abuse of Alcohol. R. J. Kinkead.

34. **Use and Abuse of Alcohol.**—Kinkead says that alcohol prevents that perfect coördination of mental and bodily functions of energy and activity, which we sum in the term "being fit."

Indian Medical Gazette, Calcutta.
November.

35 Surgery of the Lung, with an Illustrative Case. L. G. Fink.
36 Is Calcutta Seven-day Fever a Form of Dengue? J. W. D. Megaw.
37 Operation of Optico-Ciliary Neurectomy. R. H. Elliot.
38 Epidemiology of Plague. J. A. Thompson.

Presse Médicale, Paris.

39 (XIV, No. 88.) *La nature du cancer et de la cachexic cancéreuse. Debove.
40 Technique de l'amputation du sein (of breast). J. L. Faure.
41 *La névrose d'angoisse (anguish neurosis). P. Hartenberg.
42 (No. 89.) Recherches expérimentelles sur les poisons cancéreux. Girard-Mangin and H. Roger.
43 (No. 90.) Technique de la cure opératoire de l'ectopie testiculaire. E. Forgue.
44 Effects of Large Projectiles from Battle Ships.—Souvenirs de la bataille de Tsoushima. J. J. Matignon.
45 Les hémorrhagies de l'appendice vermiforme. M. Letulle.
46 (No. 91.) *La colique vésiculaire (from gall bladder). A. Gilbert.
47 Résection totale des saphènes variqueuses. M. Guibé.

39. **Nature of Cancer.**—Debove believes that the organism manufactures its own parasite. The organism is composed of cells which have at the same time an independent and a collective existence as part of the whole. If some of the cells refuse to obey the laws of the collective existence, developing without further regard to the organism as a whole, they become actual parasites, and, unless they can be overcome by the phagocytes—which are the police of the organism—or are removed by the knife of the surgeon, they are liable to proliferate indefinitely, and cancer is the result. Migrating cells from the central colony are liable to start daughter colonies at almost any point; these are the metastases of the malignant growth. The resulting general disturbance, which we call cancer cachexia, is merely the result of interference with the proper functioning of certain organs or the obstruction of certain passages or opening the door to superposed infection. Cancer is thus anarchy on the part of some of the cells.

41. **Anguish Neurosis.**—The anguish does not differ from that of any morbid dread except by its intensity and its tenacity. There is generally a chronic state of anxiety with attacks of acute paroxysmal anguish and phobias. It is essentially an over-irritability from over-excitement of the emotional system. Neurasthenia is the malady of fatigue, while an anguish neurosis is morbid distress. They are frequently combined, but in the pure form of the anguish neurosis the patient does not experience depression nor fatigue, nor backache nor dilatation of the stomach. Of all the various remedies tried for this condition, Hartenberg has found potassium bromid most effectual in doses of from 2 to 4 gm. a day, taken in the middle of a meal. This with hydrotherapy and avoidance of stimulating foods and drinks generally cured the patients in from two to four weeks. When associated with neurasthenia, the main point in treatment is to cure the exhaustion of fatigue.

46. **Gall-Bladder Colic.**—Gilbert applies the term vesicular colic to the pain attendant on efforts of gallstones in the gall bladder to pass into the biliary passages. The ordinary methods of treatment with cholagogues, mineral waters, etc., are seldom beneficial, but he has obtained uniformly good results with absolute rest in bed, exclusive skimmed milk diet, taken in small, frequent amounts, administration of seda-

tives, permanent application of moist heat to the region of the gall bladder, and strict avoidance of purgatives and cholagogues, completing the treatment with enemas or suppositories if need be. This technic prevents the alternations of emptiness and fulness characteristic of the normal functioning of the gall bladder. A continuous gentle flow of bile, with the gall bladder kept perfectly quiet, affords the best conditions for rapid subsidence of the symptoms.

Revue de Chirurgie, Paris.

Last indexed, page 2042.

48 (XXVI, No. 10.) *De l'appendicite chez le nourrisson (in nurslings). E. Kirmisson and M. Guimbellot.
49 *Cas de tumeurs multiples des os sans albumosurie (multiple myelomata in bones). Devic and L. Beriel.
50 Variété rare de hernie inguinale interstitielle. E. Galzin.
51 *Etude du cancer du rectum. Son Traitement. M. Du Pan. (Commenced in No. 8.)
52 L'inflammation des diverticules intestinaux ou diverticulite. L. Cahier. (Commenced in No. 9.)

48. **Appendicitis in Infants.**—Kirmisson reports a case of acute appendicitis in an infant of 11 months. About sixty hours after the first symptoms the appendix was removed, but the child did not survive the day. Kirmisson has found 25 similar cases on record, 9 in infants under 12 months and 17 in the second year. Out of the total number, 19 of the children died and 7 recovered; all of the latter were over 18 months of age. Appendicectomy was done in 19 cases, with recovery in 7, and the deaths of 5 of the 12 children over a year old. The evolution of appendicitis in infants is exceptionally rapid and the prognosis grave. The only children who recovered were those operated on at once. In one ease a pin was found in the appendix, in another soft matters, and in 7 there were fecal or chalky concrements in the appendix. In the 12 cases in which the particulars are known, all were bottle babies except 3. Meat had never been given in any instance, which is an argument against meat as a factor in the etiology of appendicitis. Differentiation from ordinary gastroenteritis is difficult. Invagination was diagnosed in 4 or 5 of the cases and strangulated hernia in another. The child commences to scream, has one or two bilious vomitings, with fever, the abdomen tense and painful, and the pulse rapid, but the most striking symptom is the complete stoppage of stools and flatus. If it were not for the fever, invagination would be the first thought. The diagnosis was made only at the autopsy in the children under a year old, and it is possible that many children pass through an unrecognized appendicitis which proves mild and from which they recover. As the child screams constantly, it is difficult to determine any one point more painful than another. The onset may be gradual or sudden.

49. **Multiple Primary Tumors of the Bones.**—The patient in Devic's case was a man of 68. Tumors developed on the sternum, ilium and spine, and he succumbed in about a year. The urine was examined frequently for albumose with negative results. These primary multiple tumors seem to form a group of neoformations of bone-marrow nature, whatever the aspect of the cells constituting them. If the term myeloma is applied, it should be used to designate all these typical and atypical tumors, distinguishing them from secondary tumors —which may likewise be multiple—and from alterations of the lymphadenic type associated with lesions of the spleen and ganglia.

51. **Cancer of Rectum.**—Du Pan gives the particulars of 35 cases in which an operation was performed before 1890 and 48 since then, 17 treated by making an artificial anus and 15 absolutely inoperable cases. The communication issues from Kocher's clinic at Berne. In the first group of 35 patients, 7 survived from 10 to 23 years after the operation, and 5 for more than five years. In the last group of 48 cases, 20 of the patients have been permanently cured to date, and 18 have succumbed to metastases, while in 10 male patients succumbed during or soon after the operation. In the total material of 123 cases of cancer of the rectum, only 33 of the patients were women. Heredity could be incriminated in 8.75 per cent. and direct heredity in 3.75 per cent. Hemorrhoids had preceded the cancer in only 10 per cent. of the cases, and habitual constipation was known in only 2 patients. Most of the patients had ascribed to hemorrhoids the small hemorrhages observed at times. This was the case even with a physician who failed to connect them with cancer until his attention was attracted to his progressive emaciation and weakness. He did not apply for digital examination until the tumor had reached a considerable size and had invaded the perirectal glands. Irregularly shaped stools and alternation of diarrhea and constipation are important signs. High cancers do not induee pain nor tenesmus like those nearer the anus. In one case the ileus and pains, the only symptoms, were ascribed to appendicitis, and the appendix was removed, although it was found normal. The persisting symptoms were then treated with massage, when mild peritonitis developed, which subsided under cold applications. The patient continued to grow thinner and weaker, and finally another physician was consulted five months later, when digital examination revealed the rectal cancer. In another case a cancer of the breast accompanied the cancer in the rectum, both with primary characteristics. In 19 out of the last series of 48 cases, the patients had been treated for diarrhea, constipation or hemorrhoids for from two to six months before the rectum was examined. It is certain, Du Pan comments, that if physicians would make a point of digital examination of the rectum in all cases of chronic intestinal troubles or anal hemorrhages the chances for a permanent cure of cancer would be much increased. If the cancer is very high it may sometimes be brought into view if the patient stands and strains as at stool. The indications and technie for operative treatment are discussed in detail.

Deutsches Archiv f. klinische Medizin, Leipsic.

Last indexed, page 2044.

53 (LXXXVIII, Nos. 1-3.) *Klinische Beobachtungen über den Wert der Bestimmung der wahren Puls-Grösse (Puls-Druck-Messung) bei Herz und Nieren-Krankheiten (blood pressure in heart and kidney disease). B. Fellner, jun.
54 Einfluss von Blutdruckschwankungen auf die Konzentration des arteriellen und venösen Blutes (influence of variations in blood pressure on concentration of blood). W. Erb, jun.
55 Size and Position of Normal Heart and Its Dependence on Physiologic Conditions.—Ueber Grösse und Lage des normalen Herzens. H. Dietlen.
56 Changes in Conductibility of Urine in Presence of Albumin.—Veränderung der Leitfähigkeit des Harnes bei Anwesenheit von Eiweiss. A. Wassmuth.
57 *Beiträge zur funktionellen Nieren-Diagnostik (of kidneys). H. F. Grünwald.
58 Ueber den Herpes sexualis. Bettmann.
59 Secretion of Gastric Juice and Motor Processes in the Fundus and Pylorus Parts of the Stomach.—Saftabsonderung und Bewegungsvorgänge im Fundus- und Pylorusteil des Magens. K. Sick.
60 *Ueber Harnsäurcausscheidung bei Gicht und Alkoholismus (uric-acid elimination). L. Pollak.
61 *Threshold Value Percussion of the Heart on the Cadaver.—Die Schwellenwertsperkussion des Herzens an der Leiche. A. Simons.
62 *Znr Frage der perkutorischen Darstellung des gesamten Vorderfläche des Herzens (percussion of total anterior aspect of heart). F. Moritz.
63 *Die Perkussion der wahren Herzgrenzen (true limits of heart outline). H. Dietlen.
64 Determination of Acidity of Urine by Amount of Primary Phosphates.—Verhältnis der Acidimetrie des Harnes nach Moritz zu dem Verfahren von Freund-Lieblein. W. Völker.
65 Beziehungen von Proteus- und Typhus-Agglutininen zueinander (relations between agglutinins). S. Abeles (Prague).

53. **Diagnostic Importance of Separating the Systolic from the Pulse Pressure.**—Fellner comments on the importance of what he calls enlarged sphygmomanometry in the diagnosis of heart and kidney diseases. By distinguishing between the tension (the systolic pressure) and the size (pulse pressure), many contradictions between the measurement of the blood pressure and clinical observation are explained away, and many changes in the condition of the circulation are elucidated. It reveals characteristic changes in the functioning of the heart and kidneys, suggests their cause and records the progress of the case under the influence of treatment. He has been studying the subject on 150 patients, making over 600 measurements, and here relates a few examples out of each group of affections. The measurements were made with the Riva-Rocci instrument, using a cuff 6 cm. wide, and following the Strasburger technic.

57. **Functional Kidney Tests.**—Grünwald has been studying the response of the kidneys to ingestion of water, to saline infusion and to diuretics, especially in regard to the difference

of the response in parenchymatous and in interstitial nephritis. The kidney with a parenchymatous affection reacts much more readily to stimuli than the contracted kidney. In parenchymatous nephritis a tendency to respond like the sound kidney is unmistakably evident, while the contracted kidney shows no attempt to increase the amounts of urine or to vary the specific gravity under the tests. It is evident that a parenchymatous affection is more liable to be favorably affected by treatment than a contracted kidney.

60. **Elimination of Uric Acid in Gout and Alcoholism.**—Pollak's experiments showed that alcoholic subjects eliminate uric acid after ingestion of 20 gm. of nucleic acid with the same tendency to retention and delay in elimination hitherto considered pathognomonic of gout. A healthy person eliminated the first day 0.558 gm.; a patient with gastric ulcer, 0.425 gm.; a gouty patient, only 0.198, and 3 hard drinkers from 0.055 to 0.387 gm.

61 to 63. **Percussion of the Outline of the Heart.**—Simons' communication issues from Berlin, but the other two are from Moritz' medical clinic at Giessen, the birthplace of "orthodiagraphy." They are illustrated with numerous diagrams. Dietlen analyzes the findings in examining 231 patients by orthodiagraphy, by ordinary loud percussion, and by Goldscheider's threshold percussion. The latter is percussion just at the audible limit, and requires absolute stillness in the environment to be reliable.

Deutsche medizinische Wochenschrift, Berlin and Leipsic.

66 (XXXII, No. 44.) *Presence of Syphilitic Antibodies in the Cerebrospinal Fluid of Paralytics.—Vorhandensein syph. Antistoffe in der Cerebrospin.-Flüssigkeit von Paralytikern. A. Wassermann and F. Plaut (Berlin).
67 Ueber atypische Aktinomykose. M. Litten and F. Levy.
68 *Zur Differential-Diagnostik zwischen Nierenerkrankungen und Perityphlitis (between kidney affections and appendicitis). A. Schlesinger.
69 Elektromedikamentöse Therapie. G. Heüman (Göteborg).
70 *Ueber Tuberculose der Mamma. Geissler.
71 Ueber willkürliche Erweiterung der Pupillen (voluntary dilatation). E. Bloch.
72 *Abdominal Contusions.—Zur Diagnostik der schweren Bauchquetschungen; ihre Indikation zur Laparotomie. K. Schmidt.
73 Healing of Wound After Pubiotomy.—Heilung der Wunden nach Giglischem Schambeinschnitt. A. Scheib. (Concluded.)
74 *Apparatus for Corporal Measurements.—Ueber Körpermessungen. Stephani.

66. **Syphilitic Antibodies in Cerebrospinal Fluid of Paralytics.**—Wassermann and Plaut have been applying the hemolytic biologic test in 41 cases of paralysis, and report that with 32 out of the 41 patients mixture of the cerebrospinal fluid with an extract of the livers and spleens of syphilitic fetuses resulted in an unmistakable arrest of hemolysis. The extract alone and the fluid alone had no effect on the hemolysis, but the combination checked it. The same lumbar fluid mixed with extract from the livers and spleens of non-syphilitic fetuses did not affect the hemolysis, as was also observed with the cerebrospinal fluid from 19 patients free from syphilitic taint. These results demonstrate the presence of specific antisubstances in the lumbar fluid of the majority of paralytics, and testify that these individuals have or have had syphilis. The specific antigen was seldom encountered in their cerebrospinal fluid, merely the reactionary product, the antibody. (See editorial on this test in THE JOURNAL, Nov. 22, 1906, page 1832.)

68. **Differentiation of Kidney and Appendix Affections.**—Schlesinger reports a number of cases from Israel's surgical service in which differentiation between nephritis and appendicitis was extremely difficult. He has frequently had occasion to observe the appearance of red corpuscles, fresh or emptied of their contents, in the urine in cases of appendicitis, although Tuffier claims that this a sign exclusively of nephritis. In certain cases of nephritis, intestinal phenomena mask the trouble in the kidneys. In one instance recurring attacks of what was diagnosed as appendicitis occurred several times during eight years. The attack began with pains in the penis and right buttock, pain in urinating and tenesmus. As soon as the pain grew more intense there was retention of urine and stool, intense abdominal pain spreading to the right lumbar region and hip, with vomiting. After urination the pains subsided. During the last attack the pains spread to the right costal arch and afterward there were "stitches" in the right leg. The attacks lasted for from four to ten hours. Of the four physicians consulted some diagnosed appendicitis and others a nervous affection. Israel diagnosed a stone in the ureter, and this diagnosis was confirmed by the *x*-rays. Since removal of the stone the patient has been free from all disturbances. Israel was confident that the disturbances in urination could not be the result of appendicitis alone. Chronic appendicitis can cause some urinary disturbance, but not so severe as in the case described. He has never observed radiation of the pain to the buttock, hip and penis except with an extraperitoneal cause. The shadow on the screen might have been cast by a fecal concretion in the appendix, but its size and density rendered this improbable. Notwithstanding the long duration of the trouble the urine was normal. In other cases appendicitis was differentiated principally by the radiation of the pain into the leg, and the recovery after appendicectomy confirmed the diagnosis. In another case pains in the ileocecal region radiating into the testicles were accompanied by pain when urinating. There was moderate local tenderness and the urine contained no morphologic elements. The kidneys were not palpable nor tender. Israel was inclined to suspect a concrement in the kidney, but during his absence appendicectomy was done during a recurrence. The patient a few months later had an attack of unmistakable kidney colic with the passage of a stone. It is a question whether the appendix had been responsible for the previous attacks or whether they had been manifestations of the existing nephrolithiasis. The latter frequently simulates ileus or other gastrointestinal affection. Israel knows of an instance where an attack of kidney colic accompanied by obstipation and vomiting was treated at another clinic by making an artificial anus. The fact that the kidneys were the source of the trouble in the case last reported is indicated, he thinks, by the slight changes found in the appendix, by the irritation of the bladder, the radiation of the pains to the testicles and the assertion of the patient that the attack of kidney colic resembled in every respect the pain previously experienced.

70. **Tuberculosis of the Mamma.**—The three patients were each between 50 and 60 years old when they noted a lump in the breast. It was removed without further disturbance, and the microscope revealed tuberculosis. Geissler discusses the differential diagnosis, asserting that a nodule in the breast before puberty is always of syphilitic origin—that only 4 cases are on record of actinomycosis of the breast, and that the right breast is more frequently affected than the left in case of a tuberculous process.

72. **Abdominal Contusions.**—Schmidt analyzes 4 cases from his experience, urging the importance of immediate laparotomy when the abdominal walls are rigid and there is local tenderness after a contusion, and when these symptoms display a tendency to increase rather than to subside. There is more shock when the injury is from an object acting on a large expanse of the abdomen rather than from the kick of a horse or the like. Normal temperature and full pulse do not exclude serious internal injury, and there was no vomiting in one of the most severe cases. Cautious percussion may reveal dulness corresponding to an effusion of blood, bile, stomach or intestine content or urine, and its progress can be thus traced in some cases, but the rigidity of the abdominal walls frequently renders percussion impossible.

74. **Apparatus for Measuring the Body.**—The apparatus described consists of a chair with foot rest and straight back. The foot and arm rests are adjustable to fit the proportions of the person, and slide on a graduated standard. Small horizontal bars, also sliding on the standard, are adjusted to show the height of the shoulders and top of the head. The apparatus registers a host of details useful for identification and in school inspection.

Jahrbuch f. Kinderheilkunde, Berlin.

Last indexed, page 1860.

75 (LXIV, No 4.) *Ueber induzierte Krankheiten (Imitations-Krankheiten). J. Schoedel (Chemnitz).
76 Die Lymphdrüsen (lymph glands). N. Gundobin (St. Petersburg).
77 Zur Chemie des Blutes der Neonatorum (chemistry of blood). E. Schiff. (Concluded.)

78 Ueber endemische Kretinismus und dessen Zusammenhang mit anderen Formen von Entwicklungsstörung (relations with other forms of disturbance in development). T. Dieterle (Basle). (Concluded.)

75. **Imitation Affections.**—Schoedel describes a school epidemic of shaking of the hands and arms rendering writing impossible, affecting 21 out of 35 children in two rooms. He reviews the history of similar epidemics, accepting the influence of mere imitation as the cause. The first cases occurred after an account in the papers of a similar epidemic in a neighboring town, and the other cases followed among those children who could see over the shoulders of the affected children and watch their writing. Isolation has been generally employed in such epidemics, but the results were better when no attempt at isolation was made and the children were given treatment with the faradic stream with a current as strong as they could tolerate. This put an end to the epidemic in from eight to ten days. With isolation and the closing of the schools, sometimes from eight to ten weeks elapse before such an epidemic is finally stamped out. The children in his charge dreaded the electric treatment. He thinks that hysteria and simulation can both be excluded in these "imitation affections."

Monatsschrift f. Geb. und Gynäkologie, Berlin.

Last indexed, page 1602.

79 (XXIV, No. 4.) *Age of Fetus.—Wert der Merkmale zur Bestimmung der Reife des Neugeborenen. E. Holzbach.
80 Ueber eine besondere Beckenform und über Ovarial-Befunde bei Osteomalacie. L. Goth.
81 Ueber Nerven und ernährende Gefässe im Nabelstrang (nerves and vessels in umbilical cord). A. Goenner.
82 Ein klassicher Fall von Chorionepithelioma malignum. A. Czyzewicz and W. Nowicki.
83 Totaler Uterus-Prolaps im 16 Lebensjahre (at age of 16). H. Sutter.
84 Myoma uteri; Carcinoma uteri; Galvano-Cauterisatio uteri; Cystoma ovarii; Ovariocystitis ex pedunculo torquato. L. Gelpke.
85 *Erfolge und Misserfolge der Atmokausis uteri (successes and failures with steam cauterization). H. Fuchs (Dantsic).
86 *Operating on Diabetics.—Prognostische Bedeutung des Diabetes mellitus bei op. Eingriffen. K. Thorbecke.

79. **Signs of Age of Fetus.**—Holzbach reviews the various signs that determine whether a child is born before or at term. The length is an important sign; children more than 50 cm. tall being generally "ripe," but children less than 50 cm. in length are not necessarily "unripe." The same rule applies to the weight; over 3 kg. indicates that the infant has reached term. The condition of the cartilages, nails, lanugo and genitalia is not conclusive either way. In 18 out of 30 premature children the finger nails were found well developed and hard, requiring cutting in 7. The placenta weighed on an average 541 gm. in 97 children born at term, and only 449 gm. with 19 premature infants. Comparison should not be made with a normal child, but with parts of the fetus that develop with variable rapidity at different months of intrauterine existence according to the supply of blood. The liver grows exceptionally fast during the first six months, then the upper half of the body, especially the brain, owing to the abundant supply straight from the left ventricle. During the latter half of pregnancy the conditions of the blood supply alter in favor of the lower part of the body. The proportional size and weight of the different parts is an index, therefore, of the age of the fetus. The circumference of the shoulders compared with the horizontal circumference of the head is an important sign, as the circumference of the shoulders never surpassed that of the head in 30 out of 31 cases studied, and only equalled it in 2. Holzbach urges study of the subject on a large scale, owing to its medicolegal importance in suits to establish paternity.

85. **Steam Cauterization of the Uterus.**—Fuchs has applied this method of treatment in 150 cases and has never witnessed the slightest harm from it. The patients were cured in 88.2 per cent. of the cases, which is a larger proportion of cures than is credited to any other method of arresting preclimacteric hemorrhage, which is its special field. He has had opportunity to examine the uterus removed afterward in 5 cases on account of cancer, showing the fine results obtained with the steam cauterization. It is important to apply the steam from above downward and to leave untouched a zone extending 1 cm. above the internal os, as this can be readily reached by the curette. The menopause comes on gradually, without clinical symptoms, after the simple process of curetting followed by cauterization with steam at from 115 to 120 C. for from ten seconds to one minute. Hundreds of patients have been treated by this combination of curetting and steam, *Abrasio-Atmokausis*, and generally with the best results.

86. **Operations on Diabetics.**—Thorbecke's experience and analysis of 128 publications on the subject have demonstrated that the entire organism and the urine should be carefully examined, and the limits of tolerance estimated to determine the form and degree of the diabetes, and that the patient should be restricted to an antidiabetic diet until the proportion of sugar in the urine is reduced to the minimum. Careful psychic preparation of the patient and family (the latter being instructed as to the dubious prognosis) is important to reduce the moral shock of the operation. In case of a laparotomy, purgatives, irrigations and enemas should be restricted as much as possible, but nourishment should be amply and promptly provided; sodium bicarbonate should be given as a prophylactic, with saline infusion before and after the operation. The thermocautery should take the place of the knife wherever possible to obviate dangerous hemorrhage, and the briefest technic should be selected. The choice of the anesthetic should be determined by the complications on the part of other organs. More than 4 gm. of ammonia in the urine is a direct contraindication to general anesthesia. Only one case has been reported in which spinal anesthesia was used, and this was in a very severe case and coma followed. As the sugar affords a favorable culture medium for pathogenic germs, antisepsis and asepsis must be scrupulously observed.

Münchener medizinische Wochenschrift.

87 (LIII, No. 42.) *Production of Atypical Proliferation of Epithelium and Origin of Malignant Tumors.—Die experimentelle Erzeugung atypischer Epithelwucherungen und die Entstehung bösartiger Geschwülste. B. Fischer.
88 *Displacement of Larynx and Trachea in Various Thoracic Affections.—Verlagerung des Kehlkopfs und der Luftröhre bei verschiedenen Erkrankungen der Brustorgane. H. Wichern F. Loening.
89 *Das Aorten-Aneurysma auf syphilitischer Grundlage und seine Frühdiagnose. Saathoff.
90 Ueber Gas-phlegmone. R. Rothfuchs.
91 *Zur Technik der Haut-Transplantation nach Thiersch. O. Waljaschko.
92 *Behandlung frischer Wunden mit durch Wärme zum Austrocknen gebrachten Verbänden. E. Asbeck.
93 *Zur Frage der Hebotomie. L. Seitz.
94 Zur Kasuistik der congenitalen Hernien der Linea alba. Klaussner.
95 Darm-Okklusion durch Murphy's Knopf nach Pylorus-Resektion. H. Doerfler.

87. **Experimental Production of Proliferation of Epithelium.**—See editorial in THE JOURNAL, Nov. 10, 1906, page 1566.

88. **Displacement of Larynx and Trachea in Thoracic Affections.**—Wichern and Loening write from Curschmann's clinic to report a number of cases in which the displacement of larynx and trachea gave the clue for the diagnosis. The displacement may be due to pressure from a tumor or effusion or it may be the result of traction from shriveling processes. It may be the first sign to call attention to an aneurism of the aorta. It was pronounced in 4 cases observed in the clinic, as also in 4 of sarcoma in the mediastinum. In one of the latter cases the trachea seemed to be in the median line, but the *x*-rays showed slanting of the longitudinal axis, and palpation revealed that it was unusually close to the jugular vein on one side. The fossa between the trachea and the sternocleidomastoid muscle was also shallower on this side. In 3 cases the displacement was the result of considerable pleuritic effusion, and in 5 it was the result of pneumothorax. In differentiating a cavity in the lungs it is important to bear in mind that the displacement would be toward the cavity on account of contractions and shriveling, while the displacement with a pneumothorax would be toward the opposite side. In one case reported, the percussion and auscultation findings suggested partial pneumothorax on the right side, but the pronounced displacement of the trachea and larynx toward the same side indicated a large cavity. In another case the findings suggested relics of a pleuritic process, interstitial pneumonia and bronchiectasia in the lower, rear part of the left lung. The heart was displaced with the trachea toward the left, indicating considerable cicatricial shriveling.

89. **Early Diagnosis of Syphilitic Aneurism of the Aorta.**—Saathoff affirms that the aortic disturbance ought to be diagnosed in its incipiency and not be allowed to progress to the stage of actual aneurism formation. He is convinced that the essential process is located in the vasa vasorum. The primary lues of the vasa vasorum induces a proliferating vasculitis followed by formation of granulations and obliterating vasculitis. The wall of the vessel becomes partially transformed into sclerotic connective tissue, which yields to the pressure, and an aneurism results. The wall of the aorta shows a diffuse thickening and spreading, and the patients may complain of oppression in the chest, pains radiating into one or both arms, and sometimes enlargement of the vessel trunk can be detected by percussion. Roentgen examination is generally decisive. Aortic insufficiency in the comparatively young—so long as arteriosclerosis can be reasonably excluded—without preceding articular rheumatism or endocarditis, points strongly to syphilitic aortitis. Prompt treatment will ward off the otherwise inevitable aneurism. Participation of the aortic valves occurs only when the process is located in the ascending aorta, but this is usually the case. Aortic insufficiency was evident in 6 out of the last 7 cases of syphilitic aortitis in Saathoff's experience, and on this ground an incipient aneurism of the aorta was diagnosed and found in the 3 that came to autopsy. When there is a history of syphilis and the aortic valves are found to be insufficient and the Roentgen rays show enlargement of the aorta, mercurial treatment should be instituted without delay, and it has every chance to prove an effectual prophylaxis of aneurism.

91. **After-Treatment of Thiersch Flaps.**—Waljaschko applies the flaps without allowing them to lap. He then covers them with a single layer of thin gauze, projecting out over the sound skin, and fastened by a ring of collodion around the edge of the wound. This gauze is left undisturbed for ten or twelve days. The other dressings are applied over this layer of gauze and are changed as desired, without disturbing the single layer below, through which the flaps and the progress of the healing can be inspected. He has found this technic extremely satisfactory.

92. **Treatment of Fresh Wounds with Heated Dressings.**—Asbeck relates his remarkable success in treating fresh wounds, burns and the like by applying a compress of iodoform gauze, without previous disinfection of the wound unless much soiled. A few layers of mull are then covered with cotton and the whole fastened with a mull bandage. The dressed part is then exposed to great heat for from thirty to forty-five minutes. The wound is kept dry thereafter except when necessary to moisten the inner layer to remove it. When the dressings are renewed the part is again exposed to heat. He has treated in this way over 500 patients since he has settled at Harburg, his first experiences being with Chinese steerage passengers who were constantly burning each other with their bowls of boiling rice soup. The tropical sun or the fires under the boilers supplied the heat. His results have been equally excellent in his latest series. The technic renders disinfection of the wound unnecessary unless it is visibly soiled, and thus does away with the destructive action of disinfectants and the softening of the surrounding region and washing of germs into the wound. The secretions dry and provide a bacteria-proof cover for the wound which prevents entrance of germs from without, while the development of the germs already present in the wound is inhibited by the heat. Another advantage is the hyperemia thus artificially induced in the part. In 11 instances he treated a bullet wound in this way, without seeking for the bullet. There was no suppuration, and after the wound had healed he easily removed the bullet under the *x*-rays by an aseptic operation.

93. **Eleven Pubiotomies.**—Seitz discusses the experiences at von Winckel's clinic at Munich. They show that even when the birth passages are already infected pubiotomy can be successfully done, with a favorable outcome for both mother and child. The danger for the mother increases with the extent of the injuries, consequently in future he does not intend to do this operation in a primipara with already infected birth passages if there is danger of extensive injury either from excessive contraction of the pelvis, a very large child or unfavorable presentation. On the other hand, with multiparæ with wide genital passages and not too great misproportion between the size of the head and of the pelvis, he thinks that pubiotomy might be done even with existing infection of the birth passages. The sawing must be done by some technic that prevents the infected genital secretions from finding their way into the pubiotomy wound. The operator must avoid all contact with the genital secretions or control the course of the needle in the vagina with gloved hands, removing the glove afterward. The bone generally unites again with a pseudoarthrosis, but this seldom does harm. With aseptic genital passages in multiparæ, with a conjugata vera not less than 7 cm., the simple operation is most excellent in its results and will certainly restrict the field of Cesarean section, artificial premature delivery and perforation of a living child, although not abolishing them entirely. On the other hand, febrile disturbance of the puerperium is more frequent with it as also thrombosis; it is not always possible to avoid injury to the bladder and vagina, and the part is liable to be painful for a long time afterward when the patient takes long walks or does hard physical labor. Fatalities can not always be avoided, and on the whole he warns against recommending the operation for general adoption as yet.

Virchow's Archiv, Berlin.

Last indexed, page 2045.

96 (186, No. 1.) Rickets in Italy.—Statistische Beiträge zur Frage nach der Verbreitung und Etiologie der Rachitis. R. Pfister.
97 Fall von blind endigendem Ureter mit cystischer Vorwölbung in die Harnblase, kombiniert mit Cystenniere derselben Seite. R. Borrmann.
98 Origin of Blood Plates.—Entstehung der Blutplättchen. J. H. Wright (Boston).
99 Wax-like Transformation of Muscle Fibers.—Ueber die wachsartige Umwandlung der Muskelfasern. R. Thoma.
100 *Cystitis caseosa. R. Kimla (Prague).
101 *Tuberkulöses Granulations-Gewebe ohne Tuberkel (without tubercles). J. Orth.
102 Meteorismus und Reflexe. K. von Miram.

100 and 101. **Caseous Cystitis.**—Kimla remarks that since Virchow's description, in the sixties, of tuberculosis of the bladder, our knowledge of tuberculous changes in this organ has made but little progress. He thinks that a number of gaps need to be filled, and makes an attempt in this line by describing some cases of tuberculous cystitis distinguished by a purely inflammatory process terminating in total caseous degeneration of the entire region involved. It occurs in patches, discrete or diffuse, without formation of tubercles. The process is similar to that of caseous pneumonia. Orth takes exception to Kimla's statements, quoting from his own writings to show that he long ago described cases of diffuse granulation without formation of tubercles or development of giant or epithelioid cells, which reveals its tuberculous character finally by the caseous changes and destruction entailed.

Hospitalstidende, Copenhagen.

Last indexed XLVII, page 903.

103 (XLIX, Nos. 30 to 33.) *Om den Bier'ske Stase-hyperæmi-behandling og dens Anvendelse ved traumatiske Lidelser (artificially induced hyperemia in treatment of traumatic affections). C. Wessel.
104 *Yderlige Erfaringer med Hensyn til Behandlingen af Næsedeformiteter med Paraffin-injektioner. P. T. Hald.
105 Sandel-olie som Emulsion ved Gonorré. A. Brönnum.
106 4 Tilfælde af Friedreichs Tabes. V. Christiansen.
107 Om Neuroglia-farvning (stain). Wimmer.
108 (No. 34.) *Om Erytema nodosums Etiologi. A. Brönnum.

103. **Artificially Induced Hyperemia in Treatment of Traumatic Affections.**—Wessel is convinced that Bier's method of stasis hyperemia is destined to fill an important place in the treatment of accidental injuries. He relates his experience with it in 20 cases, expatiating on the guiding principle that the elastic band must never induce pain, but, in case of existing pain, relieve it. In treatment of effusions, either in joints or tissues, of acute or chronic synovitis in a joint or tendon, of sprains and the like, he has been very much pleased with the results. In many traumatic affections of the legs or arms, with intact skin, he knows of no means of treatment which approaches the Bier technic in simplicity and efficiency. His experience has further demonstrated that his confidence in this method of treating fractures was well grounded. It avoids the development of atrophic processes, saves the trouble of massage and averts ankylosis. It is also proving the best of

all treatments for somewhat stiff joints. Its action in arresting pain is supplemented by the way in which it hastens absorption, nourishment and regeneration. Wessel learned in 1892 that sprains and contusions on the leg or arm are traditionally treated among the Danish peasantry by tying a tight bandage above to arrest the pains. Headache is also treated by tying a tight band around the neck. According to the accessible literature, however, he believes that he is the first to apply the stasis hyperemia in the treatment of fractures, for which he believes it to be exceptionally adapted and beneficial. He also found it efficient in promoting the absorption of a traumatic and very painful keloid on the finger. Twelve applications of the constricting band in the course of fourteen days resulted in the complete disappearance of the keloid. He applies the constricting band for twenty-two hours every day or so at first, in case of fracture, during the second week on alternate days, and during the third week every third day. A number of his patients had gonorrheal arthritis, which he treated by applying the constricting band every day for from twenty to twenty-four hours, relieving the pain at once.

104. **Paraffin Injections for Deformities of the Nose.**—Hald has had extensive experience in this line and states that in the 12 cases on record in which blindness or impaired sight in one eye has followed injection of paraffin for cosmetic purposes, in 10 of the cases the melting point of the paraffin was 43.3 C. or under, while not a single instance of injury is known from the use of paraffin not melting under 50 C.

108. **Etiology of Erythema Nodosum.**—Brönnum had occasion to observe the occurrence of erythema nodosum in two brothers after diphtheria, also in two brothers in another family. The affection was primary and developed in each boy with only a day's interval. These facts and certain other features of erythema nodosum point to an infectious origin, he thinks.

Archivio per le Scienze Mediche, Turin.

Last indexed XLVI, page 997.

109 (XXIX, No. 6.) Destruction of Anthrax Bacilli in Guinea-pig Organism.—Sulla distruzione del bacilli del carbonchio nell'organismo della cavia. A. Donati.
110 Sulla produzione cellulare nelle encefaliti sperimentali. F. Vanzetti and U. Parodi.
111 Sui processi infiammatorii delle membrane sinoviali. P. Sisto.
112 *La rigenerazione delle fibre nervose. A. Perroncito.
113 Stab Wounds in Nasal Cavity.—Studio delle ferite penetranti nelle cavita nasali. S. Pusateri.
114 Is Specialism a Psychic Advance or a Retrogression? H. C. pensation). C. Gennari.
115 Studio dei carcinomi del pancreas. E. Grimani.
116 Fistula of Thoracic Duct in Relation to Morphology of Blood. —Della fistola del dutto toracico in rapporto alla morfologie del sangue. U. Parodi.
117 (XXX, No. 1.) *Dell'azione di alcuni sieri citotossici sugli organi ematopoetici (action of cytotoxic serums on blood-forming organs). P. Foa (Turin).
118 Contributo sperimentale alla genesi della cistite cistica. R. Giani.
119 Una epidemia di dissenteria nella provincia di Pavia. A. Negri and D. Pane.
120 Divisione verticale totale dell' "os zygomaticum" nel cranio umano. B. Nicola.
121 Foreign Bodies in Nose.—Ricerche sperimentali sul comportamento dei corpi estranei nelle cavita nasali. S. Pusateri.
122 Sulla produzione di agglutinine e di anticorpi comuni ad alcuni simil-carbonchiosi, all II, Vaccino e al carbonchio virulento (anthrax). A. Donati.

112. **Regeneration of Nerve Fibers.**—Perroncito's article is accompanied by three large colored plates, showing with remarkable distinctness the process of regeneration after a nerve has been severed. He has been studying the subject for years and, independently, reached conclusions identical with those of Ramon y Cajal and Marinesco, although he thinks that much less time is required for the initiation of the processes than the other writers assign to it. He describes it in detail as observed principally on the sciatic nerve of the dog.

114. **Failure in Cardiac Compensation.**—The 9 cases related by Gennari demonstrate that excellent compensation may be maintained for a time even with serious lesions, while in other cases waning compensation may occur with comparatively trifling lesions. Compensation may fail completely even with mere fatty degeneration of the fibers as the sole lesion in the myocardium, or even without any appreciable anatomic changes. He concludes from the facts observed that interstitial inflammation of the heart is merely a symptom of failing compensation. Research should be directed in this line, the abnormal contractions of the fibers possibly inducing hitherto ignored chemical phenomena.

117. **Action of Cytotoxic Serums on Blood-Forming Organs.**—Foa's article describes researches on rabbits and other animals to determine the influence of the cytotoxic serums on the blood marrow and on other blood-forming organs. He was impressed with the variations in the reactions presented by different species of animals. This should warn against hasty generalizing from the effects observed in one species. Among the most interesting results he records is the mononuclear activity displayed by certain hemolytic and leucotoxic serums, and the prevailing lymphocytic character assumed by the spleen, the lymphatic glands and the bone marrow under the action of splenotoxic serums. The article is accompanied by colored plates.

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

A Text-Book of Pharmacology and Some Allied Sciences (Therapeutics, Materia Medica, Pharmacy, Prescription-writing, Toxicology, etc.), together with outlines for Laboratory Work, etc. By T. Sollmann, M.D., Professor of Pharmacology and Materia Medica in the Medical Department of Western Reserve University, Cleveland, Ohio. Second edition, thoroughly revised and enlarged. Cloth. Pp. 1070. Price, $4.00 net. Philadelphia: W. B. Saunders Company, 1906.

A Text-Book on Pathogenic Bacteria, for Students of Medicine and Physicians. By J. McFarland, M.D., Professor of Pathology and Bacteriology in Medico-Chirurgical College, Philadelphia, with 190 illustrations, a number of them in colors. Fifth edition, thoroughly revised. Cloth. Pp. 647. Price, $3.50 net. Philadelphia: W. B. Saunders Company, 1906.

Immediate Care of the Injured. By A. S. Morrow, A.B., M.D. Attending Surgeon to the Workinghouse Hospital, and to the New York City Home for the Aged and Infirm. Fully illustrated. Cloth. Pp. 340. Price, $2.50 net. Philadelphia: W. B. Saunders Company, 1906.

Practical Materia Medica for Nurses, with an Appendix, Containing Poisons and Their Antidotes, with Poison-Emergencies, etc. By E. A. M. Stoney. Third Edition, thoroughly revised. Cloth. Pp. 300. Price, $1.50 net. Philadelphia: W. B. Saunders Company, 1906.

Atlas and Text-Book of Dentistry, Including Diseases of the Mouth. By G. Preiswerk, M.D., Ph.D. Authorized Translation from the German. Edited by G. W. Warren, A.M., D.D.S. Cloth. Pp. 343. Price, $3.50 net. Philadelphia: W. B. Saunders Company, 1906.

Atlas and Text-Book of Human Anatomy. By J. Sobotta, Professor of Anatomy in the University of Würzburg, edited with additions. By J. P. McMurrich. Vol. II. Cloth. Pp. 194. Price, $6.00 net. Philadelphia: W. B. Saunders Company, 1906.

Twenty-Fourth Annual Report of the State Board of Health of Indiana, for the Fiscal Year Ending October 31, 1905, and Statistical Year ending Dec. 31, 1905. To the Governor. Cloth. Pp. 402. Indianapolis: W. B. Burford, 1905.

Medical Electricity. A Practical Handbook for Students and Practitioners. By H. L. Jones, M.A., M.D., Fifth Edition with illustrations Cloth. Pp: 519. Price, $4.00 net. Philadelphia: P. Blakiston's Son & Company, 1906.

Animal Micrology, Practical Exercises in Microscopical Methods. By M. F. Guyer, Ph.D., Professor of Zoölogy in the University of Cincinnati. Cloth. Pp. 240. Price, $1.75. Chicago: University of Chicago Press, 1906.

Walsh's Physicians' Combined Call-Book and Tablet. Monthly Form. Thirtieth edition. Flexible Leather. Price, $1.50. Washington, D.C.: Published by Ralph Walsh, M.D., 1824 H St., N. W.

Abdominal Pain, Its Causes and Clinical Significance. By A. E. Maylard, M.B., B.S. Second Edition, revised. Cloth. Pp. 301. Price, $2.50 net. Philadelphia: P. Blakiston's Son & Company, 1906.

A Manual of Pathology. By G. McConnell, M.D., Pathologist to St. Louis Skin and Cancer Hospital, etc. Flexible Leather. Pp. 523. Price, $2.50. Philadelphia: W. B. Saunders Company, 1906.

A Manual of Normal Histology and Organography. By Charles Hill, Ph.D., M.D. Illustrated. Flexible Leather. Pp. 463. Price, $2.00 net. Philadelphia: W. B. Saunders Company, 1906.

Health Talks About Children, A Plea for the Child, by J. Grimshaw, M.D., B.S. Second Impression. Paper. Pp. 83. Price, 40c. Philadelphia: P. Blakiston's Son & Company, 1906.

Elements of the Science of Nutrition. By G. Lusk, Ph.D., M.A., F.R.S. Illustrated. Cloth. Pp. 326. Price, $2.50 net. Philadelphia: W. B. Saunders Company, 1906.

The Practitioner's Visiting List for 1907. Thirty Patients per Week. Flexible Leather. Pp. 192. Price, $1.25. Philadelphia: Lea Brothers & Co.

Baby-Craft, or Just What to Do for the Baby. By A. B. Stockham, M.D. Paper. Pp. 47. Price, 25c. Chicago: Stockham Publishing Co.

Parental Rights and Economic Wrongs. By Virginia M. Butterfield. Paper. Pp. 92. Price, 50c. Chicago: Stockham Publishing Co.

The Journal of the American Medical Association

Published under the Auspices of the Board of Trustees

VOL. XLVII. CHICAGO, ILLINOIS, DECEMBER 29, 1906. No. 26.

Original Articles

THE MANAGEMENT OF TUBERCULOSIS.

SANITY: CANDOR: HUMANITY.*

J. H. MUSSER, M.D.

PHILADELPHIA.

The best has been said by the best minds of the profession and by many of the best of the laity on this vast subject. It ill becomes one untrained in literary work, with little time for the study, to inflict on the profession further dissertation that can scarce be more than repetition. Your committee, however, thought perhaps it might not be unseemly for one at this timely period to say a few words born of an experience in hospital and home on this subject. They know, oft repeating can alone bring conviction, and have no doubt calculated accurately on the endurance of the profession. Opportunity will be taken, therefore, to consider in general the subject of the management of tuberculosis and to point out some present day dangers, if such suggestive word may be used; in present day tendencies, and then to discuss special features which seem worth while employing to relieve sufferers from tuberculosis.

VARYING THERAPEUTICS.

No disease of the human race presents throughout the entire history of its therapeusis such a wild orgy of excesses, such a delirium of extremes as that of tuberculosis. In quarter century periods from first to last there has been such wide variations of treatment over degrees of latitude which if charted would appear like intermittent rushes from the equator to the pole and the pole to the equator. So well known are these extremes that a favorite mode of expression of these variations is to compare them to the swinging of a pendulum. We hear that the pendulum has swung too far on one line of treatment or too far in the opposite direction on another line of treatment. With the swing to the right or the left there is rejoicing in one camp and a corresponding wailing and gnashing of teeth in the other. All efforts seem to be directed to send the pendulum into the first or third quarter. Fortunately, a few students of tuberculosis, in season and out of season, of robust mind and clear vision, attempt to hold the pendulum in the median line.

Prior to the coming of Koch, it was drugs and foods that had their passing hour. There was the cod liver oil period, the phosphorus period, the hypophosphite period, the arsenic, the iron, the digitalis, the phenol, the quinin, the creasote and the coal tar periods. Those who are not among the very old in the profession well remember the psychic inflation of the sulphuretted hydrogen gas treatment which ballooned itself around the world, until by virtue of its own expansion, it went up into the air, a method of unsavory memory. Compressed air and vacuum apparatus of all kinds have been limboed to the garret of innocuous desuetude and save perhaps for pocket vacuation are chiefly useful only as relics of the will-o'-the-wisp period of pulmonary therapeutics.

For many decades climate and clime were the end all of all tuberculosis management in the selection of which the profession trended now here now there in accordance with the energies of the devotees of the respective region. Even since the bacteriologic era in tuberculosis there has been much chasing after false gods. Who does not recall the great excitement a score of years since brought about by Koch himself in his premature statements as to the value of tuberculin? It was not alone the profession who suffered. The confidence that is lost by the explosion of such premature fancies is harmful, but it is as naught compared to the distress, the blasting of hope, the throttling of courage which befalls the poor sufferer from this disease.

A record of such vagaries is not a credit to the profession. It is true there were sufficient excuses in the past. The loss of life was appalling. The suffering was beyond estimation. The ignorance was most dense. "A constitutional disorder," cried one; "a local disorder," called another; "of inflammatory origin," said one; "of neoplastic origin," spoke his neighbor. From pillar to post the pathologist tore the therapeutist. Is it any wonder with the stress of his responsibility he grasped at straws? As the light dawned, stability grew, and with each step forward in etiology, the grasp of endeavor grew firmer and firmer. Out of our greater insight into biology and the precision of bacteriology have come these truths: Tuberculosis is an infectious disease, the extent and course of which depends on constitutional conditions. Every person can be infected; only a few can have tuberculosis. In short, tissue resistance and adaptability decide whether an infected person shall have tuberculosis, or not. With this clear, the strife was to determine what brings about adaptability and resistance in the biologic world. Does it not seem strange indeed that that which great men have plead for for years and have sacrificed time and strength to prove by experiment and practice, only slowly filtered into our life work? The substance of their pleadings makes our line of action to-day; conservation of strength brings about tissue resistance, adaptability and cure.

With such record of fetich worshiping in tuberculous therapeutics it is no wonder that any one familiar with its history should not endeavor to be conservative, and try to hold to the good of the old while grasping the benefits of the new. Is it any wonder that some may stand aghast at the dogmatic assertions of present day management? Is it not proper to plead for sanity to-day, almost as strongly as it was necessary in the past? Do we not already see dangers from the far swing of the pendulum? Are not some methods of the past too ruthlessly cast aside? Affirmative answers can alone be given to such queries and hence to us is given the right to pro-

* Read at the Philadelphia Tuberculosis Exhibition.

test against a few latter day tendencies, although it must be briefly.

PROTESTS.

1. *The Public are Dangerously Educated as to the Curability of Tuberculosis.*—They do not understand the degrees of infection, the difference in course of the varieties of tuberculosis, and the variations in the power of resistance of the individual. Tuberculosis is tuberculosis to them, whether of cerebral, pulmonary, serous membranous or other form. To the family, the fond mother or beloved sister does not differ constitutionally from those of other families. They can not and will not recognize constitutional types. This harm is a result. The unwelcome termination when it comes brings a discredit to science not justified. The physician to whom the care of the patient is entrusted is reflected on. For the sake both of the patient and the physician a plea that such extremes should not be disseminated, is proper. Should we not better have humanity feel the hope we have, that halcyon days are coming, but until then we dare only say, fortunately with greater truth than ever, *tuberculosis is sometimes curable.*

The public should know that in the best sanatorium in this country, with the best possible means at command, in an experience of seventeen years, 66 per cent. of the incipient cases continued well; 28.6 per cent. of the advanced cases are well and 2.5 per cent. of the far advanced cases remain cured. What a splendid record and what a triumph for Trudeau! "Peace hath her victories far more renowned than war." The public should know the chances are about even as to success or failure in tuberculosis under ordinary circumstances if they do the right thing. Let the great suffering body understand that while progress is fast apace, the millennium of therapeutics in tuberculosis can not be brought forth in a day or a decade. Let them know that there is a dawn, indeed that the sun is nearing the meridian and that in prevention, in scientific methods of vaccination or immunization and in the skilled use in the future of tuberculin, the high noon of success may soon be on us.

2. *The Sanatorium Treatment is Placed on Too High a Pedestal by Many of its Ardent Advocates.*—Already danger is sighted. For example, it had been so extravagantly promulgated in England that the public believed a sanatorium, and six months' residence therein quite sufficient to bring about cures in tuberculosis. There is danger of the splendid, massive sanatorium movement in that country toppling over. Only recently the London *Lancet* devoted an issue in an attempt to stem the storm. No one can deny the great value of sanatorium treatment and wish that the properly selected cases of tuberculosis which can not be treated otherwise, could be placed under such favorable conditions. But with this unfortunately not one tithe of the struggle is over. A larger scheme than sanatorium treatment must be invoked and a longer time permitted to bring about a "cure." The sanatorium and sanatorium methods are only a fraction in the great struggle.

3. *Should not the Temporary Fiasco of Koch and the yet Inconclusive Statements of Behring Behoove Scientific Workers to Beware of Hasty Conclusions on Ill-matured and Imperfectly Observed Data?*—The story of Trudeau's patience and persistence in pathologic work is not a brilliant tale of adventure before the footlights. It is the stately march of an epic. Laboratory labors should be repeated and repeated, reflected on and then brought forth.

The opsonic theories of the brilliant technician, Wright, so attractive and of such illumination as to lead one on, must have more searching scrutiny.

4. *Our Great Sanatorium Endeavor Must not be Taken out of our Hands by Virtue of our own Enthusiasm and Taken up by the Politicians as their Stock in Trade.*—That this may occur is seen by the recent action of the Rutland Sanatorium, Massachusetts, while there are rumors that the public sanatoria in New York state are not in very happy condition. Fortunately, in Pennsylvania the present secretary of the Department of Health, Dr. Dixon, is alive to the great dangers of politically managed sanatoria, and Dr. Charles B. Penrose, to whom we owe our great state health service, sees clearly the needs of the hour. They are ever ready to strike. In our own Flick we have a man of courage to protest at such usurpation. We owe to these three men the nipping in the bud of legislative attempts to use the cloak of charity for ulterior methods.

The profession should be a unit in demanding that the cure and treatment of this class of cases should be positively carried out on lines which are agreed on by the great experts in this disease, to be correct. There can be no deviation. If from our own body selfish and self-seeking men come forward without previous training to take up this work with politics behind them there should be such uprising of the profession as to appall the stoutest in assurance. If it is not done the whole matter of such relief will fall to the ground. The profession have a right to feel indignant that those of their number who have temporary political power, should, without training or serious attention to tuberculosis, as far as their past record would show, assume to take charge of large sanatoria. Fixed principles should control the management of the institution. To expose incipient cases to th mixed infections of advanced cases would be criminal. There is much opportunity for imposition on the part of the public. The greatest diagnostic skill is required to select proper cases. We should be a unit in demanding the selection of men with experience in such work for the position; they should be trained as specifically as we ask the alienist to be trained. They should have such sanity and such humanity as to stand above all temptation and sinister influence.

THE MANAGEMENT OF TUBERCULOSIS.

It is interesting to note that a discussion of the management of tuberculosis is approached from a different standpoint than had been the custom as short a period of time as twenty-five years ago. He who engaged in such inquiry would have tried to launch some specific treatment for this then considered dread disorder either by drugs, by climate or with respiratory armamentarium. The hearer would have gone from the assembly hall disgusted at the waste of time had he not taken with him a new wrinkle in the use of drugs. The ear is strained to catch another story. It is to hear of the efficiency of pure air and sunshine, of good food and the mode of its administration and of well planned rest, regulated to the bodily needs of the patient, nicely adjusted to his physical requirements.

A century ago Benjamin Rush, the Sydenham of his day, anticipated our present day methods, and half a century later the elder Bowditch cured himself by the application of our own well formulated principles. While communities, as those of Germany, have had well formulated plans of sanatorium treatment a new community, as ours, putting forth energy in constructive duties had little to spare for conservation. This spirit of construc-

tion in politics, in economics and in the upbuilding of the nation and of the individual, brooks no thought of salvation and, it is regretful to say, has minimized the value of human life. With us sanitation, both public and private, is as yet in its swaddling clothes. There are signs that recently the juggernaut car of industry which ruthlessly rides down individuals has been rudely awakened. The value to the state and to the family of human life is daily more and more appreciated. Out of this will come the success that should pertain to sanatoria.

Such success must depend on the candor of the physician to whom the suffering patient applies, the thoroughness of method in the conduct of the institution and persistence in the one principle that it is the individual, the human being that is treated, not the disease.

Candor Should Be Our Greatest "Motif."—1. As to diagnosis: If a case is suspicious but not positive, withhold judgment and ask for another examination. No one should be cleared of suspicion or condemned on one examination, when the case is incompletely developed. 2. As to the patient: Tell him, with exercise of judgment as to his temperament, at once the nature of his illness. A very sad chapter of medicine could be written of the dillydallying of doctors at the threshold of this disease, either from ignorance, lack of candor and courage or, it is suggested, from a desire to continue in attendance on the patient for fear his methods or diagnosis may be criticised. 3. As to the public: Notification is just and should be a universal practice.

Treatment.—It can not be gainsaid that the treatment of a case of tuberculosis must be on sanatorium lines. It can not be disputed that the best results are obtained by these means and by these means alone. As successful treatment implies an early diagnosis this in turn means (*a*) education of the public not to be callous as to the surroundings. If he finds himself in an infected environment or in unhygienic surroundings an examination from time to time should be conducted. (*b*) Education of medical student and practitioner how to make a diagnosis. Unfortunately the very excesses in fear as to contagion have barred incipient cases from the hospital wards and the student is debarred from opportunity. (*c*) As to the institutions, successful treatment demands that only an expert in the management of tuberculosis must have charge and that in a "cure" house only incipient cases must be admitted.[1]

Treatment in a sanatorium or in the home by sanatorium methods involves, to the extreme: rest, fresh air and an abundance of food. The amount of rest is to be judged by the strength of the patient, the frequency of the pulse, the extent of neurasthenia, if present; and, most important, the temperature. The fresh air is to be unlimited in amount, delivered in quiet filtration if possible, certainly not whilst riding in a storm or flying in the wind. Sunlight is to be unstinted in amount. Food to be of nutritious value, the amount and character must be determined by the digestive capacity of the stomach. To this end, careful estimations must be made of gastro-intestinal conditions and treatment directed accordingly. Perhaps the only excuse for drugs is to modify gastric conditions and enhance digestive power; to tone up the circulation (digitalis) or to correct chloro-anlinia (iron and arsenic).

After the disease is arrested, gradual exercise to bring the patient up to a normal physical life must be evolved. Hence no return at once to former duties and not to any bad environment. The sanatorium or its methods, is not even the halfway house to cure. For the well to do, climate and change are essential, for the artisan or laborer, a place or position of light work outdoors with opportunities for rest, and little chance for fatigue.

A PROTEST AND A PLEA.

Is climate of value? Unhesitatingly, yes. Do we not want a sunny room for our rest patient; should he be denied days of sunshine if he can get them? Do we not want a clear sky, a tonic air and but little dust for our sanatorium patient? Should they be denied the better class? Rest, rest is the cry. Can the well to do get rest in their own hustling environment? Does not removal to a haven of peace and an atmosphere of quiet mean removal from temptation? Of course, climate without food is death, climate with homesickness is almost destruction. Climate has its limitations but it has its immense advantages. Who can cry out against sea air in bone tuberculosis and tabes mesenterica in children? Moreover, certain forms of tuberculosis, as of the larynx, do badly in the northern latitudes. For them, California and New Mexico are better than northern New York. And so reference could be made to many climatic conditions which would avail much in groups of cases, all climatic treatment to be subsidiary to rest and diet.

It is not necessary to dilate on this phase of the subject. The consensus of the profession as to climatic indications held ten years ago, holds as well to-day, and it would be well for the younger student and experts in tuberculosis to study them carefully. To those who can have an appropriate climate with proper food and rest, the likelihood of permanent cure is infinitely better than for the home or sanatorium case.

1. It almost goes without saying that such methods can not be conducted in institutions in which politics plays the greater part in the management.

THE STEM PESSARY FOR AMENORRHEA AND DYSMENORRHEA.

SOME FURTHER OBSERVATIONS.*

J. H. CARSTENS, M.D.
DETROIT.

Many inquiries by physicians in different parts of the country in reference to the use of the stem pessary have prompted me to write another short article on the question. There is no doubt that the bane of the general practitioner, and even of the gynecologist, is the treatment of stubborn cases of amenorrhea and dysmenorrhea, as they last for months and years and often persist after all the known modes of treatment have been tried.

AMENORRHEA.

If this occurs at the age of puberty, time and hygienic management will generally bring about a normal condition.

There are certain types of this disease that are very troublesome, as, for example, when menstruation occurs only at long intervals and then is scanty, or when the function has been thoroughly established for some years and then becomes irregular and slight, often accompanied by pain. This generally causes a great deal of mental distress to the patient, often resulting in the use of various kinds of household and "patent medicines" and running from one physician to another. In nearly all these cases we find a small uterus, called, in the case

* Read in the Section on Obstetrics and Diseases of Women of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

of the young girl, infantile uterus, in older persons premature atrophy. When this condition occurs after childbirth or miscarriage, it is due to superinvolution.

To develop the muscle it must be exercised. All athletes know that. And, as the uterus is a muscle, it must be exercised if we want it larger. Medicine, constitutional treatment, hygiene, will have no effect, as direct action on the muscles must take place. A good deal of good has been done with electricity, but it is very troublesome and often painful; the treatment takes long, is too expensive for most people and then sometimes fails.

By the introduction of a stem pessary the uterus is irritated, it contracts, makes constant efforts to expel the contents and thus develops. In the course of three to six months or a year the small uterus will be found to be of normal size and the menstrual function firmly and regularly established. I have had only one or two failures, and in these cases believe that some change had taken place in the ovaries and tubes. Hence the patients were beyond all help.

DYSMENORRHEA.

Dysmenorrhea is a far more formidable condition, because people suffer pain. They are often laid up for several days to a week every month; hence incapacitated from work, while in amenorrhea all this is absent. The physician has a troublesome case on hand if he has one of these persistent cases of painful menstruation, that being the only symptom. All the congenital abnormalities, diseases of the tubes and ovaries, inflammation of the pelvis of any kind, including displacements, must first be eliminted, as these each require their own special treatment. Cases of stenosis are relieved by dilatation, but recur in a few months and must then be again dilated. In these cases a stem pessary kept in long enough will give relief, as well as in cases of slight displacement sometimes met with.

The kind of cases that give most trouble are, as stated above, those in which we can find no pathologic condition to account for the trouble except a somewhat small uterus. There has never been pelvic disease, there is no obstruction and the most searching investigation fails to detect any constitutional cause, and still those women persist in having pain, sometimes very severe, for one day or more every month.

There is another class of cases in which women have a perfectly normal menstruation for ten or fifteen years and then begin to have pain, which gradually increases and in the course of several years becomes unbearable. This condition I find in unmarried women who are wage-earners and whose occupation is intellectual. Teachers are especially liable to this trouble. But in these cases you will find some condition to account for it. You will find the cervix small, hard, atrophic. The muscularis is gradually being supplanted by fibrous tissue. The fundus of the uterus remains about normal, and only later undergoes the changes.

I attribute this condition to non-use of the uterus. Those women ought to be married and have children, as I have never found it in married women. Now, in these very difficult cases, I have found the stem pessary of especial benefit. It seems to check the process and restore the cervix to a normal condition in the course of six months or a year. And as the pessary does not hurt, I have these patients often wear them for several years.

In cases of anteflexion when no serious surgical interferences are indicated. I have found the stem pessary most useful in relieving symptoms and curing the sterility from which these patients often suffer.

INDICATIONS FOR THE USE OF THE STEM PESSARY.

It probably makes no difference what kind of stem is used—rubber, glass or metal. I myself at present prefer the rubber (Chambers) pessary. It is painful to introduce. The uterus must be dilated; if there is diseased mucous membrane it needs curetting, and, therefore, it is necessary to give an anesthetic, as a rule. I keep my patients in bed two or three days and then they can get up and be about at their usual vocation.

If the stem is put in alone, it will often be forced out sooner or later, so I put in a Hodge Thomas pessary to throw the uterus forward and thus prevent the stem from coming out. It is not necessary to do this in all cases, but it is best, as a rule. If there is discharge, I have them use douches, but ordinarily this is not needed. I never take out the stem and reintroduce it. I leave it in sometimes two or three years without trouble. My patients travel all over the country, to Europe, and I have never had any trouble except in one case, in which pain suddenly developed, and I telegraphed the physician to remove it, the patient being near Boston at the time. In one or two instances, the patients insisted on having the instrument removed too soon and it had to be reintroduced. This was in my earlier experience. Now I do not take them out sooner than three or four months, and six months or a year is a great deal better. They absolutely cause no pain and distress, and women do not know they wear them unless they are told.

The greatest precautions must be taken in excluding cases of inflammations of the tubes and ovaries and pelvic inflammations in general, because latent cases of tubal or ovarian abscesses may be lighted up by the introduction of a stem pessary and serious consequences ensue. If adhesions have taken place and the uterus is pulled down and dilated, rupture may take place of dermoid tumors, even of an intestine or of the bladder. In such cases, with amenorrhea or dysmenorrhea, an abdominal section or some other operation is probably required. The stem is not indicated there. The stem is simply for cases of slight troubles from the surgeon's standpoint, but most distressing to the patient and trying to the general practitioner.

I will not weary you by reporting a series of cases, but simply will sum up by saying that the stem pessary is the most useful mode of treatment and is indicated when we have to bring on a regular menstruation in cases in which it is absent or occurs at long intervals. The same may be said of those cases in which the flow is scanty and various nervous symptoms are produced, a condition often found in fleshy women. It is also valuable in dysmenorrhea, when there are no other pathologic conditions, except that state commonly called neuralgia, or when we find a small uterus, or especially cervix, a condition often found in middle-aged, unmarried women who have for five or ten years menstruated normally. In slight flexions or displacements with recurring stenosis producing sterility, it is valuable and will sometimes cure, if I may use that expression, the last-named condition.

Counter indications are acute or latent pelvic inflammation of whatsoever kind it may be. I must especially and emphatically warn against this condition: If there has been inflammation of the tubes or ovaries, or if there are adhesions, the stem pessary should not be used. The greatest care must be exercised on this point.

Any general practitioner is able to introduce a stem pessary; no specialist is required. This article is simply written for the benefit of the general practitioner

who, I know, has so much trouble with the kind of cases described.

In conclusion I will say:

1. The stem pessary will generally cure amenorrhea after all other means have failed.

2. It will develop an infantile uterus, enlarge a prematurely atrophied one, and restore a superinvolutional womb to a normal condition.

3. It will cure most cases of intractable dysmenorrhea, when no special pathologic condition can be found

4. If worn for six months or a year it sometimes cures sterility.

5. All inflammatory conditions about the pelvic organs must be rigidly excluded before it is used. The same septic precautions should be taken during its introduction as a surgeon would take with the most complicated case of abdominal surgery.

DISCUSSION.

DR. F. D. REESE, Cortland, N. Y., said that in taking the history of his last 40 cases of fibroid tumor he had discovered that dysmenorrhea has appeared at puberty in 39 of them. This is an indication that some time in the woman's life she will develop a fibroid tumor.

DR. W. O. HENRY, Omaha, inquired under what circumstances Dr. Carstens recommends the pessary; for what sort of dysmenorrhea? The variety for which it is recommended should be known.

DR. J. H. CARSTENS, Detroit, replying to Dr. Henry, said that the pessary is of no use for pus tubes, but that a thin uterus may be made to develop and the pain will be relieved. As far as curing sterility is concerned, he had a few cases that had been followed by pregnancy. Perhaps there is sometimes a little anteflexion which the stem relieves. Later she may be able to become pregnant. It is distinctly a remedy for dysmenorrhea.

THE BEST METHODS OF CLOSING ASEPTIC WOUNDS, ESPECIALLY OF THE ABDOMEN.

THE USES AND VALUE OF THE BURIED ANIMAL SUTURE.*

HENRY O. MARCY, A.M., M.D., LL.D.
BOSTON.

To-day's mail brings me an advertisement of a new abdominal supporter especially devised to be used after laparotomy, with the statement that the hospitals are ordering them in quantities. Such advertisements reach the tables of nearly all the members of this section and are indications of their general use. One of the largest hospitals of Boston makes a routine practice of having patients wear an abdominal supporter for one year after operation. The most approved pattern adopted is a kind of reversed corset, especially fitted to the individual.

Wherefore the need? It is reported that in this same hospital, notwithstanding all this care, about 10 per cent of the laparotomies are followed by hernia at the site of the wound.

A fair critic must arrive at one of the following conclusions: Either that the technic of reunion is faulty, or that the severed portions of the abdominal wall can not be rejoined in a way to give satisfactory subsequent result.

Hence I invite your consideration of a subject which is of vital, practical importance; especially so, since, at present, the abdominal cavity is being opened very many times daily in all parts of the civilized globe. Fortunately the operator rarely is enabled to divide the structures exactly on the median line and therefore there are two or three important factors in the tissue to be rejoined.

So far as I am aware, Sir Spencer Wells was the first to point out the very great importance of incorporating the peritoneum within the sutures. He also emphasized the advisability of including a considerable amount of the tissues within the grasp of the ligature. The importance of these suggestions are in daily recognition. Notwithstanding this, however, failures by this method are of constant occurrence. A careful analysis of the parts to be rejoined makes easy explanation why such failures occur and, to my mind, the wonder is that it does not happen more frequently.

As an illustration, let us take into consideration the abdominal wall of a rather fleshy individual and the interrupted stitch, including all these tissues, tied rather tightly in order to hold the parts in complete fixation. The more tightly the stitch is drawn, in direct ratio the antero-posterior diameter of the parts is lessened. This of necessity disarranges the approximation of the included tissues, without a possibility of exact readjustment of like structures. This is so patent to every one that only reference may be made to it and I think it is the chief cause of failure.

Is there a better way? I think now this question may be definitely answered in the affirmative, since the experience of many operators is confirmatory of my views advocated many years ago. I have many times emphasized, when discussing the advantages of the buried animal suture, the importance of an accurate readjustment of the sundered structures in all parts of the body.

This in illustration: The readjustment of the divided tissues in an amputation of the thigh, with the closure and sealing of the parts without drainage. This, however, is of comparatively little importance, since no special strain is subsequently expected to be brought into play of the parts involved.

Quite on the contrary, after laparotomy every portion of the abdominal wall must be expected to resume its normal function and to be kept for the rest of life, more or less, in a state of active tension.

The possibility of closure, in layers, is of course, dependent on the use of buried sutures. Although many still use silk, it seems scarcely necessary to refer to it, except to emphasize the importance of discarding it.

It also goes without saying, that the suture material must be aseptic and absorbable. Such suture material is within the reach of every surgeon. It is furnished by reliable makers. More commonly catgut is used, but for many reasons, the carefully selected tendon suture is preferable.

SUTURING IN LAYERS.

The peritoneum should be carefully coaptated and held in easy approximation by the use of a continued animal suture. This, for many reasons, is best effected by using the so-called shoemaker's stitch—a double continuous suture. Such a suture is easily, accurately, and rapidly applied, crossing the line of the divided structures only at right angles and is held in fixation by a single knot. The especial advisory precaution is that the sutures be not drawn too tightly, since coaptation and not constriction is the object sought

The postrectus fascia of the lower two-thirds of the distance between the pubis and the umbilicus should be included in the peritoneal suture. This is important,

* Read in the Section on Obstetrics and Diseases of Women of the American Medical Association at the Fifty-seventh Annual Session, June, 1906.

since fascia separates easily, leaving an uninclosed space, and is itself an essential factor of strength.

More commonly it is unnecessary to reunite the separated muscular fibers, unless there is bleeding, or by undue manipulation they have been subject to injury. Closing by light suture has never appeared to me to be detrimental.

The careful reunion of the thick anterior fascia, the linea alba, is of the first importance, since this is the mainstay of abdominal support on the strength of which depends, in large measure, the very considerable variety of action of the oblique and transverse muscles. The recti muscles also, wanting in this support suffer a material impairment of function.

For these reasons, the coaptation of this thick fascia must be accurate. The adjustment may be by overlapping, intra or extra folding. I have used all these various measures with good result, also the so-called mattress stitch, which may be called an interrupted shoemaker's stitch.

Perhaps the easiest and most satisfactory is the double continuous suture, extra folding about a third of an inch, of the linea alba. The same emphasis of coaptation and not constriction is important, since fixation with the parts held at rest is the object sought. The peritoneum is united by a fine suture, while the linea alba requires a much larger suture. I prefer one about three times the diameter of the fine peritoneal suture chromicized to remain for about three weeks.

Each line of coaptation is closed on its independent plane, in order that in case of a possible infection, they may not be brought into juxtaposition.

As a rule, the superjacent fatty layer requires no suture and its low vitality renders it important that its structure be damaged as little as possible since an aseptic fat necrosis may ensue. A careful coaptation of the skin usually holds the fatty structures in apposition. If unusually thick or vascular, a light, running, single, continuous suture taken rather deeply from side to side through the fatty layer is sufficient. It is decidedly preferable to close the skin by a continuous suture, using a medium-sized, full-curved, sharp Hagedorn needle, medium sized is preferred, since the large needle unduly damages the tissue; full curved, since the curve enables one much more carefully and accurately to apply it without the use of forceps; the Hagedorn, much to be preferred, since the peculiarity of its point enables one accurately to penetrate the deeper layer of the skin only.

Each succeeding stitch enters the skin exactly opposite the emergence of the preceding one, the number of stitches being dependent on the length of the part traversed by the needle. Thus taken, when drawn on, the skin is evenly coaptated and the wound does not have a wrinkled or puckered appearance, and I have called it the parallel suture since the needle only penetrates the structures parallel to the long axis of the wound. Of even greater importance is the fact that the deeper layer of the skin only is penetrated, since a necrotic infection may easily follow in the sweat ducts or hair follicles if penetrated by the suture. This has been called the subcuticular suture, but for accuracy of definition it should be designated the subglandular or subfollicular suture. The suture should be of very fine material and not too highly chromicized, since absorption must precede the proliferation of the epithelial layers of the skin. The faulty application of an aseptic, absorbable, cutaneous suture, for the reasons above mentioned, may give superficial skin abscesses. On this account the subcuticular buried suture has been abandoned by many surgeons. It is, however, owing less to the suture than to the faulty method of its application; the operator rather than the correct operative procedure.

I consider the reduction of scar tissue to the minimum a very important factor. The incision should be made by a very thin, sharp-edged knife, rather than scissors, since its subsequent coaptation can be made more accurate than where its division has been irregular or ragged. Hemorrhage should be carefully stopped and the skin edges accurately approximated. The fixation and permanent holding, as by a splint, by the contractile collodion seal aids very materially in minimizing cell proliferation. I consider such restoration of the cutaneous surfaces important in all parts of the body and worthy of very especial consideration in the wounds on exposed surfaces. Oftentimes it is difficult, months later, to trace the line of incision.

How shall we dress the wound? Here many of the operators are at great variance. I have said nothing of wound drainage, since, I do not believe aseptic wounds, as a rule, should ever be drained and think this is the general consensus of surgical opinion at present. I consider the abandonment of drainage, in aseptic wounds, one of the most pronounced factors of progress in modern wound technic.

Such a wound, thus closed, will do well under a great variety of subsequent treatment. It seems but yesterday in the progress of our art, that it was considered necessary to apply some kind of dressing that would absorb the fluid which was deemed essential to be exuded in order to secure primary union. In this belief, Mr. Lister gave long continued and unwearied study in order to perfect an antiseptic absorbable wound dressing.

In our own studies of wound repair, we, many years ago, for what then seemed good and sufficient reasons, eliminated the use of drainage tubes, as in every way objectionable and dangerous and little by little learned to consider that the primary cell exudation was an important factor of repair which Nature had provided for a special purpose, and which I denominated "the first aid to the wounded." Therefore, instead of a dressing for the absorption of the fluid, I desired one for its retention and this seemed to be found ready to hand in the use of collodion. My only modification of it lies in the incorporation of iodoform in the solution sufficient to give it a light yellowish wine color. I prefer the contractile collodion since it adheres more firmly and holds the coapted edges of the skin more closely in approximation. The iodoform may not be important, but it certainly has a very marked inhibitory affect on the development of the micrococcus-pyogenes-albus.

This seal is so closely adherent that it not only does not permit the escape of the subcuticular fluid, but is a seal germ-proof from bacterial intrusion. If the wound has been aseptically made and maintained, in aseptic and well vitalized structures, primary union will supervene. If an infective wound, the method advised is one of the worst possible, since easy channels of communcation have been made along the entire lines of the sutures.

The work for good or ill has been begun and completed before the patient leaves the operating table. There is no period of anxious watching and fear lest a careless attendant may neglect the dressings. There are no stitches to be removed, a matter of comparatively minor importance to the surgeon, but always a nightmare to the patient. It is entirely unimportant to use any dressing, and in a majority of cases no bandage whatever is applied.

The seal, so to speak, grows off in about ten days, by

the proliferation of the dead epidermal cells. A second or third seal is more commonly applied, in order that the scar tissue may be reduced to a minimum, which is often so slight, that the line of union may be determined only by careful scrutiny.

The histologic changes which ensue about a buried suture would prove a most interesting subject for further discussion, a topic in itself requiring for proper elucidation the time not given by this article. Suffice it to say, that at first the foreign material is surrounded by leucocytes, which, little by little, invade the structure. Pari-passu, as absorption goes on, these cells are themselves transformed into connective tissue corpuscles; these generally assume the site of the implanted suture to such a degree that in my earlier studies I was half led to believe that it was a veritable revivification process. The fact remains, that to a considerable degree the readjusted structures are held permanently in place by vital bands which are imbedded and fused in the readjusted, reformed structures.

These facts were substantiated by me only after continuous comparative studies involving several years of research laboratory work. They give, however, an added emphasis to a great and often unsuspected value of the properly applied animal suture. The catgut of commerce furnishes a cheap and easily obtained suture material. It is, however, not easy to sterilize and is inherently defective. The separated tendons from the tail of the smaller varieties of the kangaroo, although much more expensive, are far superior for many reasons.

I find there is considerable criticism of the usual kangaroo tendon suture and I think perhaps justly. It is exceedingly difficult, more so recently than at any other period, to obtain the tendons in Australia, which have been taken from freshly killed animals, sun dried, and kept dry in shipment. Quite the larger part sent me, for these reasons, are defective. I established the price in Australia of $10 a pound which I thought was ample compensation for properly prepared tendon. Nothing more is asked of the hunter than to extract the tendons which lie parallel and traverse the entire length of the tail *en masse*. These are to be kept straight, quickly sun dried and to be kept dry in transit. The number vary from twenty to thirty in each animal. The psoas muscle is divided into fasciculi, each fasciculus having its independent tendon extending to the very tip of the tail. The only other animals which I have found with this anatomic construction are the rat, the squirrel and the opossum.

From a recent letter of Dr. F. Barrington, Sydney, I quote:

I believe as kangaroo tendons are shipped to you there is no way of overcoming the difficulty from defective preparation. They are pulled from the animals' tails and left hastily in the sun to dry, and as they are sold by the hunters by weight they put in a lot of their useless rubbish. I fear you do not know the Australian wallaby hunter or you would know that an endeavor to inculcate care would be useless. I fear, therefore, there is no way of helping you.

The way I adopt is to have the tails sent down by reliable friends in midwinter, packing the raw stumps in boric acid. I prepare them entirely myself, and even in this way, drawing them from the tail and putting them for twenty-four hours in 1/500 spirituous solution of bichlorid of mercury and then keeping them permanently in rectified spirit, when I come to desheath them for use there is considerable waste. They are a source of great trouble to me in the preparation, for from start to finish in their final resting place in the patient's tissues they never touch any hand but mine. I never allow a nurse to touch them, and if I am sore pressed they are handed to me in the grip of a pair of sterilized forceps. I use them for everything, saving horsehair for the skin, and occasionally through-and-through silkworm gut for rapid abdominal operations.

The abdominal bandage, although a support to weakened structures fails, for the best of reasons, to prevent hernia. It is troublesome to adjust and a constant source of irritation and discomfort. I never advise the use of a bandage of any sort. In over 2,000 laparotomies followed by primary union after the correct reconstruction of the abdominal wall, I have not known the occurrence of a single hernia.

The cure of hernia is rendered possible only by the use of buried sutures. Their first use in surgery was in 1870 when I closed and reconstructed the inguinal canal for the cure of hernia, using catgut furnished me by Mr. Lister.

The buried animal suture, in the closure of well vitalized aseptic structures, in all parts of the body, is one of the most important contributions to the technic of modern wound treatment and is of a revolutionary character. Only the traditions of the past and the conservatism of the present prevent its universal adoption.

DISCUSSION.

E. D. FERGUSON, Troy, N. Y., said that he had seen Dr. Marcy put in these sutures in closing a wound. They did not penetrate the deep layer of the skin. By examining carefully the complex lace network of connective tissue that encloses the fat cells it will be seen that some of the skin follicles extend below the skin into this subcutaneous fat, and unless he is very careful the operator will open them with the needle and so favor the occurrence of infection. Dr. Ferguson has largely discarded the seal since adhesive plaster is made aseptic, putting it on gridiron fashion. If the seal is used nothing else is needed unless the patient is troublesome. All extraneous dressing should be abolished if the seal is used.

DR. J. J. REYNOLDS, Defiance, Ohio, referred to a neat and quick method of closing the skin incision by the use of adhesive plaster. After the tier sutures are in, a hook or tenaculum is placed at each end of the skin incision, and by slight traction the skin is made tense. The parts coapt nicely and are held in place by narrow strips of adhesive plaster. The resulting scar is almost invisible. When economy of time is essential this plan has a special advantage over the buried suture. Turning in the ends of the strips before applying (making a hem) facilitates their removal.

DR. AUGUSTUS P. CLARKE, Cambridge, Mass., said that Dr. Marcy's method offers great advantages over other methods, as has been proved by the excellent results obtained. He has assisted Dr. Marcy in a great number of his cases of abdominal surgery, and therefore is thoroughly familiar with this method. Every suture must be made thoroughly aseptic and it must be applied aseptically. Each layer of abdominal tissue must be most carefully coapted. The sutures should be drawn gently, yet firmly, but not too tightly. Well-trained and well-experienced assistants and nurses in this special time of operating are absolutely necessary for complete success. An abdominal binder will be, for the most part, not only useless, but is liable to be of harm in causing, through undue pressure, retrograde processes of the normal abdominal wall. The application of a little iodoform collodion along the line of incision is all that is essential for protection. The fear of subsequent hemorrhage from the slipping of sutures is scarcely to be thought of. Union by first intention is to be expected. All sutures are made continuous, and are especially prepared from kangaroo tendons.

PROF. A. VON ROSTHORN, Heidelberg, Germany, stated that in Germany wounds have been sutured in the way described by Dr. Marcy for over twenty years. Drainage has been abolished. The dressings are as simple as possible. He uses simply a little iodoform or sterile gauze which is applied with the paste described by Schleich and which holds the dressing fast nicely. Bandages are not used at any time, and primary union takes

place in nearly every case. Zweifel, he says, has proved by examination of cases that ventral hernia occurs only when primary union has not taken place.

As to the suture material, he is of the same opinion as is Dr. Marcy. He uses material which will be absorbed. In the skin, where the catgut will be too quickly absorbed, he uses silk. Kangaroo tendon and silk worm gut hold the fascia together. Silk is bad, and infection of the stitches may occur. It is an improvement to do subcutaneous suturing, and he knows many surgeons who do it in Germany. Another method is the use of Michel's clamps. They are short and are placed in the skin superficially, nicely coapting the edges of the wound. It is aseptic and nothing can be absorbed by the suture, and the scars are very small. Sutures must not be tied too fast or too tightly, and they must be placed at correct intervals; then complications will not appear.

DR. CHARLES STOLTZ, South Bend., Ind., thought that there is some value in closing the peritoneum by bringing the raw edges up, and not making an edge to edge suture. This prevents adhesion of viscera to the perineum. Another thing of value is overlapping or imbricating the aponeurosis or anterior sheath of the rectus. He has been doing this for several years in closing abdominal incisions, as is frequently done in the repair of hernia. The results have been very gratifying. Dr. Stoltz believes that the tier method should be practiced. Each structure should be carefully restored to its former position. Occasionally there are conditions that require a small temporary drain to prevent the accumulation of blood within the wound. Such a drain will prevent separation of tissues.

PROF. A. DÜHRSSEN, Berlin, Germany, has used the method described by Dr. Marcy, but in the last month he has used another method. It consists in strapping the abdomen, not in the median line, but on one side. A long incision is made through the skin and fascia which covers the right rectus, and the inner part of the fascia is stripped from the muscle to the median line; then the muscle separated from the median line. The peritoneum is now opened on the side of the median line, and when closing the wound it is absolutely impossible to have a hernia. Of course, he said, if primary union does take place, then all the methods can not prevent hernia. Dr. Dührssen has also used the dry iodized catgut to great advantage. It is kept for eight days in iodin solution and then in dry sterile vessels.

DR. W. B. DORSETT, St. Louis, called attention to the mistakes some surgeons make in using animal sutures of large size. The larger the size the more probable is infection. This was demonstrated in two cases of fatal tetanus arising from large kangaroo tendon. He took some of this kangaroo tendon from his unused supply and injected mice, guinea-pigs, and rats with a maceration of it, and the great majority of the animals died of tetanus. As to the suppuration of wounds, he thinks it is caused by the too tightly tied sutures. There are many men who advance the through and through suture and they get as good results with it as others do with this method.

DR. H. O. MARCY, Boston, agreed with Dr. Dorsett that large sutures are not desirable. Surgeons should use the method that gives the best results, using it in the way they best can. There are certain principles which he thinks are important. This question of closing in layers and this method of inversion, overlapping and so on, have advantages in certain conditions; the simplest way is the eversion and union of the conjoined structures by means of the double sutures. He first taught that catgut was beyond question the best animal suture. Lister used it in ligating vessels, but after a time found that he was using infected material and wondered why. Long series of studies followed, and it was shown that catgut is inherently defective for sutures because of its construction, not unlike cutting a piece of finely woven silk diagonally and twisting it for use as a fishing-line. When wet, as it must be buried in the wet tissues, it becomes a thin, flat, elastic slippery band, not thicker than tissue paper. This has necessarily been the breeding-ground of millions of bacteria, and as a consequence, is difficult to sterilize. Carefully prepared tendons have never been thus damaged; the ultimate fibers are disposed in parallel instead of oblique directions. The cement substance is uninjured. They are in every way vastly superior to catgut when used for buried sutures.

CASES OF MENINGITIS WITH ISOLATION OF DIPHTHERIA BACILLUS FROM CEREBRO-SPINAL FLUID.*

JOSEPH MORRELL, M.D.
House Physician, Cook County Hospital.
AND
HERMAN E. WOLF, M.D.
Alumni Fellow, Rush Medical College.
CHICAGO.

Although the *Bacillus diphtheriæ* has been found in the most diverse lesions, its presence in the central nervous system is almost unheard of. Thus far we have been able to find only one case in the literature, that of Wilson and Head, in which the organism was positively identified. The circumstances which led to the discovery of the organism in this case, however, as well as in the one about to be reported, would speak for greater frequency, though usually unrecognized.

Personal History.—W. M. C., colored, male, four and one-half months old, was admitted to the children's ward of Cook County Hospital, service of Dr. F. X. Walls, to whom we are indebted for permission to report the case. According to the mother's statement the child had been taken ill ten days before admission to the hospital with high fever, pain in the chest and a cough. Eight days later she noticed rigidity of the neck and bowing of the back. The child became highly excitable, but had no convulsions. This condition had presented for two days before admission to the hospital.

Physical Examination.—This revealed a well-nourished baby lying quietly with only an occasional moan as evidence of distress. The head was markedly retracted, the muscles of the neck were rigid, the back was bowed, and the thighs and legs were flexed. The remainder of the examination was negative.

Spinal Puncture.—A few hours after admission 45 c.c. turbid fluid flowing under high pressure was removed by spinal puncture. Cultures were made by allowing the fluid to flow, under aseptic precautions, directly into tubes of blood-agar, blood serum, bouillon and milk and incubating at 37 C. A sample of the spinal fluid was also centrifuged and the sediment examined microscopically for bacteria with negative results. The cellular elements consisted almost exclusively of small mononuclear lymphocytes.

After 24 hours' incubation the cultures yielded a growth of a bacillus resembling Bacillus diphtheriæ to be described later. At the end of 48 hours another spinal puncture was performed with the same result as the first. At this time swab cultures from the nose and throat were taken, although at no time had there been evidences of inflammation, and plated in blood-agar. The organisms present were staphylococci, streptococci, pneumococci and a bacillus resembling the organism isolated from the spinal fluid.

Clinical Course.—The temperature throughout varied from 99 to 102.2 *per rectum*; pulse from 130 to 160, and respirations from 36 to 72, while several leucocyte determinations varied from 9,000 to 10,000. Physical findings remained the same. Four days after admission 6,000 units of diphtheria antitoxin were given, but the patient, already in an extremely critical condition, died 20 hours later. A few hours before death external strabismus of the right eye, accompanied by lateral nystagmus of both eyes, developed.

Postmortem Examination.—Postmortem was held 6 hours after death with the following anatomic diagnosis: General miliary tuberculosis; tuberculous bronchopneumonia; fibrinous pleuritis; tuberculous ulcerative enteritis; persistent thymus; tuberculous and exudative meningitis.

Cultures made postmortem from the heart's blood, spleen, peritoneal and perieardial fluids remained sterile; while those from the meningeal fluid and the exudate at the base of the

* From the Pathological Laboratory of Cook County Hospital.
* Read in the Section on Diseases of Children of the American Medical Association at the Fifty-seventh Annual Session, June, 1906.

right hemisphere again yielded the same organism isolated at the two previous spinal punctures.

BACTERIOLOGY OF THE CASE.

As has been already stated, the same organism was isolated from the spinal fluid at the two spinal punctures and again at the postmortem, as also from the throat, and a description of one will serve for all four strains.

Morphology.—The organism is a short bacillus measuring 2.5x0.5 microns. It stains readily by all anilin dyes, also retaining Gram's. Preparations from 48-hour cultures show a beaded appearance of the organisms when stained with Loeffler's methylene blue. There were also marked involution forms, such as club-shaped and dumb-bell-shaped organisms of variable size.

Culture Characteristics.—The organisms grow well on all the ordinary culture media, but best on blood serum, where at the end of 10 hours a creamy slightly elevated layer is formed. On blood-agar plates we find at the end of 24 hours pinhead colonies without hemolysis, though when glucose blood-agar was used often a zone of greenish tinge developed about the colonies.

Animal Experiments.—Guinea-pigs were inoculated subcutaneously with 1/20 of a 24-hour blood serum culture suspended in normal salt solution. The animals appeared sick at the nd of 12 hours, with beginning evidence of local infiltration. Death occurred in from 48 to 56 hours. At autopsy there was found locally marked edema and bloody exudate into the subcutaneous tissues, extending some distance beyond the point of inoculation. The internal organs, as a rule, showed some pallor, while the adrenals were usually large and deep red in color. Cultures from the heart's blood and internal organs remained sterile, while the organism was always recovered in pure culture from the local process.

Unfortunately we were forced to discontinue the work for two months, and on resuming it the organisms had lost their virulence so that it was impossible to test the protective influence of diphtheria antitoxin.

To differentiate the bacillus isolated from the *B. xyrosis* and *B. pseudodiphtheriæ,* the method of Knopf[1] was adopted. Serum sugar media were prepared with inulin, dextrose, saccharose and dextrin and inoculated with several strains of *B. diphtheriæ* and also the bacillus C, described above, with the results as shown in the table.

FERMENTATION OF SERUM SUGAR MEDIA BY B. DIPHTHERIAE.

Organism.	Serum Sugar Media.			
	Inulin.	Dextrose.	Saccharose.	Dextrin.
P_1	—	Fermented.	—	Fermented.
P_2	—	Fermented.	—	Fermented.
R.	—	Fermented.	—	Fermented.
Bacillus C. isolated from case	—	Fermented.	—	Fermented.

We see from the table that Bacillus C corresponds in its ability to ferment sugar to the other known *B. diphtheriæ.*

CONCLUSIONS.

Bacillus C isolated from the spinal fluid in the case of meningitis thus produces lesions in guinea-pigs typical for the *B. diphtheriæ.* It agrees, moreover, with the same morphologically and culturally, as also in its ability to ferment certain sugars, and we are, therefore, justified in classing it with this group. The case just reported also shows that these organisms occur more frequently in the central nervous system than suspected, and on careful search could undoubtedly be recovered in a large number of cases.

1. Jour. Med. Res., 1904, xii, pp. 475 to 479.

ETIOLOGY OF CEREBRAL PALSIES IN CHILDREN.*

WILLIAM J. BUTLER, M.D.
CHICAGO.

A number of classifications have been suggested for the cerebral palsies of children; some based on their pathology, others on the clinical manifestations and one on the time of their occurrence. The latter, suggested by Sachs, is very convenient. He divides them into antenatal, natal and postnatal cases.

It is not always easy to determine the etiology of cerebral palsies in individual cases. This is due chiefly to their coming late under observation or because the autopsy findings, obtained sometimes years after the onset of the disease, may not reveal the nature of the initial lesion and its cause. This applies more particularly to prenatal palsies and those occurring after birth.

The cerebral lesions having their origin *in utero* seem to depend partly on conditions affecting the mother and secondarily the fetus and partly on the development of the fetus. The brain of the fetus may suffer lack of or defective development as may other fetal organs. The pathologic change commonly found in prenatal cases is porencephalus, a localized brain atrophy, which is an end result of a primary vascular lesion, as embolism or thrombosis, which, in turn, has arisen from infections in the mother and fetus, as syphilis, etc. Injury to the abdomen of the pregnant woman has resulted in isolated instances in cerebral hemorrhage in the fetus and spastic contractures have been found at birth (Cotard, Gibbs).

Birth palsies are dependent on intraeranial hemorrhage, the result either of trauma to the infant's head during precipitate labor, prolonged labor, forceps delivery or the result of prolonged asphyxia at birth. Occasionally a history of breech presentation is noted in a birth palsy. The hemorrhage is meningeal in location and arises from laceration of the pia vessels usually close to the longitudinal sinus, from which point it may spread and envelop a considerable part of one or both sides of the brain. While this is the invariable finding in recently posted cases, if they survive a number of years, as is common, secondary changes follow which may render the primary lesion unrecognizable and, instead, we may have a lobar sclerosis, etc. This applies, however, not only to natal cases, but to all spastic cerebral paralyses in children who survive the first insult, and it is this point which has caused so much discussion as to the etiology of postnatal cases. As the prognosis of those cases happening in childhood is usually favorable as to life, the autopsy findings of acute cases are correspondingly infrequent. There is little doubt of the prominence of the rôle of vascular lesions as a cause of many of these cases of hemiplegia, in fact a predominating factor in their production, as in early posted cases, hemorrhage, embolism and thrombosis are frequently found.

The paucity of pathologic information, however, has

* Read in the Section on Diseases of Children of the American Medical Association at the Fifty-seventh Annual Session, Jun

developed considerable conjecture, and as a result various views have been advanced in their explanation. Gowers believes many of them due to thrombosis of the veins of the pia and the longitudinal sinus. Sachs is convinced that the majority of them are caused by cerebral hemorrhage. Strümpell, on the other hand, thinks that the acute spastic hemiplegias of children are the result of an encephalitis, dependent on an acute infection. This latter view was based entirely on clinical study originally and only recently received postmortem confirmation in a few reported cases.

While the only absolute proof of the exact nature of an organic disease usually lies in the pathologic findings, however typical the clinical picture may be, we are, nevertheless, often forced to depend on a study of the latter, and if this is permissible clinical observation of acute hemiplegias and occasionally a chronic one would seem to admit of a reasonably accurate pathologic diagnosis in many instances.

The cause of spastic hemiplegia in children may be briefly stated as follows: First, vascular lesions, to-wit: (*a*) hemorrhage from venous or arterial rupture, the result of trauma or occurring spontaneously in intense congestions, as in convulsions or the paroxysm of whooping cough; (*b*) embolism from cardiac or arterial thrombi or endocarditis; (*c*) endarteritis and thrombosis. Second, inflammatory changes, to-wit: acute encephalitis and meningoencephalitis. Third, rarely, a tumor.

CASE SUMMARIES.

The following cases would seem to illustrate some of the above causes:

Case 1.—*Diagnosis.*—Intracranial hemorrhage, either delayed traumatic or vascular rupture occurring in the course of a convulsion which in turn was the result of fright.

History.—James B., aged 4 years, fell from a baby carriage to the ground. No injury was evident at the time, but he was greatly frightened. On awakening the following morning, he sat up and called for a drink of water. A moment later he was found in a convulsion, followed by coma. On awakening he had right hemiplegia and aphasia; no fever. Examination a week later gave the condition as above, no trace of injury, no heart lesion, urine negative, electrical reaction unchanged.

Case 2.—*Diagnosis.*—Left hemiplegia, caused by an embolism from a heart thrombus, forming in the course of acute myocarditis in diphtheria.

History.—Martha O., aged 10 years, had diphtheria; antitoxin was given on the third day. In the second week there was palate paralysis, marked dyspnea, palpitation, edema of the extremities and scanty urine. A few days later while in this condition she was given a tub bath, and during the ordeal she became very cyanotic and seemed unconscious. Ten days later left hemiplegia was noticed. In the course of several weeks all symptoms subsided, but paralysis persisted. Examination at the third month revealed spastic paralysis of the left side, heart area enlarged, second pulmonic loud, no murmurs, urine normal.

Case 3.—*Diagnosis.*—Juvenile progressive dementia, resulting from syphilitic disease of the brain in the form of an endarteritis and thrombosis with consequent cerebral changes.

History.—James O'B., aged 10 years, at the age of six weeks had a generalized eruption, also suppuration around the nails. All cleared up under treatment in a few weeks. He developed normally to the sixth year; thereafter he showed failing intelligence, spastic gait and stammering speech. Examination revealed rigid pupils, right spastic hemiparesis with exaggerated deep reflexes. No ataxia. Eye grounds normal; no change in electrical reactions, no disturbance of rectal or vesical function. *Petit mal* attacks.

Case 4.—*Diagnosis.*—Acute encephalitis.

History.—Bennie H., 14 months old, always well up to the present illness, was seized with vomiting, fever and drowsiness. Inside of 48 hours left-sided paralysis was noticed. Examination a week later showed left spastic hemiplegia, deep reflexes exaggerated, electric reactions normal, no evident mental impairment. Subsequent observation showed continuous improvement. He started to walk a couple of months later and shows but slight traces of hemiplegia. The child is playful and has no apparent discomfort.

The similarity of the clinical history of this case to that of a poliomyelitis is evident. Attention was called to this similarity by Strümpell in his original article on the acute encephalitis of children. In this he also suggested that they were caused by the same infection, the difference in the clinical picture depending only on the location of the process; in the anterior horn in poliomyelitis and in the cerebrum in the polioencephalitis. This view was reinforced by the report of the occurrence of a case of poliomyelitis in one child and encephalitis in another in the same family at about the same time.

An encephalitis may also occur during the course of or following an acute infectious disease, in which event it is assumed it is caused by the infectious agent or its toxin. This has been reported in many of the acute infectious diseases, as measles, scarlet fever, etc., but notably in influenza, in which Nauwerk and others have demonstrated the cerebral lesion to be due to a local influenza infection by finding Pfeiffer's bacilli in the diseased foci.

Osler and Dercum have reported cases of hemiplegia dependent on cerebral tumors. Seeligmuller laid some stress on solitary tubercles as a cause of the spastic paralyses, but apparently without any convincing effect.

The following case is presented as one in which a spastic hemiplegia was a prominent symptom. I am indebted to Dr. J. A. Harvey for the privilege of reporting this case.

Case 5.—*Diagnosis.*—Anatomic: solitary caseous tubercles of the brain—(*a*) right lobe of the cerebellum, (*b*) left crus and internal capsule, (*c*) left occipital cortex. Tubercular meningitis. Chronic internal hydrocephalus.

History.—Marie P., aged 4 years 9 months, was in fair health to the third year. She had a series of infections, including measles, pertussis and pneumonia. Thereafter she was less active mentally and physically. Occasionally she had convulsive seizures, dizziness, headache, cerebellar ataxia, etc. At the age of 4 she had an attack characterized by fever, vomiting and opisthotonos. This subsided in five days, leaving left ptosis and facial paresis. Several days later right spastic hemiplegia developed. Double optic neuritis. On spinal puncture a clear serous fluid under pressure was obtained. Bacteriologically negative. Temperature, 99 to 101 degrees *per rectum*. Ultimately she succumbed in coma.

On reviewing the etiology of infantile spastic hemiplegia of postnatal origin, the conclusion seems unavoidable that the causes are essentially the same as produce hemiplegia at later periods of life.

While we do not find in children the miliary aneurisms or arteriosclerosis that are found in later life, and which with high arterial tension is the source of spontaneous hemorrhage at this period, we may have a hemorrhage resulting from spontaneous rupture during sudden, intense, venous congestions, as in convulsions or the paroxysms of whooping cough, or we may have a hemorrhage from head injuries. Likewise an infantile spastic hemiplegia may depend on a specific cerebral endarteritis and thrombosis, or an embolus from a nearby arterial or cardiac thrombus or an endocarditis, resulting in areas of cerebral softening, all of which are common causes of hemiplegia at all periods of life.

Although the frequency of inflammatory processes

as a cause of infantile spastic hemiplegias may remain a disputed question, the fact of their occurrence seems to have been placed beyond a doubt, in view of the pathologic reports of Ganghofner, Nauwerk, Raymond, Batten, etc. Encephalitis, however, is a lesion that may occur at any time of life, and is probably an important factor in the causes of cerebral paralyses in children. Close clinical observation of some cases of infantile spastic palsies seems to allow of no other assumption than that of an acute encephalitis as its cause.

Cerebral tumor is hardly to be considered as a factor in these cases, because hemiplegia, if it exists, will merely form one of a series of clinical manifestations of the tumor, the diagnosis of which will take precedence over a symptom.

BACTERIOLOGIC AND BLOOD FINDINGS IN THIRTY-SIX CASES OF BOWEL INFECTION OF INFANTS.*

J. C. COOK, M.D.
CHICAGO.

The 36 cases which I am about to present have been selected from 350 cases of diseases of children, which came under my supervision in the Jackson Park Sanitarium during the summer of 1905.

Those cases, the clinical aspect of which showed more or less severe type of anemia, are the ones selected for the special work to which I wish to call your attention. The work was taken up with the hope of obtaining findings pointing to the relation of the condition of the blood, the enlargement of the glands and spleen and the bacterial and metabolic intoxications.

The most important data obtained in each case are incorporated in the table. The cases have been arranged with regard to the red blood count, the highest to the lowest, that being the most logical order on which to make comparisons.

In every case of examination of the blood, including a count of the red and white cells, a differential count of the white cells and a hemoglobin test was made. In cases in which a general infection was suspected, cultures from the blood were made. The results of microscopic examinations from the stools and throat were recorded, as they seemed to have direct bearing on the clinical aspect of the case.

Of the physical findings, only the enlarged glands and spleen and lesions which might serve as atria of infection were recorded. Such other information as is of interest in the consideration of the subject is also placed in the table.

The diagnosis which is recorded in each case was that made at the time the case was sent into the hospital, and, in view of the careful examination made afterward, would seem to have been, in many cases, symptomatic.

CLASSIFICATION OF CASES.

Accordingly, I will classify the cases as they are numbered in the table.

1. SYMPTOMATIC CLASS.[1]

12 cases of enteritis (Cases 1, 6, 7, 15, 18, 21, 25, 26, 28, 30, 31, 33).
1 case of anemia (Case 17).
1 case of constipation (Case 13).
2 cases of malnutrition (Cases 16 and 30).
3 cases of indigestion (Cases 12, 32, 34).

2. ACUTE INFECTIONS.

2 cases of vaginitis (Cases 23 and 24).
2 cases of pneumonia (Cases 4 and 29).
1 case of bronchitis (Case 5).

3. CHRONIC DISEASES DUE TO DISTURBED NUTRITION.

4 cases of rickets (Cases 8, 9, 10, 20).
1 case of scurvy (Case 3).
1 case of marasmus (Case 13).

4. CONGENITAL DISEASES.

1 case of syphilis (Case 11).
1 case of cerebral palsy (Case 23).
1 case of cretinism (Case 36).

5. CASES IN WHICH THE BLOOD FINDINGS ARE OF INDIVIDUAL INTEREST.

1 case of hemiplegia (Case 27).
1 case of icterus neonatorum (Case 2).
1 case of goiter (Case 19).
1 case of cretinism (Case 36).

BLOOD EXAMINATION.

The normal number of red blood cells in children[2] is fairly constant after the eighth day, at about 5,000,000. In the cases of anemia, however, I wish to note that the red blood counts varied from 8,850,000 to 3,256,000. The white count,[3] which normally is about 10,000, varies from 6,600 to 53,000.

The differential count of white cells in infants[4] is: Small lymphocytes, 50 to 70; large lymphocytes, 6 to 14; neutrophiles, 28 to 40; eosinophiles, 5 to 10. In these cases we have differential counts as follows: Small lymphocytes, 4 to 77; large lymphocytes, 6 to 56; neutrophiles, 8 to 87; eosinophiles, 0 to 10.

Normal hemoglobin in children is 85 per cent.[5] In these cases the hemoglobin ranges between 45 and 100. The color index, which is normally 8.5, ranges between 1.5 and .4.

Even a hasty glance at the table will convince one that those cases having a normal red count are normal in respect to the other findings. Hence the logical conclusion to make in regard to the variation of the red count, namely, that there is a concentration of the blood in those cases showing clinical aspects of anemia and high red counts.[6]

If the anemia were due to similar etiologic factors, taking into account the ages of the patients and digestive leucocytosis, we would expect a similarity in the white and differential counts; but a comparison of Cases 1 and 6, 16 and 30, and of 12 and 34 will readily convince one that there are not similar causes exciting the leucocytosis.[7] The same condition will hold true when a comparison of the percentage of hemoglobin is made if we take into account the number of red cells, which condition is represented by the color index.[8]

Again, if we attempt to account for the enlarged spleens on the same basis, and a comparison is made of Cases 3 to 18 and Case 30, we are compelled to look for a different cause to account for the variations in the number and differential count of the white cells. The same

---

* Read in the Section on Diseases of Children of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

1. Wien. med. Wochschr., 1894, xiv, pp. 401, 464, 516, 650, 613,
2. Sorenson. Cited by von Luibeck: "Grundriss einer klinischen Path. des Blutes," Jena., 1896.
3. Whitney and Wentworth. Cited by Roach: "Pediatrics," 1896, page 348.
4. Gondobin: Jahrb. f. Kinderhlk., 15893, v, No. 35, p. 187.
5. Da Costa: "Hematology," 1902, p. 280.
6. Oppenheim: Deutsch. med. Wochschr., 1889, No. 42; also Hay: Jour. Anat. and Physiol., 1882, p. 430.
7. Counts were made a sufficient time after feeding to eliminate digestive leucocytosis, which, according to Cabot, might vary from 1 to 30,000.
8. Cabot: "Clinical Examination of Blood," p. 303, 1901.

SYNOPSIS OF FINDINGS IN 36 CASES OF CHILDREN'S ANEMIAS.

No.	Date.	Temp.	Red Cells.	White C.	S. L.	L. L.	N.	E.	Hb.	C. I.	Age.	Av. Temp.	Accessory Findings.	Diagnosis.
1*	7-16	98.8	8,850 000	20,000	19	17	64	..	70	.4	7 months.	100.4	Wt. 6 lbs.; poorly nourished; convulsions	Enteritis.
2	8-9	97.6	7,840,000	17,000	18	52	30	..	60	.4	11 days.	100.3	Wt. 8½ lbs.; well nourished; thrush and mycoides infection; scaly eruption in axilla, etc.	Icterus neonatorum.
3	7-27	99.6	7,680,000	9,600	40	25	35	..	70	.5	11 months.	100.9	Wt. 12 lbs.; fair nutrition; enlarged spleen; inguinal glands; papular eruption.	Scurvy.
	8-17	100.6	4,866,000	16,600	14	56	28	2	70	.7				
	8-21	98.8	3,288,000	12,000	24	46	30	..	70	1.				
4	7-23	103.	7,141,000	27,000	9	31	60	..	70	.5	18 months.	100.5	Wt. 16 lbs.; fairly well nourished; inguinal glauds; pustular geueralized eruption; mouth lesion.	Pueumouia.
	7-28	99.	7,740,000	15,000	29	23	48	..	60	.4				
	8-12	98.6	7,100.000	15,000	30	10	60	..	70	.5				
	8-21	98.6	6,660,000	20,000	34	14	52	..	70	.5				
5	7-28	99.6	7,320,000	30,000	41	15	44	..	70	.6	12 months.	100.	Wt. 12 lbs.; fairly well nourished; vomiting preseut; enlarged spleen; inguinal glands, enlarged; mycoides infection; mouth lesion; slight systolic murmur; epileptic mother.	Chronic bronchitis.
6	8-22	100.4	7,200,000	9,000	8	16	76	..	85	.6—	5 months.	100.	Nutrition poor; vomiting present	Enteritis.
7	7-14	99.6	6,520,000	9,000	42	12	46	..	90	.7—	21 mouths.	99.2	Well nourished	Enteritis.
8	7-29	98.6	6,480,000	10,800	39	35	25	1	95	.7—	36 months.	98.2	Wt. 24 lbs.; well nourished; colored	Rickets.
9	7-8	98.4	6.375,000	11,000	7	32	59	2§	70	.5—	19 months.	98.3	Wt. 7½ lbs.; poorly nourished; generalized papular rash; vomitiug present; does not walk.	Rickets.
10	7-29	98.6	5,520,000	10,000	12	44	44	..	60	.5—	36 months.	98.7	Wt. 23 lbs.; poorly nourished; enlarged spleen; inguinal glands; scaly rash; mycoides infection.	Rickets.
	8-21	99.	6,171.000	21,000	18	28	54	..	70	.5—				
11	7-29	99.	6,000,000	18,000	47	30	23	..	80	.6—	18 months.	....	Poorly nourished; vomiting present; fontanelle open; retinitis	Syphilis.
	8-15	99.	5,600,000	12,000	24	32	44	..	80	.7				
12*	8-1	95.8	5,960,000	48,000	32	8	60	..	80	.6—	6 months.	97.7	Wt. 4 lbs.; poorly nourished; mouth lesion; pucumococcus in blood	Indigestion.
13	7-15	103.4	5,800,000	6,600	15	8	77	..	100	.8	11 months.	....	Poorly nourished	Constipation.
14*	8-27	98.2	5,740,000	22,000	4	18	78	..	80	.7	6 months.	100.	Nutrition fair	Marasmus.
15	8-21	100.	5,500,000	10,000	22	20	58	..	70	.6—	24 months.	100.2	Wt. 22 lbs.; poorly nourished; streptococcus infection; conjunctivitis	Enteritis.
16*	7-27	97.	5,480,000	15,000	45	13	42	..	60	.5	5 weeks.	97.2	Wt. 4 lbs.; poorly nourished; vomitiug present; pustular erosion; mouth lesion; systolic murmur very marked.	Malnutrition.
17	8-1	....	5,460,000	14,700	35	19	46	..	45	.4	12 months.	....	Poorly nourished; vomiting present; skiu very pale	Anemia.
	8-7	101.	4,820,000	18.000	37	21	40	8	50	.5—				
18	8-4	100.4	5,480,000	14,000	41	41	12	4†	70	.6	6 months.	99.3	Wt. 11 lbs.; poorly nourished; enlarged spleen; glands papular; pustular eruption on scalp; vomiting frequent.	Enteritis.
	8-17	98.8	3,650,000	.....	..	..	..	..	80	1.1				
19	8-16	99.4	5,460,000	15,000	22	18	48	2	80	.7	132 months.	....	Poorly nourished	Goiter.
20	7-26	99.	5,400,000	25,000	34	19	47	..	90	.8	24 mouths.	98.9	Wt. 19 lbs.; enlarged spleen; brown macular rash on breast; pediculi capitias with resulting abscesses on scalp; excoriations.	Rickets.
	8-1	99.	.....	27.100	39	7	34	..	90	..				
21	8-12	98.4	5,320,000	9,000	12	39	59	..	70	.7	7 months.	98.8	Wt. 15 lbs.; well nourished; glands; throat lesion; generalized papular eruption; frequent vomiting.	Enteritis.
22	8-3	99.8	5,180,000	15,600	59	28	8	5	70	.7	3 months.	100.1	Wt. 9 lbs.; poorly nourished; glands; mouth lesion; papular eruption; mild conjunctivitis.	Enteritis.
	7-16	99.6	3,162,000	11,000	48	24	24	4	90	1.5				
23	8-10	99.	5,240,000	21,000	18	32	50	..	70	.7	48 months.	100.	Wt. 26 lbs.; nutrition fair; fissured anus; walked at 20 months; convulsions; talks very brokenly; pupils dilated; vaginitis.	Cerebral palsy.
24	8-21	99.2	4,900.000	13,000	42	14	44	..	70	.7	72 months.	....	Nutritlon poor	Vaginitis.
25*	8-8	103.2	4,740,000	21,000	20	37	39	† ‡	60	.6	3 months:	101.	Poorly nourished; twin of patient, Case 26	Euteritis.
26	8-8	102.8	4,680,000	16,000	38	40	20	2	50	.5	3 months.	101.1	Wt. 9 lbs.; poorly nourished; vomiting; uniform papular eruptions; edema about eyes; twin of patient, Case 25.	Enteritis.
27	8-16	93.8	4,520,000	8,000	51	21	28	..	90	1.	3 months.	95.5	Wt. 6 lbs.; right parietal bone depressed; arms and legs spastic; soft broad palate; enlarged breasts.	Hemiplegia.
	8-18	96.1	4,390,000	20,000	38	26	36	..	75	.9				
28	8-7	98.2	4,495.000	21,600	46	12	38	4	70	.7—	11 months.	....	Nutrition fair; abscess; staphylococcus	Enteritis.
29	8-2	103.3	4,480,000	53,000	7	6	87	..	60	.6	36 months.	101.5	Wt. 22 lbs.; nutrition fair; excoriatious; respirations, 64; mycoides aud streptococcus; tuberculous father.	Pneumonia.
30	7-16	98.6	4,440,000	25,000	36	34	30	..	70	.7	5 months.	99.9	Wt. 7 lbs.; enlarged spleen; lesions in mouth; later wt., 4 lbs.; mother died of tuberculosis.	Malnutrition.
31	8-16	100.2	4.380,000	11,000	38	16	46	..	70	.7	3 months.	99.9	Wt. 18 lbs.; glands on neck	Enteritis.
32	8-16	100.	4.360.000	16,000	30	30	39	1	60	.6	15 months.	99.6	Well nourished	Indigestion.
33	7-12	100.	3,960,000	12,240	40	29	31	..	55	.6	10 months.	....	Nutrition fair	Enteritis.
34*	8-12	97.6	3.250.000	20,500	27	14	58	§	50	.7	2 weeks.	96.7	Wt. 6 lbs.; poorly nourished; vomiting present; mouth lesion; excoriations	Indigestion.
35	8-14	100.4	3.256.000	13,000	36	24	40	..	70	1.	1 month.	....	Nutrition fair; vomiting present	Chronic bronchitis.
36	....	98.	4,800,000	12,000	52	8	30	10	85	.8	96 months.	98.6	Thick lips; arrested development; involuntaries; tremor; constipation; mentality fair.	Cretinism.
Normal blood av.			5,000,000	10,000	60	10	34	7.5	85	8.5				

* Fatal Cases. † Two per cent. myelocytes. ‡ Two per cent. mast-cells. § Myelocytes.

holds true in a comparison of the acute Cases 4 and 29.

It would seem that the value of the blood count in the diagnosis of infantile anemia was negative and this is true if we expect to gain from the blood count the indications of any one specific etiologic fact for our anemia.

SIGNIFICANCE OF BLOOD EXAMINATION.

But let us look for the significance of blood examination. The following conclusions may be reached:

1. In those cases which present the clinical aspect of an anemia and show a high or even normal red blood count, there is a concentration of the blood, pointing to the lack of sufficient ingestion of fluids or to a depletion of the system from vomiting or from diarrhea and indicating a high concentration of toxic substances.[9]

2. An examination of Cases 11, 23 and 36 when compared with those of (so-called) enteritis would lead us to conclude that the increase in the number of white cells is due to the specific character of absorbed toxins rather than to the toxicity of the same. If we have present in the intestinal tract or in the abraded surfaces more than one variety of micro-organisms, then the number of the white cells and the differential count will not be characteristic of either.[10]

3. Lastly, we must look to the hemoglobin for some definite information as regards the condition of the blood in these cases. Here we find a more uniform index of the actual condition prevailing. When we take this in conjunction with the red count we can readily see that the color index gives us a still more exact indication of the anemic picture.[11]

DISCUSSION.

DR. JOHN LOVETT MORSE, Boston, said his experience leads him to believe that these red blood counts are too high. Granting that the counts are correct, he is inclined to doubt to a certain extent Dr. Cook's explanation of them. While that would explain the concentration of the blood in enteritis and marasmus, it would hardly explain the high red count in scurvy, goiter, etc. Dr. Morse thinks that a more reasonable explanation of the pallor in these conditions of malnutrition is that there is a contraction of the large superficial capillaries and a concentration of the blood in the internal capillaries, so that a red count taken from the ear or finger does not give a true picture of the blood condition. A study of the anemias in infancy shows that the anemia is almost never the primary condition, but merely a manifestation of disturbance of nutrition.

DR. A. H. WENTWORTH, Boston, said he can not see how these cases can be classified under anemia. The hemoglobin may be a little low in some of the cases. With such a high count it does not seem to him that the condition is anemia. He does not know whether or not the counts were all made by one person, but it would appear as if the element of personal equation must have entered and that there must be some error in the red counts. The number appears to him altogether too high for the condition.

DR. J. C. COOK, Chicago, stated that he considered Dr. Morse's criticism just and that it probably throws some light on the subject, in that the contraction of the capillaries may cause the appearance of the red blood cells. All the counts were made by the same man and they are actual facts. The whole work shows but one thing, the concentration of the blood in these cases. Dr. Cook thinks it has been observed that as many children die of toxemia as of actual exhaustion.

9. Similar findings were made by Kopliek, N. Y. Med. Jour., xl, p. 84.

10. Annales de Gyneeologie et d'Obstet., i, p. 51; also Da Costa: "Hematology," 1902, p. 295.

11. Cabot: "Clinical Examination of Blood," p. 120; also Da Costa, "Hematology," 1902, p. 122.

THE DIETETIC TREATMENT OF DIABETES MELLITUS.*

MAX EINHORN, M.D.
Professor of Internal Medicine at the New York Postgraduate Medical School.
NEW YORK.

In no disease does diet form a more important part of the treatment than in diabetes mellitus. As is well known, the nature of the disease consists in the fact that the organism is unable either entirely or nearly so to utilize the carbohydrate foods. We thus have to deal with a genuine anomaly of metabolism, and the main points of treatment will consist of a rational and appropriate diet so long as there is no specific remedy for this disease.

As it is possible to live on meat and fat alone without carbohydrates, it was natural to exclude this latter group of foodstuff from the diabetic diet. This was, indeed, done by the earliest observers who had knowledge of the nature of diabetes (Rollo, 1796), and this diet was adhered to with slight modifications until the present time.

The following disadvantages are attached to a purely animal diet: It offers too little variety and departs too much from the usual mode of life, and in this way will soon pall on the appetite. At the same time it is poor in inorganic salts, thus predisposing to a surcharge of the organism with acids (acidosis) and subsequent comatose conditions.

An absolute meat and fat diet can be borne for only a short period. Such a diet would be about as follows:

STRICT DIET.

8 a. m.: Two eggs, butter, tea; 11 a. m.: Ham, wine; 1 p. m.; Beef tea, 200 grams of meat or fish, one egg, lettuce or spinach; 4 p. m.: Coffee, two eggs and butter; 7 p. m.: Three eggs fried in lard, or fish with eggs or cold roast.

A trace of sugar is contained even in this diet, but it hardly amounts to over 1 per cent. By the addition of some milk and cream this diet may be made a little more agreeable, although the quantity of sugar is greater.

Such a diet list may be put together about as follows:

INTERMEDIATE DIET.

Breakfast: 200 grams of milk with 50 grams of cream, two eggs, butter and 100 grams of roast.

Dinner: 200 grams of meat or fish with asparagus or peas, salads.

4 p. m.: 200 grams of milk with 50 grams of cream.

Supper: Four scrambled eggs with 120 grams of ham.

C. von Noorden[1] determines first how much carbohydrate a patient can assimilate and allows about half of this. Such a procedure appears very rational, but can be conducted only in special clinics and not in general practice. It is best to arrange the diet according to customary principles, varying it slightly to fit the individual requirements of the patient. Whether or not a diet agrees with the patient can best be determined by noting the diminution of the quantity of sugar, as well as the total daily quantity of urine, and secondly and mainly by the patient feeling better and stronger.

According to the experience of most clinicians, it is best to permit diabetics a certain, although limited, amount of carbohydrates.

* Read in the Section on Pharmacology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

1. C. von Noorden: "Ueber Hafereuren bei schwerem Diabetes mellitus," Berl. klin. Wochschr., 1903, No. 36, p. 817.

Seegen's[2] diet list for diabetics is probably the best known and, therefore, I will quote it in full:

SOLIDS.

Allowed in Any Quantity.—Meat of every kind, smoked meat, ham, tongue, fish of every kind, oysters, mussels, crabs, lobsters, meat jellies, aspic, eggs, caviar, cream, butter, cheese and bacon. Of vegetables: Spinach, lettuce, endive, Brussels sprouts, pickles, fresh asparagus, watercress, sorrell, artichokes, mushrooms, nuts.

Allowed in Moderate Quantity.—Cauliflower, carrots, turnips, cabbage, green beans, berries, such as strawberries, raspberries, currants, also oranges and almonds.

Forbidden Absolutely.—All foods made from flour or meal; bread is allowed in moderate quantities, according to the physician's orders; sweet potatoes, rice, tapioca, arrowroot, sago, grits, vegetables, green peas, cabbage, sweet fruits, especially grapes, cherries, peaches, apricots, plums and dried fruit of every sort.

BEVERAGES.

Allowed in Any Quantity.—Water, soda water, tea and coffee. Of wines: Bordeaux, Rhine wine, Moselle, Austrian and Hungarian table wines—in a word, all wines that are not sweet and that do not contain more than the average amount of alcohol.

Allowed in Moderate Quantity.—Milk, bitter beer, unsweetened almond milk, lemonade without sugar.

Forbidden.—Champagne, sweet beer, cider, fruit wine, sweet lemonade, liqueurs, fruit juices, water ices, sorbets, cocoa and chocolate.

In general, I use about the same diet as Seegen and give the following:

		Calories.
Breakfast:	Three eggs	240
	Half a roll (20 grams)	50
	Butter (30 grams)	251
	Coffee (150 grams), milk (100 grams), cream (50 grams)	203
Dinner:	A plate of soup (200 grams), with egg	85
	Meat (200 grams)	200
	Half a roll and butter (15 grams)	175
	Asparagus with butter sauce (salad)	30
Supper:	Oysters or fish (100 grams)	100
	Three scrambled eggs with butter (15 grams)	365
	Half a roll with butter (15 grams)	175
	Westphalian ham (50 grams)	200
	Apples, tea and cream (50 grams)	138
		2,212

Various diet cures have proved of value in diabetes. Of these the best known are the "milk cure" of Winternitz,[3] the "potato cure" of Mossé, and the "oatmeal cure" of von Noorden.[1]

Whereas Mossé's potato cure has not proved of much value, the other two cures are useful in suitable cases. They should not be extended over too long a time because a too limited diet is harmful if continued too long. Winternitz's milk cure consists in the patient exclusively taking milk (about four quarts daily).

Von Noorden recommends his oatmeal cure, especially in grave cases of diabetes. He uses either Knorr's oatmeal or Hohenlohe's oatmeal flakes. This substance is boiled in water for a long time with a little salt; while boiling butter and a vegetable albuminoid or, after cooling, the beaten white of eggs are added. Roborant may be employed for this purpose with good advantage. The daily quantity is 250 grams of oatmeal, 100 grams of albumin and 300 grams of butter. The soup prepared in this manner is given every two hours. Cognac or wine or black coffee may also be permitted.

No matter what form of diet is instituted, it is always essential to see that the quantity of food is sufficient. In this respect fat (butter, cream, oil, lard) is of more importance here than in other conditions. Alcohol, taken moderately in the shape of whisky, cognac or wine, is also of value. The body receives in the first place more fuel (as 50 grams of alcohol, which may be put down as the daily quantity, contain about 350 calories), and secondly because the patient, with the addition of wine, can take more of the greasy food than without it.

STOMACH COMPLICATIONS.

After thus having touched on the fundamental principles of diet in diabetes mellitus, I would like to add a few words about it in those cases of diabetes which are complicated with affections of the stomach. Two groups of functional disturbances of the stomach are found most frequently in diabetes, hyperchlorhydria and achylia.

If hyperchlorhydria complicates diabetes the treatment is easy, as the diet is the same in both (principally fat and albumin). Even the medicinal treatment of hyperchlorhydria (alkalies, sedatives) influence also the diabetes favorably.

It is different in achylia gastrica complicating diabetes. As is well known, meat is not well borne in achylia gastrica, whereas a vegetarian diet (plenty of carbohydrate) usually agrees best with these patients. We are thus confronted by a dilemma. The diabetes requires a preponderance of animal, the achylia a preponderance of vegetable food. We must find a way to select the food so that while it is rich in albumin and fat it still contains little meat.

In these cases a trial of the von Noorden oatmeal cure would be appropriate.

In three cases of such a combination of achylia and diabetes I have used the following diet list with advantage:

		Calories.
Breakfast:	Three soft boiled eggs	240
	One roll (40 grams)	100
	Butter (30 grams)	251
	Coffee (200 grams) and cream (50 grams)	138
Dinner:	Beef tea (200 grams), with meat powder (30 grams)	118
	Three scrambled eggs	240
	Half a roll	50
	Butter (30 grams)	251
	Spinach or asparagus (50 grams)	82
Supper:	Two eggs beaten with 150 grams of milk and 50 grams of cream	394
	Mashed Potato (50 grams)	63
	Crackers (10 grams)	24
	Cream cheese (20 grams)	79
	Butter (30 grams)	251
9:30 p. m.:	300 grams of Kumyss with almonds and nuts	100
		2,381

It is understood, of course, that this diet must be somewhat varied. I often use pea soups, although they contain a considerable amount of carbohydrates.

After the patient has lived on this diet for about one week, it is better to add for dinner some meat (chicken, calf's brain, sweetbread or chopped meat).

The main point in the treatment of these patients lies in the fact that they have to take more carbohydrates than usual and that they do better under this mode of treatment.

The urine naturally must also serve here as an indicator to determine whether or not the amount of carbohydrate is harmful.

Another class of digestive disturbances occurring in diabetics is that of catarrh of the stomach or bowel. We

2. J. Seegen: "Der Diabetes mellitus," Berlin, 1895; see also Friedenwald and Ruhrāh: "Diet in Health and Disease," 1905, p. 470-471.

3. Winternitz und Strasser: "Strenge Milcheuren bei Diabetes mellitus," Centlbl. f. innere Med., 1899, No. 45.

usually have to deal with acute affections of the stomach and bowel, or of both organs, produced by overfeeding with too greasy or too heavy food.

In these cases the dietetic treatment must be directed especially against the acute affections and we must leave the diabetes out of consideration.

A bland meager diet is the main thing (beef tea, gruels, milk, possibly raw eggs beaten up in milk or beef tea). When the acute stage of the digestive disturbances is passed we can slowly return to the antidiabetic diet.

DISCUSSION.

DR. HEINRICH STERN, New York City, speaking of the oatmeal cure of von Noorden, Mosse's potato cure and the milk cure, said that everybody knows that milk contains from 4 to 5 per cent. of lactose, which the diabetic organism can burn up only in the rarest of instances. In these few instances, of course, milk may be administered in quantities sufficient to maintain the nitrogen balance. In the case of at least 95 per cent. of all diabetics the ingestion of lactose, on the other hand, will increase the amount of glucose output. Mosse's potato cure is merely an imitation of von Noorden's scheme. Such dietary regulation may be indicated in certain cases of chronic glycosuria, or in certain phases of diabetes, but to recommend them for every diabetic at all times is, Stern said, illogical as well as nonsensical. He declared that it is extremely irrational for von Noorden to give his oatmeal together with 250 or 300 grams of butter every day. Von Noorden says that when the butter is washed the fatty acids of low melting power are eliminated from it. This, it is true, takes place to a slight degree; the greater part of these acids still remains in the butter after ordinary washing with cold water. As pointed out, the acetone substances have for their mother substance oxybutyric acid. This butter, in quantities as recommended by von Noorden, contains enormous amounts of butyric acid. Hence, the diabetic exhibiting acetone, for whom primarily the oatmeal cure was devised, virtually is poisoned by the butyric acid he ingests. What should be done in such instances is to withdraw all fatty acids of low melting power and to substitute therefor those of high melting power. Dr. Stern said that the yolk cure suggested by him furnishes the ideal fatty substances for the diabetic, especially to one exhibiting diaceturia or acetonuria.

DR. S. SOLIS-COHEN, Philadelphia, said he did not know what diet will actually prevent the formation of acetone, diacetic and oxybutyric acids. As a chemical neutralizing agent he is in the habit of giving diabetic patients sufficient sodium bicarbonate to keep the urine alkaline. Sometimes alkaline mineral waters suffice. He considers acid coma the one great danger in those chronic cases of diabetes in which we can even talk about treatment. He does not wait for its appearance, but tries to prevent it entirely by always keeping sufficient alkali in the circulation, and to insure this he instructs his patients to test their urine with litmus paper sufficiently often. When a patient holds his weight and has alkaline urine, the mere percentage of sugar passed does not seem highly important, and Dr. Solis-Cohen frequently allows a wide range of diet in such cases.

DR. O. T. OSBORNE, New Haven, Conn., agreed with Dr. Solis-Cohen. He said that many of these reported cures in diabetes are cures of glycosuria. In diabetic treatment we must keep in mind the ability of the suprarenals, pancreas and liver to deal with sugar and starches. Disturbance of any one of these will allow sugar to appear in the urine, and if on a starch and sugar-free diet, the patient has still sugar in the urine, the case is one of diabetes and not of glycosuria. Osborne believes that the dietetic treatment of diabetes, as it used to be understood, that is, withholding all carbohydrate food, is absolutely pernicious, and that it is important that diabetics should have a properly mixed diet.

DR. MAX EINHORN, New York, said with regard to the origin of the diacetic acid and acetone in the body, that the fats do not cause it. A meat diet appears to be the principal factor in their origins. The reason for this is that all animal food apparently is poor in inorganic matter; the alkalies are more abundant in vegetable foods which have a great deal of potassium salts. In cases of achylia gastrica complicating diabetes more vegetable foods must be given. He has seen many patients who can not get along on the usual diabetic diet. In such cases the oatmeal cure can be tried. Oatmeal contains a great deal of inorganic salts. Winternitz' milk cure can be tried as a change. It is a well-known fact that a patient who will not do well on one substance may derive great benefit from a more liberal diet; it does not matter if there is a little more sugar. The patient may be given four quarts of milk, and the milk contains 4 per cent. of glucose. Empirically, it is known that there are patients who improve under such treatment. Any such cure should not be extended over a long period of time. In order to have a patient live on a diet for a long time he must have a variety of food; none will do for a long time. A meat and fat diet will not do. Symptoms of weakness develop. An effort should be made to add carbohydrates without doing harm to the patient. If bread is added and the patient under such a régime begins to pass two quarts of urine and the amount of sugar rises and he gets weaker, this is not a proper diet and it must be changed.

Always see that the patient does not take too little food, for that alone will be enough to run the patient down. Some patients get weaker and weaker as soon as their malady has been discovered and they have been put on a too limited diet. He takes a piece of meat and does not care for it without bread, and he dies from inanition. If the patient can not enjoy meals without bread, give him bread and put plenty of butter on it and a little wine, if he wants it. Strengthen the organism instead of letting it run down. Shortly after Dr. Einhorn graduated in Berlin he made experiments on frogs and had them live in solutions of water with the addition of pure grape sugar. The object of this series of experiments was to study the amount of glycogen in the liver. The frogs were kept in sugar until killed, and then Dr. Einhorn examined the livers for the amount of glycogen. He found that the frogs that were living in sugar solutions to which an alkali was added had glycogen in the liver, while those frogs which lived in sugar solutions without alkalies had no glycogen in the liver. He believes in the administration of alkaline waters and also in the administration of large doses of alkalies in those patients who begin to show an acid state. If a comatose condition is present then large doses of alkalies should be given.

A NOVEL METHOD OF USING STRYCHNIN AND HYDRASTIN IN SEXUAL AND VESICAL WEAKNESS.*

WILLIAM J. ROBINSON, M.D.
NEW YORK CITY.

I will not weary you with a long paper. I am of the opinion that a practical point, which one can at once utilize on his patient with undoubted benefit, is of greater importance—to practical physicians—than a long abstruse paper, dealing with guesses and hypotheses and theoretical considerations, which may or may not possess value.

There is a very large class—much larger than one would imagine—of patients who are suffering from a weakness of micturition. I deliberately use this indefinite term. I do not refer to difficulty in urinating due to stricture, to prostatic hypertrophy, etc. No; there is a weakness without any discoverable pathologic basis; simply the bladder and sphincters have lost their tone, and the urine comes out without any force; the stream is split up into several thin streams and at the completion of the act there is considerable dribbling, which is very annoying to the patient, especially of the better

* Read in the Section on Pharmacology and Therapeutics of the American Medical Association at the Fifty-seventh Annual Session, June, 1906.

classes. As a rule, there is a small amount of residual urine in the bladder. If this condition just described is not attended to, it is apt to become aggravated, leading to cystitis with its well-known symptoms and sequelæ.

The number of people suffering with sexual disorders of one sort or another is exceedingly large, so large, indeed, that only he who makes a specialty of these cases can have any idea of their frequency. But of all sexual disorders we come in contact with, by far the most common is ejaculatio præcox. It is more common than all other sexual disorders combined. To one case of impotentia coeundi or generandi, or absence of libido sexualis we have 30 or 40 cases of ejaculatio præcox. And it is as common in young men of 18 as in strong men in their prime at 35, or in elderly men at 50 or over. Into the causes of ejaculatio præcox I will not go in detail. I merely mention that those causes are numerous, the chief four being excessive masturbation, excessive sexual indulgence, neurasthenia or nervous depression and chronic gonorrheal posterior urethritis, comprising in the latter term also prostatitis and vesiculitis.

OBJECTIONS TO ADMINISTRATION BY THE MOUTH.

It is universally conceded that strychnin is the remedy *par excellence* in loss of tone and functional atony of every character. That it is of benefit in vesical and in certain stages or varieties of sexual weakness nobody will deny. But the usual method of administration by the mouth is frequently open to grave objections.

The first objection is the dose of strychnin, which we must give in order to make an impression on the local condition. The administration of toxic drugs is always an evil, and, though a lesser evil than the condition for which it is given, it is an evil nevertheless, and the smaller the dose with which we can accomplish our purpose the lesser the evil. Administered internally, we must give it in doses of 1/20, 1/16 and even 1/10 gr. in order to achieve results. And the drug must be given for a considerable length of time.

The second objection is that strychnin administered by the mouth acts very injuriously in a large number of cases. Many neurasthenics are very much aggravated by strychnin. I have had occasion to convince myself of this fact dozens and dozens of times. Any possibility of suggestion is excluded. I have had many patients tell me that since they took those tablets or medicine, they being ignorant of what they were taking, they felt a heat, a burning sensation along their spine and were weaker and more irritable. Pollutions are frequently very much aggravated by strychnin administered in the ordinary way. Again, in people with good normal arterial tension, it may cause splitting headaches; it may produce diarrhea and it very often increases the libido sexualis, a condition which we, in many cases, most decidedly wish to avoid. All those considerations have led me to search for different methods and avenues for the introduction of strychnin.

AUTHOR'S IMPROVED TECHNIC.

And after many theoretical considerations and practical trials I have elaborated a plan which is giving me and my patients extreme satisfaction. The plan is very simple and consists in depositing a solution of strychnin by the aid of a Guyon syringe into the urethra, either just within the vesical sphincter or anteriorly to it, into the posterior urethra. But before giving the exact technic, I will state that I found a combination of strychnin with hydrastin much more efficient than the strychnin alone. The hydrastin exerts a distinctive curative action on the catarrhal or slightly congested condition of the urethral mucous membrane; its action is particularly marked when the vesical or sexual weakness is the result of chronic gonorrheal urethritis; but even when due to other causes the action is remarkably beneficial. The combination I have been using for several years is as follows:

Strychninæ sulphatis.....gr. i	.06
Hydrastinæ hydrochloridi.....gr. x	.6
Sol. acidi borici saturatæ.....400 drops.	

One minim of this solution represents 1/400 grain of strychnin and 1/40 grain of hydrastin.

I have the patient urinate, wash out the urethra with a boric acid solution of 1/10000 solution of oxycyanid of mercury. I fill up the Guyon syringe, attach the properly sterilized Guyon catheter, screw down the piston until a drop appears at the opening, and introduce it into the urethra to the spot where I want to deposit the solution. By turning the screw I deposit just as many drops as I wish to. Each turn of the screw corresponds to one drop. I seldom use more than 4 drops, corresponding to 1/100 grain of strychnin and 1/10 grain of hydrastin. And with this small dose, administered once or at the most twice a week, I accomplish more definite positive results than with 1/20 grain of strychnin by the mouth three times a day and every day in the week. In other words, I accomplish with 1/100 to 1/50 grain strychnin given endorethrally more than with 1 to 2 grains administered by the mouth. And, besides, I have no after-effects. None of the undesirable accompaniments of strychnin which I have enumerated have ever made their appearance.

I do not wish it understood that this is the only combination I use. I sometimes combine the strychnin and hydrastin with ergotin, sometimes with adrenalin, sometimes with both. I also use other combinations and I do not give them here in detail because the object of this paper is not to present a detailed treatment of vesical and sexual weakness. My sole object is to call attention to the medicinal treatment of a class of diseases which are very often obstinate and in which internal treatment is either unsatisfactory as to results or as to undesirable by-effects.

Are there any cases in which this local instillation is inapplicable? I have not come across any. There is a small percentage of patients in whom the slightest manipulation of the urethra with the softest catheter, the instillation of a drop of water in the posterior urethra, will cause pain, spasm and even fever. In such cases a local anesthetic occasionally becomes necessary.

I do not use cocain in the urethra, have not used it for years, since a disagreeable experience in which I had nearly lost a patient. I use some of the well-known substitutes for cocain, my favorites being the lactate of benzoyl-vinyl-diacetone-alkamin or the hydrochlorid of benzoyl-tetramethyl-diamino-ethyl-isoprophylic - alcohol.

I have also used strychnin and hydrastin in the form of rectal suppositories. The results, while not equal to those obtained by the local instillation of the alkaloids, are still very good. It is well to bear in mind, however, that the rectal dose of strychnin is, by exception, smaller than the dose by the mouth. A great portion of the strychnin becomes destroyed in the gastrointestinal canal and only a small percentage remains unchanged to exert its physiologic effect. This is not the case when the strychnin is exhibited by the rectum, and 1/100 grain of that alkaloid by the rectal route has a better effect,

and without any drawbacks, than 1/40 or even 1/30 of a grain administered by the mouth.

CONCLUSION.

I wish to make a plea for the stomach. Let us let the stomach alone as much as possible. Let us reserve the stomach for food and drink, and whenever possible let us utilize other avenues for the introduction of medicine. It is true that there is no other avenue that is just as convenient, but using other avenues the action of the remedy is more clear-cut, and we can often obtain results unobtainable with drugs administered by the mouth.

And I will beg your indulgence for giving an additional illustration. We all know the great value of oleum santali in urethritis, cystitis, ardor urinæ, strangury, etc. We also know how liable it is to upset the stomach, destroy the appetite, etc. Some people are utterly unable to stand it. In selected cases I have, therefore, utilized an emulsion of oil of santal, injecting it directly into the bladder. In strangury particularly and in cystitis in general, the effect is striking, occasionally simply marvelous. And we obtain these results in a very short time, often immediately, without punishing the stomach for sins committed by another organ, without taxing and irritating the kidneys; in short, we do not upset the entire organism in order to influence medicinally one spot in it. And this is the object of this paper: attempt to treat locally all affections which can be reached by local means.

DISCUSSION.

Dr. E. T. Tracy, Boston, considers the application of medicines locally to affections of the mucous membrane of the urethra successful. He thinks that perhaps much of the efficacy of Dr. Robinson's treatment in these cases of irritation is due to the hydrastin because the small amount of strychnin (1/100 of a grain, three times a week) hardly seems capable of producing marked influence. The hydrastin, he said, has a soothing, healing effect which brings the mucous membrane into a normal condition and does away with the reflex conditions which bring about premature ejaculation.

Dr. A. L. Benedict, Buffalo, N. Y., pointed out that in treating the stomach, which is easily reached, the tendency is to use local means. He does not advocate the uniform use of instrumentation through the esophagus. Many of the devices are unnecessarily elaborate, yet in the treatment of the stomach and esophagus it is necessary to use special local methods of medication. How much more so should this be true in the case of the urethra and surrounding parts, which are reached in the most roundabout way, and in the most fractional dose by medicines administered by the mouth. He asked Dr. Robinson to explain the difference between hydrastin and hydrastinin. Although much has been written about the active principles there is still, he said, a great deal of confusion about them.

Dr. W. J. Robinson, New York, said that he has tried strychnin alone, and then used hydrastin separately. The real tonic action is reinforced by the hydrastin, but he does not ascribe the greatest benefit to it. The strychnin is the principal thing; the hydrastin comes next. As to the difference between hydrastin and hydrastinin, he uses hydrastinin as a hemostatic only; in purely congestive conditions he has always been in the habit of using hydrastin (the alkaloid, not the resinoid).

The Opsonic Index.—By the term opsonic index is meant the relation of the phagocytic index (obtained by dividing a total number of bacteria incorporated by a total number of leucocytes incorporating) of the serum of the diseased person to that of a healthy person. In more simple language still, it is the active resistance to disease, measured by comparison with a standard.

THE RESULTS OF THE COMPLETE AND INCOMPLETE OCCLUSION OF THE ABDOMINAL AND THORACIC AORTAS BY METAL BANDS.*

W. S. HALSTED, M.D.
BALTIMORE.

[ABSTRACT.]

[Dr. Halsted prefaced his remarks with a brief historical sketch of the results of ligation of the abdominal aorta in animals and man and demonstrated an instrument and the method employed in the application of the metal (aluminum) bands.]

With the assistance of my house surgeon, Dr. W. M. F. Sowers, who most zealously aided me in making the experiments, and Dr. E. H. Richardson, a member of the surgical staff of the Johns Hopkins Hospital, during the past twelve months, I have been able to conduct experiments on the aortas of more than one hundred dogs and have noted particularly:

1. *The effects of occlusion,* partial and complete, immediate, mediate and ultimate on the blood pressure, general and local (above and below the band). The pressure below the band is lowered in proportion, roughly, to the amount of occlusion. The return of the pressure to approximately normal below the band is rapid, but varies greatly in the different dogs. For example, in one dog, a rise below the band of ten millimeters (Hg manometer) was noted in ten minutes; whereas, in another, two hours were required for a rise of fifteen millimeters. For the return of the normal pulse wave months may be required.

2. *The macroscopic and microscopic findings* in the arterial wall. (a) Partially occluding bands produced, as a rule, no macroscopic change in the aortic wall under the band, even after seven or eight months. (b) Under completely occluding bands the wall usually atrophied, and in the course of weeks or months was absorbed. (c) *When the lumen is almost but not quite occluded, complete occlusion may result spontaneously with the conversion of the arterial wall embraced by the band into a solid cylinder of living tissue. This may be considered the ideal closure of an artery,* and hitherto has probably not been achieved. Although this spontaneous secondary occlusion has occurred only thrice in the long series of experiments, it might, perhaps, if systematically tried for, be accomplished frequently, and ultimately the band might be so accurately applied that, unaided further by the surgeon, a partial occlusion would be likely to proceed to total occlusion.

3. *The effects on the spinal cord* and its coverings. The study of the spinal cords was entrusted to Mr. P. K. Gilman (now Dr. Gilman and a member of my staff), whose trained eye discovered in a number of cases, about three months after operation, a deposit of extradural fat about the cord below the site of the aortic band. In three cases the production of fat was so great that it filled, seemingly under considerable tension, the vertebral canal. This is a phenomenal discovery and one which signifies much, whether on further investigation it be found that lesions in the spinal cord or simple anemia of the particular extradural region are responsible for the deposition of fat. It is important to determine with precision the limitations of the fat deposit and to ascertain if regions at a distance, supplied by

---

* Read in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

nerves derived from the affected cord-area, yield symmetrical masses of fat.

As to the practical value of the occlusion of blood vessels by the metal band, I have in mind the gradual occlusion of large arteries, particularly the aorta, abdominal and thoracic. A vessel partly closed by a nicely rolled band may subsequently be completely occluded either spontaneously (ideal result) or by the pressure of the fingers or of a forceps on the band. It is conceivable that in some instances this subsequent tightening of the band might be accomplished subcutaneously, but usually a second, though comparatively insignificant, operation would be required. Aortic aneurisms if situated too high for the subdiaphragmatic application of the band might be cured by a band on the thoracic aorta. To apply a band to the thoracic aorta is not difficult and may be executed rapidly without the excision of a rib. When it may be necessary to test the effect of blocking an artery before permanently occluding it, as in carotid, popliteal and high femoral ligations, the metal band might be desirable because (1) it serves the purpose of both clamp and ligature; (2) during the operation it may be safely removed if advisable, for the arterial wall is uninjured by it; (3) if too tightly rolled it may be removed at any time after the operation, even days thereafter, in case gangrene threatened or cerebral symptoms developed for, the arterial wall being uninjured, the normal lumen remains.

I have at present under observation a dog whose thoracic aorta has been experimentally occluded. The aluminum band was not rolled so tightly as completely to occlude the artery or to produce demonstrable weakness of the hind legs. The recovery from the operation was uneventful, but about three weeks thereafter paraplegia developed suddenly and, coincidently, disappearance of the femoral pulse on both sides. I expect to find that complete occlusion of the thoracic aorta has been spontaneously accomplished, and in the manner above described. Partial occlusion, not becoming complete, might of itself occasionally cure an aneurism.

In the human subject I have partially occluded the innominate once and the common carotid four times, successfully, with the aluminum band. In a case of large popliteal aneurism I employed the metal band to occlude completely the femoral artery because this method enabled me particularly well to test the blood pressure during the gradual process of occlusion. In the case of a woman asphyxiated to unconsciousness by an aneurism of the aortic arch I exposed, carefully and freely and without puncturing either pleural cavity, the heart and the arch of the aorta, hoping possibly to be able to encircle with a band the aortic arch between the regions of the innominate and left carotid arteries, but the aneurism so involved the entire arch as to defeat the earnest endeavor to execute the procedure.

I may assume that it is not necessary to remind this audience of the results which have attended ligation of the human aorta. The most successful of these operations was performed in 1899 by Dr. W. W. Keen, whose patient, the thirteenth case, lived forty-three days.

DISCUSSION.

DR. W. W. KEEN, Philadelphia, said that when he commenced the operation, which he did about seven years ago, it was with the intention of getting at the sac safely and without injuring the abdominal viscera, in order to introduce wire into it, but when he found the rather long portion of the aorta apparently free from disease, he felt that it was "flying in the face of Providence" not to tie it, and he did so, making the thirteenth case on record. He regretted to say that the procedure was followed by a thirteenth death; but the patient lived for forty-three days, the longest period on record.

Since then Tillaux and Körte have tied the aorta twice more, making fifteen cases and fifteen deaths. After his own experience, when Dr. Keen had felt the enormous rebound of that aorta and the narrow ligature that we put on such vessels, he made up his mind that never again would he be tempted to tie the aorta in that way. And accordingly he devised an instrument for the purpose of its obliteration, not by a narrow ligature, but by a broad metal clamp, one clamp behind the artery and the other in front of it and adjustable by a screw.

The work done by Dr. Halsted, Dr. Keen said, certainly is most notable and it is precisely along the line of what he believes is going to bring success after the fifteen recorded failures, that is, that the aorta must be obliterated not narrowly, as by a ligature, but by a band in order that we shall avoid exactly what happened in one of Dr. Halsted's cases, that the edge of the ligature cuts through the vessel and as the result of this the animal died from secondary hemorrhage.

REDUPLICATION OF HEART SOUNDS.

HENRY C. PILLSBURY, M.D.
Contract Surgeon, U. S. A.
WASHINGTON, D. C.

Reduplication means doubling; that is, the sounds still strike the ear, not as a single tone, but as a double tone. Both the first and the second sounds may be reduplicated. The appearance of extra beats is a totally distinct phenomenon.

This subject has received scanty attention. Potain, in a study of 500 hearts, makes the first mention in literature. In a certain percentage of normal hearts, he found a doubling of the first sound at the end of expiration and beginning of inspiration; of the second sound, at the end of inspiration and beginning of expiration. All later observers have agreed as to the accuracy of Potain's observation. But as to the interpretation of the phenomena the theories advanced are as variable as possible.

It seemed at once obvious that the reduplication must have a distinct relation to the respiratory cycle. Acting on this basis, Sibson[1] and Barr[2] engaged in a controversy. Each observer based his views on the observation of a limited number of cases. Each observer assumed that the heart sounds were reduplicated only during the appropriate respiratory cycle. As pointed out by Ohastzow,[3] if these observers were correct, then all normal hearts should be reduplicated; furthermore, in many case the reduplication persists at all stages of respiration.

CAUSE OF REDUPLICATION.

Sansom[4] considered that reduplication is due to asynchronous ventricular contraction. In support of his contention is a case of cleft sternum, direct cardiographic tracings showing that the right and left ventricles did not beat in unison in that particular case. Barr,[2] in an experiment on a cat, proved that the two ventricles do not beat synchronously when the chest is opened. Barr also advanced a case of adherent pericardium, with mitral stenosis and regurgitation. One lever placed near the xyphoid and another over the apex did not move in unison. Because of the adherent pericardium the experiment is of little value. A case is

1. Sibson: Jour. of Anat. and Phys., 1880, p. 238; Lancet, 1874, pp. 438 and 506.
2. Barr: Liverpool Med and Surg. Jour., July, 1882; also, Med. Times and Gazette, 1877.
3. Ohastzow: Ztschr. f. Klin. Med., Berlin, 1905, vol. lvii, pp. 70 to 90.
4. Sansom: Med. Times and Gazette, 1881.

reported by Bindley[5] in which by auscultation two first sounds were heard and by palpation a double apex impulse was felt. Ohastzow[3] mentions a number of similar cases. Three such cases have occurred in my own series. Bindley[5] attributed this to asynchronous ventricular contraction. Austin Flint[6] agrees with Sansom that the cause of reduplication is asynchronism. Bramwell[7] considered that reduplication was due to aurieular sound. He is supported by Ohartzow.[3] Whatever the cause of reduplication may be, it is a sign of very definite elinical value.

METHOD OF EXAMINATION.

The results appended are based on examination of 162 cases. In every possible case the record included: presence or absence of reduplication of the first and the second sounds; age, height and weight of the patient; general condition, past history and present illness; presence or absence of palpitation, cardiac pain, dyspnea, cyanosis and edema; situation of the apex and right border; presence or absence of murmurs, condition of the artery and the pulse; duration of disease; permanence of reduplication, whether following exercise or holding breath; presence or absence of an extreme degree of nervousness; habits of using tea, coffee, alcohol and tobaceo. The cases were compiled at the Male Medical Out-patient Department of the Massachusetts General Hospital, in the wards of the same hospital, at the Boston City Hospital Relief Station, and at the Massaehusetts State Hospital in Tewksbury. Whenever possible the cases were followed from day to day.

In bringing out a reduplication more than the ordinary eare must be exercised. All surrounding conditions must be favorable. The heart should be auscultated both in the sitting and dorsal position. Furthermore, the heart should be aceelerated. This is best brought about as follows: Patient takes a deep breath and holds it; the hearts beats more slowly. When the slowing has reached the maximum he lets out his breath and holds it so; the heart rate is accelerated. Repeating this maneuver will eause the heart rate to be accelerated, sometimes up to 30 beats a minute. Patient may then breathe naturally, and the acceleration of the heart will persist for a short time. This is superior to exercise, as the heart beats are not increased in force, but only in rate. At this time, when the heart is racing, a reduplieation can be heard, if at all. Frequently a reduplieation heard only during the appropriate respiratory phase (as pointed out by Potain) persists throughout the entire eyele.

Reduplieations of the first sound are heard best in the third and fourth intercostal spaces, just to the left of the sternum. Often it can be detected here when it can not be heard over the apex. Rarely the rule is reversed. Pronounced reduplication can be heard over the whole precordia and in the axilla. Reduplications of the second sound are heard best in the second and third intereostal spaces to the left of the sternum. The reduplication is best heard with the Bowles stethoscope, using the large-sized tambour. It ean not be heard as well with the unaided ear.

Pathologic reduplications, and sometimes those heard in normal hearts, are commonly so clear that it is unnecessary to go through all these mancuvers.

5. Bindley: Lancet, 1881, p. 46.
6. Flint, Austin: "Auscultation of the Heart," 1890.
7. Bramwell: "Diseases of the Heart," 1884.

RELATION OF THE SECOND SOUND TO THE FIRST SOUND.

The first sound is reduplicated much more frequently than the second. Not uncommonly both are reduplieated. With the exception of mitral stenosis and those conditions altering the relative blood pressure in the greater and the shorter circulations the second sound is reduplicated only when the first sound is reduplicated.

TRANSITORY REDUPLICATIONS.

Not infrequently the reduplication is present one day and gone the next. For example:

CASE 1.—M. D. had hypertrophy and dilatation of the heart. When first examined he was in very poor condition. The apex was two inches to the left of the nipple line, the right border three-fourths of an inch to the right of the sternum. There were no murmurs. Cyanosis and dyspnea were marked. Pulse was very irregular in volume and tension. Both the first and the second sounds were reduplicated. Two days following his condition was much improved. Cyanosis and dyspnea were markedly less. The reduplication was gone.

CASE 2.—E. had same disease and symptoms. There was reduplication of the first sound, not of the second. As his condition improved the reduplication became more difficult to hear, and finally disappeared on the tenth day, simultaneously with a much improved condition.

CASE 3.—A. J. had had typhoid and was convalescent. There was reduplication of the first sound for four days. On the fifth day it disappeared. On the sixth day he sat up for the first time, and reduplication of both the first and the second sounds appeared.

These three cases illustrate well the relation between the efficiency of the heart and the presence of reduplication.

RELATION BETWEEN REDUPLICATION AND GALLOP RHYTHM.

There is a very close relation between reduplication and gallop rhythm.

CASE 4.—Mrs. V. had myocarditis. There was extreme irregularity of the heart and gallop rhythm. Both the first and the second sounds were clearly reduplicated.

Ohastzow[3] has shown that between the reduplieation that can barely be heard in the normal heart and gallop rhythm there is a perfectly definite relation; that the barely perceptible reduplication stands at one extremity of the scale; gallop rhythm at the other. He classifies all cases of reduplication thus:

1. Reduplications barely heard in the dorsal position, with reference to respiration, i. e., for the first sound, at the end of expiration and beginning of inspiration; for the second sound, at the end of inspiration and beginning of expiration.
2. Reduplications also heard in the sitting posture, but only in the third and fourth intercostal spaees to the left of the sternum.
3. Reduplications heard at the apex throughout the respiratory cycle.
4. Palpable double apex impulse.
5. Gallop rhythm.

This classification is, in the most part, true, but there may be a very great difference in efficiency between a heart that exhibits a reduplication of the first sound with a double-apex impulse and an actual gallop rhythm. The classification is prineipally of value in illustrating the close relation between the reduplication heard in normal hearts and gallop rhythm. Gallop rhythm is merely an aecentuation of this not uncommon sign.

THE RELATION BETWEEN REDUPLICATION AND EXTRA BEATS.

The relation of reduplication to extra beats is very well illustrated by the case of gallop rhythm cited in the last paragraph.

CASE 4 (continued).—Mrs. V. had marked dyspnea, cyanosis and edema. Heart beat was tumultous and irregular. In addition to the clear reduplication, there were extra beats, followed by no second sound. That is, at all times both the first and the second sound were reduplicated. Occasionally there was a third sound, heard best about 1 inch to the right of the apex, not reduplicated, and not followed by any second sound. This third sound differed entirely in quality from either of the two components of the first sound.

PHYSIOLOGIC REDUPLICATION.

It has been mentioned that the sounds of the normal heart may be reduplicated. Obviously, therefore, in settling the question of the cause of pathologic reduplication some means must be determined to rule out those cases that would, under normal conditions, present a reduplication.

Unfortunately, the criterion is one that depends, to a large degree, on the judgment of the examiner. Out of 77 hearts examined under conditions that ruled out any pathologic interference in their action, a reduplication was present in 41. In 13 of the 41 there was an excessive indulgence in tea, coffee, alcohol and tobacco, which, as will be proved subsequently, will cause reduplication. Of the 28 cases of reduplication remaining, all but one were found to be in persons with thin chest walls.

Examining the problem from the converse point of view, out of 31 persons with thin chest walls a reduplication was present in 27, absent in 4; out of 34 persons with thick chest walls a reduplication was present in 1, absent in 33; 12 cases were on the border line between thick and thin.

The criticism may be at once advanced, however, that in many of these cases it rested with the judgment of the examiner to determine whether a given chest wall might be classed as thick or thin. Wherever possible the patients' height and weight were recorded, and the judgment based on this evidence. So many cases are on record in which there is no possible chance of error as to the thickness of the chest wall that this rule is proven. Given a patient with a thin chest wall, a reduplication to some degree can be heard; if the chest wall be thick, no reduplication can be heard under normal conditions.

No relation can be made between the age of the patient and the presence of reduplication. In his recent article Ohastzow[3] claims that the tendency to reduplication increases as age advances. This observer divided his cases of reduplication into decades, and was struck with the fact that the larger numbers were found in the decades over 40. This was true, but he does not give the percentage of reduplications in men of approximately the same age. That is, if he has 100 patients between 40 and 50 years of age and 50 patients between 10 and 20, it is not surprising if more reduplications are recorded in the later decade.

As opposed to this contention, however, is the fact that my series was grouped in 5-year periods, with both positive and negative cases. There was no marked difference, the percentage of reduplications being about the same in each period, with the exception of the years 15 to 20 and 20 to 25, which showed an excess of positive cases over negative.

TEA, COFFEE, ALCOHOL AND TOBACCO.

The question of the influence of the excessive use of tea, coffee, alcohol and tobacco on the appearance of reduplication is difficult to determine with a sufficiently great number of cases. In the first place, patients' stories as to their habits are frequently untrustworthy. This at once reduces the list to those whose account may be relied on. Furthermore, it has been already noted, that in those persons possessing a thin chest wall a reduplication can practically always be heard. There must be no organic disease of the heart, and no interference with the heart's action, by the traction of a contracted lung, pressure of exudates, etc. Lastly, the patient must be addicted to one habit only. It is considered preferable to advance a few cases of pure dosage rather than a large number in which there is a greater uncertainty.

In the limited number of recorded cases of excessive indulgence in tea and coffee, there is no clear evidence that such abuse has resulted in causing reduplication when reduplication would otherwise be absent. One case only is positive:

CASE 5.—G., height 5 feet, 9 inches, weight 175. Present illness, strained knee.

Habits: Six cups of tea a day; no coffee, alcohol, or tobacco. The first sound was reduplicated when the heart was accelerated as above described, by holding and letting out the breath.

As against this case are four negative cases:

CASE 6.—N. Mc., used Oi to Oii of tea daily.

CASE 7.—A. F. used Oi to Oii of coffee daily.

CASE 8.—T. C. used Oi to Oii of tea daily.

CASE 9.—J. T. used Oii of tea daily.

It is at once evident that the four negative cases ingested much larger quantities of tea and coffee than did the one positive case. In view of the prevalent opinion that tea and coffee have an influence on the heart's action, this limited number (5) of cases is insufficient to draw definite conclusions from.

Concerning tobacco the result is far different. It is well known that the tolerance to tobacco varies widely with different persons, and, further, that the same bulk of tobacco smoked out of doors will have less effect than a similar quantity taken in a closed room. Reduplication was due to tobacco in three cases:

CASE 10.—S. J., aged 17, well built, smoked 5 or 6 cigars daily and drank 3 cups of tea and coffee daily. Present illness, neurasthenia. Reduplications of the first and second sounds after breathing exercises.

CASE 11.—J. L., aged 16, well built, used $1 worth of tobacco a week. He smoked and chewed. Patient used no alcohol, tea or coffee. Present illness, pulmonary. Reduplication of both first and second sounds during the appropriate respiratory phase.

CASE 12.—H. R., aged 23, height 5 feet 7 inches, weight 149, smoked 6 cigars a day. He used no alcohol, tea or coffee. Present illness, dyspepsia. Reduplication of the first sound; not distinct.

All these persons used tobacco to excess. None used tea, coffee or alcohol to any degree. All were of the type that should show no reduplication. As against these three cases is one negative case:

CASE 13.—M. O., aged 29, well developed, chewed and smoked one pound of tobacco a week. Patient used no tea, coffee, or alcohol. Present illness, dyspepsia. No reduplication.

In general, it may be shown that persons consuming four ounces or more of tobacco in the week will show the effect on the heart in a reduplication of the first sound.

Excessive indulgence in alcohol will cause reduplication beyond question.

CASE 14.—T. K., aged 37, 5 feet 8 inches tall, 138 pounds weight, stripped. For some time patient had been taking whisky before breakfast and during the day; 3 cups of tea a day; no coffee; tobacco, 10 cents a week. Present illness, contused shoulder. First sound was reduplicated at the end of expiration, beginning of inspiration.

CASE 15.—B., aged 36, well built, took 4 glasses of whisky, 3 or more of beer daily; tea, 3 cups; tobacco, 25 cents a week. Present illness, gonorrheal knee. There was well marked reduplication of the first sound at all stages of respiration and reduplication of the second sound at the end of inspiration, beginning of expiration.

CASE 16.—J. H., 25 years, height 5 feet 5 inches, weight 148, took whisky and 10 or 12 beers daily, and no tea, coffee or tobacco. First sound was clearly reduplicated; second sound, not reduplicated. Present illness, stomach trouble.

All these cases showed very slight use of tea, coffee or tobacco. All were well-built men. It must be noted that two cases of acute alcoholism showed no reduplication. It is to be regretted that two cases only were recorded, but because of the rattling of mucus in the throats of the patients an adequate examination of the heart could be made in only two cases. Further, because of the unconscious condition of these patients, they could not be put through the routine sometimes necessary to bring out a latent reduplication. Although only 3 cases are recorded of a pure dosage with alcohol and nothing else, 12 cases in all are reported which show a definite and trustworthy account of excessive drinking. Only 4 of these showed an absence of reduplication, 2 of the 4 being the acute alcoholics above mentioned.

ARTERIOSCLEROSIS.

The relation of reduplication to arteriosclerosis is of interest, especially as Ohastzow[3] has stated that beginning cardiac degeneration is a cause. Out of 25 cases in my series, in which the arteries were palpable, reduplication was absent in 10, present in 15. Of the 15 positive cases, 3 had nephritis with hypertrophy, 5 myocarditis, 1 mitral stenosis, 2 dilatation with hypertrophy, in 2 the heart was displaced, and in the remaining 2 other causes sufficed to explain the reduplication.

TYPHOID.

Concerning the incidence of reduplication in typhoid fever, there is little to be said. Forty cases were examined, but the findings were at variance with those of hearts under other conditions. In 7 cases of the 40, there was an absence of reduplication, which we should have had a right to expect if these patients were normal. The probable explanation is that the patients were lying quietly in bed. To arrive at any definite conclusion it would be necessary to accumulate a much larger series of cases. Three cases deserve especial notice.

CASE 17.—A. J., aged 23, was fairly developed.

November 20: Apex ½ inch outside of nipple; right border, ¼ inch to right of sternum. Habits, excellent. There was reduplication of the first sound.

November 24: Apex at nipple line; right border at parasternal line. Reduplication the same.

November 28: Condition excellent. There was no reduplication.

November 29: Patient was sitting up, feeling rather weak and giddy. Reduplication of both first and second sounds.

CASE 18.—J. M., aged 17, was a tall, thin boy. The apex was at nipple line; the right border at parasternal line. Habits were excellent. There was reduplication of the first sound. Nine days later was feeling much better. Reduplication gone.

CASE 19.—H. S., aged 16, tall, slender, thin chest.

November 24: The apex was at nipple line; right border at parasternal line. There was reduplication of the first sound.

November 28: Reduplication was gone.

November 29, a. m.: Patient had a rectal examination in the morning and was very nervous. Pulmonic second sound was accentuated. There was reduplication of the second sound, but not of the first. Patient was quiet in the evening. There was no reduplication.

In no case was reduplication accompanied by any marked degree of palpitation or cardiac pain.

REDUPLICATION IN ORGANIC DISEASE OF HEART.

In none of the cases to follow were the patients put through special exercises, and, unless otherwise specified, the reduplication was perfectly distinct and persisted throughout the respiratory cycle.

Nephritis with Enlarged Heart.—There were 7 cases of nephritis with enlarged hearts. In one there was no reduplication of either the first or the second sound. In 2 cases there was reduplication of the second sound only. In both these cases the arterial tension was remarkably high. In 3 cases there was reduplication of the first sound only, and in 1 case of first and second sounds both. In the last 4 cases the arterial tension was not remarkably high.

Sansom[4] reports 4 cases with reduplication of the first sound. Sibson[8] reports 5 cases with reduplication of the first sound. Broadbent[9] and Da Costa[10] mention reduplication of the first sound in this condition.

Dilatation of the Heart.—Of this there were 3 cases. In two the first sound was reduplicated. In one, both first and second sounds. As these cases improved under treatment, the reduplication became more and more difficult to hear; finally it was lost altogether in two of the cases. The third case was discharged against advice, unrelieved. The close relation between the presence of reduplication and the efficiency of the heart was very prominent. Two of these cases have already been mentioned under the heading of "transitory reduplications." Sansom[4] reports 2 cases of "dyspnea with dilatation of the right heart" with reduplication of the first sound. Da Costa[10] mentions that in dilatation of the heart the second sound may be reduplicated.

Dislocation of the Heart.—Of this there were 2 cases. In one the heart was pulled over by a contracted lung. In the other the apex was pushed up into the fourth intercostal space by the accumulation of ascitic fluid. Both these cases showed reduplication of the first sound. The case of contracted lung also showed reduplication of the second sound, due probably to increased resistance in the pulmonary circulation.

Myocarditis.—There were 8 cases of myocarditis. They showed a marked diversity. In 2 cases there was no reduplication; in 2 cases, one of which was associated with nephritis, there was reduplication of the first sound only; in 2 cases there was reduplication of the second sound only, one of which showed a very slight reduplication during the appropriate respiratory phase; 2 cases showed reduplication of the first and second sound, one of which, already mentioned, was an extreme instance of gallop rhythm. The only explanation of these diverse findings is in the scattered pathology of this disease. The only conclusion we can draw is that in myocarditis the heart sounds are commonly reduplicated, and in those hearts which are doing least well the reduplication is more marked. Bramwell[7]

8. Sibson, Lancet, 1874, pp. 438 and 506.
9. Broadbent: "Diseases of the Heart," 1897.
10. Da Costa: "Medical Diagnosis," 1895, p. 481.

mentions reduplication following "disease or degeneration of cardiac muscle."

Mitral Regurgitation.—Of this there were 10 cases. In 8 of the 10 no reduplication was present. In 1 of the 2 positive cases there was reduplication of the first sound. This was in a case of pneumococcus bronchitis, with an old mitral lesion. As soon as the bronchitis cleared up, the reduplication cleared up, leaving the mitral regurgitation. Only one case, therefore, remains which showed a reduplication; in this case, of the second sound. Sansom[4] reports 2 cases with reduplication of the first sound. Ohastzow[3] states that in mitral regurgitation reduplication of the second sound is never met with.

Aortic and Mitral Regurgitation.—There were 2 cases; in one there was no reduplication; in the other there was reduplication of the first sound. In the latter case there was doubt as to the absence of myocardial degeneration.

Mitral Stenosis.—There were 3 cases, of which 2 were associated with regurgitation. In no case was there reduplication of the first sound. In two cases there was reduplication of the second sound. In the third case (associated with regurgitation) there was no reduplication. Broadbent,[9] Bramwell,[7] Cabot,[11] Allbut[12] and La Fevre[13] agree that mitral stenosis may cause reduplication of the second sound. Hayden reports 63 cases, with 26 instances of reduplication of the second sound. Sansom[4] reports 37 cases, 11 with reduplication of the second sound.

SUMMARY AND CONCLUSIONS.

Reduplication of the heart sounds is a not uncommon sign.

The cause may be either asynchronous contraction of the ventricles or the auricular sound.

Normal persons with thin chest walls usually show reduplication. Persons with thick chest walls should not.

In persons in whom no reduplication should be present it is a sign of positive value.

Reduplication of the first sound means that the heart is not working properly. This may be due to nervous interference, as in persons with bad habits, or it may mean that the heart is hampered by external agencies, by pressure, or by traction, or, finally, it may mean that the heart muscle is not efficient, either due to systemic disease or inherent conditions.

Reduplication of both the first and second sounds is usually only a more advanced degree of the same condition.

Reduplication of the second sound alone means an alteration in the relative blood pressure of the systemic and pulmonary circulations.[14]

58 Kirk Street.

11. Cabot: "Physical Diagnosis," p. 169.
12. Allbut: "System of Medicine," 1897, vol. v, p. 1018.
13. La Fevre: "Physical Diagnosis, p. 314.
14. For further literature reader may consult von Turgensen: "Erkrankungen des Kreislufsorgane." Johnston: Lancet, 1876. "Guy's Hospital Reports," vol. i and vi. Gibbs: Lancet, vol. i, 1901, p. 1601. Butler: "Diagnostics of Internal Medicine," p. 885.

Metatarsalgia.—W. E. Blodgett, in the *Physician and Surgeon*, states that the pain in the chronic type of metatarsalgia, as in the ordinary pronated foot, is due to general abnormal tension and pressure. In the acute type, however, the pain is due to such a displacement of the heads of the metatarsal bones that one of the branches of the external plantar nerve is squeezed between two of the metatarsal heads.

THE CULTIVATION OF SPIRILLUM OBERMEIERI.*

PRELIMINARY NOTE.

F. G. NOVY, M.D., AND R. E. KNAPP, B.S.
ANN ARBOR, MICH.

We have heretofore applied the term *Spirillum obermeieri* to the organism isolated by Dr. Charles Norris, from a case of relapsing fever which occurred in New York, in the belief that it was identical with that described by Obermeier in 1873. We will continue to use this term for the present, although, as will be shown, there is reason to believe that the eastern relapsing fever is not identical with the American disease. When further evidence is obtained regarding the non-identity of the organisms found in these regions it may be necessary to restrict the use of the term *Spirillum obermeieri* to the organism found in the eastern disease.

On the other hand, the African relapsing fever, known also as tick fever, has been shown conclusively to be due to a different organism, the *Spirillum duttoni.* As far as we know, the first observation on this organism was made by Dr. D. Nabarro, of the Sleeping Sickness Commission, who noted the presence of spirilla in the blood of a patient in Uganda as early as August, 1903, but this fact was not published until 1905. In November, 1904, the presence of spirilla in tick fever was announced by Ross and Milne and also by Dutton and Todd. This organism was brought to England by Todd, and to Germany by Koch, and has since been studied by several workers.

In our preliminary note[1] we pointed out the probability that tick and relapsing fevers were two distinct diseases, due to different species of spirilla, and in the main paper[2] it was definitely shown that these two organisms were distinct species, and at that time we named the spirochete of tick fever *Spirillum duttoni.* Our conclusion regarding the specific difference of the two organisms was based on a comparison of (1) the animal reactions of the New York spirillum, as ascertained by Norris and his co-workers and by ourselves, with those described by Dutton and Todd and later by Breinl and Kinghorn; (2) the morphologic characteristics presented by our organism with those of the tick fever spirillum in specimens sent by Dr. Todd, and (3) the arrangement of flagella as demonstrated in this laboratory for the New York spirillum and by Zettnow for that of tick fever. Our belief that a full confirmation of this view would be afforded when cross experiments were made with sera of animals immunized to these two spirilla has been realized by the subsequent work of Breinl[3] and by still more recent tests made with our serum by Dr. Schilling at the Institute for Infectious Diseases in Berlin.

It will be seen from the above facts that a recent note made by Breinl and Kinghorn[4] and implying that our conclusion was reached merely from " a study of the two slides sent from these laboratories and of the few experiments given by Dutton and Todd" is not a fair state-

* From the Hygienic Laboratory, University of Michigan. This investigation has been aided by a grant from the Rockefeller Institute for Medical Research.

1. The Journal, Jan. 13, 1906.
2. Studies on *Spirillum Obermeieri* and Related Organisms, Jour. of Infect. Dis., May, 1906, vol. iii, pp. 291-393.
3. The Specific Nature of the Spirocheta of the African Tick Fever, The Lancet, June, 16, 1906.
4. A. Breinl and A. Kinghorn: An Experimental Study of the Parasite of the African Tick Fever (*Spirochæta duttoni*), Memoir XXI, The Liverpool School of Tropical Medicine, September, 1906.

ment of fact. In his paper of June 16, Breinl suggested the specific name "*duttoni,*" the same as used previously by ourselves. We have employed the generic name *Spirillum* in preference to *Spirochæta* for the reason that the type species of the latter genus, *Sp. plicatilis,* was said by Schaudinn to possess an undulating membrane, but no flagella. Furthermore, the term *Spirillum* expresses our view regarding the bacterial nature of these organisms.

In our article of last May, a brief discussion is given to the relation of the New York spirochete to that of the relapsing fever met with in Bombay, and the statement is made that the evidence on hand points to the existence of three relapsing fevers in man. It is unnecessary to recapitulate the reasons which led us to take this view, but it will be of interest to present in this connection some observations which have been made by Captain I. P. Mackie, I.M.S., and communicated by letter to one of us (Novy). It is generally understood, as a result of the studies of the earlier workers, that the spirillum of relapsing fever does not infect animals other than the monkey. Captain Mackie has produced the disease in rabbits, white English rats, black Bombay rats and in mice, but failed to infect pigeons and goats. In these animals the spirilla appear in less than 24 hours and sometimes disappear in less than 48 hours, but often increase to 56 or more hours. They never become numerous and do not reappear; that is, there is no relapse. These results are in accord with those of Gabritschewsky. The very scanty number of spirilla in his rats is in striking contrast with the result obtained with our *Sp. obermeieri* and with *Sp. duttoni.* Moreover, tests made by Captain Mackie with some hyperimmune serum which we sent him showed that it possessed no agglutinating, germicidal or lysogenic action even in dilutions of 1 to 10. Control tests with some of this serum were made in Ann Arbor, at about the same time as the Bombay tests, and these showed that the serum possessed undiminished activity toward our spirillum. The latter was promptly agglutinated by the serum in dilutions of 1 to 10 and even 1 to 200. Unless it is assumed that our serum had lost its properties while in transit, especially in going through the Red Sea, it would appear that the Bombay relapsing fever is etiologically different from that of New York. The question of the identity of these organisms will be investigated further and we hope to be able to make direct comparisons of the living organisms.

CULTIVATION EXPERIMENTS.

The *Spirillum obermeieri* has been maintained in this laboratory since November, 1905, by consecutive passage through rats. Although during this time many hundreds of attempts to secure cultures on artificial media have been made, they have given uniformly negative results. In the defibrinated blood of infected rats the spirilla retain their vitality for a variable length of time, depending on the stage of the disease during which the blood is drawn. If drawn during the decline stage, that is to say, at a time when the organisms have reached their maximum and are beginning to decrease in numbers, the spirilla will often die out in less than 24 hours. This is due, as we have shown, to the presence of specific germicidal bodies. On the other hand, in "onset blood" drawn during the early stage of the disease, the spirilla may live for several weeks. Thus we have seen living spirilla in such blood kept for 30 to 37 days and have been able to infect rats with blood kept for 40 days. Moreover, we have been able to make use of this fact in shipping the virus to distant points, to Dr. Todd at Liverpool and to Professor C. Fraenkel at Halle.

In our first series of attempts at cultivating the spirilla on blood agar we were, as a rule, unable to keep the organisms alive for more than two or three days. Since then, however, we have been somewhat more successful and have kept them on blood agar for 22 to 28 days, and in some experiments now in progress they are still alive and numerous on the thirtieth day. As yet, however, no evidence has been obtained of actual multiplication *in vitro.* The organisms which are found to persist we prefer to regard as mere survivals until actual subcultures have been obtained.

The successful results obtained by Levaditi in the cultivation of *Sp. gallinarum, Sp. duttoni* and *Sp. refringens* in collodium sacs led us to apply this method to our spirillum. With this object in view, the collodium sacs were filled with rat or rabbit blood, or corresponding sera, heated and unheated, and after inoculation with spirilla blood these sacs were placed in the peritoneal cavity of rabbits. After three to seven days the sacs were removed and contents were examined with negative results. Apparently the rabbit is unsuited for sac cultures.

We were finally led to make the trials under conditions approaching the natural state as much as possible. For this purpose the collodium sacs were filled with uncoagulated rat blood and after inoculation were placed at once in the peritoneal cavity of a white rat. Three days later, on removal, the sacs were found to contain active spirilla and in increased numbers. From the sacs, transplants were made to new ones and the result was equally satisfactory. The spirilla were found to be in an extremely active condition and were undoubtedly multiplying.

From this time on the transplantations were made regularly, every three or four days, from sac to sac. After a few passages the uncoagulated blood was replaced by defibrinated rat blood or by rat serum. Defibrinated rabbit blood has also been employed to some extent, but whether it will continue to be a favorable medium we are unable to state. Two sacs were inoculated each time and placed in the peritoneal cavity of a rat. Each sac had a capacity of from 2.5 to 3.0 c.c. and was sealed so as to leave within as little air as possible. It is a noteworthy fact that on removal from the rat the sacs are invariably greatly distended as a result of osmotic changes. Furthermore, the air which was originally present is in large part and at times wholly absorbed.

Since October 13 the spirilla have been carried through twenty consecutive passages in sixty-eight days, and presumably they can be kept multiplying under these conditions indefinitely. The spirilla in the sac culture are never as numerous as in the blood of rats. They rarely exceed more than 5 to 10 per field of the 1/12th inch objective, as contrasted with several hundred per field met with in the blood of rats during the maximum period of infection. The inoculation of the sac contents (blood or serum) into rats, it is interesting to note, is followed by a mild infection in which the spirilla are not much more numerous than in the sacs. Moreover, in such infection they persist for a day or two longer than is the case with the active virus.

When the sac is allowed to remain in the rat for seven days the spirilla decrease greatly in numbers and may even disappear. In the opened culture sacs after removal from the rat, and kept at room temperature, the spirilla die out in a day or two.

Throughout this series the spirilla have preserved their form unchanged. They appear either as single cells (8 microns) or of double length (16 microns), but at times even longer spirals are found. The latter are the result of end-to-end union by means of flagella, as we have heretofore shown. As in the case of blood preparations, no evidence is observed of division other than transverse. One observation in this connection is deserving of special emphasis owing to its bearing on the question as to whether spirochetes multiply by transverse or longitudinal division. In these cultures it is not unusual to find short spirals of two or three turns, and from 4 to 6 microns in length. These may occur singly or in pairs (8 to 12 microns long), showing the pale division zone. The width of the short form is the same as that of the longer cells. The occurrence of these short spirals is readily explainable as the result of transverse division. It may further be stated that the cultural spirals usually stain solid by the Romanowsky method, but at times they may show granulations which to some extent may be due to granules deposited from the medium.

SAC CULTURES IN RAT SERUM.

In view of the fact that Prowazek and others are inclined to consider spirochetes as protozoa and as cell parasites, it was desirable to ascertain whether or not the spirilla could be maintained in active multiplication in a clear serum. Accordingly, the spirilla were inoculated into rat serum, completely freed from corpuscles by centrifugation. Up to the present time we have effected seven consecutive passages in such serum in the space of twenty-four days. At each passage a control sac containing defibrinated rat blood was placed in the rat. The serum cultures, although totally devoid of corpuscles, were in every respect as rich in spirilla as the blood cultures. The conclusion to be deduced from these experiments is that multiplication of spirilla may take place without any intracellular stage. The occasional presence of spirilla in a cell is to be regarded as an accident rather than as an expression of an unrecognized cycle.

THE TUBERCULOSIS DISPENSARY: ITS METHODS, VALUE, AND LIMITATIONS.*

EDWARD O. OTIS, M.D.

Visiting Physician at the Massachusetts State Sanatorium at Rutland; Senior Physician of the Tuberculosis Department of the Boston Dispensary.

BOSTON.

Out-patient clinics for chest diseases have existed for a long time in connection with the great London chest hospitals. In Edinburgh, the Royal Victoria Dispensary for Tuberculosis was established in 1887, and is conducted according to the modern conception of such an institution.[1] The Emile Roux Antituberculosis Dispensary; however, founded at Lille, France, in 1900, by Dr. Calmette, seems to have been especially instrumental in the establishment in rapid succession of many similar institutions in France, Germany, Belgium, Portugal and other countries in Europe, as well as in the United States. The psychologic moment had apparently arrived for this distinct and notable advance in the tuberculosis warfare.

In 1899, the managers of the Boston Dispensary, at my suggestion, established a tuberculosis clinic in connection with that institution, which, so far as I am aware, was one of the first, if not the first, of the kind in this country; soon afterward others were founded in New York City and elsewhere. Whatever observations are offered in this paper are largely the result of experience in the tuberculosis department of the Boston Dispensary.

Not only has the tuberculosis dispensary proved to be a very valuable and distinct addition to the armament of the antituberculosis forces, but it has also introduced a new conception of out-patient service to the poor, which is being recognized in clinics other than those solely devoted to this one disease. This new idea is that the patient is not only and simply to be regarded and treated as a case with a number, illustrating a disease, but as a social unit, a human being, whose habits of life and whose environment are discordant with the conditions of healthy existence; consequently, paramount attention is devoted to the reorganization of such vicious habits, and the transformation, so far as possible, of the environment into a wholesome one, for such, in fact, is an essential part of the treatment of pulmonary tuberculosis. In order to accomplish this, the patient is studied socially, both at the clinic and by the "visitor" or nurse at his home. His habits, mode of life at home and at work, his surroundings, physical and moral assets, and limitations, his pecuniary condition, are all the subject of careful inquiry and consideration. Based on the results of such social investigation, together with the medical findings, the treatment is instituted, which in itself is more social than medical.

There is yet another reason why the social side of the tuberculosis dispensary should be particularly accentuated; for the object of such a dispensary, unlike that in other clinics, is not only to help and cure those suffering from tuberculosis, but to prevent others from becoming infected by them—*prevention* is quite as important as the care and treatment of the disease; indeed, more so, from the point of view of the community.

In order, then, that any effectual and continuous application of the hygienic-dietetic treatment—the established treatment of the day—can be carried out, we must possess not only an exact and complete knowledge of the patient's social condition as indicated above, but we must as well obtain and retain control over him when the treatment is pursued at home, and this obviously can only be done with the willing coöperation of the patient, for his attendance on the dispensary is voluntary. Furthermore, the patient must be thoroughly educated in the tuberculosis hygiene both by the physician and visitor or nurse, so that his immediate family, his workshop neighbors, or the community may not become infected through his carelessness or ignorance.

In the tuberculosis dispensary as at present constituted in France, England and this country, the examination and treatment of the tuberculous individual forms an integral part of the plan, as well as the social side as above referred to. In Germany at the so-called *Fürsorgestellen,* "advice and precaution" stations, education and advice are the principal object of attainment, and the direct treatment is referred to the local or family physician—thus resembling closely the work of the tuberculosis associations.

In the recently initiated tuberculosis "classes" first

---

* Read in the Section on Pharmacology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

1. R. W. Phillips, Edinburgh Med. Jour., January, 1906, p. 9.

conceived and carried out by Dr. Pratt, of Boston, a comparatively few consumptives in various stages of the disease are collected and kept under constant supervision by means of a nurse. They are required to give up all else while under treatment, and are thoroughly instructed and drilled in the hygienic-dietetic method of the cure. Weekly meetings are held with the physician and nurse, when the daily record of temperature, pulse, food, number of hours out of doors, etc., are reviewed and such further advice and treatment are given as are indicated. This represents, perhaps, the most elaborate and complete attempt to carry out home treatment among the consumptive poor. In the tuberculosis dispensary the same minute supervision and control is not always possible, but, with those who are home-treated cases, the same governing principles are kept in view and enforced so far as the conditions will permit. As with dispensary practice in general when medical service is free, the clientage is a changing one: some remaining faithful in their attendance, while others disappear after a few visits. Hence the control of the patient is limited and uncertain.

This class system may be made a regular department of the tuberculosis dispensary. It is not, however, in my opinion, applicable to all cases: direct individual treatment should be considered the ideal plan, as in the best conducted sanatoria, though the inspiration and encouragement of others are an advantage of the collective system of treatment.

It is also to be borne in mind that the scope of the dispensary work is more extended than simply the treatment and guidance of its patients at home, as important and valuable as this phase of its work is. Prevention and education are also a very essential part of its duties, and go hand in hand with the treatment of the patient.

In the interest of the patient himself, the best disposition of his case is sought for after careful consideration of his circumstances and the resources at hand. If an early and curable case, the sanatorium is advised and by coöperation with other charitable institutions or the Tuberculosis Association, pecuniary aid for this purpose is usually obtained, and the patient is sent to the state sanatorium. For others, whose disease is too far advanced for the sanatorium, an opportunity for residence in the country is frequently obtained, or, in the warmer months of the year, the day sanatorium can be utilized, which in Boston has been found to be a very useful adjunct to the home treatment. Occasionally opportunities for removal to a more favorable climate are afforded to others. With far-advanced, hopeless cases, in which the patients are an evident menace to other members of the household or the community, through coöperation with the board of health, removal to the pauper hospital or to a municipal or private consumptive hospital, if such exists in the community, is sought to be effected. In most cities, unfortunately, the accommodations for such cases are very inadequate, though in Boston a new consumptive hospital for advanced cases is soon to be established, for which the city has appropriated $150,000.

If the patient remains at home, in whatever stage of the disease he may be in, care and supervision are given him by means of the visiting nurse or association visitor, and, when needed, food, through coöperation with the diet kitchen, is furnished, or this may be done by the hospital with which the dispensary is connected. At the Phipp's Institute, and at the Lille Dispensary and others, milk or other articles of food are furnished by the dispensaries themselves. It is often one of the most difficult problems in the work of the dispensary to assure oneself that the patient is obtaining abundant and nourishing food, which is such an essential part of the home treatment. Sputum cups or Japanese napkins with impervious paper bags are also supplied to the patients. Both at the dispensary and at the home by the nurse or visitor careful directions are given as to the general plan of treatment—fresh air, feeding, rest, the arrangement of the bedroom, and the care of the sputum. By repeated regular visits to the dispensary by the patient and of the nurse to him at home he is kept under constant supervision and the progress of the disease and effect of treatment are noted.

In the interest of those who come in contact with the consumptive patient, his family, his associates in shop or factory, his immediate community, careful instruction is given and reiterated as to the safe disposal of the sputum, and the importance of holding something before the mouth when coughing, to avoid spray infection. Being instructed as to the dangers and sources of infection, and the unwholesome hygienic conditions predisposing to the disease, the patient becomes, in his turn, a teacher of others, an apostle of ventilation and fresh air in the home and workshop. He is mindful of others who cough, and may be instrumental in bringing them to the dispensary. The community is also safeguarded in calling the attention of the board of health to dangerous advanced cases, and in asking their removal, and it may be remarked here that in Boston every case of tuberculosis must be reported to the Boston Board of Health according to law.

LIMITATIONS.

It is obvious that in this, as in all dispensary practice where the attendance is voluntary, the control of the patient can only extend so far as he himself will submit to it, and unless he is possessed, to a certain degree, of earnestness, persistence and an appreciation of what is being done for him, the home treatment fails. Much effort is necessarily wasted on patients who make only a single visit or attend irregularly; but even in these cases we learn of their existence and report them to the board of health, which is of importance from the point of view of prophylaxis. Again, in tenement-house conditions, where extreme poverty exists, it is extremely difficult, if not impossible, to institute any proper open air life or to supply sufficient and properly prepared food.

With wage earners obliged to continue work for their own maintenance and support of their families, we can only avail ourselves of such limited opportunities for treatment as their hard condition offers. Many patient sufferers continue their occupations even in the advanced stages of the disease, an obvious menace to those directly or indirectly associated with them. They should be removed to a consumptive hospital; but this presupposes such an institution, and in many cases provision for the family deprived of its supporter. I recall the cases of a cook and waitress in a restaurant, both of whom were in the advanced stages of the disease, who applied at my clinic; the possibilities of spreading infection from the occupations they were engaged in—the handling of food—are evident.

Married women suffering from the disease, in the child-bearing period, are always subject to the perturbing, and, under the circumstances, untoward incident of pregnancy, unless we can remove them from their families

to a sanatorium or elsewhere. Pregnancy in tuberculosis, although, in my experience, it is not always the case, frequently, if not generally, exercises an unfavorable influence on the course of the disease. In dealing, then, with women of this class, our efforts are limited, and the treatment is ever liable to the interruption of pregnancy; hence the attempt should always be made to separate them from their families. So it is with infants and young children of consumptive parents. They should be removed from the source of infection present in the family. This, however, frequently can not be accomplished, and we can only warn the parents and relations of the dangers and keep them under observation.

PLAN PURSUED AT BOSTON DISPENSARY.

From what has been said above, the general scope and object of the tuberculosis dispensary has been in the main indicated, and it now remains to describe the method of conducting such an institution, and in doing so the plan pursued at the Boston Dispensary will be closely followed.

In the first place, such a dispensary may either constitute a unit, with its separate building and equipment, as is the case with the Antituberculosis Dispensary at Lille; the dispensary of the Health Department of New York and others, which is probably the best plan, or it may form one department of a large general dispensary, as does the tuberculosis clinic of the Boston Dispensary, where are gathered under one roof some dozen or more special clinics. There are, however, several advantages to this latter arrangement: The same pharmacy, clerical force and general equipment serve all the departments; cases requiring examination or treatment in other special departments, such as the throat, the ear, the general medical or surgical clinics, etc., can readily be transferred to these departments which are close at hand; the same *x*-ray apparatus and pathologic laboratory can also be utilized. On the other hand, suspected or proved tuberculous cases can readily be referred to the tuberculosis department from other clinics for examination, diagnosis and treatment.

A fairly full history of the patient is taken by one of the assistants. The family and previous history, habits, present illness, exposure to infection, various symptoms, etc., are recorded on a card. The list of questions to be asked is printed in order that there may be uniformity in the different services. The patient is then weighed, and the temperature, pulse and respiration taken. With this data in hand the physician-in-chief makes a careful physical examination of the patient, indicating graphically his findings on diagrams at the back of the history card. If the sputum can be obtained, it is examined then and there; if not, the patient is given a sputum bottle and requested to bring a specimen of his sputum at the next visit. If the diagnosis is in doubt, recourse is had to the tuberculin test, and occasionally to the *x*-ray, though we have found the latter of limited value. If the diagnosis is positive, the case is reported to the board of health, and the name and address are placed on the visiting nurse's card for her investigation of the patient at his home. On this card is a set of interrogations relative to personal and domiciliary hygiene, the habits and needs of the patient, and notes are also to be made of the instructions given. This report of the nurse is returned to the physician and filed with the history card and physical examination. The result of subsequent visits both of the patient to the clinic and of the nurse to the patient is added to the respective cards; thus both the medical and social history of the patient are at hand for guidance in the disposition of the case. The best disposition and treatment of the patient is then considered, whether sanatorium, consumptive hospital or home treatment, as outlined above, and all the resources at our command are drawn on to accomplish this. The patient is informed of his exact condition and his coöperation in the treatment proposed is solicited. In the majority of cases some medicinal treatment seems to be indicated, or at least expected by the patient, such as a tonic, a corrective for digestive disturbances, a simple cough remedy, etc. Instruction is given as to the safe disposal of the sputum, and receptacles for the same are distributed free.

Discharged sanatorium patients can also be kept under observation and advised in such a clinic, although in this city the majority of them report to the office of the examining physicians of the Rutland Sanatorium.

The tuberculosis dispensary is exceedingly valuable for teaching purposes, particularly in the early diagnosis of the disease as well as in the technic of physical examination. At the Boston Dispensary both physicians and medical students are in almost constant attendance, and the material affords excellent opportunities for the study of all stages of tuberculosis both as regards diagnosis and treatment.

Research work, the investigation of methods of treatment, the collection of statistics, and the study of various social problems in connection with the disease likewise find a legitimate field and a favorable opportunity in the tuberculosis dispensary.

We not only desire to attract as many consumptives as possible to the dispensary, both for their own sake and that of the community, but to get them early, in the curable stage; hence evening clinics are desirable when the wage earner can attend who can not or will not leave his work by day, or does not consider himself sick enough to do so. Every possible opportunity should be afforded the working classes to obtain an examination of the lungs, even if they suspect no trouble, and many incipient cases would undoubtedly be discovered in this way. I trust the time will shortly come when everyone will recognize the prudence and wisdom of obtaining an examination of the lungs with reference to tuberculosis, and evening clinics will be of the greatest value for this purpose.

But little and simple equipment is absolutely necessary for the establishment of the dispensary, which is within the reach and means of almost any community. A room or two or even the physician's office can be utilized for accommodations; or a complete building erected for the special purpose with more extensive space, as is the case with the Lille dispensary and others. A microscope, staining reagents for the examination of the sputum, a stethoscope with a patient at one end and an enthusiastic physician at the other, a visitor who can be a volunteer layman, actuated with an altruistic spirit and possessed of tact and common sense, are the essential requisites. When a tuberculosis association exists, the dispensary may be conducted under its auspices, and the two institutions go far toward commanding the tuberculosis situation in any community; or the dispensary may be an adjunct of the board of health, as in New York City. Experience has abundantly proved the value of the tuberculosis dispensary in combating the disease, and from its simplicity and inexpensiveness it can be established in any community.

DISCUSSION.

DR. WILLIAM R. WHITE, Providence, R. I., stated that the physicians of Boston are required by ordinance to report cases of tuberculosis just as much as cases of other contagious diseases.

DR. O. T. OSBORNE, New Haven, Conn., referred to his experience as chairman of the medical board of the Gaylord Farm Sanatorium, near New Haven. Incipient cases only are taken, except a few patients for training, but these remain only a month. Dr. Osborne has been impressed with the answers to the following question on the medical blank: Has anyone had consumption in the house or building where applicant has lived or worked during the last five years? The answer has so many times been in the affirmative that it has made a profound impression even on those who know the disease to be communicable. The dispensary cases are mostly those well advanced. Dr. Osborne emphasized the necessity of nurses or medical students visiting these families from which the advanced cases come, because in this way the incipient cases can be discovered. Thus there can be brought for treatment the anemic girl, the overworked mother and the pale boy, and though the first sputum obtained is often negative, repeated observations—ten or more—may show bacilli. Dr. Osborne denies the right to give tuberculin to these patients for a test examination, inasmuch as it may stir up something that would better be left unstirred.

Patients who are in a condition which can easily develop into tuberculosis should be treated just the same as incipient cases. Fortunately, he said, the profession is getting past the stage of forced feeding. Therefore, the dispensary treatment is all the more successful. The mere matter of putting on a little fat does not mean the cure of tuberculosis. Forced feeding works other organs to excess, and the stomach, liver and kidneys should be considered in the treatment of tuberculosis. The patients should be watched and instructed, and they should be seen weekly, certainly every two weeks, if they are to get well.

DR. K. DUNHAM, Cincinnati, considered that basing the diagnosis on the old-fashioned signs, is not enough. In conjunction with other aids in diagnosis the *x*-ray is of value. For the last four years he has been working alongside a very able diagnostician, and they send each patient from one office to the other. By using the fluoroscope Dr. Dunham can detect tuberculosis from three to six months before the diagnostician can do so.

DR. H. EDWIN LEWIS, New York City, said that in the dispensary of the New York Lung and Throat Hospital one great fact has been demonstrated and that is, that the principal function of the dispensary is to educate patients concerning their own needs, and their relations to other people. As Dr. Otis pointed out, the question of attendance is a very important one. In other words, if we can get a patient to come often enough to keep him under proper surveillance and discipline, the results are proportionately greater. As an aid in this direction, every dispensary should be well equipped with various paraphernalia, high-frequency apparatus and various forms of inhaling cabinets. While their curative influence in the average case may be small, their psychic effect on the patient is often pronouncedly beneficial, for he is always impressive, and feels he is getting something tangible—something that will contribute to his recovery.

Dr. Lewis voiced a strong belief in the value of suitable medication in the treatment of tuberculosis. From his experience he is convinced that medicine can be employed with a great deal of benefit if for no other reason than to make the average patient realize the gravity of his condition, and to emphasize the necessity of utilizing every possible means in overcoming it.

In regard to actual curative results, Dr. Lewis said that it is too early to make any positive statement. He believes that the dispensary is accomplishing substantial results in overcoming early cases of tuberculosis, but several years must pass before any hard and fast deductions can be made. The crying need of the moment is more money in order that the tuberculosis dispensaries may increase their efficiency to the highest possible point, and fulfil their educational mission in every detail. This provides a splendid opportunity for philanthropy, and as the work unfolds, physicians can demonstrate remarkable results in this grand and noble undertaking.

DR. S. SOLIS-COHEN, Philadelphia, believes that the tuberculosis dispensary is much more important at present than the tuberculosis sanatorium or hospital. In the United States there is now provision for about 8,000 patients in special hospitals for tuberculosis; while there are not less than 1,000,000 persons affected with tuberculosis. That, he said, is rather an underestimate than an overestimate. Thus in Philadelphia alone about 3,000 new cases are reported yearly which means that about 25,000 people are walking about Philadelphia with tuberculosis. At least one-tenth of the consumptives throughout the land are in need of charitable assistance and the least amount of money that should be expended on each one being $500, it would require at least $50,000,000 a year to care properly for the needy 100,000 in hospitals. That seems to be an impossible sum of money but if we are going to get at the tuberculosis question from the philanthropy end that is the least sum that can be considered. As a matter of fact, philanthropy is inadequate to the situation. The prevention of tuberculosis has ceased to be a medical problem and has become a sociologic and economic problem. Graves, of Dublin, showed how men were made phthisical in Ireland by dwelling in dampness, dirt and darkness, and being anxious, underfed and overworked. What was true of Ireland two generations ago, is also true of the world at large, to-day. The great cause of tuberculosis in the large cities of America is the high rent that crowds people into slums—the crowding forcing rents still higher, in the familiar vicious circle of pathology—and the low wages that force people to herd in unfit habitations and does not suffice to nourish them or clothe them properly. Dr. Cohen believes that the way to prevent tuberculosis in the cities is to bring about such changes in economic conditions that rents may be low and wages high, so that the people need not herd together and can have food and air and sunlight in plenty. Meanwhile the tuberculosis dispensary which will take care of the innumerable walking cases, teach the patients how to take care of themselves, how to avoid becoming foci of infection for the family and community, will be of much palliative value.

DR. E. A. BURNHAM, Boston, has been associated with Dr. Otis in the Boston Dispensary for six years. He believes that drugs have a distinct place in the treatment of tuberculosis.

DR. THOMAS F. REILLY, New York City, said that in looking over the printed instructions given tubercular patients, it occurred to him that the word tubercular or tuberculosis might be substituted with advantage for the term consumptive. Most patients are frightened when told they are consumptive. Another suggestion he made was to say to patients: "Don't take any medicine except that recommended by your physician. Above all things, avoid 'patent medicines.' Nostrums earn most from tuberculous people because it is claimed that they cure." There is little danger that the treatment of tubercular patients by dispensaries will infringe on the rights of the general practitioner. Tuberculosis is a disease of the poor. At first the physicians of the city thought it was an attempt of the health department to treat everyone. That thought has been dissipated and the profession is now taking up the work of the health department more and more. Registration, Dr. Reilly said, is now compulsory in New York. The inspectors do not visit these patients unless they are instructed to do so by the family physician. When a patient dies the house is disinfected.

DR. E. OTIS, Boston, said that it is only to the poor in the tenement house districts that the dispensary representative goes and advises as to the dangers of infection, and how to avoid it. If it is a case which, in the opinion of the board of health, is dangerous, a menace to the household, the board has the power to remove the patient to some institution. He said that there always will be a difference of opinion in regard to the value and safety of the tuberculin test. He has never met the slightest danger in its use. At the Rutland Sanatorium it is used constantly when the diagnosis is doubtful. When the tuberculin is used properly, in doses of from 2 to 10 mg.

(not over 10 mg.) it is perfectly safe and of great value. The general practitioners must be depended on to detect incipient curable cases. For example, there are 365 beds at the Massachusetts State Sanatorium at Rutland. It is impossible to obtain more than one-third incipient cases, though the authorities have the pick from among 14,000 consumptives in the state. The same condition exists in other sanatoriums. The Rutland Sanatorium receives patients in whom the diagnosis is doubtful, and keeps them under observation, and it is in such cases that the tuberculin test is a valuable aid. Dr. Otis is convinced that the prevention of tuberculosis is largely a sociologic and economic problem. Sanitarians must have ample means if they are going to eradicate this disease. The public, he said, is coming to realize these facts, and as time goes on larger and larger amounts of money will be available to institute more extensive and sweeping methods of prevention, isolation and treatment. Dr. Otis has had better results in telling patients frankly what is the matter with them, and not permitting them to go away without being clearly informed of the exact nature of their disease, and the treatment necessary. Then they are ready to respond to the rigorous exactions of the treatment.

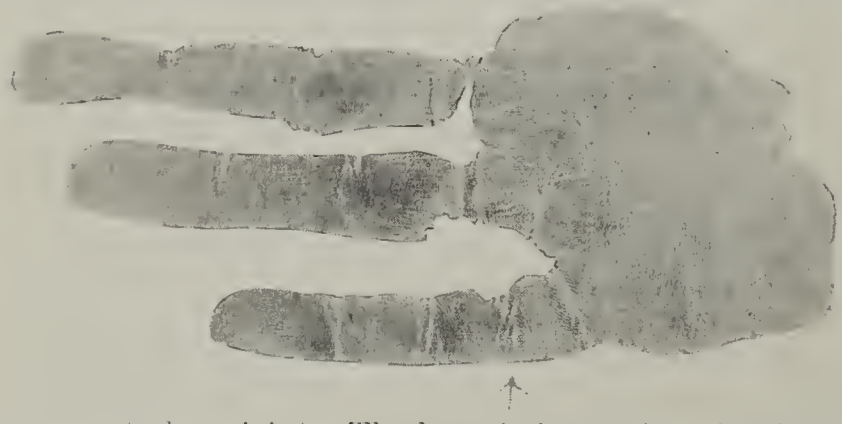
Clinical Notes, New Instruments, Etc.

A TISSUE JOINT OF THE LITTLE FINGER.

GEORGE B. LAKE, M.D.
WOLCOTTVILLE, IND.

The accompanying illustration shows a hand-print of the middle, ring and little fingers of a young man.

Between the metatarso-phalangeal joint and the distal end of the first phalanx of the little finger is what



appears to be a joint. The bone is intact, but the tissue creases at this point when the man closes his hand. There are no symptoms and the peculiarity was discovered accidentally.

DEATH FROM BROMO-SELTZER.

CASE OF ACETANILID POISONING.

HENRY BIXBY HEMENWAY, M.D.
EVANSTON, ILL.

On Oct. 12, 1906, about 5:20 p. m., I was called to attend Mrs. K. H.

Patient.—Female, white, Irish-American, aged 31.

Family History.—Father was found dead at age of 50; he possibly died of alcoholism. Mother died of childbirth at 38; father's mother died at 99, and paternal grandfather reached old age. Mother's parents died young. Cause of death of grandparents is unknown.

Personal History.—Within the past eight years, the patient had had four children and four miscarriages. She has suffered from profuse menstrual hemorrhages, and in June, 1906, was in St. Francis Hospital for curettement. Except at the menstrual period, she had never been subject to headaches, until within the last month. Her husband being away on business during that time she had "grieved much" and had several severe headaches, which had been relieved by bromo-seltzer. Wednesday evening she had a headache. Friday for dinner the family ate canned baked beans; after eating the beans, though no other member of the family was sick, she had signs of indigestion, with severe headache. She took the bromo-seltzer, but how much or when I do not know. Her husband told me that so far as he can find she never had more than the one smallest size bottle of bromo-seltzer. Before I arrived the patient had vomited after taking a drink of water.

Examination.—The patient was very poorly nourished, her teeth poor. I found her dressed as for work and lying on the bed. She was breathing regularly and deeply. The eyes were shut, the body was relaxed; the lips were slightly blue, and the fingers very blue. The pulse was full, soft, regular and about 80. The heart action was full, but not hard; the area of dulness was slightly increased, and the right ventricle was dilated, bringing the apex beat about one inch below and half an inch to the right of the left nipple. There was no bruit, but the valvular sounds were slightly softened. Anterior auscultation and percussion of the lungs showed fairly normal conditions. No râles were heard. The abdomen was flat, with very slight gaseous distension of the stomach. The colon was empty and the liver possibly slightly enlarged. At my request the patient promptly protruded the tongue, which was clean. Her eyes were not congested, but the pupils were dilated. (The room was not light).

Treatment.—My diagnosis was acetanilid poisoning from bromo-seltzer. I prescribed, but when the medicine arrived it was impossible for her to take it. I left immediately after writing the prescriptions and heard no more of the case until I reached home at 9 p. m. I learned then that the woman sank rapidly and died about 7:45 p. m.

Autopsy.—The postmortem examination made by the coroner's physician, Dr. O. W. Lewke, received the following conditions:

Heart contracted, left side empty; small soft clot in right side, heart muscle soft, permitting entrance of fingers on pressure. Valves normal, evidences of chronic myocardial degeneration. Lungs completely engorged; condition typical of acetanilid poisoning. Liver enlarged and engorged. Spleen engorged. Kidneys engorged and softened from parenchymatous inflammation. Stomach and intestines empty; mucous membrane engorged and showing slight capillary hemorrhage.

Verdict: Death from acetanilid poisoning from taking bromo-seltzer.

Remarks.—It is my opinion that the taking of the headache remedies had weakened the circulatory apparatus, so that a dose usually harmless finally became lethal.

Her family physician and husband both assured me that the previous existence of nephritis had not been suspected. In view of the postmortem findings, in another case I should depend on oxygen for treatment, combined possibly with bloodletting and the use of normal salt solution. Alcohol, strychnin, digitalis and nitroglycerin are contraindicated.

EDITOR'S NOTE.—Several months ago we had analyses made of bromo-seltzer as sold in original bottles to the trade. These analyses show that 100 parts of the effervescing salts contain:

Potassium bromid	10.53 parts
Acetanilid	4.58 parts
Caffein	1.20 parts

Assuming an average dose of the article—a teaspoonful—to weigh 76 grains (5.0 gm.), each dose would contain:

Potassium bromid	7 grains (0.5 gm.)
Acetanilid	3 grains (0.2 gm.)
Caffein	0.8 grains (0.05 gm.)

Since a half-ounce of this preparation is often taken at a dose, and since many women especially are taking it daily, it is anything but harmless.

Aside from serving as an example of the fatal effects of small doses of the drug, the report calls attention to the therapeutic contraindications in the treatment. While we can not agree with Dr. Hemenway that strychnin or digitalis are contraindicated, his objections as to alcohol and nitroglycerin are, we think, sound, and,

as these drugs are very frequently administered as stimulants, the objection should be borne in mind. We presume that the objection which Dr. Hemenway has to nitroglycerin is that it is not a direct cardiac stimulant; at any rate this is not its chief action, but acts by dilating the capillaries and relieving the strain on an overworked heart. It also lowers the blood pressure considerably, and, as a lowered blood pressure is characteristic of acetanilid poisoning, it is, therefore, contraindicated. Alcohol is contraindicated, though to a less extent, for the same reason, and also on the general principle that it is unwise in case of poisoning to administer any substance which has marked solvent power over the toxic substance. The use of oxygen, and especially the bloodletting and injection of normal salt solution, are the most reliable means for combating acute acetanilid poisoning which are known as present.

A MONOCEPHALUS, TETRABRACHIUS, TETRAPUS.

J. J. GOODING, M.D.
GILMORE, OHIO.

The birth of this monster occurred in my practice, July 23, 1905.

The mother, a native of Ohio, white, and about 40 years of age, has a large family. The labor was normal, although it was thought to be seven weeks premature. The fetus lived ten minutes. It weighed eight pounds. It was a double female with single head and thorax, four arms and four legs. The two abdomens were separate. The head was normal, with a small spina bifida at the neck.

ANTIDOTE FOR SUPRARENAL PREPARATIONS.

L. M. ROBERTS, M.D.
LITTLE FALLS, MINN.

Relative to the case reported by F. C. Bennett in THE JOURNAL A. M. A., November 17, I recently had an experience with adrin. The patient was given tablets containing among other medicants adrin gr. 1/500, with directions to let one dissolve slowly in the mouth every three or four hours. The patient used one every hour for six doses, and then telephoned that he was suffering greatly with his heart and that pulse was "very rapid and weak, with smothering." I at once ordered recumbent position and strong black coffee, with almost immediate relief. I have used adrenalin and adrin a great deal with cocain, and have witnessed these phenomena before, but heretofore have attributed it to cocain, but there was no cocain in these tablets.

THE OPSONIC INDEX IN TYPHOID FEVER.

A PRELIMINARY REPORT.*

C. P. CLARK, M.D.
CHICAGO.

From a study of 33 cases of typhoid fever in which one or more estimations of the opsonic index were made, certain broad conclusions relative to the index in this disease may be deduced.

It has been demonstrated that there occurs during a typhoid infection a marked rise in the opsonic index; that the index varies from day to day; that there is early in the disease a high index; as the temperature decreases this appears to fall and to rise again as convalescence approaches, but more cases must be studied before any final conclusions may be drawn.

That the high index is due to the presence of opsonin and not to the incorporation by the leucocytes of clumps of bacilli resulting from agglutination is demonstrated by a comparison of the number of phagocytes in the normal as compared with that of the patient's specimen. In many cases the index so obtained is very nearly the same as that obtained by the usual method of determination, i. e., by counting the number of bacilli incorporated. Furthermore, there may be marked agglutination and no increase in opsonin and vice versa.

The typhopsonin is thermostable, resisting a temperature of 60 C. for 30 minutes, being, however, destroyed almost entirely at a temperature of 75.

In order to counteract the lytic effect of the serum it is necessary in preparing the specimens always to first heat the serum to 56 C. for 30 minutes. The lytic effect is now destroyed but the opsonic activity of the serum remains apparently unchanged.

It seems likely that the opsonic index in typhoid fever will prove valuable from the standpoint of diagnosis, inasmuch as the index is high during the earliest part of the disease.

* From the Memorial Institute for Infectious Diseases, Chicago.

A POINT IN THE MANAGEMENT OF UVEAL SARCOMAS.

BROWN PUSEY, M.D.
CHICAGO.

Usually sarcomas arising in the uveal tract are slow in perforating the sclera and experience has taught us that, in their clinical course, they usually give rise to symptoms—interference with vision or glaucoma and the pain which goes with it—which attract attention to the condition before perforation of the sclera and extension to the orbital tissues take place. Accordingly the ophthalmic surgeon, as a rule, when he sees no gross perforation of the sclera, contents himself in dealing with uveal sarcomas by enucleating the affected eyeball. And this is good practice; for enucleation of the globe usually suffices, and the more radical procedure of exenterating the orbital contents, which theoretically, of course, would be more proper, is a far more serious operation and leaves the patient more deformed.

Sometimes, however, these growths go through the sclera comparatively early and sometimes macroscopically such extensions can not be made out. An experience with such a case has been instructive to me, suggesting a point in the management of cases of intraocular sarcomas which I think worthy of attention.

History.—The patient was a woman of about 60. The diagnosis of choroidal sarcoma was fairly certain. Clinically there was no sign indicating extension of the growth through the sclera. The eyeball was enucleated and macroscopically the globe showed no indication of extension of the growth externally. Just after the operation the eyeball was cut into two parts and the clinical diagnosis was verified. The tissue was preserved in formalin. After about one and one-half years the patient noticed a swelling in the orbit. Exenteration of the orbit was done and a pigmented tumor as large as a normal eyeball was removed.

Interested in this history I made sections of the eye, which had come into my possession through the courtesy of the operator, in order to see if I could find the place or places where the tumor cells had perforated the sclera. It took very little trouble to demonstrate an

extension of the tumor cells through the selera—the sclera, by the way, is a tissue in which any invasion by foreign cells is easily found when microscopic examination is made—along the sheath of one of the ciliary nerves.

And herein is the case instructive. Sections of the eyeball should have been made as soon after the enucleation as possible. Had this been done the extension into the orbital tissue could have been recognized, prompt exenteration of the orbit could have been done, and the patient thus spared the dangers incident to the further growth of the tumor.

I think this one case demonstrates the following proposition: When enucleation of the eyeball is done for uveal sarcoma, the globe, if it has no gross signs of extension externally, should be sectioned, as soon as it can be prepared, and examined for possible microscopic extension to the orbital tissue. It follows, of course, that if such extension is found exenteration of the orbit should be done immediately.

A NEW COMBINED OPERATING AND OFFICE TABLE.

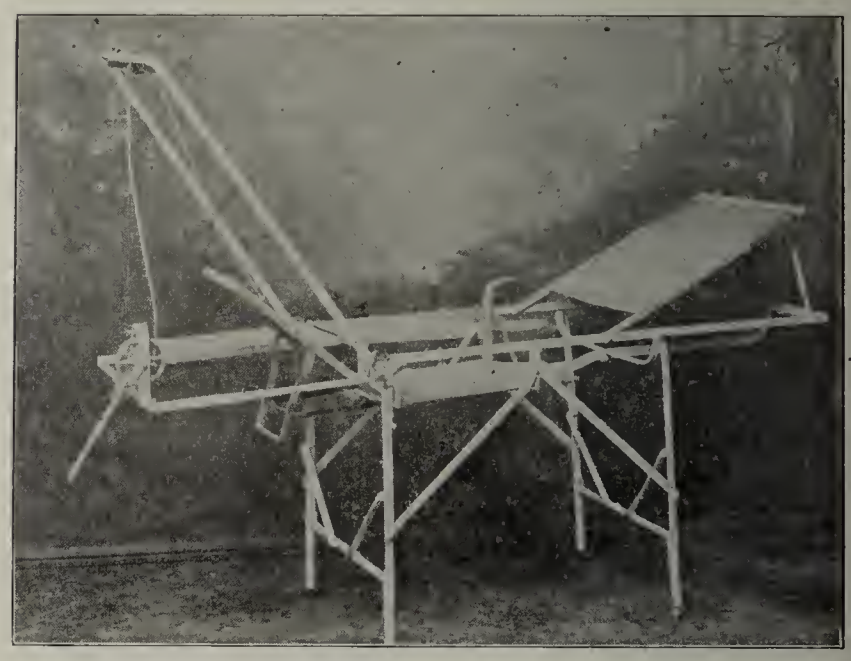
JOHN H. DOWNEY, M.D.
GAINESVILLE, GA.

I have devised a new combination operating, office and fracture table, in which I have tried to arrange the traction in every desired direction that will hold the patient in a partially suspended and yet comfortable position. It gives the physician free access to his patient and allows him to apply a dressing or a plaster-of-Paris splint to any part of the body.

In Figure 1, the table is arranged for general surgery; it is just as good as any for general operating and can be easily arranged for office work. By dropping the lower portion of the top and placing the leg rests and stirrups in position it can be used for special operations about the vagina, uterus or rectum.

Figure 2, shows the arrangement for treatment of fracture of the femur or fracture of the upper two-

thirds of the tibia and fibula. In the latter the whirl arch is thrown forward and locked, as in Figure 5, traction being made against the head of the tibia, the foot being fastened to the foot plate as in Figure 3. When the lower thirds of these bones are the site of fractures the whirl arch is thrown backward on the same plan as the top of the table and the extension is made in a straight direction. In this fracture the cast need not go above the knee; so only two sections are necessary; first, the slipper, after this sets, put on the strap, apply extension until fragments are in opposition (the center post makes the counter extension) then apply the upper section of the cast to just where the knee makes the bend. The fixation points are the heel and instep of the foot, the tapering calf and the head of the tibia. In fractures of the upper part of the tibia it is necessary to carry the plaster above the knee and the cast has to be applied in three sections; first, the slipper, as mentioned above, then an elbow at the knee, leaving the site of the fracture bare. To do this, the foot is fastened to the foot plate and the whirl arch thrown forward; as in Figure 4, the leather strap is reversed so as to grasp the head of the tibia and to make the exten-



sion upward and forward—the foot plate making counter extension downward and backward. When the fracture is properly adjusted, the middle section of the cast is applied.

In fractures of the femur, the patient's leg is fixed in the proper position and the first section of the cast is applied in the usual way to just above the knee, making the cast a little heavy just below the knee to prevent denting during extension. When this section is hard, which only takes a few minutes, the patient is placed on the table as shown in Figure 3, and the knee strap is applied so as to grasp the head of the femur; the necessary extension is made, the center post being the counter extension, the fragment is adjusted and the upper section of the cast is then applied, beginning at the upper end of the lower section by spreading a small amount of plaster for the new starting point and to make the weld firm; carry the plaster up to the ensiform cartilage, making the necessary layers to give strength, reinforce it at the hip and at the junction of the two sections, and you have the double angular splint.

Note how perfectly extension and counter-extension can be made and how slowly and steadily extension is made, giving the muscles time to relax. When the fragments are in position there is no giving way and no slipping out of place. The operator has perfect access to the patient without the slightest unnecessary movement. Perfect fixation is afforded by the abrupt angles at the knee and hip, making shortening and deformity impossible. The fracture must unite as it has been placed, there is no eversion or inversion, there is freedom of every movement without pain as the fragments and every muscle connected with the fracture are fixed. The patient can attend the calls of Nature at any time in natural positions, he can sit or walk at will. There is no four or six weeks in bed, no weight or suspension apparatus to be adjusted, very little pain and no deformity.

These look like broad statements, but they have been proved time and again.

In fracture of the clavicle arrange the table as in Figure 1; elevate the head, telescope it up to full extent, hook the spinal support in hole where the center post was taken out of place, place the patient on the table with the back of the head resting on the telescoped part, the spinal support holding the chest up, then carry the shoulders upward, outward and backward until the fractured end is in position.

Take an ordinary roller bandage and tie the shoulders

in this position to the sides of the table, cover the upper fourth of the chest with cotton wadding and hold this in place with a few turns of a roller bandage. Next take a strip of adhesive plaster two inches wide and long enough to reach from the trochanters up to the side of the axilla and two inches out under the arms, commence with the plaster roller at the lower part of the cotton wadding and go up to the axilla and make a double figure of eight back and front. At this point loosen the plaster under the arms and carry it down beside the

chest, making a loop at the top, and cover this with another layer of plaster. With this splint both shoulders and scapulæ are fixed, the sound shoulder acting as a fulcrum to hold the injured one up. The double figure of eight turns around the neck and both shoulders prevent the forward and downward drooping, and the adhesive plaster prevents the elevation of the shoulders, thus giving perfect fixation, while at the same time the appliance is comfortable and will allow the patient to wear his arm in his sleeve. The only other dressing necessary is a simple sling in which the hand may rest.

This is a simple, comfortable and efficient method of treating these fractures and the assistance of this table makes it easy of application as it gives easy access to the patient.

In dislocation of the hip, knee, ankle or shoulder, this table can be arranged to give the desired amount of extension in any direction; Figure 4 shows its application in backward dislocation of the hip, one man doing effectually the work of three and with greater ease to himself and less pain to the patient. The finger in the center post holds the patient to the table, the ratchet pulls the head back in the direction of the acetabulum, the side lever lifts the head from behind the rim and the right hand uses the leg as a crank to rotate the head into the socket. Figure 5 shows a device for suspending the patient with an injury or disease of the spine necessitating a plaster jacket. This is done by telescoping

the head rest, with the patient sitting on the table, the legs dropping through the table are adjusted, the clamp holds the patient to the table, the leather cuff is lifted around the neck and drawn up by the ratchet to the desired point and locked. The patient is firmly fixed and the physician has access to every part without a single movement and any amount of traction can easily be kept until the plaster has thoroughly set.

Comfort in Winter Traveling.—The exhaust from the engine can be made to thoroughly heat the car, which can readily be made inclosed, and in zero weather the doctor can go to the bedside as warmly as he can sit in his surgery. Instead of getting thawed out at the stove before approaching the sick one, he is ready immediately to give attention to his patient.—*Automobile.*

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

103 DEARBORN AVENUE . . . . CHICAGO, ILL.

Cable Address . . . "Medic, Chicago"

Subscription price.....Five dollars per annum in advance

[*For other information see second page following reading matter.*]

SATURDAY, DECEMBER 29, 1906.

[The large amount of space occupied by the index in this issue compels us to omit several departments and to curtail others.]

AMENORRHEA AND BRAIN TUMOR.

During the past decade a suspicion has developed that various intraeranial growths produce disturbances of menstruation, especially in the direction of scantiness or even complete absence. In 1903 Axenfeld[1] pointed out that tumors of the base of the brain, especially those which involve the hypophysis cerebri, are most commonly productive of cessation of menstruation. For some years it had been recognized that acromegaly, especially in young persons, was likely to have complete amenorrhea as one of its first symptoms. Cessation of menstruation often declared itself many months before any other symptom of acromegaly could be observed and usually was treated in many ways before the hopelessness of the condition was realized with the inevitable advance of the nervous and tissue manifestations. In these cases a relationship between optic atrophy and the disturbance of menstruation was an early symptom and optic atrophy was also likely to develop early. The two sets of symptoms, indeed, were noted as tending to run corresponding courses.

These observations have been confirmed now in every part of the world and further study of such cases has thrown light on certain hitherto puzzling gynecologic conditions. Dr. Harvey Cushing,[2] of Johns Hopkins University, calls attention to cases in which tumors affecting the hypophysis cerebri were complicated not only by optic atrophy, but also by sexual infantilism, this latter condition involving complete absence of menstruation. Such cases have been reported before, and in some of them the sexual development has been very much delayed; menstruation has only been imperfectly established, and then has not infrequently disappeared completely after a short time. There would seem to be some very definite relation between the hypophysis and the genital organs, for a certain number of instances of failure of male genitals to develop normally have been reported in cases in which tumors of the hypophysis were diagnosed or were actually demonstrated at autopsy.

1. Neurologisches Centralblatt, 1903, p. 608. Sitzungsbericht.
2. Jour. of Nervous and Mental Dis., November, 1906, vol. xxxiii, No. 11, p. 704.

While most observers seem inclined to the opinion that it is the hypophysis and its function whose disturbance is directly responsible for the interference with menstruation, there is no doubt that in a number of reported cases the brain tumors have been situated at a considerable distance from the hypophyseal region, some of them, indeed, at the periphery of the brain. In these cases it has been argued by those who favor the hypophysis theory that either the function of the gland is interfered with by the occurrence of internal hydrocephalus with distension of the recessus infundibuli, or else that the gland suffers in some other way from the increased intracranial pressure. There is, however, no absolute demonstration of this, and in some cases the general disturbance of the central nervous system seems to have been the main cause for the menstrual difficulty. In a certain number of cases it has been noted that injuries in which concussion of the brain takes place are followed by prolonged disturbances of menstruation, especially cessation for many months, and it would seem rather difficult to connect the underlying pathologic conditions directly with the hypophysis.

The lesson of this recent observation is plain. A distinguished professor of gynecology of the last generation used to tell his pupils that they must not forget that a woman had a large number of organs outside of her pelvis. Most of these reported cases of disturbance of menstruation have been treated by local measures, of course, without results. As a large proportion of the patients were young unmarried women, the desirability of avoiding such a mistake is manifest.

SLEEPING SICKNESS.

The somewhat mysterious and obscure disease known as sleeping sickness is not present in the United States, and, therefore, the subject is of no direct concern to us. Although perhaps of academic interest only, from the wider standpoint of medical science sleeping sickness is of peculiar interest to members of the medical profession in all parts of the world. The disease is wholly confined to certain parts of Africa, as its scope does not extend further than that of the tsetse fly. Recently, however, the news has come from Arabia that a species of this fly has been found in that country, the first time, so far as is known, that Asia has been visited by the pest. The high death rate caused by sleeping sickness in some districts of Africa is creating much alarm, and no less than four expeditions are now investigating the matter in different parts of the country. An expedition has been sent out to the Congo region under the auspices of the King of the Belgians, another to East German Africa by the German government, still another to the Congo by the French Geographical Society, while the Schools of Tropical Medicine of Liverpool and London have been prosecuting researches in the Congo and in Uganda for some time past.

The statement has been made recently that about

600,000 natives have died from the disease during the past ten years in Central Africa. Of course, it is impossible to collect trustworthy statistics as to the death rate from the disease, but men who are well acquainted with the subject say that the above estimate is not exaggerated. Anxiety is being occasioned, too, by the appalling rapidity with which sleeping sickness is spreading in Africa, due undoubtedly to the fact that the waterways have been opened up within the past few years, rendering communication easy. The malady has been endemic in the Congo Free State as long as the history of that country has been known, and thence has been disseminated in various quarters. Uganda is a district which has suffered, and is suffering, very severely from its inroads. The disease is probably far more universal than is usually believed. It is a somewhat debated point to whom is due the honor of discovering the cause of sleeping sickness. This lies between Castellani and Bruce. At any rate, it has been definitely decided that a species of tsetse fly is responsible for its spread. The commission of the British Royal Society is said to have proved that the sole cause of sleeping sickness is the *Trypanosoma gambiense* conveyed from the sick to the healthy by means of *Glossina palpalis,* a species of tsetse fly, and probably by other varieties of the same fly. In Uganda the distribution of sleeping sickness and that of the *Glossina palpalis* particularly coincide.

It will require further and more convincing evidence before it can be wholly accepted as proved that the tsetse fly is the only cause of the distribution of the disease. Authorities are fairly well agreed that the disease is at first a specific polyadenitis caused by the *Trypanosoma gambiense,* and that in its last and sleeping stage it is invariably fatal. There have been but few cases in which members of the white race were attacked, but there have been sufficient to demonstrate the fact that white individuals are not immune to the disease.

It is hoped that the investigations now proceeding in Africa with the view of clearing up all moot points in connection with sleeping sickness will be successful in their object, and that, furthermore, means may be found to stay the ravages of this tropical plague.

THE GUIDE TO CURRENT MEDICAL LITERATURE.

For the past seven years THE JOURNAL has been publishing at the end of each volume an Index to Current Medical Literature. In each index number attention has been called to it editorially, and we are doing this again, in order that more of our readers may know of it. We are not now referring to the index to the reading matter appearing in THE JOURNAL, which resembles similar indexes in other journals.

Commencing on page 2205 is the Index to Current Medical Literature, and it is to this that we wish to call particular attention. Here will be found the titles of the original articles which have appeared in practically all of the important journals of this and foreign countries. On page 2234 commences the Author's Index. In this list will be found, arranged alphabetically, the names of the authors of the articles referred to above. While this Index to Current Medical Literature is not as complete as the Index Medicus, nor is expected to take its place, it will be found practical by those who wish to look up articles that have appeared in medical journals during the last six months.

The important matter connected with this index, however, is the separate publication of the Guide to Current Medical Literature in pamphlet form. In this are included—in addition to the index—the titles of the articles referred to in the index, reproduced as they appear, week by week, in THE JOURNAL. Without this reprint one has to refer to THE JOURNAL itself to find where an article can be found. The reprint includes the titles so that the reader can look up the matter without referring to THE JOURNAL at all.

We supply this reprint at 50 cents a copy or 75 cents a year. We again respectfully ask those of our readers who are in the habit of looking up literature, and who have not used this index, to test its value and to make suggestions for its further improvement.

TIME OF DEATH.

In a recent study of what Sir James Paget would have called the "chronometry of life," Mr. Marsh[1] has investigated, among other things, the time of day at which death is most likely to occur. For this purpose he analyzed 36,000 records, omitting only deaths from accident or suicide. His results are interesting because they controvert the usual view that death commonly occurs in the early morning when the vital forces are at a low ebb. Marsh's figures seem to show that, on the contrary, most deaths occur between 2 and 6 o'clock in the afternoon, i. e., at the time when the vital forces are normally at their highest point. The fewest deaths occur between 7 in the evening and midnight. In women the time of death tends to be a little earlier than in men, and in children a little earlier than in women, this too, following the line of the differences under normal circumstances in the pulse and temperature maxima. Mr. Marsh claims that there has really been no accurate investigation on the point in question, and that the usually accepted view has been based on generalities rather than on accurate observation. We fear that the figures presented are not sufficient to warrant accepting these conclusions as final.

THE NEXT PHARMACOPEIA.

According to the report published in the last issue of THE JOURNAL,[2] the Board of Trustees of the United States Pharmacopeial Convention is taking active steps for the issuance of the 1910 Pharmacopeia. The pros-

1. "The Diurnal Course of Efficiency," New York, 1906.
1. Dec. 22, 1906, p. 2101.

pect of greater interest in the Pharmacopeia being manifested by the profession is a hopeful sign of the times. The Journal is glad to be made the official organ of the Pharmacopeial Convention, if thereby it may aid in making the book a more practical one for physicians, and thus promote its use among them. We trust that practitioners generally will take more interest in this book and will suggest improvements, for it ought to be for physicians what it has long been for pharmacists, an exceedingly valuable hand-book and guide.

DISEASE DISSEMINATION BY INSECTS.

The conveyance of disease from animals to man through the agency of insects has been the subject of much investigation, but the number of species capable of acting as such carriers has not been fully appreciated. A suggestive addition to our knowledge of the subject is made in a communication of Dr. Samuel Weber[1] to the forty-third annual meeting of the American Veterinary Medical Association at New Haven, in August, 1906. His paper contains a description of certain insects belonging to the *psocidæ,* which are common in country places, frequenting barns and especially hiding in hay and grain, and which from their association with animals and their occasional visitation of houses may well prove carriers of disease from animals to man. They may infect clothing as well as food. There is a well-known aversion for such insects that is practically universal and amounts on the part of many persons almost to positive physical abhorrence. It would be extremely interesting to find now that this natural dislike has an important bearing on that instinctive conservatism which so often leads men to avoid the carriers of disease and certain methods of disease conveyance long before such definite knowledge in the matter has been gained as would enable them to give a reason for their action. Dr. Weber points out that many of the small insects which inhabit barns feed on the remains of fodder left by cattle and other animals, and not infrequently these remnants have become thoroughly saturated with saliva. If any disease of the respiratory passages particularly exists in these animals the insects are likely, for a time at least, to harbor the bacilli that may be present in such secretions in their digestive tracts. A certain number of the insects during the colder season migrate to the houses and there are to be found on the food and on the clothing of human beings. Danger of the conveyance of disease under these circumstances can be readily understood. Weber has demonstrated the occurrence of tubercle bacilli in one insect of this class. The danger is not great and yet it is constantly present, and these insects may account for the origin of many diseases in families, the cause of which can not otherwise be determined. The paper includes a description of unfamiliar insects which are usually not considered as likely to play a pathologic rôle, but whose possibilities in this matter have evidently not yet been established.

1. New York Med. Jour., Nov. 3, 1906, p. 885; abstracted in The Journal A. M. A., Nov. 17, 1906, p. 1683.

Medical News

CALIFORNIA.

Donation.—Mrs. Ethel W. Crocker has donated $15,000 toward the University of California Hospital fund.

Physician Wins Suit.—Immediately on the conclusion of the arguments in the case of the damage suit brought by D. Daniels against Drs. J. V. Varplanck Lazeriere and George M. Bumgarner, Escondido, in which malpractice was alleged and damages of $10,000 were asked, the judge gave judgment for the defendants, as the testimony failed to substantiate the charge.

Library Trustees Elected.—At a meeting of the patrons of the Barlow Medical Library, erected by Dr. W. Jarvis Barlow, Los Angeles, at an expense of $60,000, the following trustees were elected: Drs. Benjamin F. Church, Milbank Johnson, Fitch C. E. Mattison, Stanley P. Black, William A. Edwards, John R. Haynes and George L. Cole. At his own request Dr. Barlow was not made a director.

Hospitals Benefited.—At a meeting of the San Francisco Relief executive board the committee approved the following appropriations for hospitals: San Francisco Maternity, $25,000; German Hospital, $19,000; California Woman's Hospital, $3,000; St. Joseph's Home and Hospital, $11,000; St. Luke's Hospital, $17,000; San Francisco Lying-in Hospital, $6,000; San Francisco Policlinic Hospital, $2,800; Lane Hospital, $1,500, and Children's Hospital, $22,500.

COLORADO.

October Deaths.—The total number of deaths reported to the State Board during October was 791, equivalent to an annual death rate per 1,000 of 14.13. Of the deaths, 74 were due to typhoid fever; 5 to scarlet fever and 4 to diphtheria.

Communicable Diseases.—As compared with September, 1905, the October report shows a decrease of 7 cases of diphtheria and 2 cases of smallpox and an increase of 17 cases of scarlet fever and 99 cases of typhoid fever.

MacGregor Memorial.—The Edinburgh friends of Dr. Jessie MacLaren MacGregor, formerly physician to the Woman's Hospital, Edinburgh, who died in Denver in March last, are establishing a memorial to take the form of a money prize for original research work by women graduates of the Edinburgh University, to be called the "Jessie MacGregor Memorial Prize."

CONNECTICUT.

Mayo in Hartford.—Dr. William J. Mayo, Rochester, Minn., president of the American Medical Association, was the guest of the Hartford Medical Society, December 7, and read a paper before the organization entitled "Surgery of the Stomach and the Allied Viscera."

November Deaths.—During the month, 1,294 deaths were reported, 8 more than in October, 37 more than in November, 1905, and 139 more than the average number of deaths for the month during the five years preceding. The mortality was equivalent to an annual death rate per 1,000 of 15.4.

Communicable Diseases.—Of the deaths reported 153 were due to diseases of the nervous system; 150 to heart disease; 138 to pneumonia; 101 to accidents, including violence; 90 to consumption; 37 to diphtheria; 33 to bronchitis; 26 to typhoid fever; 20 to diarrheal diseases; 18 to whooping-cough and 10 to influenza.

Infectious Diseases.—During November there were reported to the State Board of Health 46 cases of measles in 12 towns; 99 cases of scarlet fever in 29 towns; 1 case of cerebrospinal fever; 190 cases of diphtheria in 42 towns; 47 cases of whooping cough in 16 towns; 82 cases of typhoid fever in 32 towns, and 33 cases of consumption in 14 towns.

GEORGIA.

Physicians' Fire Losses.—A fire in the new sanitarium of Dr. Charles C. Stockard, Atlanta, which was nearing completion, did considerable damage and is believed to be of incendiary origin.——Dr. D. T. McCall, Rome, was seriously burned in a fire which destroyed his house, November 28.

ILLINOIS.

Personal.—Dr. and Mrs. Hero Kruse, Peoria, left for a trip to California, December 10.——Dr. and Mrs. Marvel Thomas, Gillespie, have gone to the south and Cuba to spend the winter.——Dr. Josiah M. Cody, Tremont, entered St. Francis Hospital, Peoria, for an operation December 10, and is reported to be doing well.

For the State Insane.—At a recent conference between the governor, the State Board of Charities and the superintendents of the various state charitable institutions last week, a plan was proposed by the governor for the rehabilitation of the charitable institutions in Illinois, including the establishment of several laboratories and one central psychopathic institute at Kankakee. This plan, if carried out, will, it is said, require $5,000,000, of which $800,000 is said to be available.

January Examination.—The Illinois State Board of Health will hold an examination for license to practice medicine, at the Great Northern Hotel, Chicago, Jan. 16-18, 1907. No applications will be received after January 5. The applicant must present a diploma from a medical college in good standing. Application must be made to the secretary, Dr. James A. Egan, Springfield, Ill., and a card of admission to the examination secured. Students who are to graduate in 1907 will be required to present documentary evidence of preliminary education.

Chicago.

Physicians Warned.—Judge Judson S. Going issued a warning to physicians against the common practice of issuing certificates of physical disability on slight grounds and ordered an individual, who had such a certificate, to appear in court forthwith.

Smallpox.—The first patient with smallpox discovered in the city since August 13, walked into the city hall December 12. The man, 36 years of age, had never been vaccinated, was in the fourth day of the eruptive stage, and probably had exposed hundreds to the infection. He is said to have come from Galesburg.

Deaths of the Week.—Deaths of the week from all causes numbered 618, equivalent to an annual death rate per 1,000 of 15.73. Pneumonia caused 113 deaths; heart diseases, 62; consumption, 55; Bright's disease, 44; violence, 43; acute intestinal diseases, 29; cancer, 25; bronchitis, 21; and diphtheria and scarlet fever, each, 15.

Bequests.—By the will of the late Otto Young $20,000 is bequeathed to the Chicago Home for the Friendless and $400,000 to the Chicago Home for Incurables, as a separate fund, the income of which is to be used in the maintenance of the building already erected by Mr. Young on the grounds of that institution in memory of his son.

Scarlet Fever and Diphtheria.—Scarlet fever and diphtheria are reported to be prevalent in the area of the city bounded by Diversey avenue, the north branch of the river, Chicago avenue, and Kedzie avenue, and in the section bounded by Taylor and Morgan streets, the south branch of the river, and Hoyne avenue. During the holiday season the health department will make a thorough canvas of every infected house, and children living in such houses will not be allowed to re-enter school until it may be done without exposing other children to risk.

INDIANA.

Morbidity and Mortality.—During November the State Board of Health reports 302 deaths from pneumonia and 80 from influenza as compared with 219 deaths from pneumonia and 13 deaths from influenza in the corresponding month of last year. Diphtheria, tonsillitis, bronchitis, pneumonia, influenza and typhoid fever were most prevalent during the month. Diphtheria caused 79 deaths, as compared with 33 in November, 1905. During the month, 56 schools were closed on account of diphtheria and 37 on account of scarlet fever. There were reported 495 cases of typhoid fever from 37 counties with 135 deaths, or 92 more cases and 34 more deaths than in the corresponding month of last year. Smallpox was reported in 14 counties with 212 cases and no deaths. Deaths from tuberculosis numbered 323; from cancer, 91; from violence, 184 and from diarrheal diseases, 161. The mortality for the whole state was at the rate of 13.3 per 1,000, per annum.

IOWA.

Hospital Opened.—The Pocahontas Sanitarium and Hospital was formally opened December 1. Dr. J. W. Starr is in charge of the institution.

Personal.—Dr. Ralph H. Parker, Storm Lake, who was recently elected coroner of Buena Vista county, has resigned.——Dr. Louis A. Thomas, Red Oak, secretary-elect of the State Board of Health, has left for his new field of duty in Des Moines.——Dr. Cora B. Williams, Marshalltown, who has been seriously ill with cholelithiasis, is reported to be improving.——A banquet was recently tendered to Dr. Daniel W. Crouse, Waterloo, who retired December 1, to locate in Alabama.

Medical Society Meeting.—The Marion County Medical Society held its thirty-fourth annual meeting in Knoxville, December 14. Among the visiting members were Drs. J. W. Cokenouer and E. E. Dorr, censors of the seventh district, both of Des Moines. The following officers were elected: Dr. J. W. Finarty, Knoxville, president; Dr. A. C. Payne, Pella, vice-president; Dr. C. W. Connell, Knoxville, secretary; Dr. J. V. Brand, Knoxville, treasurer, and Dr. C. E. James, Durham, censor.

MASSACHUSETTS.

To Complete Hospital.—The Boston board of aldermen has unanimously passed an order to appropriate $28,000 for the completion of the Relief Hospital of East Boston.

Diseases in Schools.—Whooping-cough, chickenpox and mumps are prevalent in the schools of Middleboro, and whooping-cough is reported to be epidemic among the public school children of Somerville.

School Inspectors Appointed.—The Boston board of health has appointed 30 additional physicians, making a total of 80 now appointed by the board, as medical inspectors of schools. Each inspector is paid a salary of $200 a year.

Boston Needs Tuberculosis Hospital.—So great is the need of Boston for more accommodations for its consumptive citizens, that pending the completion of the new hospital now being erected in Dorchester, Mayor Fitzgerald is seriously contemplating the use for this purpose of the old hospital on Swett Street formerly used as a smallpox hospital. About 60 beds could thus be provided.

Personal.—Dr. James J. McAvoy has been elected a member of the Lawrence school board, to fill the unexpired term of Dr. John H. Bannon, recently elected school physician.——Dr. Charles D. McCarthy, mayor-elect of Malden, was thrown from his buggy and seriously injured on the evening of election day.——Dr. Charles H. Mace has been appointed school physician of Huntington.——Dr. Francis J. Keany, Boston, has been appointed dermatologist of the public schools.

Tuberculosis Prevention.—A conference on "The Duty of the Municipality and the State in the Prevention of Tuberculosis," held at the rooms of the Twentieth Century Club, Boston, on December 19, was addressed by Dr. Thomas Darlington, commissioner of health of New York City. The discussion was continued by Edward F. McSweeney, chairman of the trustees of Boston's new consumptive hospital; Dr. Samuel H. Durgin, chairman of the Boston board of health; Dr. Thomas F. Harrington, Lowell, and Drs. Arthur T. Cabot and Frederick L. Knight, Boston.

MICHIGAN.

Epidemic Diseases.—It is reported that there are from 50 to 60 cases of scarlet fever in Iron Mountain, and more than a dozen cases of diphtheria, and that the diseases are spreading rapidly.

Source of Typhoid Located.—The source of the five cases of typhoid fever in one family in Ecorse has been discovered by examination of the water from the well from which the family obtained its drinking water, which shows that the water is polluted.

Will Ask for Laboratory.—Dr. Frank W. Shumway, Lansing, secretary of the State Board of Health, says that the board will ask the next legislature to provide a bacteriologic laboratory and to employ a bacteriologist in connection with the department.

Ill and Injured.—Dr. Joseph Marshall, Durand, had his leg amputated in St. Mary's Hospital, Detroit, December 7.——Dr. Frank M. Thoms, Lansing, was seriously injured in a runaway accident, December 3. He was thrown from his buggy, striking his head against a tree, and sustained a sprain of the left arm, and cuts and contusions of the face.

Personal.—Dr. A. Duncan McAlpine, house physician at Harper Hospital, Detroit, has resigned to enter private practice.——Dr. Thomas M. Koon has resigned as health officer of Grand Rapids, the resignation to take effect January 1.——Dr. Arthur C. Lee, Detroit, accused of an attempt at bribery, has been discharged, as the judge found nothing in the testimony that would justify him in holding Dr. Lee for trial.——Drs. Edwin B. Forbes and William J. Stapleton, Jr., Detroit, have been reappointed physicians of Wayne County.

MISSOURI.

In Memory of His Son.—In memory of his son, the late Dr. John Franklin White, Mr. J. B. White, Kansas City, has presented to the town of Youngsville, Pa., a school building which cost $20,000.

Snodgras Laboratory.—St. Louis will spend $15,000 in equipping with the latest apparatus, instruments and literature the Snodgras laboratory, which is a department of the St. Louis City Hospital.

Municipal Sanitarium Report.—Dr. St. Elmo Sanders, city physician of Kansas City, has reported on the cost and maintenance of a municipal sanitarium in Clay County, for the fresh-air treatment of tuberculosis. He estimates the cost of the buildings at $10,000 and the maintenance for a year at $6,500 on a basis of 20 patients a day.

Personal.—Drs. J. F. Gallagher and Charles D. Hyndman, junior assistant physicians to the St. Louis City Hospital, have resigned, and Dr. Thomas F. Mullford has been appointed to fill one of the positions.——Dr. Otto W. Koch, Clayton, has resigned as jail physician.——Dr. St. Elmo Sanders, city physician of Kansas City, was operated on for gallstones at the University Hospital, December 7, and is reported to be doing well.

Meeting of Pharmacists and Physicians.—The St. Louis Medical Society of Missouri has invited the Alumni Association of the City Hospital, the Cinchona Club, the St. Louis Retail Druggists' Association, the St. Louis Drug Clerks' Association and the Alumni Association of the St. Louis College of Pharmacy to a union meeting, January 12, in the auditorium of the society, 3523 Pine street, to discuss the mutual relations of the professions of pharmacy and medicine. The following is the program:

"An analysis of the New Pharmacopeia," Mr. J. M. Good. Discussion opened by Dr. Joseph L. Boehm.

"The Mission of the National Formulary, with Exhibit of Selected Preparations," Prof. Francis Herr. Discussion opened by Dr. Justin Steer.

"The Ethics of Prescription Writing," Dr. Albert E. Taussig. Discussion opened by Mr. A. A. Kleinschmidt.

"The Ethics of Prescription Compounding," Mr. Emil A. Sennawald. Discussion opened by Dr. Otto A. Wall.

Hospital Notes.—The Swedish Hospital, Kansas City, with accommodations for 250 patients, has been formally opened. The staff is made up as follows: Dr. Nathan O. Harrelson, chief surgeon; Dr. Bertan H. Wheeler, chief obstetrician; Dr. Carl Sandzen, chief of department of medicine; Dr. Frank Hall, chief pathologist; Dr. Theo. S. Blakesley, eye, ear, nose and throat, and members of the general staff: Drs. Eric M. Anderson, Eugene Carbaugh, Oliver P. Faires, Jefferson D. Griffith, Minford A. Hanna, Carl A. Jackson, William C. Iuen, Euphemia Metzger, George C. Mosher, B. I. Sharp, Edward H. Thrailkill and David H. Riegle.——Plans are being formulated for a building at the St. Louis Insane Asylum for the segregation of violent and dangerous patients. The structure will accommodate 100 patients and will cost about $75,000.——The new administration building of the St. Louis City Hospital is nearing completion and will be ready for occupancy some time this month. The building will contain offices for the physicians in charge of the hospital, the residence of the superintendent and sleeping quarters for the attending staff.

NEW HAMPSHIRE.

Personal.—Dr. George Cook, Concord, has been appointed to represent New Hampshire on the committee of medical legislation of the American Medical Association.——Dr. Ralph E. Gallinger, Concord, has been appointed physician to the state prison, Concord.——The trustees of the New Hampshire Memorial Hospital for Women and Children, Concord, have appointed Dr. Marion L. Bugbee physician in charge, vice Dr. Julia Walace Russell, deceased.

School Sanitation.—A committee of physicians, invited by the school board of Claremont to examine the sanitary conditions of the local school houses, recommended the abolition of vaults as soon as practicable, the installation of water closets, the disinfection of all school buildings with formaldehyd at the end of each term, and the appointment of a board of three physicians as medical inspectors of school children.

NEW YORK.

Reception for Students and Nurses.—Dr. Albert Vanderveer gave his annual reception for the students of the Albany Medical College and the nurses of the Albany Hospital Training School at his home, November 17.

Lecture Room Dedicated.—Scatcherd Hall at the Buffalo General Hospital, a gift from Mr. John N. Scatcherd, in memory of his father, was dedicated with appropriate ceremonies November 29. It is to be used for a lecture room and will seat about 150.

State Will Oppose Sewer.—The proposed Bronx Valley sewer, which will drain the valley from White Plains to Yonkers, will, it is believed, be a nuisance and a serious menace to health, and the State Commissioner of Health and the state engineer are still considering its advisability. If the state authorities should approve the plan, the merchants' association committee on the pollution of the waters of New York State will at once begin a fight to have the decision reversed.

Promotions at Craig Colony.—Dr. William P. Spratling announces that Dr. William T. Shanahan has been made first assistant physician and Dr. Kirby Collier second assistant physician at the Craig Colony for Epileptics, Sonyea, both promotions to date from Jan. 1, 1907. Both of these physicians have had several years experience in the treatment of epileptics, and during the last twelve months have performed 172 surgical operations under anesthesia on patients at the colony.

Medical Examining Board Appointed.—Major General Charles F. Rowe on December 12 issued an order, to take effect December 31, dissolving the examining board for medical officers of the National Guard organizations, and designating the following new board: Col. William G. Leboutillier, New York City, surgeon N. G., N. Y.; Lieut.-Col. Nathan S. Jarvis, New York City, surgeon First Brigade; Lieut-Col. Herman Bendell, Albany, surgeon Third Brigade; Lieut.-Col. Eugene A. Smith, Buffalo, surgeon Fourth Brigade; Major John A. MacCumber, surgeon Fourteenth Regiment, and Major William S. Terriberry, New York City, surgeon field hospital.

New York City.

Alumni Meeting.—The Alumni Association of the German Hospital in the City of New York holds its tenth annual banquet at the Café Martin December 29.

Dr. Emmet Knighted.—Dr. Thomas Addis Emmet has been made a Knight of St. Gregory by Pope Pius X in recognition of the devotion to his profession and his loyalty to the Catholic church. Dr. Emmet was formally invested with the insignia of the order December 20.

Hospital Dedicated.—The new Jewish Hospital at Classon and St. Mark's Avenues, Brooklyn, was dedicated with elaborate ceremonies, December 9. The hospital was equipped and built at a cost of $350,000 and $60,000 is still needed to equip the institution and to discharge its floating indebtedness.

Many Crippled Children.—In connection with the plans of the Guild for Crippled Children for erecting a large and commodious school building and dispensary, and the endeavor to have the board of education take over a larger amount of the work, it has been shown that there are more than 7,000 crippled children in Manhattan alone, and probably 10,000 in Greater New York.

Contagious Diseases.—There were reported to the sanitary bureau for the week ended December 15, 354 cases of tuberculosis, with 179 deaths; 289 cases of diphtheria, with 42 deaths; 185 cases of scarlet fever, with 11 deaths; 163 cases of measles, with 8 deaths; 71 cases of whooping-cough, with 9 deaths; 51 cases of typhoid fever, with 15 deaths; 3 cases of cerebrospinal meningitis, with 13 deaths; 140 cases of varicella, and 5 deaths of smallpox, a total of 1,261 cases and 277 deaths.

Testing Opsonic Method.—For some time physicians at the Rockefeller Institute have been experimenting with the opsonic theory for the cure of infectious diseases, including consumption. This new method is founded on the theory that there is in each person's blood the organic substance which will counteract the bacteria which occasion the disease. The Department of Health has taken up the application of the experimental work in the treatment of consumption. Dr. George W. Ross of Canada who has been in this city experimenting with this new idea, has gone to Saranac Lake to try the treatment on consumptives there.

Hospital Asks Aid.—The annual report of the New York Society for the Relief of the Ruptured and Crippled shows that 920 patients were treated in the hospital during the past year and that 46,284 treatments were given in the out-patient department. Although a saving of over $8.000 was made as compared with the previous year, the expenditures still exceeded the receipts by more than $27,000. On account of this deficit an appeal for public subscriptions has been made. This hospital is the largest orthopedic hospital in the world and recently has been making great strides in the treatment of tuberculosis of the bones and joints.

The Seney Hospital.—The Halls administration building of the Methodist-Episcopal Hospital, Brooklyn, has been dedicated. The Seney Hospital was founded twenty-five years ago by the late George I. Seney whose gifts to the institution

amounted to over $400,000. Four years ago Mr. and Mrs. William J. Halls offered to complete the hospital at an expense not to exceed $125,000, on condition that $500,000 be raised to pay off the floating debt and bring the endowment of the institution up to $850,000. As more than $450,000 has been raised it was decided to open the administration building. The third building will be complete and ready for occupation within a year.

NORTH CAROLINA.

Sanatorium Opened.—The Stewart Sanatorium, Newberne, was opened to receive patients December 1.

Personal.—Dr. Francis Duffy, New Bern, while driving to the Stewart Hospital recently, sustained painful injuries in a runaway accident.——Dr. J. Vance McGougan, Fayetteville, has been made president of the Scottish Fire Insurance Company recently organized in that place.

Doctors' Homes Burglarized.—The home of Dr. J. H. Harrison, Littleton, was entered by burglars November 23. Two friends, who attempted to capture the criminals, were wounded but not fatally.——Dr. Algernon M. Lee, Clinton, lost a case of surgical instruments, a suit of clothes, his watch, $118 in cash and some valuable papers at the hands of burglars, December 1.

OHIO.

Malpractice Suit Ended.—In the malpractice suit of Mrs. Hixon against Dr. James W. Rabe, Akron, the jury returned a verdict for the defendant on technical grounds without leaving the box, in accordance with the instruction of the court.

Epileptic Hospital Report.—Dr. William H. Pritchard, superintendent of the State Hospital for Epileptics, Gallipolis, in his annual report, gives the average population of the hospital as 1,234 and the per capita cost of operating at $167.83. In his report he condemns the use of "patent medicines" and states that the hopeless condition of many of the incurable epileptics is due to the use of drugs.

Communicable Diseases.—During October the health officer of Toledo reported 99 new cases of typhoid fever, due, it is presumed, to the use of drinking water from polluted wells. ——Minster reports 60 cases of typhoid fever, with 20 deaths. ——A considerable amount of diphtheria is reported in Brown County.——Schools in Augusta, Batavia and Mount Orab have been closed and public gatherings have been prohibited for the time being on account of diphtheria.——The public schools of Blossom Grove have been closed on account of the prevalence of diphtheria.——The Van Horn school in Amanda Township, near Vanlue, has been closed on account of the prevalence of typhoid fever. Two other schools in this township have been closed for the same reason.——Diphtheria is reported to be epidemic in North Baltimore.

PENNSYLVANIA.

Personal.—Dr. Alfred E. Fretz, Sellersville, has been appointed pension examiner for Bucks County vice Dr. Howard M. Griffee of Taylorsville, deceased.——Dr. James S. Porteus, Taylor, broke his leg at the ankle by a fall on an icy sidewalk, December 11.——Dr. George H. Halberstadt, Pottsville, who has been seriously ill, has resumed practice.——Dr. Charles W. Delaney, senior interne at the Altoona Hospital, has resigned and will practice in that city.——Dr. Arthur F. Ash, Duke Center, who was recently operated on for appendicitis at the Bradford Hospital, has recovered.——Dr. William A. Upperman, Houston, was assaulted by an unknown assailant, his head was badly cut and he was rendered unconscious. Robbery was apparently not the motive for the crime.

State Hospital for Inebriates.—The establishment of an institution for the treatment of habitual drunkards, dipsomaniacs and drug habitués of whatever character may be confined and treated, was the basis of discussion of a number of Pennsylvania's most eminent physicians and alienists, held at the University Club, Philadelphia, December 14. A committee was appointed to draft a bill asking for an appropriation and commission for the furtherance of the project. The measure was to be given in charge of Senator Grim of Bucks County for presentation to the upper house, and an assemblyman from western Pennsylvania will be selected to present the measure to the lower house. The members of the committee appointed by the state medical society at its last meeting were: Dr. Theodore Miller, Pittsburg; John W. Ellenberger, Harrisburg; Charles K. Mills, Philadelphia; John B. Carrell, Hatboro; Fremont W. Frankhauser, Reading; George E. Holtzapple, York; and George D. Nutt, Williamsport. The question of the establishment of the institution was thoroughly discussed and a committee of five was appointed consisting of Drs. John B. Carrell, Charles K. Mills, Albert M. Eaton, Henry Beates, Jr., and Mr. Franklin Marsh of the Society for the Prevention of Cruelty to Children. The committee is also interested in the procuring of an amendment of the law of 1903 relative to the commitment of inebriates to insane hospitals.

Typhoid Fever.—Allegheny City and County are suffering with what is said to be the most severe epidemic of typhoid fever the district has even known. There are at present nearly 3,500 cases of typhoid fever in Pittsburg and Allegheny. From January 1 to December 20 the records of the Bureau of Health show that 5,457 cases of typhoid fever have been reported in Pittsburg alone. The disease is general throughout the county, as indicated by reports from the surrounding towns. In Allegheny City 2,000 cases have been reported since January 1, making a total of over 7,000 cases of typhoid fever in less than eleven months. The death rate has been, as a rule, above 5 per cent., but the rate in Pittsburg at the present time is nearly 6 per cent. During April 82 persons died of the disease; in May, 51 deaths resulted; in June, 46; in July, 27; in August, 29; in September, 85, and in October 27 deaths occurred. The death rate for November has not yet been completed, but it is estimated that about 62 deaths from the disease occurred during that month. This makes a total of nearly 500 deaths from typhoid fever in Pittsburg alone. This record of sickness and death is ascribed to the impure water supply.——Scranton is undergoing a rather severe epidemic of typhoid fever. Ninety-three new cases of the disease were reported to the Bureau of Health on December 21. On December 22 the report of new cases showed a marked falling off, only 45 new cases being reported. The health authorities believe the acme of the epidemic has, therefore, been reached and passed. The total number of cases reported thus far aggregate 482. It is believed that the city's water supply is responsible for the disease, and the Elmhurst reservoir which is the principal source of supply, has been closed.

California Relief Fund.—At a meeting of the Philadelphia County Medical Society, held October 17, it was resolved that a copy of the report of the California Physicians' Relief Committee be published. The report shows that a total of $2,490.50 was received by the treasurer of the committee and turned over to the American Medical Association's California Relief Fund. The amounts received from the different counties are as follows:

Bradford County	$ 25.00	Northampton County	$ 50.00
Bucks County	28.00	Northumberland County	12.00
Center County	50.00	Norristown, Montgomery County	110.00
Clinton County	55.00	Philadelphia County	1,560.00
Columbia County	38.00	Somerset County	15.00
Dauphin County	50.00	Susquehanna County	12.00
Elk County	18.00	Union County	19.00
Fayette County	30.50	Warren County	25.00
Franklin County	10.00	Wayne County	8.00
Lancaster County	100.00	Westmoreland County	25.00
Lehigh County	25.00	York County	140.00
Lycoming County	50.00		
McKean County	25.00		
Mifflin County	10.00	Total	$2,490.50

Insane Hospitals of the State.—The special commission appointed at the last session of the legislature to investigate the condition and management of the hospitals for the care of the insane held several sessions in Philadelphia during the past week and sessions will be continued in that city, Harrisburg and Pittsburg, so that an opportunity may be afforded for visits to the institutions, in the eastern, western and central parts of the state. The investigations will also include an examination of the members of the state lunacy board, the managers, physicians and nurses of the institutions, and also former patients who have been discharged, cured from the hospitals. S. J. Nicholas Mitchell, Philadelphia, secretary of the state lunacy board, during his examination by the commission pointed out that there are now in the hospitals and penitentaries of the state 348 male and 38 female insane criminal convicts. He submitted the following facts to show the overcrowded condition of the state institutions: The State Hospital for the Insane, Southeastern District, Norristown, has accommodations for 985 females and 860 males; its inmates number 1,191 male and 1,286 females, or an excess of 331 males and 301 females. The Pennsylvania State Lunatic Hospital, Harrisburg, has accommodations for 915 and had 1,005 inmates September 30, an excess of 90. The State Hospital for the Insane, Danville, has accommodations for 950 and has 1,285 inmates, an excess of 335. The State Hospital for the Insane, Warren, has accommodations for 716 and has 1,162 inmates, an excess of 446; and the Western Pennsylvania Hospital for the Insane, Dixmont, has accommodations for from 600 to 700 and inmates 966; an excess of nearly 300. The total excess of inmates over accommodations is 1,779.

Philadelphia.

Hospital Report.—The report of the Medico-Chirurgical Hospital for November shows that 5,749 patients were treated in the institution. Of these, 1,137 were treated in the surgical dispensary, and 632 were treated in the accident room.

Medical Inspection.—The report of the medical inspectors of the bureau of health for November shows that a total of 18,517 individual examinations were made, and that treatment was recommended to 4,607. The inspectors made 5,364 visits to the schools of the city during the month.

Bequest.—The will of the late Mrs. M. Louise Delavan, bequeathes $5,000 to the Methodist Episcopal Hospital for the establishment of a free bed to be named the "Rebecca E. S. Delavan free bed;" $2,500 to the Methodist Home for the Aged; $2,500 to the Methodist Orphanage, and $1,000 to the Philadelphia Society for Organizing Charity.

To Stop Quackery.—A movement to secure the passage of a pure food and drug law by the next legislature has been inaugurated by the druggists and physicians of this city. The provisions of the bill to be urged for enactment will be similar to the federal statute passed June 30, 1906, and a committee has been appointed by Dean Remington of the Philadelphia College of Pharmacy to frame the bill.

Bacteriologic Laboratory Report.—The report of the city's bacteriologic laboratory for November shows that 1,484 specimens were examined for the diphtheria bacillus; 583 specimens of suspected typhoid blood were examined; 841 specimens of milk were analyzed and 128 specimens of sputum were examined. The laboratory supplied 2,302,500 units of antitoxin, made 10 disinfection tests, and 121 analyses.

Medical Inspection.—The report of the department of medical inspection of the Bureau of Health for the month of November shows that 3,667 inspections were made by the medical inspectors, excluding schools. The inspectors ordered 614 fumigations and examined 67 cases for special diagnoses. They collected 251 bacteriologic cultures, administered 207 injections of antitoxin, and performed 414 vaccinations.

Contract Awarded.—The contract for the erection of the new muncipal hospital for the treatment of contagious diseases was formally awarded for $643,298. The department of public health will push the erection of the building of the hospital to early completion. The contract calls for the erection of pavilions for the care of diphtheria and scarlet fever cases, a main or administration building, nurses' home and other accessory buildings.

Municipal Hospital Report.—The report of the Municipal Hospital for November shows that in the diphtheria department 70 patients remained at the last report; 106 were received, 108 were discharged, 14 died, and 54 remained. In the scarlet fever department 59 patients were remaining at the last report. During the month 29 were received, 27 were discharged, and 4 died, leaving 57 remaining. No cases of smallpox were treated during the month at the hospital. Two cases of other contagious disease were received.

Health Report.—The deaths from all causes reported for the week ended December 22, reached 525. This is an increase of 26 over last week, and an increase of 2 over the corresponding week of last year. The principal causes of death were: Typhoid fever, 31; diphtheria, 17; influenza, 5; tuberculosis, 57; cancer, 18; apoplexy, 21; paralysis, 4; heart disease, 56; disease of arteries, 7; acute respiratory diseases, 64; gastric ulcer, 5; enteritis, 19; cirrhosis of liver, 6; appendicitis, 4; acute nephritis, 5; Bright's disease, 41; premature birth, 17; congenital debility, 12; old age, 8; suicide, 3; injuries, 29; marasmus, 3, and unknown, 8. There were 281 cases of contagious diseases reported, with 48 deaths, as compared with 272 cases and 30 deaths reported last week. The increase in the death rate and in the number of contagious diseases is attributed to the damp, unseasonable weather conditions.

Personal.—Dr. Edward A. Spitzka and Dr. George McClellan, professors of anatomy in Jefferson Medical College, were tendered an honorary reception by the Penn club December 22. ——Dr. John V. Shoemaker was tendered a reception by the Mecklenburg County Medical Society at Chase City, Va., December 15. Dr. Shoemaker spoke to the society on: "The Mineral Water Resources and Climatology of Virginia and North Carolina."——Dr. William L. Rodman was the guest of honor at the Rodman Surgical Society of the Medico-Chirurgical Hospital at the University club, December 18.——Dr. W. Joseph Hearn, who sustained a fractured skull by being thrown from his carriage is still improving.——Dr. Henry Sykes was appointed chief resident physician of the Philadelphia General Hospital by Dr. Coplin, director of the Department of Health and Charities, December 17.——At the annual meeting of the Academy of Natural Sciences, December 19, Dr. Samuel G. Dixon, State Commissioner of Health, was again elected president, and Dr. Henry Tucker was elected to the Board of Curators and Councilors to fill vacancy.

TEXAS.

Epidemic Diseases.—Marfa, Presidio County, has an epidemic of what is supposed to be malignant diphtheria and 12 deaths are said to have occurred. The condition of affairs was investigated by Dr. Philip J. Shaver, state health officer at El Paso, who reported 30 cases in the town of Marfa, with 5 deaths, all in children.——Smallpox is reported to be prevalent in a negro settlement, five miles from Venus. Dr. Ben H. Turner, Cleburne County health officer, is in charge of the situation.——Two cases of smallpox are reported from Corsicana.

Asylum Report.—The biennial report of the North Texas Insane Asylum, Terrell, for the period ended August 31, shows that on August 31, 1904, there were 1,379 patients in the institution; on August 31, 1905, 1,404 patients and on August 31, 1906, 1,663 patients. During the biennium 3,548 patients were under treatment, of which number 185 were discharged cured and 19 were greatly improved. One hundred and sixty-one died and 130 were sufficiently improved to be paroled. The deaths in the institution were due chiefly to chronic diseases, of which tuberculosis alone caused 48.

WISCONSIN.

Smallpox.—Eight cases of smallpox have developed in one ward in Beaver Dam and have caused the closure of the public schools and buildings in that part of the city.——A number of new cases of smallpox are reported in Milwaukee; at the Isolation Hospital in that city, 68 patients are under treatment. All of the cases are of mild type.——The St. Stanislaus Polish parochial school and the Concordia College, Milwaukee, have been closed on account of the infection.

Did not Comply with State Law.—The state statistician reports that only 235 accidents were reported in Dane County during the fiscal year ended September 30. Of this number, 9 were fatal and 198 suffered severe injuries, the rate of injured to the population being 1 to 326. The statistician believes that many physicians of the state are negligent and do not report accidents as required by the law. Wisconsin is said to be the first state in the Union to attempt a classification of accidents and the state statistician is naturally desirous that the records should be made as complete as possible.

Against Illegal Practitioners.—The State Board of Medical Examiners, through its attorney, A. C. Umbreit, has begun a crusade to force out of practice the practitioners who have not fully complied with the medical practice act in all its intents. The recent suits instituted against four Milwaukee men on the ground that they have assumed the title of "Doctor of Medicine" unlawfully and the further action in the circuit court to revoke the certificates of registration because of unprofessional conduct, are the first steps in this direction. Henry A. Schmidt and Adolphus Strasmann, practitioners, who were unable to produce diplomas from accredited medical schools or to show membership in recognized medical societies, are reported to have been fined $25 each and costs in the district court for assuming the title of "Doctor."

GENERAL.

Yellow Fever Situation in Cuba.—On December 9 there was only one case of yellow fever reported under treatment in Havana and one in the provinces. During the week ended December 17 two new cases were reported in Havana and one in the provinces, with no deaths. At this time last year there were 16 cases in Havana.

Beriberi and Trachoma in Mexico.—Consul General Gottschalk, at the City of Mexico, reports that trachoma and beriberi have recently been found in Mexico and that both diseases are believed to have been imported by immigrants en route to the United States. At Salina Cruz, the Pacific terminal of the Tehuantepec Railroad, and which is in direct communication with the greater part of the republic, from 500 to 1,000 Asiatic coolies land monthly. Although quarantine precautions are taken with this class of immigrants, there is always some danger of their carrying the disease inland to the plantations. During the past two years 150 cases of beriberi have been treated at Salina Cruz by the medical officers of the port.

FOREIGN.

New Hospital for Skin Diseases in England.—Four years ago an appeal was made for funds to build a hospital for skin diseases in Manchester. Last year the central building and

one wing were opened and in November, 1906, another wing was opened. The total cost so far has been $190,565, of which $167,840 has been raised.

Antialcohol Party in the French House of Deputies.—More than a hundred of the deputies in the French parliament have united to work against alcohol. The first meeting was devoted to a discussion of an extra tax for absinthe and bitters. Breton recently presented a bill in the house asking for the absolute suppression of the manufacture, importation and sale of absinthe and liqueurs containing it.

Honors for Publishers of Medical Books.—The medical faculty of the University of Tübingen, Germany, has conferred an honorary degree of doctor of medicine on F. Enke of Stuttgart for his fine medical publications. This same honor was conferred on Gustav Fischer of Jena a few years ago. Each of these publishers not only publishes medical books, but also issues one or more high-class medical periodicals.

International Annals of Gastrointestinal Surgery.—This is the title of a new review just founded by Monprofit of Angers with Marcel Baudouin as editor. Baudouin was formerly editor of the *Gaz. Méd. de Paris*, and was the originator of the *Institut de Bibliographie* at Paris. It issued an Index Medicus during the eclipse of the American Index Medicus. Monprofit is one of the leading surgeons in France. He presided at the last French Congress of Surgery.

Final Adoption of International Unification of Formulas for the Heroic Drugs.—The representatives of the various governments have officially signed the agreement for unification of the formulas for the preparation of the more potent drugs. The ceremony took place recently at Brussels, as the Belgian government has taken the lead in the matter. Sweden, Roumania and Bulgaria were the only countries interested which were not represented at the ratification of the agreement.

Hospital Management in New South Wales.—A new hospitals bill is to be introduced into the New South Wales parliament. The measure provides for radical changes in the existing system of hospital management. According to the *Australasian Medical Gazette*, the fundamental principle is to make hospital committees corporate bodies, with all the powers and functions belonging to such bodies. Clauses will probably be included intended to do away with defects in the existing law which afford ground for complaint.

Lack of Uniform Cocain Legislation in India.—There is a lack of uniformity among the various provincial governments in India in dealing with the growing evil of the cocain habit. According to the *Journal of Tropical Medicine*, no steps have been taken in the united provinces of Agra and Oudh to bring cocain under the provisions of the excise act and, therefore, these provinces form centers from which the drug may be smuggled into neighboring provinces where the authorities have acted more wisely in the matter.

Bust of Hanot Unveiled.—The suicide of the Paris associate professor of general medicine, V. Hanot, in 1896, was a tragic ending to a medical career full of promise and achievement. A tablet bearing his bust in relief was unveiled recently in the court of the Saint-Antoine Hospital, the principal seat of his labors, erected by subscriptions from his former friends and pupils. He was at one time editor of the *Archives Gén. de Médecine*, and published a number of works, especially on affections of the liver.

Medical Work in China.—Dr. J. C. McCracken spoke at Johns Hopkins University, Baltimore, November 8, on medical missionary work in China, where he has been serving as a representative of the Y. M. C. A. He says a medical school is now in process of construction in Canton, and that at present there are only 10 physicians in that province, or one physician for every 200,000 persons, and only one of the 10 is giving medical instruction. A dispensary will first be founded and later a hospital of 300 beds, with medical school attached, will be added.

Cancer Research in Hungary.—A national conference on the subject of cancer was held at Budapest in November. Dollinger is president of the cancer committee of the Budapest Medical Association, and he is the leading spirit in the national campaign. He made an official report on the results of the collective inquiry in regard to cases of cancer undertaken Oct. 15, 1904. The director of the bureau of statistics also delivered an address on the comparison of the German and Hungarian collective inquiries, both in regard to the methods and results of the investigation. The profession in Hungary is making an extra effort to collect interesting material for the international medical congress to meet at Budapest in 1909.

Ebstein's Seventieth Birthday.—The name of Wilhelm Ebstein of Göttingen, Germany, is well known in this country by his numerous contributions to the literature on obesity, gout, diabetes, chronic obstipation, etc., and his Manual of Practical Medicine which has been translated into several languages. His seventieth birthday, November 27, was celebrated by the medical faculty at Göttingen and his friends in various ways. After having been connected with the medical faculty of Göttingen since 1874, he resigned his chair October 1. During the last few years he has published some articles showing profound historical research on "Medicine in the Old Testament," and "in the Talmud," on "Thucydides' Plague" and the "Diseases observed in the Campaign against Russia, 1812," and others.

Eyesight Test for German Railroad Employés.—According to some new regulations the employés of the railroads in Prussia —which are government institutions—must have their eyesight tested when they enter the service, again when they enter on another branch of work which makes greater demands on the eyesight, and again when appointed to any official position. Besides this, the eyesight must be tested anew every five years, at which time the men are also to be examined for ocular and constitutional affections, and also for injuries to the head. In certain branches of the service the employés are allowed to wear glasses to bring their vision to the proper standard, but artificial aids are not permitted to switchmen and bridge-tenders, signal men, locomotive engineers and stokers, conductors or despatchers.

Prizes Awarded by the French Académie de Médecine in 1906.—The Académie de Médecine at Paris held its annual business meeting December 10, and distributed 30 prizes in money, amounting to about $8,680. Besides this, the income of $5,000 from the Audiffred endowment was divided among Calmette, Vallée, Halbron and Juillerat for their important work on tuberculosis. Calmette's research on the intestinal origin of tuberculosis has been frequently mentioned in these columns; Vallée is professor at the Alfort Veterinary School, and has published numerous important works on tuberculosis in man, cattle and horses; Halbron received $700 for his thesis on tuberculosis plus associated infections, and $900 was given to Juillerat for his system of "house books," the *casier sanitaire*, the sanitary record of each individual house. The system was described in THE JOURNAL for March 24, 1906, page 901. He has charge of the house book bureau in Paris where it is part of the police department. Each house book contains a diagram of the house with drain pipes, cess pools, etc., record of cases of communicable diseases that have occurred in the building, deaths, etc. Honorable mention in connection with this Audiffred prize was also given to Spengler of Davos, to Lesieur and others. The Audiffred prize is an endowment representing an annual income of about $5,000, to be given to the person discovering a sovereign cure for tuberculosis before 1920. The income may be given as encouragement for individual research on the subject of tuberculosis. This year seventeen persons competed in this line. Lesieur described a method for direct determination of the bacilli in the blood by having the blood drawn by leeches. The blood then squeezed out of the leeches does not coagulate, and the bacilli may be found in the sediment after centrifugation. Chuquet presented the second edition of his work on "Hygiene for the Tuberculous." Ferrier called attention to his finding that the persons who recover from tuberculosis are those with sound teeth, while those with friable teeth are liable to succumb. His conclusion that the tuberculous are starving for lime and the technic which he has found most conducive for its administration have already been summarized in THE JOURNAL, June 23, 1906, page 1961. Mendel described his method of intratracheal injections in treatment, and Rosenthal a method of respiratory gymnastic exercises. Vigné and Tartarin sent in studies on tuberculosis in the navy and merchant marine. No communication was received from America in competition for this prize, or for any of the others, so far as we can learn. THE JOURNAL published a list of the subjects and amounts of the prizes in the issue for Jan. 13, 1906, as competition is open to the world. The Chevallier prize of 6,000 francs, about $1,200, was given to L. Rénon of Paris for his "Studies on Tuberculosis, 1903-1906." Prizes for research on cancer were given to Cavaillon of Lyons for his fine works on surgery of cancer of the large intestine, and to Béclère, Bélot and Harct for Roentgen treatment. The prize given annually to the "most meritorious medical student" was awarded to a woman, Mlle Lingois.

Pure Milk in Australia.—It is announced from Melbourne, Australia, that the parliament of Victoria has passed a milk supervision act, which practically places every dairy in the colony under the eye of the government, and places those

dairies within the metropolitan area under the very strictest supervision. So drastic is the standard fixed that Mr. S. Cameron, the chief veterinary officer of the agricultural department, has stated that no matter how carefully the regulations are made under the laws, nearly 90 per cent. of the dairies, now supplying a population of about a million people in Victoria, will require important structural alterations and improvements. A thorough system of inspection is being inaugurated, the cost of which will to some extent be borne by a scale of fees, which dairy farmers and the owners of butter factories and creameries will have to pay. The organization of the sampling and analysis of milk is on a thorough scale, and pure milk is to be defined as milk containing butter fat to the extent of 3.3 per cent., provided that the total solids amount to 12 per cent. The transit of milk from country to town is to be supervised, and with the coöperation of the state railway department, the board of health and agricultural department, the risk of conveyance of disease to the milk through exposure on dirty railway stations and rough handling by railway workmen will be reduced to a minimum. At present the British example of municipal milk depots is not to be followed, but if physicians and some of the more enlightened leaders of municipal thought in Melbourne and Sydney win the day it will not be long before municipal milk shops are established in some of the principal cities of Australia. On the whole, legislation in Victoria, so far as the care for milk is concerned, is really more advanced than it is in Great Britain.

Educational Number of Paris "Progrès Médical."—The issue of the *Progrès Médical* (Paris, rue des Carmes 14), for November 10 is a stately journal of nearly 125 pages, containing detailed information regarding all the medical colleges in France and the French-speaking countries, including Canada and Switzerland, as well as the medical schools in Roumania and Turkey. The titles of the theses presented at the various medical schools are also given with each college. The number opens with a special article on instruction in pediatrics in France, with the hospital facilities at each of the medical schools and a list of 15 journals devoted to children's diseases.

Nine French journals are listed: *Annales de méd. et de chir. infantiles* (Périer's); *Archives de méd. des enfants* (Comby's); *Clinique infantile* (Variot's); *Revue mensuelle des maladies des enfants* (Broca's); *Revue de puériculture* (Raimondi's); *La tuberculose infantile* (Derecq's); *Revue d'hygiene et de médecine infantiles* (H. de Rothschild's); *Gaz. des mal. inf. et d'obstet,* (Gillet and Berthod's)—all published at Paris, and *Pédiatrie pratique* (Ausset's) of Lille. The list further includes the American *Archives of Pediatrics* and *Pediatrics* of New York; the British *Journal of Children's Diseases*; the *Archivos de Pedagogia y Ciencias afines,* of La Plata, Argentina; the *Revista del hospital de ninos,* of Buenos Ayres, and the *Kinderarzt,* of Leipsic.

The number also contains classified information in regard to medical and scientific societies, educational facilities offered to foreigners, etc. It states that every day from 50 to 100 persons apply by mail or in person at the scientific information bureau at the university, in charge of Dr. R. Blondel, where card catalogues of data of all kinds are kept, and inquiries are answered by clerks speaking English, French and German. The official title and address of the institution is the Bureau des renseignements scientifiques, Sorbonne, Université de Paris, Paris, France.

Public Honors at Funeral of Head Nurse at Paris Hospital.—With a military guard of honor, accompanied by the chief of the Paris hospital service, the director of the Salpétrière hospital and hosts of others, the remains of Marguérite Bottard were interred November 16 and touching tributes were offered at the grave. She was head nurse and superintendent of nurses at the Salpétrière for sixty years, entering its service in 1841, and still residing there when pensioned five years ago, living to the age of 85. When the clinic of nervous affections was founded in 1882, she took charge of the nursing and proved an invaluable aid to Charcot and to Raymond since. In 1891 she was presented by the public authorities with a gold medal commemorative of her fifty years of service, and seven years later she was made chevalier of the Légion d'honneur, according to Charcot's frequently expressed wish. Another gold medal and the Montyon prize had also been bestowed upon her. The *Progrès Médical* devotes nearly three pages to a biographical sketch and portrait of Mademoisel Bottard, whose indefatigable devotion and gentleness and skill in managing her subordinates and the patients at the Salpétrière were proverbial through generations of physicians and attendants. Sometimes six years would pass without her crossing the threshold of the hospital.

Correspondence

Prescribing Aconite by the Old Pharmacopeia.

New York, Dec. 22, 1906.

To the Editor:—On looking over a few of the latest prescription files at several drug stores, I was surprised to find that many physicians still prescribe tincture of aconite in the old doses.

Most druggists by this time have the new official tincture of 10 per cent. strength; and of this they dispense the quantity as prescribed. The result must, of necessity, be disappointing to both physician and patient, since a tincture of 10 per cent. can not have the same therapeutic effect, in the same doses, as a tincture of 35 per cent.

Some physicians not only did not know that the strength of this tincture had been reduced, but were entirely innocent of the existence of the new Pharmacopeia.

One physician who happened to prescribe tincture of aconite in five minim doses, in my presence, thought he was heroic in his doses. When I told him of the change in strength and of the changes in strength of different other official preparations, he exclaimed: "Is that so? Where did you see all of that? I never heard of it."

And this must be true of all other official preparations the strength of which has been changed. These are lamentable facts, very lamentable indeed.

Our patients ought not to be made to suffer because of our being too busy or too negligent to learn of those new facts most essential in the intelligent treatment of patients.

I write as a gentle reminder to those who have not yet learned of the new Pharmacopeia and its many changes.

L. Buckle, Ph.G., M.D.

Dispensing versus Prescribing.

Princeton, Mass., Dec. 11, 1906.

To the Editor:—A judgment made according to the merit of the argument in Dr. Fussell's article, "Dispensing versus Prescribing," in The Journal, Dec. 1, 1906, would certainly maintain that prescribing is more advantageous than dispensing, both to the patient and the physician. If we allow that his statement purports the fact, we immediately claim that the grade of work done by the country physician is inferior to that done by the city physician.

Dr. Fussell says: "I can see no way at present for the country doctor to work except by dispensing." Be it true or not that the average medical man in the city is superior to the professional man of the outlying districts, i is indeed not necessary that there should be any difference in progress between two equally ambitious persons. To counterbalance hospital opportunity, the man in the country continually faces two most instructive problems: individual responsibility and inventive adaptation to inconvenient circumstances, for consultation is rarely available and surgical cases are not ideally environed.

As regards furnishing medicine, if a physician buys the finest preparations from the most reputable drug houses and charges enough for them, in addition to his fee, to make it profitable to himself, and knows each ingredient he uses, there can certainly come no harm from dispensing, provided only that he be conscientious. A progressive country doctor keeps in touch with latest methods through his medical journals, his medical societies and occasional visits to hospitals.

I maintain that he can also spend as much time in careful physical examination, and correct diagnosis as a city physician, therefore, the prime factor is, not the dispensing of drugs, but the quality of man. Elisha Sears Lewis, M.D.

Broken Thermometer in Child's Rectum.

Rochester, Minn., Dec. 6, 1906.

To the Editor:—I was interested in the report of a broken thermometer in a child's rectum, in The Journal, Dec. 1, 1906, page 1841, and was surprised to read that no other such case was found recorded. A similar case occurred in my practice about twelve years ago.

A child about a year and a half old seemed indisposed and the mother proceeded to take the temperature by rectum. The child made a sudden movement and the instrument broke off at the upper constriction, leaving the bulb in the rectum. I reached the house about an hour afterward. The child was evidently in pain, crying and straining ineffectually. An anesthetic was given, and with the aid of a small bivalve ear speculum the bulb was extracted. It was placed somewhat obliquely; the sharp, jagged end had penetrated the mucous membrane, thus probably frustrating the efforts at expulsion. Although evidently some injury had been inflicted on the mucous membrane, no ill effect followed.

H. SPEIER, M.D.

[Several other letters on the above subject have been received. The fact is, the breaking of a thermometer in the mouth or the rectum is not such an unusual occurrence, and the statement "there is no case on record of the breaking of a thermometer in the mouth or anus," which occurred in our Vienna correspondent's letter, should not have been published.—ED.]

Traveling Fakirs: A Remedy.

SPRINGFIELD, OHIO, Dec. 10, 1906.

To the Editor:—Our city was recently afflicted by an unusually blatant pair of fakirs, and the way in which we got rid of them may be of interest. They advertised under the name of "Dr. Otto Urban," or "Prof. Joseph Otto Urban and his staff of magnetic healers." They carried full-page advertisements in our local papers, gave public exhibitions in the city hall and opened offices in a hotel. The first day they had between 30 and 40 patients.

Our medical society has a committee to look after illegal practitioners, and it was soon learned that "Dr." Urban was not licensed by the state board. A warrant for his arrest was secured and the fact demonstrated that Urban was a myth. R. E. Brake was the man brought into court, and he was regularly licensed. A warrant was then secured for the arrest of his business manager, C. J. Young, alias Joseph Otto Urban, but he skipped out before we could arrest him.

The day after we attempted to arrest Urban they did not have a patient, and Brake said in an interview that we had ruined his business.

If these fellows try to operate elsewhere we will gladly furnish those requesting it, all the information we have concerning them.

W. B. PATTON.

The "Philistine" on Vaccination.

CINCINNATI, Dec. 9, 1906.

To the Editor:—I desire to call your attention to the outburst of pent-up enthusiasm of the editor of the periodical (bound in butcher's wrapping paper) called the *Philistine*, or foolistine, of December, 1906. This gentleman, who is also a manufacturer of expensive furniture, endeavors to pull down the barriers which have stood for a century in support of vaccination. His article, while very weak, is cleverly written and, of course, will be hailed by many as a just attack, just as the followers of poor Dowie embraced his wonderful teachings, until their funds gave out.

The editor of the *Philistine* makes this statement: "Vaccination has got to go along with black cat salve for itch and sheep nanny tea for mumps." What a brilliant comparison. Does he really believe this? No, we shall not feel alarmed about this wonderful man who explodes "every little while." In the meanwhile let us hope that there will be no outbreak of smallpox in the furniture factory at East Aurora, N. Y.

DR. WILLIAM C. HERMAN.

Medical Organizations and Appointments on Health Boards.

JACKSON, MICH., Dec. 17, 1906.

To the Editor:—Through the medium of THE JOURNAL I should like to secure information regarding the appointment of members to local boards of health on the recommendation of the county societies or similar medical organizations. The inefficiency and dishonesty of boards appointed through political favor is so notorious that it behooves the profession to take this matter up for serious consideration, as a means of protecting both the public and themselves.

If any of the readers of THE JOURNAL know of such an arrangement as mentioned above I shall be greatly indebted for information as to methods and results.

CHRISTOPHER G. PARNALL.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish name or address will be faithfully observed.

LOCUM TENENS IN CALIFORNIA.

GOSHEN, MASS., Dec. 14, 1906.

To the Editor:—In order to act as *locum tenens* in California is it required that one shall take the State Board examination and register? N.

ANSWER.—Yes, all states require registration before one can practice medicine. A few, Arkansas, Florida and Tennessee, allow registration under temporary permits, but this is under the supposition that the applicant will secure a permanent certificate at the next meeting of the board of examiners.

DOUBLE VISION.

PEARSON, MD., Dec. 4, 1906.

To the Editor:—What is considered by the best authorities on diseases of the eye to be the cause of diplopia, or double vision, that is, one person appearing as two persons to the person so affected. Is it generally considered a disease only of the eye or a symptom of Bright's disease or some other trouble? Is it usual for double vision to occur only in one eye, and that only on looking straight forward or slightly downward, not on looking upward? Would a slight amount of inflammation of the eyelid or the conjunctiva produce it in some individuals? A. L. HODGDON.

ANSWER.—Diplopia, or double vision, is merely a symptom of some eye disease, usually paresis or paralysis of one or more of the external eye muscles. This paralytic condition is, in its turn, generally due to disease (syphilis, rheumatism, gout, diabetes, etc.) affecting either the nerve supply to the muscles at their centers or along their course from the brain to the orbit. The disease in which double vision most commonly occurs is locomotor ataxia. It is well known that a temporary double vision is one of the commonest forerunners of that disease, although it may be due to many other diseases of the brain and cord. Double vision in one eye only (monocular diplopia) is a rather rare condition and is not generally noticed by the patient. When it occurs it is generally due to hysteria or to beginning cataract.

NON REPETATUR.

PENN YAN, N. Y., Dec. 13, 1906.

To the Editor:—We are frequently annoyed by hearing that our prescriptions have been repeated without our knowledge or consent, either for the patient himself or for one of his friends. Have we any means of preventing such a practice other than trusting to the fairness of the pharmacist? Just what effect, if any, have the words "Do not repeat" when written on the prescription.

WILLIAM BRADY, M.D.

ANSWER.—The prescription is an order to the druggist to furnish the patient with a certain medicine prepared in a certain way and of a definite quantity. If the order incorporates the directions that the preparation is not to be repeated the druggist has no right to refill it. This much appears to be reasonable and we believe is legally correct. It is important in the interest of the patient himself, as well as of the physician, that the prescription should not be repeated, since it frequently consists of a remedy appropriate only to a temporary condition which may have disappeared before the request for repetition is made and it possibly contains drugs the continued use of which may produce a drug habit. The druggist not only ought not to refill the prescription, but he should not give a copy, as this would defeat the object of the prohibition against repetition. The prescription may be copied before it is delivered to the druggist.

CARREL'S TECHNIC OF ANASTOMOSIS.

NAPOLEON, OHIO, Dec. 19, 1906.

To the Editor:—Please inform me where I can obtain Carrel's method of anastomosing arteries or veins, with technic.

C. M. HARRISON.

ANSWER:—Carrel and Guthrie's technic is described and illustrated in THE JOURNAL, November 17, 1906. There are many illus-

trations. Another article giving the technic is found in *Surgery, Gynecology and Obstetrics,* March, 1906. This article contains a bibliography.

MORTALITY OF PNEUMONIA.

Peculiar, Mo., Dec. 15, 1906.

To the Editor:—What are the latest statistics of the mortality of pneumonia? H. A. Brierly, M.D.

Answer.—The latest statistics appear to be those of E. F. Wells (The Journal A. M. A., Sept. 24, 1904), who states that 20.4 per cent. of pneumonia patients die. His deductions are based on records of 465,400 cases. The mortality per 10,000 of the population in 1900, according to the U. S. Census (A. R. Reynolds, The Journal A. M. A., Feb. 28, 1903), was 19.78.

The Public Service

Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending Dec. 22, 1906:

Rutherford, Henry H., asst.-surgeon, granted ten days' leave of absence.

Lamson, Theodore, asst.-surg., granted twenty days' leave of absence.

Newgarden, Geo. J., surgeon, now at Newport News, Va., ordered to proceed to Fort D. A. Russell, Wyo., for duty.

Brown, O. G., asst.-surgeon, granted twenty days' leave of absence.

Shimer, Ira, asst.-surgeon, reported for duty as attending surgeon, New York City, New York.

Newgarden, Geo. J., reports on fifteen days' leave of absence en route to station.

Cowper, H. W., asst.-surgeon, relieved from further observation and treatment at the General Hospital, Washington Barracks, D. C., and to accompany detachment from Co. C, to Co. G, Hospital Corps, to San Francisco, Cal., then report in person to medical superintendent Army Transport Service for duty, relieving First Lieutenant Howard A. Reed, asst.-surgeon.

Reed, Howard A., asst.-surgeon, will upon being relieved from duty in the Army Transport Service, proceed on the first available transport sailing from San Francisco to Manila, and report in person to the commanding general, Philippines Division, for assignment to duty.

Bloombergh, H. D., asst.-surgeon, granted leave of absence for one month.

Rhoads, Thos. L., asst.-surgeon, granted twelve days' leave of absence.

Wilson, James S., asst.-surgeon, granted seventeen days' leave of absence.

Jarrett, Arthur R., contract surgeon, relieved from further duty at Fort Totten, N. Y., and from temporary duty at Fort Jay, N. Y., and ordered to Fort Hamilton, N. Y., for duty.

Byars, Caspar R., contract surgeon, granted leave of absence for one month.

Pinquard, Joseph, contract surgeon, returned to Fort Leavenworth, Kans., from duty in the field and leave of absence.

Johnson, Charles W., contract surgeon, granted leave of absence for three months.

Hutson, T. Ogier, contract surgeon, relieved from further duty at Fort McPherson, Ga., and ordered to Fort Moultrie, S. C., for duty.

Whinnery, Jean C., dental surgeon, left Fort Lawton, Wash., for duty at Fort Liscum, Alaska.

Mason, George L., dental surgeon, ordered from Fort McPherson, Ga., to Fort Oglethorpe, Ga., for temporary duty.

Navy Changes.

Changes in the Medical Corps, U. S. Navy, for the week ending Dec. 22, 1906.

Lumsden, G. P., surgeon, ordered to duty with Marine Recruiting Party, Dallas, Texas.

McLean, N. T., asst.-surgeon, detached from the Naval Station, Guam, L. I., and ordered home.

Barber, G. H., surgeon, detached from the Naval Station, Olongapo, P. I., and ordered to the *Baltimore.*

Kindleberger, C. P., surgeon, detached from the *Baltimore,* and ordered to the Naval Station, Olongapo, P. I.

Spear, R., surgeon, detached from the Naval Station, Cnacao, P. I., and ordered to the Naval Hospital.

Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ended Dec. 19, 1906:

Rosenau, M. J., P. A. surgeon, granted leave of absence for nine days from December 21, 1906.

Oakley, J. H., P. A. surgeon, granted leave of absence for three days.

Cofer, L. E., P. A. surgeon, leave of absence granted for 1 month and 8 days from Nov. 21, 1906, amended to read 18 days.

Grubbs, S. B., P. A. surgeon, granted leave of absence for three days from Dec. 26, 1906.

Amesse, J. W., P. A. surgeon, granted leave of absence for seven days from Dec. 10, 1906.

Ransom, S. A., acting asst.-surgeon, granted twenty-two days' extension of annual leave, on account of sickness, from Nov. 20, 1906.

Troxler, R. F., pharmacist, leave of absence granted for twenty-two days from December 10 amended to read for eighteen days.

PROMOTIONS.

McBride, C. R., pharmacist, promoted from pharmacist of the third class to pharmacist of the second class, effective August 15, 1906.

Neves, George, pharmacist, promoted from pharmacist of the third class to pharmacist of the second class, effective Nov. 17, 1906.

Marriages

William A. Upperman, M.D., Houston, Pa., to Miss Riles, recently.

George W. Irvine, M.D., to Miss Anna F. Booth, both of Detroit, December 12.

George Chain, M.D., to Miss Nellie Noblit, both of Philadelphia, December 19.

Thomas J. Collings, M.D., to Miss Grace Davidson, both of Mecca, Ind., December 6.

George Holmes, M.D., to Miss Celeste Haynes, both of Leesville, Texas, November 29.

Jeffries Buck, M.D., to Miss Augusta Isabella Cook, both of Baltimore, December 5.

William S. Osborn, M.D., Knoxville, Iowa, to Miss Lucy Martin of Cherokee, Iowa.

Henry S. Wieder, M.D., to Miss Josephine Mendel, both of Philadelphia, December 10.

Pascal B. Bland, M.D., to Miss Susan L. Montgomery, both of Philadelphia, December 27.

John A. Ferguson, M.D., to Miss Julia Ruether, both of Brooklyn, N. Y., December 12.

Everett H. Bradway, M.D., to Miss Arta V. Maginnis, both of Abingdon, Ill., December 12.

Fred. J. Hunter, M.D., Clyde, Ohio, to Miss Lelo B. Gilbert of Bellevue, Ohio, December 6.

Wilson S. Anderson, M.D., to Mrs. Maggie Shriner, both of Newtonsville, Ohio, December 8.

Leroy C. Waggoner, M.D., to Miss Minna Matilda Pearsall, both of Brownsville, Pa., November 28.

William B. Chamberlain, M.D., Cleveland, Ohio, to Miss Grace Huntoon of Moline, Ill., December 27.

Isaac S. Long, M.D., Freehold, N. J., to Miss Mary Isabelle Drummond, at Trenton, N. J., November 28.

John H. Rorke, M.D., Reading, Pa., to Miss Martha J. Rorke of Northumberland County, Pa., December 6.

Victor C. Vaughan, Jr., M.D., Detroit, Mich., to Miss Gertrude Leffingwell, of Quincy, Ill., December 12.

J. Randolph Hersey, M.D., Wheeling, W. Va., to Miss Kathryn Dobler of Brooklyn, N. Y., December 25.

Robert P. McReynolds, M.D., Philadelphia, to Miss Frances Cornelia Coulter of Los Angeles, Cal., December 12.

Deaths

Llewellyn Adelbert Buck, M.D. University of Georgetown, Medical Department, Washington, D. C., 1866; a member of the American Medical Association; formerly president of the Kansas Medical Society; assistant surgeon of the Twentieth Maine Volunteer Infantry during the Civil War and a prominent and highly esteemed citizen and practitioner of Peabody, Kan., for thirty years, was attacked with pneumonia at El Reno, Okla., while on his return from the meeting of the Rock Island Railway Surgeons at Hot Springs, Ark., and died in the Rock Island Hospital at El Reno, December 13, aged 66.

Joseph D. Montmarquet, M.D. College of Physicians and Surgeons in the City of New York, 1889; a member of the American Medical Association, Medical Society of the State of New York and Albany County Medical Society; attending surgeon to the Cohoes Hospital; once coroner's physician and member of the local board of health; died at his home in Cohoes, December 15, from typhoid fever, after an illness of four weeks, aged 47.

George H. Shoulters, M.D. University of Georgetown, Medical Department, Washington, D. C., 1883; a graduate of the Albany (N. Y.) Law School; clerk to a state senate committee for several years; an official of the Indian office in Washington and later an examiner in the patent office, died at his home in Washington, December 14, after an illness of five months, aged 58.

William Harrison Hipp, M.D. Bennett College of Eclectic Medicine and Surgery, Chicago, 1885; a member of the Illinois State Board of Health; professor of gynecology in his alma mater; attending surgeon at various hospitals, and a member of the national, state and city eclectic medical societies, died from pneumonia, at his home in Chicago, December 19, aged 42.

Lovias T. Ingersoll, M.D. University of Michigan, Department of Medicine and Surgery, Ann Arbor, 1880; a member of the American Medical Association, Colorado State Medical Society and Mesa County Medical Society; one of the most prominent practitioners of western Colorado, died suddenly at his office in Grand Junction, from heart disease, aged 45.

Edwin K. Foreman, M.D. University of Maryland School of Medicine, Baltimore, 1862; surgeon in the Army during the Civil War and one of the most prominent practitioners of Adams County, Pa.; for many years a practitioner of Littlestown, was found dead from heart disease in his buggy near Two Taverns, December 10, aged 72.

Joseph H. Firestone, M.D. Northwestern University Medical School, Chicago, 1897; a member of the Illinois State Medical Society, Stephenson County Medical Society, Mississippi Valley Medical Association, and the International Medical Congress, died at his home in Freeport, December 14, from typhoid fever, after a short illness.

Aldine Joseph Dooley, M.D. Rush Medical College, Chicago, 1896; superintendent of the Norwood Hospital and Sanitarium, Marion, Ind., a member of the Indiana State Medical Society and Grant County Medical Society; died in his apartments in Norwood Hospital, December 18, after an illness of several months, aged 34.

William D. Pursell, M.D. Jefferson Medical College, Philadelphia, 1874; after his graduation house physician in the Bedford Street Dispensary and Hospital, Philadelphia; for 32 years a practitioner of Whitehouse Station, N. J., died at his home, December 9, from cerebral hemorrhage, after a short illness, aged 57.

Joseph D. Nash, M.D. Jefferson Medical College, Philadelphia, 1865; for many years secretary of the Philadelphia County Medical Society and one of the best known practitioners of the northern section of Philadelphia, died at his home, December 9, from cerebral hemorrhage, after an illness of one day, aged 70.

Charles Bowker, M.D. Berkshire Medical College, Pittsfield, Mass., 1854; contract surgeon in the Army during the Civil War; a member of the Franklin District Medical Society since 1874; a selectman of Bernardston, Mass., where he practiced for 40 years, died at his home, December 10, after a short illness, aged 82.

Jacob Schneck, M.D. Chi ago Medical College, 1871; a member of the American Medical Association, Illinois State Medical Society and the Railway Surgeons' Association; surgeon for the Cairo division of the Big Four System and the Illinois Central Railroad, died at his home in Mount Carmel, Ill., December 18.

Henry K. Weiser, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1881; for many years medical examiner for the Pennsylvania System, and a practitioner of York, Pa., died from heart disease while he was being taken to the Polyclinic Hospital, Philadelphia, December 7, aged 48.

David P. Bolster, M.D. Medical School of Maine at Bowdoin College, Brunswick, 1852; surgeon of the Twenty-first and Sixteenth regiments of Maine Volunteer Infantry during the Civil War; for the last 25 years a practitioner of Augusta, Maine, died at his home in that city, December 9, after a long illness, aged 79.

Austin B. Sherman, M.D. Eclectic Medical Institute, Cincinnati, 1865; surgeon during the Civil War; deputy coroner of the district; a member of the Schuylkill County Medical Society since its organization; died at his home in Mahanoy City, Pa., from locomotor ataxia, December 11, aged 78.

John Robert Coleman, M.D. University of Louisville, Medical Department, 1883; formerly president of the Southwestern Kentucky Medical Association, died at his home in Paducah, Ky., December 10, from acute nephritis, after an illness of one week, aged 46.

William K. Smith, M.D. Baltimore Medical College, 1880; during the Civil War connected with the medical department of Chimborazo Hospital, Richmond, Va., died at his home in that city, November 5, from nephritis, after a long illness, aged 72.

John Randolph Leigh, M.D. Jefferson Medical College, Philadelphia, 1850; brigade surgeon in the Confederate service during the Civil War, died at his home in Clarkesville, Va., December 9, from senile debility, after an illness of one year, aged about 80.

Fred L. Ainsworth, M.D. St. Louis College of Physicians and Surgeons, 1895; died at his home in Newport, Wash., December 13, from injuries received in a fall three days before, in which he sustained a compound fracture of the right leg above the knee.

Charles Cushing Odlin, M.D. Dartmouth Medical School, Hanover, N. H., 1870; one of the founders of the Melrose Hospital, and once president of the Massachusetts Society, died at his home in Melrose, Mass., December 19, from heart disease, aged 60.

Vernie A. Peterson, M.D. Atlanta (Ga.) College of Physicians and Surgeons, 1899; a practitioner of Hampton, Ill., until he was forced to leave on account of his health; died in Rhyolite, Nev., from pneumonia, November 25, aged 33.

John E. Prichard, M.D. Southern Medical College, Atlanta, Ga., 1892; a member of the Gordon County Medical Society and the Medical Association of Georgia, died at his home in Resaca, December 13, from capillary bronchitis, aged 52.

Louis J. Frazee, M.D. Hospital College of Medicine, Louisville, 1869; a Confederate veteran and well-known practitioner of Lexington, was found unconscious in his office, December 17, and died from heart disease an hour later, aged 57

Walter Duesler Clement, M.D. College of Physicians and Surgeons of Ontario, Toronto, 1872; who had practiced medicine in Innerkip for 40 years, died at his home in Toronto, from cerebral hemorrhage, December 11, aged 75.

Roch Raphael Gareau, M.D. Montreal University, Medical Department, 1877; died at his home in Detroit, December 13, after an illness of three months, following a blow in the abdomen from the crank of his automobile, aged 52.

Sylvester Van Syckle, M.D. New York University, New York City, 1849; a well-known practitioner of Hunterdon County, N. J., died at his home in Clinton, December 7, from pleuropneumonia, after a short illness, aged 81.

James Avery Mattison Stone, M.D. Miami Medical College, Cincinnati, 1870; a minister of the Union Baptist Church and a practitioner of Vincennes, Ind., died at his home in that city, April 15, from septicemia, aged 67.

Thomas F. McCleary, M.D. Long Island College Hospital, Brooklyn, 1893; surgeon to the Williamsburg and Bushwick hospitals, Brooklyn, died at his home in that city, December 15, after a long illness, aged 36.

Samuel W. Minshall, M.D. Minnesota Hospital Medical College, Minneapolis, 1886; formerly of Missoula, Mont., died in Kansas City, Mo., December 11, after a long illness from tuberculosis, aged 50.

Charles E. Hume, M.D. Jefferson Medical College, Philadelphia, 1849; one of the most prominent practitioners of Culpeper County, Va., died at his home in Culpeper, December 10, aged 81.

Benjamin L. Euans, M.D. University of Michigan, Department of Medicine and Surgery, Ann Arbor, 1879; formerly of Watseka, Ill., died at Goldfield, Nev., December 6, from pneumonia.

Edward L. Morse, M.D. Eclectic Medical Institute, Cincinnati, 1878; a veteran of the Civil War, died at his home in Chardon, Ohio, December 9, from cerebral hemorrhage, aged 68.

William R. Dufphey, M.D. Medical College of Virginia, Richmond, 1874; a member of the Medical Society of Virginia, died at his home in Oldtown, Va., from nephritis, November 29.

Frederick Goessling, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1873; was found dead at his home in Troy, N. Y., December 10, aged about 60.

John G. Baylor, M.D. University of Vermont, Medical Department, Burlington, 1896; died at his home in Pittsford, Vt., December 2, from nephritis, after a long illness, aged 34.

Thomas B. Payton, M.D. Kentucky School of Medicine, Louisville, 1884; died at his home in Lima, Ohio, December 17, from uremia after an illness of four days, aged 55.

J. C. Stanley, M.D. University of Louisville, Medical Department, 1887; formerly of Ogden, Ind., died at his home in Sherley, Ind., recently, after a short illness, aged 81.

Martha Champlin, M.D. Boston University School of Medicine, 1889; of Framingham, Mass., died at the home of her sister in San Francisco, November 22, aged 62.

George L. Hatfield, M. D. Jefferson Medical College, Philadelphia, 1900; secretary of the Fayette County (Pa.) Medical Society; died in Uniontown in September last.

George D. Seaman, M.D. Pennsylvania Medical College, Philadelphia, 1853; formerly a member of the legislature, died at his home in Avoca, N. Y., September 11.

James H. Keever, M.D. Baltimore Medical College, 1894; died at his home in Oak Cliff, Dallas, Texas, from cerebral hemorrhage, December 8, aged 36.

Simeon E. Smith, M.D. Eclectic Medical College of Pennsylvania, Philadelphia, 1877; died suddenly at his home in Portland, Ore., December 9, aged 85.

Jesse L. Limes, M.D. Eclectic Medical Institute, Cincinnati, 1870; of St. John, Kan., died suddenly at Adrian, Mich., December 12, from heart disease.

Horace J. Treat, M.D. Metropolitan Medical College, New York City, 1858; a veteran of the Civil War, died at his home in Chicago, December 18.

Laura A. Stow Ballard, M.D. Hahnemann Medical College and Hospital, Chicago, 1875; died at her home in Berkeley, Cal., December 8.

Joseph Wise, M.D. Medical College of Georgia, Augusta, 1856; died at the home of his son in Atlanta, November 18, aged 77.

John Shamblin, M.D. Atlanta (Ga.) Medical College, 1888; died at his home in Broomtown, Ala., December 13, aged 50.

Deaths Abroad.

L. V. Popow, M.D., until recently professor of internal medicine at St. Petersburg; for years president of the local medical society, and honorary body physician to the imperial family, died November 7, aged 62. He was the successor of Botkin, and published about 30 monographs on various phases of internal medicine.

I. Zabludowsky, M.D., director of the university massage institute at Berlin, died November 25, aged 55. He was a pioneer in the line of massage and other physical measures, especially in the after-treatment of surgical affections and to promote absorption.

G. Rossi, M.D., privat docent of anatomy at Naples, was recently fatally stabbed by an educated anarchist who had some fancied personal grudge against him.

L. Lapponi, M.D., physician to the present pope and his predecessor, died at Rome, December 17, of cancer of the stomach with intercurrent pneumonia.

Society Proceedings

COMING MEETINGS.

American Laryn., Rhin. and Otol. Society, Eastern Section, Providence, R. I., Jan. 5, 1907.
Med. Society of State of New York, Albany, Jan. 29, 1907.

BOSTON MEDICAL LIBRARY MEETING.

Regular Meeting, held Nov. 14, 1906.

DR. GEORGE W. GAY in the Chair.

Intolerance of Fats.

DR. DAVID L. EDSALL, Philadelphia, stated that the subject needs attention because fats, being very nutritious, are used freely, especially in cases of depraved nutrition and chronic disease. But these patients may not be able to digest milk, cream, eggs, olive oil, etc. This is well recognized in cases of severe liver or pancreatic disturbance, and has been lately urged as a reason for a different modification of milk in certain cases of infantile indigestion. Indeed, the younger the person the greater the apparent difficulty for the system to split up the fats and use them. The fat eaten may seem to be normal in amount, but more often is found to be increased. The object is to "build up" or "feed up" the patient. Thus a boy of 11 may receive as high as 250 grams of fat daily, or about 5,000 to 6,000 calories. Forced feeding of phthisis patients may result in overfeeding, and there will develop an intolerance of even normal amounts of fat. Special difficulty is also often encountered in pneumonia and typhoid fever, which may be relieved by using buttermilk, fat-free milk or the white of the egg, gradually adding the yolk. However, it should be remembered that infection in the milk is most often the cause for its being badly borne. Gastric hyperacidity at first is relieved by fat, but later is much increased and the condition then is promptly relieved by using fat-free milk.

After an acute infectious disease children often have a bowel disturbance which is due to intolerance of the fat which is too freely given.

Another group of patients not described in text-books shows languor, sallowness, often foul breath. A reduction in the amount of fat given produces a cure. Cases of recurrent vomiting, too, may be due to fat intolerance. On examining the stools for fat, note must be made of the amount ingested and of the size or number of the dejections. Otherwise any approximate estimates are useless. Not much value is to be attached to any statements except those based on a complete fat absorption experiment, such as can rarely be conducted outside of an institution.

PROF. A. E. AUSTIN said that fats leave the stomach last and may then inhibit the mobility of the stomach. While in the stomach fats may be split and the resulting fatty acids may cause irritation and produce vomiting. Fats vary in the readiness with which they liquefy, and those which liquefy most readily are most easily absorbed. Other fats are the cause, at times, of discomfort and distaste. Lime water forms the hard, insoluble calcium soap. Why, he asked, should it be used in infants' foods? Why is it that we sometimes have a liquid, smooth stool containing a normal carbohydrate and proteid output with an abundance of fatty acids and only little soaps? There is some evidence of enteric disturbance, but why, if so, are the carbohydrate and proteid outputs normal?

DR. EDSALL said that the explanation offered, which does not seem to him adequate, is that there is in these cases a disturbance of the pancreas and consequent increase in the supply of alkalies. Pancreatic disease does not always mean a lower metabolism of fat.

Current Medical Literature

AMERICAN.

Titles marked with an asterisk (*) are abstracted below:

St. Louis Medical Review.
December 8.

1 *Treatment of Pneumonia. O. H. Brown, St. Louis.
2 Pathologic and Clinical Diagnosis of Sarcoma. (To be continued.) M. G. Seelig, St. Lous.

1. **Treatment of Pneumonia.**—The purpose of Brown's article is to present the various methods of treatment of pneumonia, as mentioned most often in the recent literature. He claims that from the results of the so-called quinin and iron therapy in a large number of cases of pneumonia, although the application is empirical, it seems that it should be tried. The fresh air method has been sufficiently successful to cause one to think it has virtue. Its judicious application is certainly rational and should perhaps be combined with the quinin and iron. The circulation is best supported by strychnin, caffein, or digitalin. The prescribing of definite amounts of water at regular intervals to remove bacterial toxins is also rational. The administration of an alkali in pneumonia patients is indicated to neutralize the acid produced by the bacteria, and to raise the alkalinity of the blood above that of normal. For this purpose sodium carbonate may be given. The salts of organic acids, however, serve the same purpose, as they are readily oxidized in the alimentary canal and in the tissues to the carbonate. Sodium citrate will serve the purpose of decreasing the coagulability of the blood and of maintaining the alkalinity of the body fluids. It acts when given by the stomach as a mild laxative, and after absorption stimulates diuresis. Both these latter actions are highly desirable in eliminating the toxic products of the disease.

American Journal of Medical Sciences, Philadelphia.
December.

3 *Infantile Mortality and Its Principal Cause—Dirty Milk. C. Harrington, Boston.
4 *Clinical Study of Eighty Cases of Exophthalmic Goiter. W. G. Thompson, New York.
5 *A Year's Experience in Intestinal Surgery. J. B. Deaver, Philadelphia.

6 Accidents Following Thoracentesis; Pneumothorax; Sudden Death from Exploratory Puncture. G. G. Scars, Boston.
7 Differential Diagnosis of the Diseases Hitherto Groped Together as Rheumatoid Arthritis, Chronic Rheumatism, Arthritis Deformans, etc. P. W. Nathan, New York.
8 *Exophthalmos in Leukemia. J. B. Herrick, Chicago.
9 *Typhoid and Paratyphoid Spondylitis, with Bony Changes in the Vertebræ. T. McCrae, Baltimore.
10 Value of the Differential Leucocyte Count in Diagnosis. F. E. Sondern, New York.
11 Early Diagnostic Signs of Insular Sclerosis. S. Brown, Chicago.
12 Principles of Treatment of Renal Insufficiency. R. B. Preble, Chicago.
13 *Treatment of Tuberculous Laryngitis with Culture Products. F. M. Pottenger, Monrovia, Cal.

3. **Infantile Mortality and Dirty Milk.**—Although it is generally well known that the mortality among infants and young children is very high, Harrington says that it is not commonly recognized that much of it is due to causes which are avoidable, and to one in particular which can be effectively controlled by individual and concerted effort—the milk supply. In this country, the annual waste of infant life fails to attract the attention to which it is entitled, largely because of indifference and ignorance on the part of the public and of public authorities to the importance of registration of vital statistics, by which alone can be measured the influence exerted by the various conditions affecting the public health. With no knowledge of the number of births and deaths, and of the ages at death, there obviously can be no knowledge of the rate of infantile mortality; and consequently where this is high, but unrevealed, the public mind is not disturbed. Even where vital statistics are registered and the rates of infantile mortality are therefore known, it is far from being well understood how many lost lives might easily have been saved. In some places, however, in this country and abroad, where this waste and its cause have been properly emphasized and brought home to thinking people, much has been done for its prevention and thousands on thousands of lives have undoubtedly been saved thereby.

4. **Exophthalmic Goiter.**—The findings of eighty cases are included in Thompson's report. All the cases presented the so-called cardinal symptoms. The most important facts which the investigation has elicited are three: (1) The frequency of serious acute febrile exacerbations, with dilatation of the heart; (2) the very common association of these exacerbations with tonsillitis; (3) the possibility of mistaking the highly toxemic clinical picture for such acute conditions, as malignant endocarditis or other forms of acute general septicemia. In none of the series did the influence of shock appear to be a definite causative factor. The gland was more or less enlarged in all cases, in most of them moderately and bilaterally. In fourteen cases there was a distinct preponderance of enlargement on the right side, and in nine on the left. The heart was enlarged in many cases. In one-half of all cases murmurs were heard. In many instances these disappeared under treatment, showing that they were due to dilatation or over action. Gastrointestinal symptoms were present in about one-fourth of the cases. They consisted of irregular attacks of vomiting and diarrhea, as well as abdominal cramps, and sensations of distension and distress. Loss of weight was recorded in about one-third of all cases, and was often considerable. Edema was observed in twenty-three cases of the entire series. Sweating was noticed in twenty cases. Erythema was present in ten cases. Slight hemorrhages are occasionally associated with the disease. Von Graefe's sign, Stellwag's sign, and Moebius' sign were not often mentioned in the case histories under discussion. Pregnancy, instead of increasing the nervousness and other symptoms, as might be supposed, either exerts no special influence or the patient is materially better during the period of gestation. Diabetes was coincident with the exophthalmic goiter in three cases of the series. In several cases the thyroid extract had been prescribed. The patients were uniformly made worse by it. The duration of the disease varied from six weeks to twenty-five years, but more than one-fourth of the patients had had symptoms from two to four years. There were eight fatal cases. In twenty of the eighty cases, or in one in four, there was a history of tonsillitis or quinsy, and in ten more of acute infection of the respiratory system.

5. **A Year's Experience in Intestinal Surgery.**—On the forty patients whose case histories are given by Deaver, there were done twelve simple enteroenterostomies; eleven intestinal resections, with enteroenterostomy; one enterotomy; two colostomies; seven enterorrhaphies for various forms of fecal fistula; one suture of a typhoid perforation; one reduction by manipulation of an intussusception; eight instances in which strangulating bands or adhesions were divided; and three other (atypical) operations—a total of forty-six operations on forty patients. There were thirteen cases of intestinal carcinoma, all in the large bowel. The cecum was diseased in four cases; the sigmoid in four; the hepatic flexure of the colon in two; and the transverse colon, the splenic flexure of the colon, and the rectum in one case each. Five of these thirteen patients died—those in whom the splenic flexure and the rectum was involved, one of those with the cecum affected, and two of those in whom the sigmoid flexure was diseased. The remaining eight patients recovered from the primary operation and were relieved temporarily, but of the four successful cases in which the patients were seen sufficiently early for a radical operation to be done, two developed symptoms of recurrence about eight months later, and were again temporarily relieved by further operation; and in the case of two others, on whom a radical operation was done, sufficient time has not elapsed since the operation to permit of their being considered in this connection.

8. **Exophthalmos in Leukemia.**—Herrick reports a case of exophthalmos occurring in leukemia. The patient, male, aged 22, contracted a cold in the head, with some fever, buzzing in the ears, pains and aches over the body, and a feeling of general weakness. A few days later swelling of the eyelids and prominence of the eyeballs were noted. The case was a typical one of acute lymphatic leukemia. From the onset of symptoms of coryza to his death, was only thirty-six days. In that time there was a gradually increasing pallor with the attendant symptoms and findings of grave anemia, dyspnea, palpitation, dizziness, weakness, hemic cardiac murmurs, etc. A striking feature was the early and persistent bilateral exophthalmos. There was a slight puffiness of the lids, but the prominence of the eyeball was so marked as immediately to attract attention. No other suggestions of Basedow's disease could be found, no enlarged thyroid, no tremor or cardiac irritability, though the pulse rate was naturally accelerated (80 to 110) from the anemia and fever. The external ocular muscles worked perfectly, as did the iris. No tumor masses could be felt back in the orbit. There was little or no pain in the eye; vision was good. The retinal examination was negative, except for pallor. While suspecting chloroma an examination for thickening of the periosteum or for tumor masses other than the glands, especially in the temporal region was negative, nor could abnormal urinary pigment or pigmentation of the enlarged glands be made out. Treatment consisted of strychnin, *x*-ray exposures every other day, and Fowler's solution in increasing doses. The autopsy showed: Hyperplasia of the spleen and lymph glands; enlargement of the intestinal glands; lymphoid marrow in the femur; high grade of general anemia; multiple hemorrhages into the serous membranes, lymph glands, and viscera; leukemic infiltration of the lungs, kidneys, myocardium, and liver; diffuse bronchitis; atelectatic areas in the lungs, right serofibrinous pleuritis; localized fibrous adhesive pleuritis; double exophthalmos, with leukemic infiltration of the fatty tissue of both orbits.

9. **Typhoid and Paratyphoid Spondylitis.**—McCrae reports two cases which illustrate that in certain instances of typhoid spondylitis there are definite bony changes in the vertebræ. The general features of the condition suggest the probability of organic changes in the spine of some degree being a usual occurrence. The similarity of the changes found in typhoid spondylitis and those in the spondylitis found in other infections, especially arthritis deformans, suggest that the latter may be due to various infective agents.

13. **Tuberculous Laryngitis.**—Pottenger claims that the larynx is the ideal location for a lesion to be treated by tuberculin, for the dosage can be controlled absolutely by the local

reaction produced. The larynx should be watched daily and the dosage should not be increased beyond that which is necessary to produce a slight reaction; nor should a second injection be given until all reaction produced by the first has disappeared. Tuberculin administered in this manner will cure many cases of tuberculous laryngitis. It will increase the chances of recovery in these cases from 50 to 75 per cent., and in many cases it offers practically the only hope. In conjunction with it, all measures which will improve nutrition, and the local lesion should be used.

St. Paul Medical Journal.

December.

14 Theories of Immunity. F. C. Schuldt, St. Paul.
15 Immunity—Agglutinins and Precipitins. S. E. Williams, St. Paul.
16 *Clinical Use of Antistreptococcic Serum. J. T. Christison, St. Paul.
17 Anatomy and Physiology of the Intestine. P. B. Cook, St. Paul.
18 Causes and Varieties of Chronic Constipation. J. A. Cameron, St. Paul.
19 *Medical Treatment of Chronic Constipation. M. Allen, St. Paul.
20 *Dietary Treatment of Chronic Constipation. M. N. Ghent, St. Paul.

16. **Antistreptococcic Serum.**—Christison's records of the use of the antistreptococcic serum in 42 cases of scarlet fever of severe type show but four deaths. In 31 of these cases the streptococci were found. In 10 of these cases there was present endocarditis of moderate severity. The application of ice bags was the only addition to the routine treatment. Most of the cases of scarlet fever were of so mild a type that little or nothing beyond a milk diet and rest in bed was needed. In one series of 6 cases there was no apparent effect from the serum, but on the administration of a serum of different manufacture the result was at once manifest. Christison's experience with the serum coincides with that of other clinicians.

19. **Chronic Constipation.**—Allen discusses the use of aloes, cascara sagrada, podophyllum, calomel, castor oil, salines and enemas. He says that laxatives should be avoided as much as possible, and that when used a preference should be given aloes, cascara and podophyllin. Drastic purgatives are to be used only occasionally, when constipation is obstinate and an immediate evacuation is necessary. The bitter waters afford only temporary relief. Sedative and antispasmodic remedies are sometimes required when constipation is of spastic type. Injections are of certain value, but the disadvantage is that ultimately small quantities of water do not suffice, and larger amounts must be used, which overdistend the large bowel and thereby render the use of injections valueless. Small injections of glycerin and large injections of olive oil may very properly be recommended.

20. **Id.**—Ghent claims that a patient with habitual constipation can as a rule eat any kind of food, but those things should be selected that will have the largest residue.

Bulletin of the Lying-In-Hospital of the City of New York.

September.

21 Open-air Treatment as Employed at the Lying-In Hospital. J. W. Markoe, New York.
22 Multiple Pregnancy; Triplets Followed by Eclampsia in Mother. R. McPherson, New York.
23 An Unusual Case of Hemorrhage in Eclampsia. J. E. Welch, New York.
24 Two Cases of Puerperal Septicemia Complicated by Abscess of the Parotid. A. B. Davis, New York.
25 Case of Hydatidiform Mole. E. S. Gushee, New York.
26 Method of Identifying Infants in the Lying-In Hospitals. A. B. Davis, New York.

Philippine Journal of Science, Manila, Supplement IV.

September 15.

27 New Philippine Acanthaceæ. C. B. Clarke, Kew, England.
28 New Philippine Ferns, II. E. B. Copeland, Manila.
29 Notes on Philippine Gramineæ, II. E. Hackel, Graz, Austria.
30 Myrsinaceæ Novæ Philippinenses. C. Mez, Halle, Germany.
31 A List of Known Philippine Fungi. P. L. Ricker, Washington, D. C.
32 New Philippine Asclepadaceæ. R. Schlechter, Berlin, Germany.
33 New Philippine Burmannia. R. Schlechter, Berlin, Germany.

October.

34 Non-Christian Tribes of Northern Luzon. D. C. Worcester, Manila.
35 Philippine Coals and Their Gas-Producing Power. A. J. Cox, Manila.
36 Notes on a Collection of Birds from Palawan Island. R. C. McGregor, Manila.

American Medicine, Philadelphia.

October.

37 Acute Pyelitis. G. H. Nofer, Philadelphia.
38 Series of Cases Illustrating the Ocular Complications of Hysteria. E. A. Shumway, Philadelphia.
39 Brain Abscess, Following Acute Otitis Media. T. H. Halsted, Syracuse, N. Y.
40 Pelvic Girdle for Ptosis of Abdominal Viscera; Suggestions for its Use in Tuberculosis, etc. C. D. Spivak, Denver, Colo.
41 Severe Injury to the Left Orbital Region Presenting Paralysis of Several Cranial Nerves. J. H. W. Rhein and S. D. Risley, Philadelphia.
42 Bilateral Removal of the Lens in High Myopia, the Subsequent Use of Dionin. H. F. Hansell, Philadelphia.
43 The Mastoid Incision. W. Roberts, Philadelphia.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

Semaine Médicale, Paris.

1 (XXVI, No. 47.) *Sur quelques troubles de la nutrition: la cystinurie et l'alcaptonurie. L. Blum.
2 *Qualitative Change in Neurotrophile Leucocytes Earliest Sign of Measles.—Diagnostique hématologique de la rougeole avant l'apparition du signe de Koplik.
3 (No. 48.) Revision de la question de l'aphasie: l'aphasie de 1861 à 1866; essai de critique historique sur la genèse de la doctrine de Broca. P. Marie. Eight illustrations.

1. **Cystinuria and Alcaptonuria.**—Blum's critical study of the literature on this subject and his researches demonstrate, he believes, that alcaptonuria is a disturbance or defect in nutrition which allows a product of the normal decomposition of the aromatic substances to escape the destructive action of the liver. The cells of the liver seem to be unable to perform certain normal chemical functions whose nature the resulting alcaptonuria allows us to surmise. The knowledge of cystinuria and alcaptonuria has thrown light on the complicated question of the intermediate exchanges while at the same time raising new problems.

2. **Early Sign of Measles.**—An editorial note states that Flesch and Schossberger found on examining the blood of 26 normal individuals that the mononucleated neutrophiles with the nuclei more or less deeply indented averaged 36, while those with two lobes averaged 45, with three lobes 15, with four lobes 3 and with five lobes 1. The younger the cell the more even its outline. They also found that in 5 cases of measles the leucocytes with simply indented nuclei were abnormally numerous, amounting to 63 or 71 per cent., and increasing to 80 and 85 per cent. the day before the eruption appeared. In 2 other cases the proportion was 81 and 85 per cent. two days before Koplik's sign was evident. In another case in which Koplik's sign never appeared, the proportion was 60 per cent. four days before the exanthem. Simple examination of the dried blood with the Jenner or tri-acid stain reveals this hematologic sign of measles several days before any other sign. It was first discovered in examining the blood of two children convalescing from scarlet fever, and was a puzzling finding until explained by the development of measles a few days later.

Deutsche medizinische Wochenschrift, Berlin and Leipsic.

4 (XXXII, No. 45.) Neue experimentelle Untersuchungen über Tuberculose. Lydia Rabinowitsch (Orth's Pathologic Institute, Berlin).
5 *Zur physikalischen Therapie der chronischen Nierenerkrankungen (kidney affections). M. Herz (Meran).
6 *Erfahrungen mit der Lumbal-Anästhesie. Lindenstein (Nuremberg).
7 *Ueber Thoracoplastik. Goebel.
8 Ueber die familiäre Hornhautentartung (corneal anomalies). Velhagen.
9 *Concentrated Carbolic Acid in External Treatment.—Ueber eine neue Anwendungsweise der konzentrierten Karbolsäure in der externen Therapie, vor allem bei Bubonen und Furunkulose. W. Wolff.
10 Effect on New-Born Animals of Parental Injection of Heterologous Serum.—Verhalten neugeborener Tiere bei parentaler Zufuhr von artfremden Eiweiss (Kuhmilch and Kuhblutserum). W. Gessner (Magdeburg).
11 Ueber intravenöse Nikotin-Einspritzungen und deren Einwirkung auf die Kaninchen-Aorta (of rabbits). J. Adler and O. Hensel (New York).

5. **Physical Measures in Treatment of Chronic Kidney Affections.**—Herz doubts whether baths are suitable for "toughening," even the well, especially children. Nature shows us the way to "toughen" th skin by the healthy, sunburned

aspect of the skin of persons leading an out-of-door life in contrast to the pale, sensitive skin of those who stay in the house. Light and air are Nature's methods of toughening the skin, not water. Especially in kidney disease, Herz warns against baths except for cleansing purposes, and states that they should be omitted entirely in cold, damp and stormy weather. All the arguments against the use of water which he presents are so many arguments in favor of the use of light and air baths. With them, he states, we can obtain all the special advantages which a mild, sunny climate offers in case of kidney disease. He gives the baths in a cabinet with electric lights in which the air is constantly changed by a weak current of warm air passing through it and carrying away the evaporation and emanations from the patient's body.

6. **Spinal Anesthesia.**—Lindenstein gives a very favorable report of his experiences with spinal anesthesia in 150 operations.

7. **Plastic Operations on the Thorax.**—Goebel describes a few cases of old empyema requiring a plastic operation, in which he used a muscle to fill up the dead space remaining after the main operation. If the muscle flap is cut with a broad base its nerves and vessels do not suffer. Even if cut into several flaps, observing the direction of the fibers, there is no disturbance in the innervation. This technic not only avoids dead spaces but the wound heals more rapidly, he states, and the stumps of the resected ribs are covered with skin, thus avoiding necrosis. He describes the technic in detail.

9. **Voerner's Carbolic Acid Treatment of External Affections.**—In case of a bubo or furuncle, if it is still hard, it is painted with pure carbolic acid, applied on a cotton-wound toothpick, in a strip from 0.5 to 1 cm. wide. The application is repeated daily for a few days until the skin peels off. After an interval of a few days, if the bubo has not retrogressed, the procedure is repeated daily. If there is fluctuation, the bubo is evacuated and the cavity swabbed with pure carbolic acid. This is repeated every second or third day until the cavity granulates, when salve or iodoform gauze is applied. Furuncles are treated with a mixture of 9 parts carbolic acid in one part alcohol, applied externally, or the interior is swabbed out. Care is necessary not to allow the carbolic acid to spread to the surrounding sound skin. A single application generally aborts or cures a small furuncle. The application of the concentrated carbolic acid in the same way cured also in cases of ulcerative and aphthous stomatitis, felons, and glandular processes in the experiences related by Wolff.

Münchener medizinische Wochenschrift.

12 (LIII, No. 43.) *Pubeotomie und künstliche Frühgeburt (and artificial premature delivery). H. Fehling (Strasburg).
13 *Ueber akute Darm-Tuberkulose unter dem Bilde einer schweren allgemeinen Infektions-Krankheit (intestinal tuberculosis). H. Pässler.
14 Das Leukocyt-Ferment in Milz, Lymph-Drüsen und Knochenmark bei Leukämie und Pseudo-Leukämie. G. Jochmann and C. Ziegler.
15 Poliomyelitis acuta und Meningitis cerebrospinalis. E. Tiedemann. One case.
16 Endemic Dysentery in an Insane Asylum.—Ueber Ruhr bei Irren. H. Liefmann and A. Nieter.
17 *Erythema exsudativum multiforme und nodosum der Schleimhaut in ihren Beziehungen zur Syphilis. G. Trautmann.
18 Ueber Pseudarthrosen-Heilung und künstliche Pseudoarthrosen-Bildung (artificial pseudo-arthrosis in forearm). J. Frankel.
19 Light and Currents of Air in Treatment of Chronic Heart Affections.—Die Licht-Luftstrombehandlung der chronischen Herzkrankheiten. M. Herz. See abstract 5, above.
20 Portativer Apparat für Behandlung von Finger- und Handgelenkversteifungen. Bettmann.
21 Zur Technik der Roentgen-Therapie. B. Wiesner.
22 Zur Hygiene der Frauenkleidung (women's clothing). Grisson (Hamburg).
23 (No. 44). Intravenöse Digitalis-Therapie mit Strophanthin. R. von den Velden.
24 Die biologische Bedeutung der Photoaktivität des Blutes und ihre Beziehung zur vitalen Licht- und Wärme-Wirkung. V. Schläpfer.
25 *Ueber Komponenten des Tetanus-Toxin bei Anwendung von wasserfreiem Salzsäuregas bei der Temperatur der flüssigen Luft. A. Wolff-Eisner.
26 *Einwirkung der Roentgen-Strahlen auf Ovarien und den schwangeren Uterus von Meerschweinchen. K. Lengfellner.
27 *Zur Früh-Diagnose des Typhus. W. Meyerstein.
28 Ueber proteolytische Wirkungen intrazellulärer Fermente. J. Baer.
29 *Zur Alkohol-Anwendung bei der Pneumonie. Fock.
30 Cholera Preventive Station.—Die Thätigkeit der Choleraüberwachungsstelle Küstrin, 1905. Peters.
31 Negative Verdict on O. Schmidt's Cancer Parasite.—Zur Beurteilung der nach. O. Schmidt in malignen Tumoren auftretenden protozoenähnlichen Mikro-organismen. A. Schuberg (Heidelberg).
32 Transmission of Epidemic Meningitis.—Sind die Steinkohlengruben die Verbreiter der Genickstarre? Lindemann (Bochum).

12. **Pubiotomy and Artificial Premature Delivery.**—Fehling presents statistics from his experience with 110 cases of artificial premature delivery and 27 of Cesarean section. The children were born alive in 92.3 per cent. of the cases with Cesarean section, but only 63.6 were alive by the end of the first year, while with artificial premature delivery 80.9 per cent. were born alive and 82.35 per cent. were living at the end of the first year. The prognosis for the life of the child is thus materially better with premature delivery, while Cesarean section is considerably more serious for the mother. Pubiotomy is preferable, he thinks, in case of a primipara with contracted pelvis, first seen at term, if the condition of mother or child renders it desirable to terminate labor, and if version or forceps are not advisable. Artificial premature delivery is indicated for multiparæ when the first or second birth resulted in the spontaneous death of the fetus or required difficult forceps intervention or perforation.

13. **Acute Intestinal Tuberculosis.**—Pässler describes 2 cases which demonstrate that an acute tuberculous infection of the intestines may develop in adults, independent of severe tuberculosis of the lungs, and may lead to a severe, febrile general syndrome, fatal in a few weeks. It is possible that mixed infection plays as important a part in the severe course of a tuberculous intestinal affection as in pulmonary tuberculosis. In the 2 cases described a few pyogenic staphylococci were found in the blood. The stools should always be examined for tubercle bacilli in case of a severe, exhausting, febrile affection without findings in the organs to explain it, and without positive signs of sepsis, typhoid or acute miliary tuberculosis, dragging along for weeks after a gradual onset. The complete absence of symptoms on the part of the intestines—as in one of the cases reported—should not mislead the observer.

17. **Erythema Nodosum of Mucosa in Relation to Syphilis.** Trautmann describes 6 cases of a multiform and nodose erythema with exudation affecting the mouth or upper air passages, occurring in persons years after syphilitic infection. He believes that the syphilis was not directly responsible, but merely afforded the predisposition for the development of the lesion. Mercurial treatment is unnecessary. In the cases reported excellent results were obtained with potassium iodid and in every instance there was a prompt and salutary reaction to salicylic acid.

25. **To Separate the Components of Tetanus Toxin.**—Wolff-Eisner has been applying Bergell's method to the study of tetanus toxin. Instead of treating toxins with an aqueous solution, Bergell uses a water-free gas, for example, anhydrous hydrochloric acid, with a boiling point at 86 C, applied at the temperature of liquefied air. His research on typhoid bacteria was published in the *Med. Klinik*, No. 16, 1906. He obtained by this means a product which displayed very little toxicity and was well tolerated by the animals injected with it. The serum of the animals acquired high agglutinating and bactericidal power. Similar experimental research on tetanus toxin by Wolff-Eisner resulted in the complete loss of the death-dealing properties of the toxin while it still retained unimpaired its contracting action. It thus proved possible to separate the fatal property of tetanus toxin from its property of inducing contractions. Animals treated with the toxin afterward became immunized to a certain extent, although certain signs indicated the development of an extra susceptibility on the part of some of the animals.

26. **Action of Roentgen Exposures on the Ovaries and Gravid Uterus.**—Lengfellner's experiments on guinea-pigs demonstrated that prolonged exposures killed the embryo in the uterus and even short exposures had a marked injurious effect. He is inclined to believe that even a very brief exposure of certain important vital organs in the fetus would have a fatal effect, although it is still unknown which organ is most susceptible to the minimal dose, entailing in time the gradual general death of the fetus. The ovaries showed

destructive changes in all his guinea-pigs after Roentgen exposures, both the gravid and non-gravid. He also noted considerable irregularity in menstruation in a young woman whose pelvis was examined several times with the Roentgen rays. She had always been regular before, but after the exposures there was complete amenorrhea for a time and then the menses gradually returned, but were irregular and scanty.

27. Early Diagnosis and Treatment of Typhoid.—Meyerstein has found that the addition of bile to culture media promotes the proliferation of typhoid bacilli, and that the crystallized biliary salts, kept in glycerin, have the same effect. It is possible by this means to determine the presence of typhoid bacteria in the blood in the very incipiency of the disease, when it is practically a pure bacteriemia. He believes that intensive treatment with some drug which would pass readily into the blood and annihilate the bacteria at this stage might abort the disease. The hope seems rational that it may be possible to detect typhoid fever during the phase of incubation by systematic examination of the blood of persons in the environment of typhoid patients and exposed to the disease. The moment the bacteriemia is detected, vigorous administration of iodin, mercury or quinin, which pass readily into the blood, might possibly, he thinks, abort the disease. He adds that the destruction of the typhoid bacilli in the blood occurs simultaneously with the onset of the typical typhoid fever curve.

29. Alcohol in Pneumonia.—Fock of Hamburg sent a question blank to a large number of medical men in Germany, Austria, Switzerland, Denmark, Sweden and England, especially the professors of internal medicine and other internists, asking their experience in regard to the use of alcohol in pneumonia. The questions asked were: Whether or not alcohol was given in every case of pneumonia or only under special circumstances, the form in which it was given, whether or not it was given to hard drinkers, what effects were expected from it and what effects were realized and if the same effects could not be obtained by other means. The general conclusions from the large numbers of replies received are that there did not seem to be any difference in the final outcome whether patients had been treated with or without alcohol. About equal numbers recover with or without it. Some physicians had the subjective impression that convalescence was shorter when alcohol had not been given. Fock urges hospitals to collect statistics on a large scale by treating patients alternately with and without alcohol.

Gazzetta degli Ospedali, Milan.

Last indexed, page 1966.

33 (XXVII, No. 117.) Epitelioma primitivo della vulva. G. Serafini. Fifteen cases.
34 *Patogenesi della stenosi mitralica pura. A. Cipolletta.
35 Epidemic of Goiter.—Piccola epidemia di gozzo. G. Cantamessa. Six cases.
36 *Removal of Crusts in Ozena.—Techniche attuali per il distacco delle croste nell' Ozena ed esposizione di un nuovo metodo razionale. L. Fornari.
37 (No. 120.) Negative Verdict on Salomon's Test for Cancer of Stomach.—Sulla prova di Salomon nella diagnosi del carcinoma dello stomaco. S. Diez.
38 *Significance of Various Symptoms of Insufficiency of Liver.—Del valore dei diversi sintomi di insufficenza epatica. G. Funaioli.
39 Sense of Shape and Size in the Insane.—Il senso stereognostico negli alienati in rapporto coi disturbi della sensibilita generale. G. Fratini.
40 Scrofulosi. E. De Renzi. Clinical lecture.
41 (No. 123.) Pleuriti e peritoniti da bacillo di Pfeiffer. G. Ghedini.
42 Sulla genesi e sul significato dei rumori di soffio venoso continui (continuous venous murmurs). S. Livierato.
43 Fluctuations in Temperature and in Weight in Connection with Pathologic-Anatomic Changes in Experimental Tuberculosis.—Le oscillazioni di temp. e di peso, etc. G. Romanelli.
44 Morfologia del bacillo di Koch nelle diverse forme cliniche di tubercolosi polmonare. P. Tumminia.

34. Pathogenesis of Pure Mitral Stenosis.—Cipolletta's conclusions from his personal experience and that of other Italian physicians and review of the literature are that the mitral valve, in case of pure mitral stenosis, becomes affected owing to some inherited predisposition. This tendency is manifested in an arrest of development, commencing with the sixth month of intrauterine life, at which period the valve flaps separate. This defective development presents a point of lesser resistance to the toxic action of the blood in case of syphilis, tuberculosis and, in a few rare cases to the effects of consanguinity in the parents. Congenital defects of the left heart are more common than is generally believed. Treatment should aim to ward off or to cure the syphilis or tuberculosis or other causes liable to do special damage at this weaker point.

36. Removal of Crusts in Ozena.—Fornari uses a hot spray consisting of 8 gm. sodium carbonate; 4 gm. sodium chlorid; 4 gm. distilled cherry laurel water, and 400 gm. distilled water. The mouth is held partly open as the nose is sprayed, and the patient is instructed not to breathe during the spraying.

38. Symptoms of Insufficiency of the Liver.—Funaioli declares that to date no symptom of insufficient functioning of the liver is known which has actual pathognomonic value.

Riforma Medica, Naples.

Last indexed, page 2046.

45 (XXII, No. 46.) *Permeability of Kidneys in Liver Affections.—Permeabilita renale nelle affezioni epatiche. F. Ignazio.
46 Sulla prezenza di uno speciale enzima nelle urine dei nefritici (in nephritis). A. Primavera.
47 (No. 47.) *Influence of Artificially Induced Hyperemia on Healing of Wounds of External Ear on Rabbits.—Influenza della stasi alla Bier nel processo di guarigione delle ferite della cartilagine auricolare. M. Donati and E. Delfino.
48 *Sulla pleurite appendicolare ad essudato siero-fibrinoso. S. Barba.
49 Osservazioni cliniche ed anatomo-patol. sopra 46 casi di stenosi intestinale da causa intrinseca. L. Floravanti.

45. Permeability of Kidneys in Liver Affections.—Ignazio describes the results of tests on 6 patients with various liver affections, by injecting methylene blue subcutaneously, followed by similar tests with potassium iodid and with sodium salicylate. In health the methylene blue appears in the urine in about half an hour and reaches its maximum by the third or fourth hour, then gradually subsides and vanishes by the sixtieth or seventy-second hour. In parenchymatous nephritis the curve is about the same, only accelerated, the elimination reaching its maximum in one or two hours and vanishing by the forty-eighth hour. In interstitial nephritis there is an irregular, polycyclic elimination, ebbing and flowing, reaching a maximum and then subsiding to reach the maximum again several times. Ignazio found in his tests that the liver affections seemed to influence the elimination of the drug in the same way as interstitial nephritis. With all three drugs the same irregular, polycyclic elimination was observed, showing a special rhythm of kidney secretion in case of liver affections. This rhythm of elimination is so marked and so constant that he is inclined to consider the liver partly or entirely responsible for the irregular rhythm hitherto ascribed to defective kidney functioning. Substances injected subcutaneously are obliged to traverse the liver, and as Miahle has demonstrated with the heavy metals, they may be detained in that organ. The remittent elimination of methylene blue or other drug in these tests may confirm the diagnosis of a liver affection, as it seems to be a constant symptom and to indicate defective functioning on the part of the liver. The intermittences or remissions are earlier and more numerous the graver the liver affection.

47. Artificially Induced Hyperemia in Treatment of Wounds in Rabbits' Ears.—After making an incision about 1 cm. long in the skin and cartilage of both ears of a rabbit an elastic band was applied to the root of one ear, and the process of healing studied and compared on both ears. The results were almost invariably that the ear to which the constriction was applied healed in much less time than the other, and the ear seemed to be better nourished in every respect. The process of repair was exactly the same in both ears, but in the constricted ear these processes consumed much less time than in the other.

48. Appendicitis and Pleurisy.—Barba describes 2 cases of unmistakable appendicitis in which pleurisy developed three or four days after the onset. The pleural effusion was serofibrinous and apparently sterile. Both the appendicitis and the pleuritis subsided together, the tendency to spontaneous cure being early apparent.

GENERAL INDEX.

All reading matter in THE JOURNAL from July to December, inclusive, 1906, is indexed here. (For Current Medical Literature Index see pages 2205 to 2233.) All societies, congresses, etc., are grouped under the general subject of "Societies" at the end of the letter "S." Similarly, all "Deaths" and all "Book Notices" are indexed under those titles at the ends of the letters "D" and "B," respectively. Matter pertaining to the Association is under "Association News." With the above exceptions, all matter is indexed under the most important word of the heading that was used in THE JOURNAL, and also under the subject heading. For instance, sarcoma of femur will be found indexed under sarcoma as well as under femur. Such titles as "ocular manifestations, etc.," have also been indexed under "eye." Cross references have been made wherever this was possible. It is also well to remember that in looking up a certain subject, related words should be consulted, for example, nostrum, "patent-medicine," proprietaries, proprietary medicines. The letters used to explain in which department the matter indexed appeared are as follows: "E", editorial; "O", original article; "T", therapeutics; "P", pharmacology; "Ml", medico-legal; and "ab" denotes an abstract of an article that has appeared in full elsewhere.

A

Abbe, R., radium in surgery, 183—O
Abdomen, cracked-pot sound in, 1141—ab
  gunshot wounds of 1417—ab
  penetrating wounds of, 460—ab
  surgical treatment of lesions of upper, 1765—ab
  to facilitate palpation of, 544—ab
Abdominal atony of rickets, its significance and treatment, 1598—ab
  contusions, 2127—ab
  drainage, principles and mechanics of, 956—ab
  fissure and double genitalia, 1212
  fissure, case of, 723—ab
  operations, normal saline solution in, 2038—ab
  operations, pulmonary complications following, 539—ab
  pain, acute, 1859—ab
  section, 48 cases of delivery by, 2121—ab
  section for trauma of uterus, 1127—ab
  sections, series of fifty consecutive, 723—ab
  wall, actinomycosis of, 542—ab
Abortion, case of, in myomatous uterus, 1856—ab
  course and distribution of infection with septic, 1336—ab
  criminal, feticide; prevention of conception, 17
  education as factor in prevention of criminal, and illegitimacy, 1889-O
  epizoötic, 311—ab
  indications for artificial, 1142—ab
Abscess from spinal caries, 293
  marked albuminuria from prostatic, 508—O
  middle ear suppuration as a cause of retropharyngeal, 229—ab
  of brain, 1864—ab
  of liver, diagnosis of, 316—ab
  of liver, tropical, 156—ab
  of liver, two cases of amebic, 155—ab
  of lung, 396—ab, 1221—ab
  of temporosphenoidal lobe, 1417—ab
  probable rupture of liver, into bronchus, 1687—ab
  splenic, following malaria, 1047—ab
  treatment of tuberculous, 1598—ab
  two cases of hepatic, treated by transpleural operation, 1419—ab
Abscesses, differential diagnosis of metastatic and otitic, 1691—ab
Absorption, studies in, 1056—ab
Abt, I. A., acute non-suppurative encephalitis in children, 1184—O
Accident, remarkable, in hospital ward, 1666
Accidents, industrial, 604
Accommodation after middle life, 1222 ab
Accouchement force, induction of premature labor and, in first 5,000 labors in obstetrical department of Johns Hopkins University, 1229—ab
Acetanilid, case of poisoning from absorption, 359—O
  phenacetin (acetphenetidin) vs., 1923—E
  poisoning by headache tablets, 2012—O
  poisoning from bromo-seltzer, 2158—O
  solubility of, in sodium bicarbonate solutions, 1206—O
Acetone bodies, action of alcohol on elimination of, 396—ab
  ring test for, 1773—ab
Acetonuria after anesthesia, 1408
Acetozone, 856—P
  inhalant, 856—P
  in typhoid, 1651—O
Acet-theocin-sodium, 856—P
Acetylene gas in treatment of rebellious gonorrhea, 2114
Achylia gastrica, 158—ab, 1143—ab, 1755—ab
Acid, acute carbolic, poisoning: recovery, 435—O
  installation of pure carbolic, into eye, 37—O
  hydrocyanic, intoxication, 1963—ab
  possible danger in therapeutic use of osmic, 966—ab
Acne papulosa, 302—ab
Acranius, interesting case of, 2092—O
Acroparesthesia, 894—ab
Actinomycosis, abdominal, 542—ab, 976—ab
  and pregnancy, 2042—ab
  case of, 543—ab, 1957—ab
  of cheek cured by iodid of potassium, 1859—ab
Adams-Stokes disease, 73—ab, 302—ab
  disease, pathology of, 1944—ab
Addison's disease, blood pressure and pigmentation in, 723—ab
Address, chairman's, before Section on Nervous and Mental diseases, at annual session of A. M. A., Boston, June 5-8, '06, 1337—O
  chairman's, before Section on Pathology and Physiology, at annual session of A. M. A., Boston, June 5-8, '06, 549—O
  chairman's, in Section on Diseases of Children, at annual session of A. M. A., Boston, 1906, 397—O
  in surgery, 1221—ab
  introductory, by president, St. Louis Medical Society, 1045—ab
  presidents Medical Society State of Pennsylvania, 1048—ab
  presidents British Medical Association, 705—ab
  presidents British Medical Association, section on ophthalmology, 1221—ab
Adenatome, description of a new, 777—O
Adenitis, x-ray in tubercular, 888—ab
Adenoid operations, observations in 1,000, 1415—ab
Adipose tissue, freezing of subcutaneous, 813—ab
Adler, jr., L. H., medical specialism, with especial reference to proctology, 1365—O
Adnephrin emollient, 856—O
  oil spray, 857—P
  solution, 857—P
Adolescence, insanity of, 1956—ab
Adrenal gland, primary sarcoma of, 808—ab
  preparations, dangers in use of, 1655—O
Adrenalin, 857—P
  acute glaucoma following instillation of several drops of, in cataractous eye, 460—ab
  chlorid solution, 857—P
  production of vascular lesions in rabbit by single injections of, 1854—ab
  suppositories, 857—P
  treatment of sarcoma of nasopharynx by injections of, 430—O
Advertisements, newspaper, 1679—ab
Advertisers and the gullible, 708
Advertising, medical, in a Rhine province, 603
  Michigan checks disreputable, 513—E
Advertising, validity of law authorizing revocation of certificates for, relative to venereal diseases, 1413—Ml
  press and quack, in Germany, 137
Aërophagia, 385—T
Africa, diseases and hospitals of east coast of, 141—O, 225—O, 291—O, 531—O, 611—O, 1098—O, 1217—O
  diseases and hospitals of Portuguese East, 700—O
After-care problems, 1833—E
Age of consent, advances, 2119—Ml
Agglutination in pulmonary tuberculosis, 1690—ab
  test, improved, 1236—ab
Agglutinins, specificity of, 1390
Agoraphobia, 1599—ab
Agurin, 857—P
Ainhum, case of, 1420—ab, 2092—O
Air, dangers of working in compressed, 464—ab
  dilatation in treatment of chronic constipation, 454—ab, 639—ab
  passages and ear, treatment of tuberculosis of upper, 300—ab
  rest in open, for gallstone patients, 643—ab
  superheated, in treatment of emphysema and bronchitis, 1690—ab
  superheated, plus calomel and iodin in treatment of tuberculosis of mucosæ, 974—ab
  tract, functional derangement of ears and upper, in insane, 806—ab
Airol, 857—P
Alabama medical news, 42, 279, 439, 783, 1105, 1494
Albumin and albumose, prostatic, 1767—ab
  practical significance of trace of, in urine, 306—ab
  sensitive test for, in urine, 816—ab, 1041
  presence of, in bile, 228—ab
Albuminuria, diet in, 1621—O
  marked, from prostatic abscess, 508—O
  recognition of albumin bodies in urine, 234—ab
  to differentiate harmless from serious, 1312
Albumosuria and albumin metabolism, 976—ab
Alcohol, action of, on elimination of acetone bodies, 396—ab
  as internal germicide, 690—E
  as therapeutic agent, 2174—ab
  diminishing use of, in hospitals, 948
  disinfection with, 1333—ab
  further observations on influence of, in pneumonia, 2178—ab
  on metabolism of hepatic glycogen, 1467—O
  question, 1101—E, 1322—ab
  treatment of neuralgia and spasmodic tic with deep injections of, 209—E
  unusual case of methyl poisoning, 236—ab
  use and abuse of, 2125—ab
Alcoholism, 314—ab, 1120
  elimination of uric acid in gout and, 2127—ab
  increase of, among women, 1206
  satellites of, 1232—ab
Algesimeter, new apparatus, (1) aseptic protective sheet for mastoid surgery, and (2) practical, 1652—O
Alimentation, rectal, 1960—ab
Alkalics, effect of, and other drugs on efficiency of pepsin, 607
Alkaloid, what is an, 1405
Alkaptonuria, cystinuria and, 2176—ab
Allen, R. A., case of general argyria, 1829—O
Allport, F., history of mastoid operation, 92—O
Alopecia, 455—T
  areata, transmission of, 1772—ab
  high-frequency spark in treatment of premature, 459—ab
Alpha-eucain hydrochlorid, 857—P
Alphozone, 858—P
Alumnol, 858—P
Alvarenga prize of Berlin Hufeland Society, 518
Ambaline, 1623—O
Amblyopia, types of congenital symbol, 1813—O
  wood-alcohol, 1222—ab
Amebiasis, comparative treatment of intestinal, 458—ab
Amenorrhea and brain tumor, 2162—E
  and dysmenorrhea, stem pessary for, 2133—O
American Institute of Homeopathy, 633
  Medical Association. See Association News.
  Medical Association, attacks on, 698, 950, 1116
  Medical Association, date of next session of, 528
  Medical Association, district branches of, 698
  Medical Association, finances of, 217
  Medical Association, its friends and its enemies, 778—E
  Medical Association, standards of medical education adopted by, July, 1905, 627
  medical directory, 217, 1024—E, 1196—E
Amino acids and metabolism, 1769—ab
Aminoform, 858—P
Amputation, successful, of leg at 94 years, with account of new operation, 75—ab
Amyl nitrite inhalations, action of on blood-pressure, 1399—ab
Anaërobic organisms, simple method for plating, 969—ab
Anastomosis, button for intestinal, 1141—ab
  new open method for lateral, 896—ab
  of blood vessels by patching method and transplantation of kidney, 1648—O
  successful end-to-end, after partial disembowelment in runaway accident, 1829—O
Anatomic appearances in living, 1844
Anatomy, teaching of, in universities and public schools, 1047—ab
Anders, J. M., angina pectoris, true and false, 1432—O
Anders, J. M., tetanus neonatorum, 2083—O
Anderson, J. F., hypersusceptibility, 1007—O
Andrews, F. T., hernia of ovary and tube, 1707—O
Ane, 1303
Anemia, experimental, in rabbit, 1855—ab
  insufficiency of tricuspid valve in pernicious, 1415—ab
  in tuberculous, 393—ab
  leukemia and cancer, relations between pernicious, 1963—ab
  parallelism between condition of blood and that of bone marrow in pernicious, 901—ab
  Roentgen rays plus diphtheria antitoxin in pernicious, 293

Anemia, serious from micrococcus tetragenus albus, 1520—ab
severe, without degeneration or atrophy of bone-marrow, 465—ab
so-called school, 1773—ab
splenic, 302—ab
treatment of, in ankylostomiasis, 546—ab
unusual forms of, in childhood, 811—ab
Anesthesia, 1678—ab
acetonuria after, 1408
Bier's technic for spinal, 2112
combination of scopolamin-morphin and spinal, in 150 gynecologic operations, 1862—ab
consideration and treatment of accidents of surgical, with reference to prevalent drug treatment, 151—ab
electrical orientation in spinal, 387—ab
ether-air, or drop method for administration of ether, 1653—O
ethyl-chlorid, 2038—ab
limited area of, epileptiform attacks of hemialgesia, and early muscular atrophy in brain tumor, 1768—ab
permanent paralysis after spinal, 727—ab
scopolamin-morphin, 302—ab
scopolamin-morphin, in labor, 77—ab, 1774—ab
spinal, 813—ab
spinal, in gynecology and obstetrics, 1602—ab, 1603—ab
spinal, preceded by morphin-scopolamin, 243—ab
technic of local, in rectal surgery, 454—ab
to avoid mishaps in spinal, 1235—ab
Anesthesin, 858—P
Anesthetic, choice of, 51.
death of minor from, administered for operation without father's consent. 1653—MI
ethyl-chlorid as general, in minor operations, 502—O
local, in operations on chest and abdomen, 1596—ab
new method of administering through a tracheotomy tube, 1231—ab
sequences, notes on some, 1687—ab
Anesthetics, a plea for scientific administration of, 1361—O
technic of tubation of pharynx to facilitate administration of, and to prevent inhalation of blood in mouth and face operations, 539—ab
Aneurism, arteriovenous, of neck caused by gunshot wounds, 2125—ab
case of, operated on by Matas method, 362—O
early diagnosis of syphilitic of aorta, 2129—ab
fluoroscope in diagnosis of, 687—O
of arch of aorta producing bronchoesophageal fistula, 1684—ab
of subclavian artery, 900—ab
operation, recovery, 1019—O
radical cure of, 990—O
substitution of vein for artery in, 1121
successful treatment of thoracic, threatening to rupture externally, 1331—ab
Aneurismal varix, 957—ab
Aneurisms, gelatin injections for, 464—ab
intrasaccular suture of, 1017—O
Angina pectoris, 1223—T, 1432—O, 1511—ab
spasmodic vasomotor contraction with, 1602—ab
Anguish, no damages for, from mutilation of dead, property rights in bodies and skeletons, 1326—MI
Ankle joint, method of drainage of, 1684—ab
Ankylostomiasis, treatment of anemia in, 546—ab
Annunciator, electrical, for use in metabolism experiments, 228—ab
Anthracosis and primary tuberculosis of lungs and bronchial glands, 1619—ab
intestinal origin of, 1692—ab, 1859—ab
Anthrax, investigation at Bradford,2101
Antialcohol movement among students and practitioners, 1841
Anticholera serum, 971—ab
Anticrotalus and antimoccasin sera, therapeutic experiments with, 1855—ab
Antidiphtheritic serum, prophylatic use of, 1231—ab
Antidysentery serum, great efficacy of, 972—ab
Antimalarial campaign in Federated Malay States, 948
Antinostrum war is right, 879
Antipneumococcic sera, dynamic effects of in pneumonia, 2122—ab
Antipyrin salicylate, 858—P
Antiquackery campaign, 1032
society, national, 1584—ab
Antiseptic, is sulphate of soda a true intestinal? 1961—ab
Antithermoline, 859—P
Antithyreoidin, therapeutic value of, in treatment of exophthalmic goiter and kindred affections, 153—ab
Antithyroid preparations, 859—P
Antithyroidin, 859—P
Antitoxic sera, internal administration of, 1119, 1766—ab
Antitoxin administration in diphtheria by intravenous method, 1515—ab
intestinal absorption of, 1063—ab
rash, unusual case of, 808—ab
results of use of refined, Gibson's globulin preparation in treatment of diphtheria, 1854—ab
Antivaccinationists, mischief wrought by, 1315
Antrum plug, combined, and artificial denture, 1686—ab
should, be opened in mastoid operation? 959—ab
Anus, treatment of congenital absence of, 797
Aortas, results of complete and incomplete occlusion of abdominal and thoracic, by metal bands, 2147—O
Aortic insufficiency, dicrotic pulse with, 1775—ab
Aperients, effects of, on peristalsis of stomach and intestines, 1819—O
Aphasia, Marie's new views of motor, 813—ab
new ideas concerning, 436—E
revision of question of, 1772—ab
sensory, 642—ab
transcortical motor, 1776—ab
Aphonia, attacks of hysterical, in patient subject to typical epileptic seizures, 112—O
Apoplexy, its diagnosis and treatment, 143—ab
of liver in syphilis, 1771—ab
Apparatus, new; (1) an aseptic protective sheet for mastoid surgery, and (2) practical algesimeter, 1652—O
Appendectomy, hemorrhage from stump following, 2009—O
through operative wound for radical cure of right inguinal hernia, 1738—O
Appendicectomy an hour after parturition, 392—ab
trend of times in, 1323—ab
Appendicitis, 812—ab, 1327—ab, 1857—ab
and abscess formation, 462—ab
and gallstones, relation between, 1458—O
and gangrene of appendix considered as separate diseases, 641—ab
and pleurisy, 2178—ab
as cause of tetany, 235—ab
atypical clinical features of, 71—ab, 151—ab
boric acid relative to, 1332—ab
bradycardia in, 1405—ab, 2011—O
chronic, and early diagnosis and treatment of acute appendicitis in children. 75—ab
collective research on, in Europe, 694
discussion of operations for non-existent, 464—ab
healing of suppurative, with calcification, 1856—ab
in infants, 2126—ab
is, on increase? 2014—E
peculiar case of, 897—ab, 2039—ab
perforative, caused by foreign body, 1512—ab
plea for complete operations in pus cases, 1765—ab
points commonly contested in diagnosis and treatment of, 1324—ab
treatment of, 458—ab
unnecessary operations for, 76—ab
value of leucocyte count in cases of, 1138—ab
Appendicostomy, 426—O
and cecostomy for relief of chronic diarrhea, 454—ab, 967—ab
Appendix, appendicitis and gangrene of, considered as separate diseases, 641—ab
case of tying wire perforating, 2036—ab
hernia of, probably infantile, and perforated by pin while in scrotum, 155—ab
Appendix, instrument for invaginating tip of, 37—O
polypi of, 359—O
pyopneumo, due to obstruction by fecal concretion, 435—O
strangulation of, in hernial sac, 1386—ab
Appetite, significance of morbid, with erosions and ulcers of stomach, 157—ab
Aquamiel, 1629—O
Areas, observations on functions of association, (cerebrum) in monkeys, 1464—O
Arch, supports for, 887—ab
Archambault, J. L., tuberculosis of adenomyoma of uterus, 768—O
Argentamin, 859—P
Argonin, 859—P
Argyria, general, 1829—O
Argyrol, 859—P
Aristochin, 938—P
Aristol, 938—P
Arizona July report, 1411
medical news, 514
October report, 1951
Arkansas board, changes in, 1848
July report, 1848
medical news, 42, 210, 279, 514, 598, 783, 1494, 1570, 1836
Army and navy medical service, appointments in 291
sanitary conditions in Japanese, 724—ab
Arrow poisons, recently discovered African, 1206
Arsenic, leukemia treated successfully with, 1120
phosphorus and antimony, test for, 815—ab
use of, in pneumonia, 2036—ab
Art, field for, in medicine, 1243
Arterial hypertension, renal origin of permanent, 724—ab
tension, constitutional low in children, 1734—O
tension, veratrum viride in case of increased, 815—ab
Arteries, experimental study of suture of, with description of new suture, 1329—ab
sclerosis of coronary, 1594—ab
Arteriosclerosis, 1677—ab
and iodin, experimental, 708
clinical manifestations of abdominal, 545—ab
experimental, 1306—E
forms of, 1400—ab
gastrointestinal disturbances due to, 814—ab
in surgery, 243—ab
tobacco and, 1197—E
Arteriovenous anastomosis, 1683—ab
Artery, extraperitoneal ligature of external iliac, for aneurism, 461—ab
ligature of innominate, 644—ab
rupture of coronary, 308—ab
treatment of aneurism of subclavian, 900—ab
Arthritis deformans of hip, treatment of, 467—ab
primary pneumococcal, 239—ab
two cases of gonorrheal, treated by Bier hyperemia, 1597—ab
Asbestos as surgical dressing, 73—ab
Asemia, case of traumatic, 2121—ab
Ascites, 1129—ab
surgical treatment of, secondary to vascular cirhosis of liver, 1960-ab
Asparagus, dangers of, 527
Aspergillosis, primary, of lungs, 815—ab
Asphyxia-neonatorum, its causes and treatment, 1058—ab
use of oxygen in, 1765—ab
Aspirin, 938—P
lactophenin and, 882
Asses' serum in treatment of tuberculosis, 284
Associate in medicine, designation of one's, 2078
Association, German, to promote material interests, 216
International Medical, of Mexico, 1576
of American Medical Colleges, regulations of, 627
Asterognosis, unusual case of trauma of head exhibiting symptoms of, 1049—ab
Asthma, bronchial, 976—ab, 2033—T
Curschmann's spirals in bronchial, 157—ab
hay fever and persistent bronchial, relieved by treatment of antrum of Highmore, 966—ab
pathogenesis of, 815—ab
treatment of, 1985—O
treatment of bronchial, 1234—ab
Asthmatic paroxysm, inhibition of, 2122—ab
Ataxia, treatment of tabetic, by methodical exercises, 1688—ab
Athletes, mortality among, 1213
Atonia gastrica in relation to cholelithiasis, 1228—ab
Atresia, diagnosis of congenital, of small intestines, 643—ab
vaginæ, symptoms and treatment of, 1220—ab
Atrophy, contractures and muscular, 1682—ab
total, of stomach, 583—O
treatment of progressive, of optic nerve due to acquired syphilis, 823—O
Atropin and strychnin combined, specific for seasickness, 217, 445
chronic, poisoning, 639—ab
Aural disease, headaches due to, 1523—O
Australia, pure milk in, 2169
saves lives. 1351
Autoinfection, puerperal, from bacteriologic standpoint, 1516—ab
Autointoxication from stenosis of pylorus, 467—ab
interstitial gingivitis due to, 261—O
Automobile in winter, 1440
number, another, 1319
possibilities of, 1357
requests information about Dayton, 1503
Autonarcosis for wounded and others in severe pain, 708
Autoprognosis, 546—ab
Auxiliary committee, state society, 1026—E
Awakening, 1407
Axis-traction apparatus, new, 1055—ab

ASSOCIATION NEWS.

Acknowledgement from Professor Trendelenburg, 285
American Medical Association, date of next session of, 528
Bryant, acceptance of president-elect, 52
Minutes, correction of official, 52
Minutes, official, of sections, 52
Minutes of Section on Diseases of Children, 285
New members, 130, 450, 796, 1210, 1580, 1939
Senn Medal Essay Contest, 1669

B

Bacillus pestis, action of serum of various mammals on, 391—ab
pyrogenes associated with febrile disease, 1854—ab
typhosus, action of cold or lukewarm tea on, 1599—ab
Bacteria, action of sunlight on, with reference to bacillus of tuberculosis, 2110—ab
in scarlatinal and normal throats, 1171—O
pathogenic, of conjunctiva, 320—O
pathogenic of eyeball, 324—O
Bacterial colonies, cause of green coloration of, in blood agar plates, 1227—ab
diseases, treatment of, by serum therapy, 1505—ab
vaccines, series of cases treated by injection of, 1770—ab
Bacteriologist, county, 1382—E, 1753
Bacteriolysins. injections of specific tuberculous, directly into lungs, 546—ab
Baldwin, W. H., influence of tuberculosis sanatorium on value of surrounding property, 2054—O
Ballenger, E. G., marked albuminuria from prostatic abscess, 508—O
Balneotherapy, experimental research on, 642—ab
in gynecologic affections, 643—ab
Bannan, T., hematoma of new-born, 274—O
Banti's-disease, blood in, before and after splenectomy, 1149—O
(splenomegalia and cirrhosis of liver), 894—ab
Barberio's reaction for spermatic fluid, 1690—ab
Barium chlorid, digitalis and, 71—ab
Bartlett, W., five years' experience with original filigree intended to prevent and cure abdominal hernia, 754—O
Bass, C. C., uncinariasis in Mississippi, 185—O
Baths, hot, in treatment of superficial inflammations, 314—ab
new radioactive, 871
should cold, be given for fever in young children? 459—ab
Beans, poisoning from canned, 157—ab
Bed lift, a, 1093—O
rod, 243—ab
Bedbug, present status of, in transmission of human diseases, 85—O

Beebe, S. P., serum having therapeutic value in treatment of exophthalmic goiter, 661—O
Behring's Tulase, 1111
Benedict, A. L., quantitative estimation of diet in private practice, 1616—O
Benmosche, M., method of cleansing blood pipettes, 1738—O
Bennett, F. C., dangers in use of adrenal preparations, 1655—O
Benzidin dyes, treatment of trypanosomiasis by, 972—ab
Benzosol, 938—O
Bergey, D. H., studies on phagocytosis, 580—O
Beriberi and uncinaria, 1317
studies in. 1685—ab
Berlin, preventive lectures at, 45
Bevan, A. D., diagnosis and treatment of tuberculosis of kidney, 1075—O
Beta-eucain hydrochlorid, 938—P
Beta-naphthol benzoate, 939—P
Betol, 939—P
Bier treatment of infections and septic wounds of extremities, 1512—ab
Bier's congestive hyperemia, study of, from standpoint of endotoxin theory, 726—ab
passive congestion, 1141—ab
technic for spinal anesthesia, 2112
Bierring, W. L., study of blood in Banti's disease before and after splenectomy, 1149—O
Bile beans, 696—P
duct, obstruction of common, 1134—ab, 1438—O
duct, operations on lower part of common, 2040—ab
fistula, plastic anastomosis between biliary passages and gastrointestinal tract to cure, 2043—ab
passages, diseases of, including liver, gallbladder and pancreas, 1225—ab
pathology of, 765—O
Biliary affections, small frequent meals in treatment of certain, 1125—ab
apparatus, group of cases illustrating surgery of, 1515—ab
tract, non-lithogenous obstruction of, 1945—ab
passages, diseases of, 67—ab
tract, indications for surgical intervention in infections of, 402—O
tract, infections of. with reference to latent (or masked) and typhoid infections, 1416—ab
Billings, F., etiology and diagnosis of gastric and duodenal ulcer, 840—O
Binnie, J. F., development of urachus, 109—O
Birth-rate, declining, 790, 1928
effect of plague and malaria on, in India, 1032
Births after vaginal Cesarean section and vaginofixation, 1333—ab
Bishop, L. F., constitutional low arterial tension in children, 1734—O
Bishop, L. F., health inspection as applied to individuals, 651—O
Bismal, 939—P
Blacklist, will, authors of write-ups, 1576
Blackwater fever, case of quinin hemoglobinuria or, 1959—ab
fever, treatment of, 394—ab
Bladder and urethra, surgical treatment of, 1402—ab
cancer in, in bilharzia affections, 315—ab
carcinoma of, 889—ab
inguinal hernia of, 361—O, 1864—ab
perforation in curetting, 466—ab
plastic operation on, 902—ab
preventive, artificial filling of, during gynecologic operations, 78—ab
satisfactory vesical evacuator, 967—ab
simplest, easiest and best method of irrigating, 112—O
successful removal from male, of lost filiform bougie by endovesical manipulations, 1189—O
traumatic ruptures of, 306—ab, 972—ab
treatment of tuberculosis of kidney and, by nephrectomy, 2047—O
tuberculosis of and its cure, 903—ab
tumors of, results of surgical treatment of, 79—ab
vesical sphincter and mechanism of closure of, 811—ab
wound, treatment of, after high incision, 1691—ab
Blake, C. J., otology in its relation to rhinology and laryngology, 1809—O
Blastomycosis, results of culture and inoculation experiments, 1057—ab
generalized, 247—O, 1227—ab
Blepharitis, 1332—ab
Blind, commission to investigate adult, 1852—Ml
Blindness, to prevent, of infants, 1045—ab
Blood and lymphocytosis in cerebrospinal fluid, 1962—ab
and seminal stains, improved methods for recognition of, 1959—ab
and tissues, methylene-blue-eosin stain for, 1236—ab
another test for detection of occult, 1212
changes in dementia præcox, 430
clot, occurrence and significance of extradural, in burned bodies, 276--E
coagulability of, in yellow fever, 1854—ab
corpuscles, action of photodynamic substances on, 1334—ab
corpuscles, new counting chamber for enumeration of, 1737—O
deviation of complement by serum plus antiserum as test for, 1832—E
direct transfusion of, in treatment of hemorrhage, 1482—O
diseases, 1962—ab
diseases, Roentgen ray in, 889—ab
dosage of chloroform in, and tissues, 1638—ab
examination of fresh, in general practice, 394—ab
experimental increase in concentration of, 1864—ab
filaria, new, of man, filaria Philippinensis, 1416—ab
in gastric cancer, 1212
injurious influence of night work on composition of, 708
mercury, etc., in relation to tests for occult, 816—ab
new clinical method of determining, in urine, 853
observations on action of strontium salts on coagulability of, 899—ab
parallelism between the condition of, and that of bone marrow in pernicious anemia, 901—ab
pipettes, method of cleansing, 1738—O, 1935
plates, method for differential staining of, 306—ab
pressure, action of amylnitrite inhalations on, 1399—ab
pressure and pigmentation in Addison's disease, 723—ab
pressure, arterial, in heart disease, 1419—ab
pressure, experiments on venous, and its relations to arterial pressure in man, 1279—O
pressure in heart and kidney disease, 2126—ab
pressure in paresis, 1341—O
pressure, measurement of, 726—ab
pressure, relation to surgery, 143—ab
serum, coagulating power of, in epileptics, 2046—ab
serum, concentration of, after taking much water, 1862—ab
study of, in Banti's disease before and after splenectomy, 1149—O
tests, biologic, 975—ab
value of, examinations in surgical diagnosis, 235—ab
vessels, anastomosis of, by patching method and transplantation of kidney, 1648—O
vessels and organs, transplantation of, 1048—ab
Bloodgood, J. C., importance of early recognition and operative treatment of malignant tumors, 1470—O
Board of Health, liability of, members from smallpox hospital, 805—Ml
of Health, neither county nor members of, liable for quarantine through mistake or for loss of crops, 1224—Ml
Boards of Health, medical organization and appointments on, 2171
Boards, rights of state, to revoke licenses, 1133—Ml
Boas' retirement. 1576
Bodies and skeltons, no damages for anguish from mutilation of dead, property rights in, 1326—Ml
foreign, in digestive tract, 314—ab
Body exhumed as result of unfounded attack on physician, 1390
foreign, in crystalline lens extracted by electric magnet, 308—ab
weight, method of recording changes in, which occur within short intervals of time, 1790—O
Bone cavities, treatment of, 345—O
etiologic factors in, tuberculosis in children, 2120—ab
implantation of muscle to repair defect in long, 816—ab
marrow, diagnosis of tumor in, from blood findings, 1518—ab
marrow, severe anemia without degeneration or atrophy of, 465—ab
pins, treatment of ununited and compound fractures with, 1597—ab
tuberculosis, clinical significance of so-called acute stages of, 1221—ab
Bones, neurotic atrophy of, 1775—ab
Bonney, S. G., chronic non-tubercular affections of lung, 350—O
Books, non-mailable, 233—Ml
received, 80, 244, 316, 468, 548, 644, 728, 904, 976, 1064, 1144, 1336, 1424, 1520, 1604, 1692, 1776, 1864, 2046, 2130
Boric acid in food, 520
is, ointment sterile? 770
relative to appendicitis, 1332—ab
Borochloretone, 939—P
Boston, L. N., benign cystic epithelioma, 1147—O
Boston session, Professor von Rosthorn's impressions of, 1840
Bottini memorial, 869
Bowditch, V. Y., scope and aim of state sanatoria for tuberculosis, 317—O
Bowel, management of, of doubtful vitality in operations for relief of strangulated hernia and intestinal obstruction, 1219—ab
Bow legs, cause of straddling gait in, 801—ab
Boyd, G. M., pregnancy and labor complicated by anterior fixation of uterus, 1528—O
Bradley, E. B., opsonic index in medicine, 1722—O, 1793—O
Bradycardia in appendicitis, 1405—ab, 2011—O
Brain, abscess of, 1684—ab
central office for research on, 1031
diagnosis and localization of tumors of frontal regions of, 1859—ab
differential diagnosis of metastatic and otitic abscesses of, 1691—ab
faradization of motor cortex in human, 1972—O
lesion of, from impact of umbrella tip, 1966—ab
negro, 1660—E
palliative operations in treatment of tumors of, 679—O
rare case of, tumor, 1233—ab
surgery of frontal lobes of, 1864—ab
surgery of, present status of, 926—O
symptoms of affections of frontal lobe, 1143—ab
tumor and amenorrhea, 2162—E
tumor of, 101—O, 639—ab, 1782—E
two cases illustrating value of ophthalmoscope as aid in diagnosis of lesions of, 1329—ab
weighing 2,069 grams (73 ounces), 37—O
Breast, amputation of, 902—ab
new classification of benign tumors of, 1853—ab
new method of incision for removal of, 305—ab
plastic operation after removal of, 395—ab
sarcoma of male, 957—ab
ultimate results in carcinoma of, with x-ray, 888—ab
Breath, cause of bad, 292
Breathing, deep, as therapeutic and preventive measure in diseases of lungs, 967—ab
sternomastoid, 806—ab
Breisacher, L., treatment of emaciation, 558—O
Brem, W. V., malarial hemoglobinuria, 1896—O, 1992—O
Brewer's grains as food for cattle, 1211
Bridge, N., gallstones and gall-bladder diseases from standpoint of physician, 905—O
Bridge, N., some truths about sleep, 652—O
Bridges, W. O., medical fees in country practice, 1065—O
British medical association, central emergency fund of, 1112
medical association, section on state medicine, 885—ab
medical journal, educational number, 1058—ab
pharmaceutical conference, 520
Bromctone, 939—P
Bromipin, 1020—P
33 1-3 per cent., 1020—P
Bromism, 1821—O
Bromo-seltzer, death from, 2158—O
impotence caused by excessive consumption of, 508—O
Bronchial glands, primary tuberculosis and anthracosis of lungs and, 1691—ab
Bronchi, foreign bodies in, 1553—O, 1586—O
Bronchitis, acute and chronic, 1508—T
case of, remarks on cough and perforated zinc inhaler, 2119—ab
superheated air in treatment of emphysema and, 1690—ab
Brower, D. R., treatment of acute insanity in a general hospital, 83—O
Brown, E. V. L., so-called leucosarcoma of iris, 418—O
Brown, L., case of aneurism operated on by Matas method, 362—O
Brown, O. H., polycythemia, 1265—O
Brutality for humanitarian purposes, 1563
Bulkley, L. D., cure of psoriasis with study of 500 cases of disease, observed in private practice, 1630—O
Bull, C. S., treatment of progressive atrophy of optic nerve due to acquired syphilis, 823—O
Bullard, W. N., affections of spinal cord in epileptics, 1717—O
Bullock, W. G., Jr., intrasaccular suture of aneurisms, 1017—O
Bullous disease, evidence of existence of an autotoxic factor in production of. 1514—ab
Burkard, A. F., diphtheria antitoxin in treatment of exophthalmic goiter, 1486—O
Burke, M. O., case of total atrophy of stomach, 583—O
Burns, 535—T, 1679—T
and skin grafting, treatment of, 236—ab
continuous water baths for, 797, 1042
treatment of, 236—ab, 529
Burr, A. H., guarantee of safety in marriage contract, 1887—O
Business before health, 2017—E
problem of general practitioner, 1417—ab
Butler, W. J., etiology of cerebral palsies in children, 2139—O
Butter coloring, dermatitis from, 2012—O
Butyl-chloral hydrate, 1020—P

BOOK NOTICES.

Antonini, G., Principi Fondamentali Della Antropologia, 526
Bailey, E. H. S., A Text-book of Sanitary and Applied Chemistry, 1409
Bain, W., Physiology and Therapeutics of the Harrogate Waters, Baths and Climate. 1122
Bainbridge, W. S., A Compend of Operative Gynecology, 880
Becker, T. C., Medical Jurisprudence, Forensic Medicine and Toxicology, 1040
Bell, J., Notes on Surgery for Nurses, 1502
Bigg, H., An Essay on the General Principles of the Treatment of Spinal Curvatures, 377
Binnie, J. F., Manual on Operative Surgery, 378
Blake, C. J., Operative Otology. 63
Bovée, J. W., Practice of Gynecology, 225
Box, C. R., Clinical Applied Anatomy or Anatomy of Medicine and Surgery, 224
Brown, S. H., Eczema, 794
Brubaker, A. P., Text-book of Human Physiology, 794
Bryant, J. D., Operative Surgery, 292
Buckmaster, G. A., Morphology of Normal and Pathologic Blood, 1215
Bulkley, L. D., Influence of the Menstrual Function on Certain Diseases of the Skin, 1936
Cabot, F., Technique du Traitement des Tumeurs Blanches, 1408
Cabot, R. C., Case Teaching in Medicine, 62
Caldwell, R. H., Military Hygiene, 794
Carbohydrate Metabolism, 224
Case Teaching in Medicine, 62
Cause and Prevention of Dental Caries, 377
Clinical Applied Anatomy or Anatomy of Medicine and Surgery, 224
Clinical Bacteriology and Hematology for Practitioners, 1123
Clinical Therapeutics. 2105
Collected Studies on Immunity, 224
Compend of Operative Gynecology, 880
Conelli, A., Prontuaro Di Posologia, 526
Consumption, 223
Cotton, A. C., Medical Diseases of Infancy and Childhood, 139
Croftan, A. C., Clinical Therapeutics, 2105
Diet and Dietetics, 1501

Diet in Health and Disease, 2104
Diseases of the Nose and its Accessory Sinuses, 139
DuBois, P., Influence of the Mind on the Body, 1408
Eccles, W. McA., Clinical Applied Anatomy, or Anatomy of Medicine and Surgery, 224
Eczema, 794
Edgecombe, W., Physiology and Therapeutics of the Harrogate Waters, Baths and Climate, 1122
Ehrlich, P., Collected Studies on Immunity, 224
Elements of General Chemistry, 1214
Emery, W. D., Clinical Bacteriology and Hematology for Practitioners, 1123
Essay on the General Principles of the treatment of Spinal Curvatures, 377
Extra Pharmacopeia of Martindale and Westcott, 1501
Eye and Nervous System, 525
Examination of the Function of the Intestines, 526
First Report of Clinic for Treatment of Communicable Pulmonary Diseases, 1936
Fischer, L., Health-Care of the Baby, 1501
Friedenwald, J., Diet in Health and Disease, 2104
Fowler, R. S., Operating Room and the Patient, 224
Gautier, A., Diet and Dietetics, 1501
Greenish, H. G., Medical and Pharmaceutical Latin, 526
Handbook of Climatic Treatment, 525
Hare, H. A., Progressive Medicine, 2039
Head, G. P., Practical Medicine Series, 525
Health-Care of the Baby, 1501
Heath's Manual of Surgery and Bandaging, 378
Henry, J. N., Nurse's Hand-Book of Medicine, 880
Hewlett, R. T., Pathology, General and Sepsis
Huber, J. B., Consumption, 223
How to Suppress a Malpractice Suit, 1408
Huggard, W. R., Hand-Books of Climatic Treatment, 525
Human Sexuality, 1122
Hyatt, T. P., Teeth and Their Care, 292
Hygiene of Pregnancy, 1123
Influence of the Menstrual Function on Certain Diseases of the Skin, .1936
Influence of the Mind on the Body, 1408
In the Year 1800, 1501
Introduction to General Inorganic Chemistry, 526
Jennings, W. B., Hygiene of Pregnancy, 1123
Kelley, S. W., In the Year 1800, 1501
Kelly, H. A., Walter Reed and Yellow Fever, 224
Kilmer, T. W., Physical Examination of Infants and Young Children, 223
Lack, H. L., Diseases of the Nose and Its Accesory Sinuses, 139
Lane, W. A., Operative Treatment of Fractures, 377
Leathes, J. B., Problems in Animal Metabolism, 1039
Leedham-Green, C., Treatment of Gonorrhea in the Male, 62
Le Vieillissment Artificial Des Vins et Spiritueux, 1408
Long, J. H., Elements of General Chemistry, 1214
Malvezin, F., Le Vieillissement Artificiel des Vins et Spiritueux, 1408
Manual of Medical Treatment or Clinical Therapeutics, 1936
Manual on Operative Surgery, 378
Martindale, W. H., Extra Pharmacopeia of Martindale and Westcott, 1501
Medical and Pharmaceutical Latin, 526
Medical Directory of New York, New Jersey and Connecticut, 1669
Medical Diseases of Infancy and Childhood, 139
Medical Jurisprudence, Forensic Medicine and Toxicology, 1040
Meeker, H. D., Compend of Operative Gynecology, 880
Military Hygiene, 794
Minor Maladies and Their Treatment, 2104
Morat, J. P., Physiology of the Nervous System, 1122
Morphology of Normal and Pathologic Blood, 1215
Notes on Surgery for Nurses, 1502
Nurse's Hand-Book of Medicine, 880
Nursing in Acute Infectious Fevers, 1669
Operating Room and the Patient, 224
Operative Otology, 63
Operative Surgery, 292
Operative Treatment of Fractures, 377
Ophthalmoscope and How to Use It, 794
Parke, J. R., Human Sexuality, 1122
Pathology, General and Special, 223
Paul, G. P., Nursing in Acute Infectious Fevers, 1669
Pavy, F. W., Carbohydrate Metabolism, 224
Personal Hygiene, 378
Physical Examination of Infants and Young Children, 223
Physician's Visiting List for 1907, 2080
Physiology and Therapeutics of the Harrogate Waters, Baths and Climate, 1122
Physiology of the Nervous System, 1122
Pneumonite Crupale, 1214
Pollard, B., Heath's Manual of Surgery and Bandaging, 378
Porter, A. L., Preservatives in Food and Food Examination, 1409
Posey, W. C., The Eye and Nervous System, 525
Practical Medicine Series, 525
Practice of Gynecology, 225
Practitioner's Visiting List for 1907, 2105
Preservatives in Food and Food Examination, 1409
Principi Fondamentali Della Antropologia Criminale, 526
Problems in Animal Metabolism, 1039
Progressive Medicine, 2030
Prontuario Di Posologia, 526
Reese, J. J., Text-book of Medical Jurisprudence and Toxicology, 1317
Riley, C. M., Toxicology, 1936
Ruhräh, J., Diet in Health and Disease, 2104
Schmidt, A., Examination of the Function of the Intestines, 526
Senn, N., Tahiti, The Island Paradise, 1317
Serafini, A., Pneumonite Crupale, 1214
Schofield, A. T., Unconscious Therapeutics, 880
Shastid, T. H., How to Suppress a Malpractice Suit, 1408
Smith, A., Introduction to General Inorganic Chemistry, 526
Stelwagon, H. W., Treatise on Diseases of Skin, 223
Stevens, A. A., Text-Book on Modern Materia Medica and Therapeutics, 378
Tahiti, The Island Paradise, 1317
Technique du Traitement des Tumeurs Blanches, 1408
Teeth and Their Care, 292
Text-Book of Human Physiology, 794
Text-book of Medical Jurisprudence and Toxicology, 1317
Text-Book of Sanitary and Applied
Text-Book of Modern Materia Medica Chemistry, 1409
and Therapeutics, 378
Thorington, J., Ophthalmoscope and How to Use It, 794
Thresh, J. C., Preservatives in Food and Food Examination, 1409
Toxicology, 1936
Treatment of Gonorrhea in the Male, 62
Treatise on Diseases of the Skin, 223
Unconscious Therapeutics, 880
Visiting List, Physicians, 1907, 2030
Visiting List, Practitioners, 1907, Lea Bros., 2105
Visiting List, Walsh, 2105
Walsh's Physicians Combined Call-Book and Tablet. 2105
Wallace, J. S., Cause and Prevention of Dental Caries, 377
Walter Reed and Yellow Fever, 224
Westcott, W. W., Extra Pharmacopeia of Martindale and Westcott, 1501
Whitthaus, R. A., Medical Jurisprudence, Forensic Medicine and Toxicology, 1040
Williams, Minor Maladies and their Treatment, 2104
Woodhull, A. A., Personal Hygiene, 378
Yeo, I. B., Manual of Medical Treatment on Clinical Therapeutics, 1936

C

Cabot, R. C., physician's responsibility for nostrum evil, 982—O
Cactus products, 1624—O
Caffey, H. B., a dicephalous monster, 1738—O
Caisson disease, 688—E
and medical certificates, 1492—E
Calcareous degeneration, studies on, 969—ab
Calcium ichthyol, 1020—P
iodid, value of, in treatment of ulcers, 542—ab
treatment of serum disease, 511—E
Calculi, diagnosis of renal, with x-ray, 888—ab
phosphatic, following suprapubic prostatectomy, 1136—ab
renal, 2111—ab
Calculi, surgical treatment of renal, 2111—ab
urinary, in Egypt, 395—ab
Calculus, large, of ureter removed by suprapubic cystotomy, 542—ab
Calcutta, phthisis in, 869
California, announcement of board of medical examiners, 139
August report, 1848
medical news, 279, 368, 439, 514, 598, 783, 944, 1105, 1494, 1570, 1836, 2097, 2164
relief fund, 121, 283, 372, 517, 947, 1311
state society journal out of ashes, 588—E
Calomelol, 1020—P
ointment, 1020—P
Calthos, 1624—O
Cammidge reaction, 310—ab
Campbell, W. C., further contribution to study of stools of starch-fed infants, 763—O
Canada medical news, 121, 215, 283, 444, 603, 694, 789, 869, 1031, 1110, 1205, 1311, 1388, 1575, 1665, 1840, 2021, 2100
Cancer, 390—ab, 1962—ab
and immunity, experimental, 206—E
and tuberculosis, relations between, 1424—ab
and venereal disease, prophylaxis of, 789
and water, 468—ab
can it be cured? 364—E, 379
curability of, in general and of cancer of tongue in particular, 2041-ab
dread of, 468—ab
errors in treatment of cutaneous, 1514—ab
etiology of, 2120—ab
first international conference on, 1312
in bladder in bilharzia affections, 315—ab
in mice, 468—ab
in Stuttgart, 468—ab
laryngotomy in radical treatment of laryngeal, 1602—ab
lesions predisposing to, 15—O
medical treatment of, 1539—O
metastasis in central nervous system, 1519—ab
methylthionin hydrochlorid in inoperable, 1545—O
nature of, and cancer cachexia, 2125—ab
of cervix uteri, operative treatment of, 1869—O
of head and neck, excision of, 1780-ab
of lips and tongue, a plea for more radical operations in, 986—O
of pancreas, 1213
of rectum, 453—ab, 901—ab, 2126—ab
of rectum, axioms in treatment of, 1327—ab
of rectum, operative treatment of, 453—ab
of stomach, 316—ab
of stomach, diagnosis of, 244—ab, 1331—ab
of stomach, operative treatment of, 2041—ab
of stomach, pylorogastrectomy for, 901—ab
of stomach, symptomatology of, 902—ab
of stomach, trauma and, 395—ab
of stomach, treatment of, 899—ab
osteoplastic, in prostate, four cases of, 315—ab
of uterus, 1867—O
pathogenesis and therapeutics of, 1414—ab
pancreatic extract in, of larynx, 1955—ab
powers of peritoneum in, 1142—ab
prevention of, 1742—E
prevention of, regarded as practical question ripe for solution, 1599—ab
radical operation in, of uterus, 1872—O
research, 1400—ab
research, brief résumé of the world's recent, 894—ab
research fund, imperial, 444
research in France, 1928
in Hungary, 2169
research, international conference for, 45
retention of sphincter in removal of rectal, cancer, 1603—ab
Roentgenization in treatment of, 1541—O
spirochetes in, and in syphilis, 1601—ab
spontaneous cure of, 152—ab
symptoms of, of uterus, 1865—O
to detect incipient, 468—ab
treatment of, 1676—ab
treatment of, with glycolytic and pancreatic ferments, 216
trypsin treatment of, 450, 644—ab, 2119—ab
vaginal extirpation of, 240—ab
uterine, results of abdominal extirpation of, 77—ab
Cancers, treatment of, by anesthetization, 1964—ab
Canker sores, treatment of, 1124
Cannaday, J. E., present status of conservatism in surgical treatment of tubes and ovaries, 1454—O
Cap and gown in Molière, 1557—O
Capsulotomy, cataract extension with preliminary, 960—ab
Carbohydrates in amniotic fluid in diabetes, 1774—ab
Carbolic-acid, treatment of external affections, 2177—ab
arthrodesis, treatment of paralytic dislocation of hip with, 1141—ab
Carbon compounds, naming of, 687, 1550, 1741, 1800, 1881, 1919, 2093
dioxid gas retention as frequent factor of disease, 305—ab
Carcinoma and lupus, case of, 455—ab
and sarcoma appearing in same patient, 64—ab
cervicis uteri, careful study of parametrium in twenty-seven cases of, and its clinical significance, 1513—ab
experimental production of atypical epithelial proliferation in relation to, 1566—E
in early life, 152—ab
influence exerted on virulence of carcinoma in mice by subjecting tumor materials to incubation previous to inoculation, 969—ab
of bladder, 889—ab
of breast, ultimate results in, treated with x-ray, 888—ab
of cervix, lymph glands in, 973—ab
of rectum, new operation for, 453-ab
of stomach, 538—ab, 715—T
of upper end of esophagus, with perforation into trachea, 896—ab
of uterus at Breslau, 315—ab
total laryngectomy for, 809—ab
veutriculi, with rare and unexpected findings, 309—ab
Carcinomata, bilateral metastatic ovarian, 1601—ab
Cardiac compensation, failure in, 2130—ab
diseases, graphic methods in study of, 1415—ab
muscle, relation of, and valves to arterial tension, 1323—ab
peril, another, 2017—E
Cardiovascular diseases, treatment of chronic, 1677—ab
Carotid gland, tumors of, 469—O, 566—O, 1329—ab
Carrel, A., anastomosis of blood vessels by patching method and transplantation of kidney, 1648—O
Carrier, A. E., what shall we teach public regarding venereal diseases? 1250—O
Carson, case of "Dr.," 690—E
Carstens, J. H., education as a factor in prevention of criminal abortion and illegitimacy, 1889—O
Carstens, J. H., stem pessary for amenorrhea and dysmenorrhea, 2133—O
Carter, J. C., instillation of pure carbolic acid into eye, 37—O
Cascara evacuant, 1020—P
tonic laxative globules, 1021—P, 1195
Caseous matter, observations on effect of sterile, in treatment of tuberculous disease, 970—ab
Cases, two interesting surgical, 392-ab
Cassady, D., acetanilid poisoning by headache tablets, 2012—O
Cat, pathologic, 209—E
Cataract, black, 1957—ab
extraction with preliminary capsulotomy, 960—ab
simple extraction of senile, by Teale's method, 2041—ab
study of, 3436 cases of senile, 1765 ab
what is safest operation for, 1130-ab
Catarrh, autumnal, 1223—T
Catgut, methods of preparing, 703
sterile, ready to use, 642—ab
that can be boiled, 727—ab
Caustic potash, treatment of epithelioma by, 720—ab
Cauterization, steam, of uterus, 2128—ab
Cautery, an improved tip for, 205—O
Cecostomy and appendicostomy, for relief of chronic diarrhea, 967—ab
Cecum, ileocecal, valve and appendix, tuberculosis of, 391—ab
Celluloid plates to close defects in skull, 545—ab
Cerebellum, functions of, and symptoms of its disease, 1328—ab
Cerebral affections, diagnosis and prognosis of acute, 816—ab
decompression, 679—O, 744—O, 849—O, 923—O
development, impaired, due to other than cranial causes, 1049—ab

Cerebral localization, 709—ab, 1419—ab
nervous system, staining of and relation of epilepsy to central nervous system, 799—ab
Cerebrospinal fever, case of, 1853—ab
fever, epidemic 1139—ab
fluid, escape of, through ear with intact drum, 1620
Cerebrospinal-meningitis, epidemic of, 47, 310—ab, 1683—ab, 1690—ab
epidemic, in Germany, 283, 1335—ab
experimental, and its serum treatment, 560—O
inflammation of extradural tissue of spinal cord in epidemic, 901—ab
in Glasgow, 283
prevention of, epidemic, 1198—E
serum treatment of, 242—ab
Cerebrum, observations on functions of association areas, in monkeys, 1464—O
tumor of, giving rise to Jacksonian epilepsy and, at later stage, coma, 1599—ab
Certificate requirements, 893—Ml
validity of law authorizing revocation of, for advertising relative to venereal diseases, 1413—Ml
Cervical ribs, diagnosis of, 1862—ab
Cervix, excision of V-shaped piece of posterior uterine wall for anteflexion of, with aid of intrauterine holder, 1056—ab
lymph glands in carcinoma of, 973—ab
manual and instrumental dilatation of pregnant and parturient, 1534--O
new operation for anteflexion of, 235—ab
tuberculosis of, 393—ab
uteri, lacerations of, 2121—ab
Cesarean-section, deep incisions and vaginal, should be banished from obstetric practice, 1234—ab
in country practice, 1603—ab
indications for, other than pelvic deformities or tumors, 1858—ab
performed by a cow, 1192—O
remarks on, 1593—ab
Schauta's experience with, 973—ab
treatment of placenta prævia by, 2122—ab
treatment of placenta prævia centralis by, 1229—ab
vaginal, in treatment of puerperal convulsions, 1596—ab
Cesarean-sections, four, and labor complicated by fibroma in which hysterectomy was performed on sixth day of puerperium, 895—ab
review of fourteen, successfully performed, 809—ab
Chanca, a forgotten worthy, Dr. Diego Alvarez, of Seville, Spain, 1013—O
Chancre, certain bodies present in, in condyloma, and in blood during secondary syphilis, 239—ab
Chapin, C. V., fetich of disinfection, 574—O
Chase, R. F., an improved stomach tube, 273—O
Chassaignac, C., etiology of social evil, 2075—O
Chemical discoveries in Switzerland and Germany, 1406
Chemistry, application of physical, to pharmacology, 1122
Chest, diaphragm in Roentgenography of, 889—ab
Cheyne-Stokes respiration, 1383—E
Chilblains, treatment of, 467—ab
Child labor, restricts, in factories, 2034—Ml
prosecution for cruelty to, in neglecting medical advice, 1314
training of, mentally and morally defective, 383—ab
Childbirth after pubiotomy, 1142—ab
Children, acute intestinal diseases of, 1399—ab
acute non-suppurative encephalitis in, 1184—O
capacity of, to commit rape and other crimes, 1326—Ml
duty of family physician in regard to proper mental and physical development of, under his care, 301—ab
empyema in, 1221—ab
heredity and environment as factors in life and diseases of, 760—O
mental health of school, 39—E
pleuritic exudates in, 1296—O
relief of Australian dependent, 1111
rheumatism in, 1399—ab
Chill, pathology of, 1213
China and opium traffic, 1493—E
medical work in, 2169
prospects of Western medicine in, 1060—ab
Chinaphenin, 1021—P
Chlorbutanol, 1021—P
Chloretone, 1021—P
inhalant, 1021—P
Chlorids, simple test for, in urine, 904—ab
Chloroform anesthesia, 1120
dosage of, in blood and tissues, 1688—ab
hallucination of, 1110
poisoning, acute atrophy of liver from, 1191—O
poisoning delayed, 2040—ab
urobilinuria with, 547—ab
Chlorosis, treatment of, 725—ab, 891—T
Cholecystitis, phlegmonous, 1332—ab
typhoid, 311—ab
Cholecystostomy, improved technic, 1135—ab
Cholelithiasis, 966—ab
atonia gastrica in relation to, 1228—ab
etiology of, 2036—ab
treated by olive oil, 1402—ab
Cholemia in melancholia, 292
Cholera in Manila, 788, 1204
in Philippines, 45, 121, 518, 788, 1031, 1204
quinin treatment of, 1986—O
sodium bicarbonate in, 1140—ab
treatment of, and various bacterial affections with Fuller's earth, 2113
Cholin, influence of injections of, on embryo, 1691—ab
Chorea, 715—T
analysis of 808 cases of, with special reference to cardiovascular manifestations, 1352—O
considered as cerebral rheumatism, 238—ab
etiology of, 1567—E
hereditary, 1853—ab
of pregnancy, 976—ab
pathology of, 1599—ab
Christensen, C., two cases of generalized blastomycosis, 247—O
Christian, H. A., certain phases of recent work in pathology and physiology, 549—O
Church, W. F., milk in infectious diseases, 1614—O
Circulation, collateral, following ligation of femoral artery, 720—ab
physiopathology of lymph and blood, 1863—ab
recent contributions to physiology of, 1343—O
viewed from periphery, 706—ab
Citarin, 1021—P
Cities, population of, in educational number, 1116
Claiborne, J. H., conjugate lateral deviation, 490—O
Claiborne, J. H., types of congenital symbol and amblyopia, 1813—O
Clamp pincers for suturing, 466—ab
Clark, J. G., cancer of uterus, 1867-O
Clark, J. G., symptoms of cancer of uterus, 1865—O
Claudication, intermittent ,due to angiosclerosis of extremities, 308—ab
spinal intermittent, 1961—ab
Clavicle, dislocation of outer end of, 19—O
Clavicles, improved method of putting up fractured, 1058—ab
Cleveland, how fake doctors of, extort money and deceive patients, 1579
Climate in treatment of tuberculosis, 2016—E
maxims for selection of, in pulmonary, laryngeal and bone tuberculosis, 459—ab
winter, of Tucson, Ariz, 1135—ab
Clippings, physician's library and filing of, from journals, 609, 882
Clothing, manufactures from cast-off, prohibited, 1852—Ml
Clubfoot, treatment of congenital, 1960—ab
Clubs, union of medical representative, in Austria, 1033
Coal-tar industry, fiftieth anniversary of, 518
Cocain, hypodermic solutions, alcoholic strength of, 1042
in Tucker asthma cure, 377, 793
striking idiosyncrasy to use of, in eye, 1486—O
Cocks, E. M., case of pemphigus limited to mucous membranes, 1736—O
Cod-liver-oil, a food or medicine—which? 1207—P
Hagee's cordial of, 1208—P
how to prove or disprove the presence of, 1207—P
preparations, fraud and deception connected with so-called, 1207—P
Waterbury's metabolized, 1207—P
Coe, J. W., treatment of purpuric conditions and hemophilia, 1090—O
Coeducation, advantages or disadvantages of, after age of 12 years, 383—ab
at Glasgow university, 2021
Coffee and cocoa, action of, on secretion of gastric juice, 1143—ab
Colds, Benjamin Franklin's views as to nature of, 381
Coley's serum for inoperable sarcoma, 1041
Colic, artificial renal, as valuable means of diagnosis, 1056—ab
gall-bladder, 2125—ab
Colica mucosa, clinical features of, 1859—ab
Colitis, pathogenesis of experimental, and relation of colitis in animals and man, 969—ab
surgical aspects of, 811—ab, 1220—ab
surgical treatment of chronic, 1960—ab
College, reputability of, 536—Ml
Colleges, increase in medical, 588—E
new, 597
which have raised standards during past year, 597
Collodion and acetanilid dressing, 892—T
Colon, health of, 1497
Colon, neoplasms of, 825—O
Color conversion, new phenomenon of, 175—O, 524
Colorado, college report for 1905, 1672
July report, 713
medical news, 279, 368, 598, 784, 914, 1105, 1384, 1494, 2098, 2164
new educational requirements of, 452
new requirement, 588—E
October report, 1951
Colpohysterotomy, anterior, 976—ab
Columbian Life Insurance company of Boston, 1394
Comb, use of steel, for dissection in axilla, 460—ab
Commercialism and drug adulteration, 1026—O
Competition, may contract against future professional, 1053—Ml
Complexion powder, 1629—O
Conception, prevention of, criminal abortion; feticide, 17
Condition that precedes disease, 464—ab
Conduct, higher plane of, 1407
Congestion, passive, in treatment of affections in diabetics, 1335—ab
passive, in treatment of gonorrheal joint affections, 548—ab
Congress, fourteenth international, of hygiene and demography, 519
fourth international, of insurance examiners, 1313
French, of alienists and neurologists, 604
German Naturforscher, 1313
German ophthalmologic, 1576
health, and consumption, 284
international, for child study and care of youth, 284
Italian, of internal medicine, 603, 1843
of French speaking physicians of America, 694
of otology, eighth international, 694
of professional medicine in Belgium, 520
ophthalmologic, at Oxford, 605
second international, for insane, 1389
second international, on school hygiene, 1313
summary of legislative affairs at close of, 130
tenth annual medical, of Roumania, 1576
Connecticut eclectic committee adopts standard, 2116
July report and questions, 713
medical news, 42, 279, 598, 1027, 1494, 1570, 1836, 1924, 2164
Connell, F. G., capillarity in intestinal sutures, 405—O
Consanguinity, marital, and defective children, 689—E
Conservatism, present status of, in surgical treatment of tubes and ovaries, 1454—O
Constipation, air dilatation in treatment of chronic, 454—ab, 639—ab
dietary treatment of chronic, 2176—ab
chronic, 1682—ab
galvanic treatment of habitual, 138
habitual, viewed from standpoint of modern evolution of dietetics, is physiologic phenomenon, 894—ab
management of, in infancy, 237—ab
medical treatment of chronic, 2176—ab
treatment of, 644—ab, 892—T
Consultation, charge for, by telephone, 1206
Consumption (see tuberculosis)
Contagious disease, failure of hospital or individual to warn nurse of patient having, 1592—Ml
disease, hospital not deemed nuisance, 1134—Ml
Contract insurance work—experience of Warren, Pa., 2106
practice, 1923—E
problem and its solution, 1841
Contractures and muscular atrophy, 1682—ab
Convergence, and its effects, 670—O
Convulsions in children and their relation to epilepsy, 1231—ab
several thousand, in four weeks' old infant, 1138—ab
vaginal Cesarean section in treatment of puerperal, 1596—ab
Cook, J. C., bacteriologic and blood findings in 36 cases of bowel infection of infants, 2141—O
Cordier, A. H., nephrolithiasis, 908—O
Cornea, treatment of opacity of, by physical agents, 812—ab
treatment of ulcer of, 1130—ab
Corns, treatment of, 1909
Corporations, liability of, for medical services to employés, 1319
Corpuscles, stain index of red, 396—ab
Cortex in tuberculosis, 393—ab
Costal arch, osteoplastic resection of, to reach vault of diaphragm, 1069—O
Cotton, A. C., sodium citrate in infant feeding, 1080—O
Cough, unrecognized causes of, 172
Council on Medical Education, comment on report of, 606
Council on Pharmacy and Chemistry, an endorsement of, 696—P
official report on vin mariana by, with comments, 1751—P
Counter irritants in pneumonia, 1124
prescribing, lay self-medication, and, 527
Country practice, 584—E
Coxa valga, 887—ab
Coxitis, end results of conservative treatment of tuberculous, 545—ab
Craig, G. G., fatal poisoning by external application of bichlorid of mercury, 1484—O
Cramp, writer's, cured by elastic ligature, 1174
Cranial injuries, 1049—ab
surgery, present status of, 1049
Creosotal, 1096—P
Cretinism, case of, with spontaneous improvement, 205—O
Crile, G., a method of treatment of hemorrhage, 189—O
Crile, G., direct transfusion of blood in treatment of hemorrhage, 1482—O
Crile, G., excision of cancer of head and neck, 1780—O
Crime, eye-strain and, 960—ab
Crippled, institution for, 2022
Crockett, E. A., tuberculosis of middle ear and mastoid, 1293—O
Croftan, A. C., dietetics of obesity, 820—O
Cumston, C. G., what effective measures are there for prevention of spread of syphilis and increase of prostitution, 1372—O
Cupidene, 1624—O
Curschmann's spiralis in bronchial asthma, 157—ab
Cushing, H. E., acute atrophy of liver from chloroform poisoning, 1191—O
Cushing, H., cases of spontaneous intracranial hemorrhage associated with trigeminal nevi, 178—O
Cutter, J. B., acute carbolic acid poisoning; recovery, 435—O
Cyanosis, microbic, 463—ab
Cyclopedia, biographical, of medical men, 1935
Cyst, echinococcus, of liver, 388—ab
removal of intraligamentary, and bilateral oöphorectomy during early pregnancy without interrupting gestation, 718—ab
Cystinuria and alkaptonuria, 2176—ab
Cystitis, 804—T
caseous, 2129—ab
urethral bacteria as factor in etiology of, in women, 1513—ab
Cystocele and uterine prolapse, treatment of cases of extensive, 152—ab
Cystoscope and ureteral catheter, diagnostic value of, 1418—ab
Cystoscopic instruments, evolution of modern, and methods, 1513—ab
Cystoscopy and ureteral catheterization, 1402—ab
Cystotomy, large calculus of ureter removed by suprapubic, 542—ab

Cystotomy, suprapubic, as preliminary to, and as route for performance of considerable number of prostratectomies, 1137—ab
Cysts in mesentery, 1144—ab
large, of suprarenal capsule, 2042—ab
of lower jaw, 2046—ab
of ovary, situated above superior pelvic strait, complicated by pregnancy, 1229—ab
of urachus, 1683—ab
retroperitoneal, 2079—O
Cytology of effusions and exudates, 242—ab

D

Dacryocystitis, treatment of acute, 959—ab
Daggett, W. G., typhoid fever in a patient aged 70 years, 1191—O
Damage suits terminating in favor of surgeons, 1312
Damages, elements affecting expectancy of life, and, for injuries, 1763—Ml
for death of dentist, 70—Ml
recoverable, for wrongful death of physician, 966—Ml, 1763—Ml
Dame, F. R., peculiar congenital malformation, 363—O
Darling, S. T., accessory nasal sinuses and pneumococcus infections, 1561—O
Darnall, W. E., multiple neuromata of skin, 1810—O
Davenport, F. H., chronic headache, associated with pelvic disease, 1525—O
Davis, D. J., Negri bodies in hydrophobia, 87—O
Davis, N. S., effects of pericarditis on heart, 1429—O
Dead line in sports, 1493—E
Deaderick, W. H., hymenolepis nana and hymenolepis diminuta, 2087—O
Deafness, chronic catarrhal, 1806—O
due to defective functioning of thyroid gland, 2044—ab
electrolysis in treatment of, due to stricture of the Eustachian tubes, 895—ab
influence of pregnancy on, 608
Death, cause of, 866—E
damages for, of dentist, 70—Ml
damages recoverable for wrongful, of physician, 966—Ml
from bromo-seltzer, 2158—O
from puerperal septicemia one arising from pregnancy, 536—Ml
from rattlesnake bite, 2012—O
from suppurating tonsil, 305—ab
in diphtheria, 814—ab
in pregnancy, 536—Ml
massage of heart in apparent, from anesthetics, 957—ab
may testify as to cause of, although not present at death, 457—Ml
of minor from anesthetic administered for operation without father's consent, 1053—Ml
proximate cause of, septicemia after injury, 536—Ml
rate in city and country, 40—E
rate of Norway, why it is low, 138
under chloroform in dentist's chair, 1751
Deaths in India due to wild animals, 1751
medicolegal features of, from burning, 1520—ab
Deaver, J. B., indications for surgical intervention in infections of biliary tract, 402—O
Decidual tissue, diagnostic significance of, 459—ab
Deformities, basal principles of oral, nasal and facial, 145—ab
tendon transplantation and grafting for paralytic, 387—ab
Degenerates, sterilization of undesirable, 799—ab
Degeneration, sympathetic, 1221—ab
Delaware June report, 381
medical news, 599, 1924
Delay, must avoid preventable in getting to hospital, 1764—Ml
Delirium and death during convalescence from ileus, 903—ab
Delivery, artificial, 1861—ab
Dementia, motor degenerative sequence in, 1338—O
paralytica, etiology of, 1419—ab
paralytica, examination of spinal fluid in, 150—ab
præcox, 800—ab
præcox, blood changes in, 430
spontaneous rupture of heart in case of senile, 538—ab
Dench, E. B., treatment of intracranial complications of middle-ear suppuration, 1289—O
Dengue, clinical notes on recent epidemic of, 538—ab
in Syria, 543—ab
Denny, F. P., value of small quantities of human milk in treatment of infantile atrophy and infections of infants, 1904—O
Dentalone, 1096—P
Dentition, reflexes of, 25—O
Dermatitis, causative factor in production of, of ground itch (uncinariasis), 1693—O
from butter coloring, 2012—O
gangrenosa, infectious, 1767—ab
Dermatoses, nutrition in various, 1771—ab
Dermacentor occidentalis, further observations on Rocky Mountain spotted fever and, 1067—O
Dermatol, 1096—P
Dermatology, Roentgen ray in, 888—ab
Descensus ovariorum, 1856—ab
Desmoid reaction, 975—ab
Deviation, conjugate lateral, 490—O
Dewey, E. L., case of tetanus neonatorum with recovery, 583—O
Dewey, E. L., successful delivery of twins in placenta prævia, 1301—O
De Ybarra, A. M. F., a forgotten worthy, Dr. Diego Alvarez Chanca of Seville, Spain, 1013—O
Diabetes, carbohydrates in amniotic fluid in, 1774—ab
experimental, 1198—E
insipidus, treatment of, with strychnin, 546—ab, 1233—ab
Langerhans' islands and, 1334—ab
mellitus, dietetic treatment of, 2143—O
mellitus, rational treatment of, 1054—ab
Diabetics, management of, 1403—ab, 1808
passive congestion in treatment of affections in, 1335—ab
operations on, 2128—ab
Diabetin, 1096—P
Diachylon, use of, as abortifacient, 1032
Diagnosis at sight, 1922—E
necessity for careful and accurate, 1678—ab
possibilities and limitations of laboratory, 1596—ab
Diagnostician, technic of, 1401—ab
Diapers, electric signal for wet, 985
Diaphragm, diagnosis and surgical treatment of injuries to, 1324—ab
hernia of, 1144—ab
innervation of, 1773—ab
osteoplastic resection of costal arch to reach vault of, 1069—O
paralyses of, 1775—ab
Diarrhea, 302—T
appendicostomy and cecostomy for relief of chronic, 454—ab, 967—ab
infantile, 1412—T, 540—ab
unrecognized etiologic factor in summer, 1055—ab
Dictionaries, medical, as evidence, 1953—Ml
Diehl, C. L., national formulary, 1826—O
Diet, effect of dry, in nephritis, 1232—ab
in albuminuria, 1621—O
quantitative estimation of, in private practice, 1616—O
values, 1314
Dietetics, 1732
diagnostic and therapeutic value, 1403—ab
of obesity, 820—O
Digestion, importance of hydrochloric acid for infantile, 527
influence of rest, exercise and sleep on gastric, 896—ab
Digestive tract, frequency of tuberculous infection by way of, 972—ab
primary pneumococcus infection of, 160—ab
primary tuberculosis of, 813—ab
Digitalis and barium chlorid, 71—ab
and heart block, 302—ab
giving, 509
pharmacology of, 2059—O
Dilator, new hydrodynamic bag for cervical, 1856—ab
Diller, T., attacks of hysterical aphonia occurring in patient subject to typical epileptic seizures, 112—O
Dionin, 1096—P
Diphtheria antitoxin and Roentgen rays, in pernicious anemia, 293
antitoxin, duration of immunization after injection of, 1860—ab
antitoxin in exophthalmic goiter, 1486—O
antitoxin treatment of, 159—ab, 870
contagiousness of, 1940
death in, 814—ab
Diphtheria, injection of antitoxin in, by intravenous method, 1515—ab
latent, public health problem, 1220—ab
length of quarantine in, 291
mortality in Vienna hospitals, 522
patients, methods employed in Providence, R. I., for releasing, 2031—ab
patients, value of two consecutive cultures as method of releasing, 2031—ab
precautions against spread of, in schools, 604
present treatment of, 1594—ab
toxins in blood in, 1604—ab
Diplobacillus of Morax-Axenfeld, 255—O
Dipsomania, 1135—ab
Disc, palliative surgical operations in choked, 1381—E
Disease, affliction with loathsome, can not be condoned, 386—Ml
dissemination by insects, 2164—E
prevention in children of, in adult, 160—ab
Diseases and hospitals of Africa, 1098—O
and hospitals of east coast of Africa, 141—O, 225—O, 531—O, 611—O
and hospitals of interior of Southh Africa, 960—O, 1050—O
and hospitals of Portuguese East Africa, 709—O
comparative frequency of, here and abroad, 276—E
induced, 2128—ab
influence of domestication on origin of, 642—ab
nervous and mental in general practice, 145—ab
relation of systematic, to conditions of oral cavity, 324—O
resolutions on communicable, 46
Disinfection, 940—E
course in practical, 603
fetich of, 574—O
formaldehyd, 523, 952, 1512—ab
hot-water-alcohol, in obstetrics and for protection of abdominal wounds, 1424—ab
of physician's hands, 2120—ab
of ships, 373
reasons and methods, 2030—ab
Disorders, some obscure cases of urinary, 239—ab
Dispensary, free, as factor in tuberculosis crusade, 1404—ab
Dispensing versus prescribing, 1786—O
Dissection, blunt, in plastic gynecologic operations, 1850—ab
District-of-Columbia July report, 1673
medical news, 43, 280, 368, 439, 599, 784, 1027, 1105, 1570, 1745
Ditman, N. E., opsonic index in medicine, 1722—O, 1793—O
Diuretics, action of, after removal of kidneys, 975—ab
Diuretin, 1096—P
Dock, G., proprietary medicines and their abuses, 978—O
Doctor, an American, of the old school, 1306—E
and automobile, 1544
and public, 1404—ab
country, 287
of neurology and ophthalmology, 1953—Ml
ruined, 1312
Doctors and medical emergencies, 870
Donoghue, F. D., retroperitoneal cysts, 2079—O
Dooley, D. H., method of treatment of hemorrhage, 189—O
Dorrance, G. M., treatment of fracture of inferior maxilla with description of splint, 854—O
Dorrance, G. M., treatment of osteomyelitis with iodoform bone plugging, 2090—O
Dowie, passing of, 1104—E
Downey, J. H., treatment of fractures of femur, 581—O
Downey, J. H., new combined operating and office table, 2160—O
Drainage, 1401—ab, 1768—ab
drains and, 968—ab
peritoneal, 1405—ab
principles and mechanics of abdominal, 956—ab
puerperal fever treated by uterovaginal, 639—ab
Drains and drainage, 968—ab
Dramatist, great medical, 115—E
Drinking, decrease of, among physicians, 690—E
Dropsy, chylous, 2044—ab
toxic, 1690—ab
Drug adulteration, commercialism and, 1026—E
eruptions, histopathology and theory of, 1956—ab
Drugs, action of, in vascular hypertension, 2124—ab
administration of, to concurrently retard and stimulate systematic oxidation, 459—ab
institute for testing new, 1110
physiologic standardization of, 1658—E
prohibits adulterating or misbranding, and food, 2034—Ml
relations between physical behavior and action of, 975—ab
unification of formulas for heroic, 603
Druggists and physicians, 127—P
Duct, wound of thoracic, ligature, recovery, 154—ab
Dudley, E. C., utilization of broad ligaments in complete descent of uterus, hysteromyomectomy and removal of uterine appendages, 1605—O
Dührssen, A., guarantee of safety in marriage contract, 1891—O
Dunbar's remedies, hay-fever treatment by, (Pollantin), 376, 447, 523, 605, 794
Dunn, C. H., reflexes of dentition, 25—O
Duodenal ulcer, surgical treatment of gastric and, and its results, 912—O
Duodenum, acute, perforation of, 1858—ab
further observation on anatomy of, 306—ab
hour-glass, 341—O
surgical treatment of duodenal ulcer, 338—O, 1960—O
Duotal, 1096—P
Duotonol, 1096—P
Dust and disease, 444
danger of, as cause of tuberculosis, 1849—ab
nuisance, fighting, 48
passage of mineral, through walls of digestive tract, 1139—ab
problem, 1230—ab
Duty as to providing nurses for quarantined persons, 232—Ml
Dwellings, reform in construction of, 1689—ab
Dwight, T., clinical significance of variations of wrist and ankle, 252—O
Dysentery, asylum, 293, 1577, 1835—E
endemic sporadic, (with Shiga's bacillus) in England, 75—ab
prevalence of, in asylums, 1577
treatment of catarrhal and gangrenous, 723—ab
treatment of chronic, 1063—ab
Dysmenorrhea, 722—ab, 1762—T
Dyspepsia, intestinal, 964—T
reflex, in abdominal and pelvic disease, and surgical treatment, 1324—ab
Dystocia from cystic kidney of fetus, 2121—ab
Dystrophies of tabes dorsalis, 209—E

DEATHS.

Abbitt, Julian H., 1671
Adams, William Lysander, 290
A'Heron, Terrance M., 1942
Ainsworth, Fred L. 2173
Aldrich, Robert H., 1845
Alexander, John F., 50
Alexander, Wilbur, 447
Allen, C. P., 1381
Allen, Francis Withers, 2029
Allen, George Edgar, 1754
Allen, Otis, 1846
Allen, Porter W., 1319
Allen, Robert Grover, 50
Allison, Robert H., 289
Anders, John R., 1040
Anderson, Edward H., 1583
Anderson, Isaac Campbell, 2107
Andrade, Eduardo, 1123
Andrew, Russell G., Jr., 1503
Andrew, William P., 221
Angney, William Muir, 1845
Anthony, Marcus P., 954
Appleby, David Jeffries, 221
Armstrong, George S., 1318
Arndt, Otho H., 50
Arnold, Glover Crane, 2029
Ashcraft, John Fairley, 2107
Atkins, Lyman, 1319
Atkinson, Isaac Edmondson, 1845
Axtell, William Harvey, 1396
Babcock, H. E., 1124
Bachman, Solomon S., 1041
Bacon, Charles G., 794
Bacon, E. R., 2107
Bacon, H. Clint, 795
Bacon, Margaret, 135
Baethig, Henry, 290
Baillargeon, Philip L., 2107
Bailey, Alvan S., 1943
Baker, Harlan C., 1671

Baker, Reuben H., 1319
Baker, Richard B., 1754
Baldinger, Arthur F., 220
Baldwin, Neilson Abeel, 881
Ball, Addison W., 1583
Ball, William A., 1754
Ballard, Laura A. Stow, 2174
Banks, Robert Coulter, 1503
Barlow, Arthur, 881
Barnes, Crittenden E., 1318
Barrett, William Marshall, 1845
Bartles, William H., 289
Bartlett, Lorenzo B., 609
Bassett, John N., 795
Bates, Thomas H., 134
Baylor, John G., 2173
Beach, Charles E. C., 1123
Beach, Ferdinand, 1846
Beard, Cornelius C., 702
Beck, William H. 135
Beebe, Justus, 881
Beecher, Elmer, 954
Beecher, John A., 1319
Beekman, John C., 1209
Beeman, Edwin E., 1846
Beers, Frank, 1671
Behane, Jeremiah, 1943
Bell, Edward O., 289
Bell, Marguerite, 289
Bemis, Charles Vose, 1754
Bemiss, Ezra B., 221
Benham, Harvey R., 1041
Bennett, Sirvilla A., 1209
Bentley, Benjamin Charles, 528
Berlin, Cicero, 1396
Best, John Ellison, 448
Bigelow, Blake, 1041
Bigony, Franklin W., 221
Billings, Charles Maurice, 954
Birch, Edward L., 703
Birch, George W., 220
Birney, David Bell, 1670
Bittinger, William M., 1942
Blanchard, Asa L., 1943
Blanks, John Harrison, 1502
Bliss, William Anson, 795
Blossom, Almert H., 2108
Bogdanow, A., 796
Bolman, Christian F., 2030
Bolster, David P., 2173
Bonham, Edgar F., 795
Boone, J. Irvin, 220
Bourne, Henry Marshall, 1670
Bournonville, Augustus C., 2107
Bowker, Charles, 2173
Bowman, Andrew Washington, 289
Bradley, Charles C., 2106
Bradley, David H., 795
Brandegee, William Partridge, 447
Brantley, James H., 1943
Breedlove, James W., 795
Brendle, George F., 795
Brennan, Thomas, 528
Brevard, Robert Joseph, 609
Brightwell, Jasper H., 2030
Brooke, Edgar A., 954
Brooks, Eugene, 2107
Brothers, Guy M., 1041
Brouardel, Paul C. H., 529
Brown, Alphonso Bickford, 1502
Brown, Ashford, 50
Brown, Daniel Henry, 1041
Brown, Marshall Augustus, 1942
Brown, Paul R., 133
Brown, Sherman T., 1040
Bruner, Pinckney McDonald, 1041
Brunner, William J., 1754
Bryant, John Henry, 50
Buchanan, Samuel A., 880
Buchart, Edward Louis, 1209
Bucher, Frederick C., 1670
Buck, Llewellyn Adelbert, 2172
Buckingham, John Milton, 1123
Buckner, James H., 1845
Bullard, John William, 219
Bullard, William Duff, 50
Burckhalter, Thomas DeL., 50
Burdick, Ormond E., 1846
Burnell, Sereno, 703
Burns, George W., 795
Burrows, Sylvester S., 1209
Butler, Cecil A., 954
Cabell, Arthur Grattan, 50
Cable, George A., 1670
Calabrese, Bernadino, 702
Cameron, Craig, 1846
Campbell, J. Y., 1124
Campbell, William S., 703
Carey, Zenas, 1396
Carlisle, Richard Coleman, 795
Carothers, William H., 1503
Carr, Dennis Henry, 1896
Casavaw, William Francis, 1942
Cass, Nathaniel, 795
Cassel, George, 135
Cassidy, Wiliam Alfred, 1503
Cavitt, Bonner Huxley, 1395
Cawley, Ernest Guy, 379
Chamberlain, George J., 134
Chamberlin, William E., 609
Champion, C. F., 954
Champlin, Martha, 2173
Channing, William S., 378
Chapman, Edward J., 881
Chapman, George, 448
Chase, Maurice James, 953
Chatterton, Harry Stuart, 290
Cheever, William Rockwell, 795
Chisholm, James W., 379
Church, R. Connelly, 1319
Claiborne, James William, 1845
Claitor, David M., 1503
Clark, Benjamin, F., 378
Clark, Samuel A., 1943
Clark, Wallace Cleveland, 448
Clark, Wallace E., 135
Clark, William H., 954
Clarke, Abram Irvin, 880
Clarke, Daniel Boone, 220
Clarke, James, 448
Clarke, William Boone, 220
Clarkson, Julius R. L., 134
Class, William J., 528
Clay, C. L., 1209
Clayton, A. H., 134
Clement, Walter Duesler, 2173
Cline, Jacob W., 134
Clinger, Isaac W., 1583
Clinton, DeWitt C., 1942
Cloud, Robert B., 1754
Cochrane, Charles Albert, 609
Cody, Walter Tate, 795
Cohn, Hermann, 1124
Cole, Palmer C., 220
Colegrove, Clinton, 1583
Coleman, John Robert, 2173
Coleman, Robert S., 220
Collard, George W. A., 1124
Coller, Ira P., 2108
Collier, Wesley F., 703
Collins, William T., 1670
Colthar, William E., 2030
Colvin, Charles M., 135
Combs, Albert H., 289
Combs, James Brown, 609
Comegys, Edward Tiffin, 1845
Comstock, Aaron Lyman, 1502
Cone, Thomas E., 1671
Conlan, John E., 220
Conover, Henry Frank, 1209
Cook, John J., 2029
Cooper, Butler, 1210
Cooper, David M., 135
Cooper, Hunter P., 702
Cooper, Joseph W., 1582
Cooper, Luke H., 448
Cooper, R. L., 609
Corniek, William F., 379
Cornwell, Levinus W., 1670
Couper, Joseph E., 795
Courtney, Franklin W., 1396
Cowan, Francis Percival, 1943
Cox, Francis Volney, 1396
Cox, Leonard T., 134
Cox, William J., 1124
Craig, C. O., 448
Craig, Robert Christian, 1754
Craik, Robert, 134
Crang, Frederick, 1318
Crenshaw, Octavius A., 1582
Crisp, David H., 1041
Crittenden, Thomas Rockwell, 1319
Crouse, Henry J., 290
Crowder, Edith Warner Cadwallader, 880
Crowley, Timothy Stanton, 1754
Crumpacker, Daniel Stoner, 1671
Cunningham, William, 2106
Curry, Reuben C., 703
Curtis, Thomas M., 379
Czermak, W., 1124
Dail, Nicholas Gibbs, 1754
Dailey, John Wesley, 1942
Dailey, Samuel George, 221
Davies, George W., 1124
Davis, E. Howe, 1754
Davis, Robert T., 1670
Davis, Samuel Zimmerman, 134
Davis, William H., 609
Dean, W. L., 1583
Dearborn, Alvah D., 703
Delk, David L., 609
DeLoss, Sarah, 1943
Deming, Henry Halbert, 1040
de Monsabert, A. M. Gustave, 2107
Dever, Isaiah, 135
DeVere, Joseph, 448
Dewberry, J. H., 1583
Dewey, Mary D., 1671
Dexter, Livingston L., 2107
Dickerman, Silas B., 1319
Dickinson, Rollin J., 2030
Disbro, Ira W., 1754
Dix, P. Alvin, 1503
Dodson, Thomas C., 1123
Doggett, Cyrus, 221
Dole, William A., 1041
Donelson, Emanuel M., 796
Dooley, Aldine Joseph, 2173
Doran, William C., 221
Douglas, George, 1395
Dozier, Alexander Thomasson, 881
Drake, Joseph H., 954
Draper, George W., 135
Drew, C. M., 448
Drew, Stanton Blake, 529
Dryer, John W., 1318
Due, Malvern N., 1502
Dufphey, William R., 2173
Dunbar, Frank Harvey, 953
Dunn, Harvey, 1124
Dunnington. Reuben C., 448
Eaton, Thomas Jefferson, 289
Eavenson, Sarah T. R., 378
Eberhardt, James W., 2030
Eberle, Harry A., 220
Ebert, Charles M., 221
Edgar, Silas Fulton, 221
Edwards, James L., 289
Elder, Guilford Dudley, 1318
Eldridge, Edwin W., 1396
Elliott, Charles Grimsley, 1318
Elliott, Joseph John, 448
Ellis, Daniel S., 609
Emerson, Florence Greenman, 1942
Emerson, Mark, 1209
Emrick, George Monroe, 2108
Enders, Levi J., 1041
Epes, Algernon Sydney, 1502
Ermentraut, John P., 1846
Erwin, David J., 1396
Estes, Melville B., 609
Estey, Harry E., 1754
Euans, Benjamin L., 2173
Everest, E. F., 1846
Ewen, George Washington, 703
Ewing, Frank, 220
Ewing, Gilbert A., 795
Faber, Charles F., 50
Fahrney, Louis Weltv, 703
Fanning, Frederick W., 1582
Farmer, John W., 1670
Farr, Jefferson C., 795
Fayette, William H., 1671
Fegers, William, 703
Fellows, George W., 954
Fellows, Joseph T., 1942
Felsberg, Paul F., 1502
Ferguson, Everard D., 953
Ferguson, Franklin B., 1209
Ferguson, John T., 135
Ferguson, J. W., 609
Fernald, Samuel, 954
Ferrel, James H., 135
Fincke, Bernhardt, 1503
Fine, Andrew, 1123
Finlayson, James, 1754
Finn, Charles G. Jenkins, 1753
Finn, James A., 881
Firestone, Joseph H., 2173
Fisher, Benjamin H., 1846
Fisk, Melancthon Hogeboom, 2029
Fitts, Allen W., 2107
Fitzgerald, Charlotte, 1319
Fitzgerald, Reynaldo Juan, 702
Fix, Ira N., 1942
Flagg, N. Jonathan, 135
Flanagan, Peter J., 135
Flanders, Jerome W., 609
Fletcher, Sophronie, 378
Fliesburg, Oscar Alfred, 1124
Flint, Charles B., 954
Foote, Edward Bliss, 1319
Ford, James B., 135
Foreman, Edwin K., 2173
Foster, Timothy S., 1503
Foster, William B., 1123
Frahm, Marie E., 1318
Frank, Finley S., 2030
Frank, Samuel H., 447
Fraser, Archibald, 1671
Frazee, Morris, 2107
Frazee, Louis J., 2173
Frazer, Donald A., 1846
Fregeau, Isidore, 881
French, Harriet S., 881
French, Samuel M., 290
Frost, Hyatt A., 1942
Fry, Joseph Talbot, 1942
Fuqua, Wiliam Walton, 1502
Gaffner, Theophilus, 289
Gaines, George W., 290
Gamble, Samuel Wayne, 703
Garand, Narcissus, 954
Garcelon, Alonzo, 2028
Gardner, Alfred Wild, 2107
Gareau, Roch Raphael, 2173
Garey, Dumont, 220
Garnett, Thomas N., 289
Garrett, Harry W., 220
Gauntt, Charles Stockton, 608
Gause, Charles A., 2029
Gay, Daniel E., 135
Gay, Isaac, 135
Gay, Neal B., 379
Geddings, Edward C., 134
Gelwix, James M., 220
Gemmill, Jacob Mytinger, 220
Gerhard, Jerome Z., 1942
Gerron, Thomas J., 529
Giddings, Josiah, 447
Gillard, James, 528
Gilmore, Arnold Plumer, 1318
Gilmore, John N., 1754
Glidden, Willis C., 379
Goddard, James H., 135
Goessling, Frederick, 2173
Goode, W. A., 609
Goodell, Rollin A., 135
Goodsell, Evander J., 1040
Goodwin, William H., 135
Gordon, Charles Chester, 220
Gordon, John Lee, 1395
Gordon, Joseph P., 796
Gordon, Samuel H., 1754
Goudy, John W. S., 1671
Gould, Charles, 2029
Gould, Henry Austin, 881
Graetzel, Henry F., 881
Graham, Samuel A., 290
Grandfield, Michael, 1846
Grange, James, 703
Gray, John T., 448
Grayson, Thomas Jefferson, 448
Green, Lapsley Yancey, 50
Greene, Clement Clay, 881
Greene, Jerome B., 795
Greene, J. G., 1319
Greene, Lorenzo M., 1845
Greenfield, Melvin F., 703
Greenley, Thomas W., 1846
Greenway, Minerva M., 1318
Gregg, John, 795
Griffee, Howard M., 1671
Grimes, J. Fletcher, 220
Griswold, Walcott Noble, 1318
Grove, Frank P., 702
Grubbs, J. S., 1503
Guisinger, John S., 1754
Gustin, George W., 1671
Gustine, Steven D., 2107
Haischer, Victor, 1319
Haley, J. Garland, 135
Hall, Charles H., 953
Hall, Walter L., 1503
Hamilton, Benjamin Franklin, 528
Hamilton, George D., 703
Hamilton, J. S., 448
Hamilton, William C., 954
Hance, Joseph C., 1846
Hand, George F., 1210
Hanley, Richard Rush, 881
Harbin, W. R., 50
Hare, William G., 50
Harmon, James C., 528
Harne, Franklin H., 1754
Harris, Benjamin, 2107
Harris, Howell D., 1942
Harris, Nathaniel Otis, 1942
Hartshorn, Edward, 448
Harvey, John Andrew, 220
Hatcher, M. G., 1670
Hatfield, George L., 2173
Hathaway, David Gilbert, 1845
Hays, Benjamin E., 881
Hayslett, Andrew Jackson, 2107
Hazard, Albert S., 609
Hazen, David Henry. 1753
Hazzard, Rinaldo P., 1670
Head, Charles Rollin, 50
Heard, John Theodore, 953
Hedrick, John P., 1671
Heiskell, Sidney O., 50
Helper, Harry L., 881
Helsby, Thomas H., 1123
Hempel, Max, 1395
Henrotin, Fernand, 2028
Henry John Hazard, 135
Herdman, William James, 2106
Herman, Charles F., 447
Herrod, W. L., 703
Herzen, A., 954
Hester, Benjamin Otis, 221
Hewit, Irving Washington, 1671
Hicks, Robert W., 134
Higgins, John Jay, 881
Higgins, Richard T., 1754
Hill, John James, 1846
Hill, William C., 953
Hinds, Byron W., 1670
Hipp, William Harrison, 2173
Hipsh, Jacob F., 1396
Hitzrot, Henry W., 134
Hoag, Guy Dudley, 1318
Hobson, William, 1754
Hoeber, Emil Wilhelm, 1318
Hoehn, Edward, 134
Hoffman, Charles I., 2107
Hogan, Cornelius, 2108
Hogves, A., 1124
Holladay, Adam Uriah, 1395
Holliday, Albert H., 219
Holmes, John C., 795
Holrovd, William H., 221
Honsberger, John, 135
Hopkins, Howard H., 135
Horne, Willis Sims, 220
Horton, David B., 220
Hosken, Joseph B., 221
Houtz, William G., 528
Howard, James Wiliam, 1583
Howard, John F., 135
Howard, Mary A., 2030
Howe, Chauncey B., 1124
Howell, DeWitt C., 2107
Howell, Joseph L., 221
Howland, Charles E., 881
Hubble, George W., 2029
Hudders, Alva L., 1502
Hudson, Frederick R., 1582
Huggins, Jacob, 2108
Hughes, Emmett, 135

Hughes, Isaac Lemon, 528
Hughey, William Fletcher, 448
Hull, George S., 2107
Hume, Charles E., 2173
Hummell, Charles Carroll, 134
Hurst, D. A., 1942
Hurt, Charles David, 702
Hutchason, Rudolph H., 290
Hutchins, Alexander, 447
Hutchinson, M. M. T., 1124
Hynds, Sam Houston, 795
Ingalls, Edmond Church, 447
Ingersoll, Lovias T., 2173
Isaminger, Charles W., 529
Jackson, Noah F., 448
Jackson, Walter Clarke, 1123
Jacobs, Philander, 2108
Jacoby, William, 609
Jaeger, Christopher Anton, 795
Jakeway, Charles Edwin, 609
Jameson, Samuel Hunter, 134
Janney, Daniel, 1503
Jansen, Jesse W., 795
Jenkins, John F., 1395
Jenkins, Olin L., 1754
Jerman, Thomas Palmer, 1670
Jobe, Abraham, 528
Johnson, Albert C., 528
Johnson, Ira W., 881
Johnson, Newell M., 448
Johnson, Oscar B., 1319
Johnston, James L,. 1582
Jones, Andrew M., 1319
Jones, E. A., 221
Jones, George W. (Iowa) 290
Jones, George W. (Ohio) 528
Jones, Henry Cotton, 2107
Jones, Herbert S., 1502
Jones, J. A. R., 448
Jones, J. R., 1396
Jordan, J. F., 220
Josias, A., 135
Judkins, William, 134
Kane, Henry H., 135
Katzenmayer, Guido, 1396
Keate, Walter, 134
Keathly, Adam S., 289
Keating, A. C., 1845
Keever, James H., 2174
Kehnroth, Carl Henry, 220
Keith, Arthur P., 2030
Kellogg, Theodore De Mont, 220
Kelly, James F., 954
Kendall, Henry Booth, 220
Kenyon, Orsman S., 1670
Kerr, William D., 1123
Kesla, William H., 609
Keyes, William Richard, 220
King, Albert L., 448
King, J. Stebbins, 2029
Kingsbury, Onslow M., 379
Kirkpatrick, John, 378
Klingberg, Andrew, 881
Knapp, Franklin L., 1943
Knight, Arthur, 1041
Kornitzer, Joseph, 134
Kovats, Edmund, 134
Laird, Frank F., 703
Landers, J. Robert, 2030
Lane, Samuel M., 1754
Lang, Edward R., 1754
Langdon, Walter Ross, 795
Lapponi, L., 2174
Laros, John A., 1845
Latane, Thomas, 1754
Lauber, Martin Ludwig, 528
Laurent, Henry A., 1396
Laws, Dudley S., 1503
Laycock, Reuben T., 1502
Lee, Charles H. F., 1942
Lee, Wiliam A., 2029
Leech, James A., 881
Leeper, Thomas W., 1846
Leet, Frederick H., 219
Le Fevre, E. B., 1503
Lefevre, John M., 1041
Leigh, John Randolph, 2173
Lewis, Thomas, 1942
Lewis, Thomas Y., 1319
Liddle, Herbert James, 135
Lightfoot, Geo. F., 1040
Ligon, Wilson M., 2108
Lilly, William Henry, 1040
Limes, Jesse L., 2174
Lind, Ernest T., 290
Link, Harvey, 953
Links, Donald Archibald, 795
Lippincott, Samuel Wesley, 1123
Litchfield, Harry, 448
Lively, William M., 134
Livermore, R. Fay, 448
Livingston, Robert R., 703
Locke, Dana A., 1754
Lohr, Walter C., 795
Long, Charles W., 448
Love, John H., 378
Luck, William J., 2108
Lusson, Pedro M., 2029
Lyngar, Andrew C., 1583
McAffee, William. 290
McAnally, Charles B., 378
McAndrew, Helen, 1503
McCabe, Dennis J., 1041
McCaw, James Brown, 608
McCleary, Thomas F., 2173
McConnell, John W., 2107
McCorkle, J. L., 1583
McCracken, Thomas, 220
McCreary, Thomas F., 220
McCullough, William H., 795
McCurdy, Robert L., 795
McDaniel, A. R., 2030
McDonald, Alexander E., 2029
McDonald, Charles, 448
McDonough, Edward J., 2030
McDow, Edgar S., 1846
McElhinney, Joseph Miller, 1943
McGee, Lubie, 221
McGregor, Jessie Maclarin, 447
McIntosh, George, 2030
McIntosh, W. A., 290
McIntyre, Hugh Henry, 702
McKinley, William R., 1583
McKinney, George F., 1943
McKnight, Charles Scott, 448
McLaughlin, Daniel Charles, 2107
McLean, Joseph M., 1846
McMullin, Edward R., 1503
McNaught, John S., 1041
McQueeney, Francis J., 1209
McQuesten, Eugene F., 378
McSherley, James L., 1846
Mackey, Charles David, 528
Mackie, George, 880
Mackin, Thomas H., 1753
MacLean, Alexander K., 881
MacMahon, Walter G., 135
MacNider, James, 703
Macpherson, George H., 448
Madigan, Michael Joseph, 1319
Madill, Thomas F., 379
Magel, Frank, 1846
Mahr, John Montague, 220
Mansfield, John R., 1846
Marean, William Henry, 2029
Marion, Otis Humphrey, 2029
Martin, Ambrose H., 1123
Martin, Annie W., 1671
Martine, Godfrey F., 702
Marvin, Ruth E. Swift, 1846
Maslowsky, Felix, 609
Mason, George W., 529
Masterman, Benjamin H., 1582
Matthews, George W., 1753
Matthews, John Barnett, 1582
Matthews, Joseph Baxter, 1753
Maurer, John, 1846
Maxwell, Joseph Wylie, 1395
Meengs, Peter C., 1396
Meisburger, William, 2106
Memelsdorf, Alexander, 447
Mendenhall, Scott, 1583
Merklen, P., 1583
Meyer, Alfred Edward, 2107
Millen, Samuel Rutherford, 220
Miller, Andrew J., 448
Miller, Ernest J., 1846
Miller, George S., 1754
Miller, James C., 1124
Miller, J. F., 448
Miller, John M., 1942
Mills, Hiram R., 2029
Milton, Harvey Oliver, 1753
Minshall, Samuel W., 2173
Mitchell, John T., 448
Mitchell, Lewis B., 1754
Moffitt, James, 1209
Montmarquet, Joseph D., 2172
Moore, Edmund, 1503
Moore, George B., 1846
Moore, Henry H., 1943
Moore, Spurzheim, J., 1943
Morache, G. A. 1124
Morehouse, Frank H., 1671
Morris, Austin Flint, 703
Morris, Julius A., 1846
Morrison, John, 448
Morrison, Robert L., 1395
Morse, Edward L., 2173
Morton, J. Thompson, 881
Mull, Joseph C., 1503
Mullaney, Thomas J., 1582
Mullins, William Scott, 1319
Munn, James F., 1041
Murphy, Jane Hammond, 953
Musgrove, Charles W., 881
Musser, Henry Elmer, 1209
Naret, Edward Linden, 1670
Nash, Joseph D., 2173
Necly, Shaw F., 378
Neil, William, 703
Newburgh, Jonas S., 1943
Nichols, Edgar H., 1670
Nicoll, Leonard Francis, 1943
Nidelet, Sylvester L., 1670
Niles, Augustus, 378
Northrup, Lorenzo, 290
Oates, William M., 1041
Oatis, Charles E., Jr., 1396
O'Brien, Thomas Francis, 135
Obst, H., 50
O'Daniel, W. A., 703
Odiorne, Walter B., 289
Odlin, Charles Cushing, 2173
O'Donnell, Charles C., 448
O'Dwyer, Joseph P., 1846
Oleson, Charles Wilmot, 2029
Ong, Albert R., 1123
Orr, Adam, 1124
Osborne, James Ambrose, 881
Otis, William K., 1123
Overholt, Daniel W., 1671
Ovyssanikoff, P., 135
Owen, E. T., 1943
Owen, Harvey Donnel, 1395
Owens, Frederick J., 702
Packwood, William Jasper, 1124
Page, Melvin E., 953
Parris, David C., 448
Patterson, Armstead Jackson, 702
Paul, Comegys, 448
Paul, Mike M., 2030
Payne, Edwin B., 1041
Payton, Thomas B., 2173
Peabody, James H., 953
Peck, George, 448
Peltier, Pierre Desnoyers, 378
Pelton, Jonathan G., 703
Pennington, Lot S., 609
Perkins, Edward D., 795
Perkins, Edward W., 953
Perry Albert F., 290
Perry Carl Dio, 220
Peterson, Vernie A., 2173
Pfeffer, Charles W., 1124
Phelan, Thomas F. M., 1123
Philips, William Copeland, 2029
Pierce, John Onins, 609
Pinckney, Samuel G. Courtney, 1041
Pingree, Merrill Gaylord, 1396
Piper, Albert F., 379
Pirnat, John, 1319
Plummer, Joseph W. V. R., 702
Poehler, Frederick C., 448
Pond, Frederick L., 1943
Popow, L. V., 2174
Potter John Donaldson, 379
Power, Harrison H., 1503
Pratt, George Wollage, 1395
Pratt, N. A., 1670
Preston, Robert J., 702
Prichard, John E., 2175
Pursell, William D., 2173
Quick, John M., 1395
Quinn, Joseph Francis, 2107
Ramser, Arthur, 1846
Ramsey, Samuel, 609
Rauch, Henry, 529
Ray, Peter W., 1942
Ream, David, 881
Reed, George M., 1041
Reed, Laurin Williams, 1670
Reeve, James Theodore, 1753
Reilly, John W., 220
Rice, John A., 703
Rice, Ruel Dwight, 1583
Richard, Frank, 220
Richardson, Francis M., 1503
Richardson, Josiah S., 221
Ridout, Arthur C., 379
Rittenhouse, George S., 1123
Rivas, Isaac, 221
Robbins, Alfred H., 1315
Roberts, Frederick A., 703
Robinson, W. J., 1319
Rodman, Harry Heth, 1753
Roncati, F., 1755
Ronga, Guiseppe, 134
Rooney, John J., 2108
Rood, Vernon D., 1582
Root, Henry Ashley, 1582
Rosenthal, Isaac M., 1670
Rossi, G., 2174
Routh, Walter W., 1209
Rowe, Alma Lautzenhauser, 609
Rowe, Jeremiah Wesley, 134
Ruger, Henry H., 1040
Ruggles, Charles Augustus, 953
Russell, Charles P., 1502
Russell, Julia Wallace, 220
Rust, Charles Manning, 2107
Rutherford, James Napoleon, 703
Rye. Charles, 448
Sample, Samuel R., 1319
Sanford, Richard, 1124
Savage, James William, 1396
Schatelowitz, Robert, 290
Schaudinn, Fritz, 135
Scheiber, George S., 1671
Schmeltzer, Robert Paul, 1319
Schmidt, John H., 448
Schmitz, John Peter, 220
Schmole, William, 2030
Schneck, Jacob, 2173
Schuessler, Frank W., 1503
Scobell, Eva M. L., 1124
Scott, J. T. H., 795
Scott, Samuel Burks, 448
Scott, Thomas J., 1319
Seaman, George D., 2174
Seastrunk, T. R., 795
Selman, Frank W., 1041
Selover, W. Updyke, 1053
Sessions, Llewellyn, 1754
Sexton, Millard P., 880
Seymour, James D., 954
Sganga, Pietro, 1396
Shackelford, John F., 219
Shackford, William H., 1319
Shacklett, Henry R., 529
Shafer. William, 1754
Shamblin, John, 2174
Sharp, James D., 1396
Sheldon, Henry Lawrence, 2107
Sheldon, Jay W., 953
Shemwell, James B., 1583
Shepard, John L., 703
Sherman, Austin B., 2173
Shoulters, George H., 2172
Showman, Charles M., 528
Shrader, John C., 1582
Simpson, John B., 1210
Simrock, Joseph W., 1583
Sinclair, Duncan, 1503
Sitton, Felix Grundy, 2107
Skinner, Daniel M., 1123
Skinner, William T., 1209
Skinner, William Wallace, 221
Slagle, Columbus G., 881
Sloan, Alexander C., 2029
Smallwood, Francis M., 1319
Smith, Charles C., 220
Smith, Higgins C., 1123
Smith, James E., 702
Smith, Jeremiah P., 1671
Smith, John Greer, 2029
Smith, Melvin Roscoe, 134
Smith, Simeon E., 2174
Smith, William A., 954
Smith, William Armistead, 954
Smith, William K., 2173
Snoddy, Virgil, 1943
Snyder, Calvin DeFord, 528
Snyder, Jerome B., 1318
Solly, S. Edwin, 1845
Southgate, Robert W., 1943
Spafford, George H., 220
Spalding, George Atherton, 1318
Spaulding, Charles Lester, 133
Specht, Franz George J., 1846
Spring, Clarence W., 1754
Stanley, J. C., 2173
Stansell, Joseph A., 703
Stanton, David S., 1671
Stark, Mary E. Bostwick, 528
Starkel, Louis C., 1942
Stevens, George Willard. 289
Stevens, Ithiel Silsby, 528
Stevenson, Thomas, 1582
Stewart, James, 1395
Stewart, James E., 1502
Stewart, Morse, 1318
Stockton, John W., 1503
Stockton, Leander D., 1754
Stolze, John, 954
Stone, James Avery Mattison, 2173
Stoney, Randell Croft, 1395
Storch, August B., 2107
Strachan, David Clark, 289
Strauss, Louis M., 289
Streets, David R., 289
Stringham, James M., 379
Strother, Corneille B., 1754
Stryker, Isaac Edward, 1754
Sturgeon, Robert H., 1209
Sullivan, William D., 1395
Sutherland, William R., 1942
Sutton, Noah E., 1942
Swartz, West Jacobs, 134
Tabb, Robert Bruce, 1845
Taft, Albert H., 379
Talbert, Aaron V., 1041
Tanner, John Alexander, 133
Tantum, Percy Linwood, 2030
Tarnovski, B., 50
Tarver, Fleming G., 1583
Taylor, Charles R., 2107
Taylor, Francis Perley, 1123
Taylor, George W., 795
Taylor, William Edwin, 795
Ten Eyck, John Adams, 2029
Terry, William A., 290
Thatcher, Henry C., 881
Theyson, Robert H., 289
Thomas, Thomas C., 379
Thompson, George A., 134
Thompson, George P., 289
Thompson, Samuel, 289
Thompson, W. M. Marshall, 1670
Thorley, John David, 2107
Thornton, Joseph Lyle, 1041
Thruston, Stephen Decatur, 1845
Tilton, Henry Remsen, 133
Tinker, Charles A., 289
Todd, William E., 1396
Tomaselli, S., 796
Toms, Alpheus, 2107
Towar, Charles G., 134
Townes, George W., 1754
Townsend, George Frederick, 2107
Treat, Horace J., 2174
Trent, John Henry, 2107
Troughton, W. F., 189
Trull, Frederick Warren, 289
Tuffs, Edward G., 289
Tulloch, Forbes, 50
Turner, Sylvester W., 2107
Utz, Sherman S., 289
Vance, William Octah, 702
Van Ghoren, Ludwig H., 880
Vann, Andrew J., 954
Van Ness, Eugene, 1369

Van Sandt, H. G., 1319
Van Syckle, Sylvester, 2173
Van Tuyl, William R., 702
Van Wagonen, Herbert J., 134
Varick, William Wilson, 953
Vassault, Theodora E., 1396
Vetter, Gustav, 1503
Vierordt, O., 1124
Vincent, A., 609
Von Der Luhe, Amelie D. F., 379
von Heilwart, Isidor Neumann, 954
von Rothmund, A., 1755
Wagar, Percy Earnest, 954
Wales, Philip Skinner, 1040
Walker, Albert L., 1124
Walker, Isaac C., 1582
Wallace, Hugh, 289
Wallace, William F., 954
Walradt, William A., 954
Walter, Barnett C., 221
Walter, John, 1942
Ward, Alva F., 953
Watkins, William B., 881
Watts, Samuel R., 2029
Watson, Eugene G., 1846
Weaver, Charles Chandler, 1671
Weaver, John Henry, 881
Weeks, Wansor Wilson, 953
Weinlechner, J., 1583
Weinsberg, Herbert A., 134
Weir, James, 529
Weir, Virgil, 1503
Weiser, Henry K., 2173
Weitenberger, Anthony J., 1396
Wells, Hiram Jefferson, 1754
Weschcke, Carl, 1670
Westerfield, John Harris, 795
Wetmore, Howard Graham, 609
Wetton, Charles, 1942
Whalend, Charles Tylden, 609
Wharton, Eugene V., 2030
Wheeler, Edward A., 1041
Wheeler, Elliot H., 1670
White, L. E., 1319
White, Leonard Darling, 1040
Whitefoot, Robert Mills, 447
Whitfield, Alston Jones, 2107
Whitlock, Albert, 881
Wilcoxson, Clark R., 1754
Wilkinson, J. J., 1124
Willard, James, 448
Willard, Louis H., 447
Williams, Denard S., 290
Williams, George A., 1319
Williams, Thomas J., 1041
Williamson, Charles Samuel, 1502
Willison, Henry Clay, 134
Wilson, G. W., 1123
Wilson, J. Greenwood, 1041
Wilson, Jeremiah C., 1754
Wilson, Williams A., 529
Winchell, Harvey R., 1319
Wise, Joseph, 2174
Wolfe, Joseph B., 448
Wolfe, William H., 290
Wolfgarten, Joseph, 954
Womersley, Edward E., 528
Woodrow, Orlando Miller, 881
Woodward, Harriet A., 448
Woolfolk, Ernest, 881
Wooten, Thomas Dudley, 528
Wright, John Franklin, 135
Wright, Joseph C., 289
Wulff, Edwin James, 1754
Yale, Leroy Milton, 953
Yarrow, Thomas J., 135
Yerex, David H., 880
Young, Parke G., 448
Zabludowsky, J., 2174
Zimmerman, Carl Frederick, 378
Zimmerman, George Michael, 529

E

Ear affections and mental disturbances, 1416—ab
anatomy of, a criticism, 879
anatomy of internal, in animals and birds, 1407
and mastoid, tuberculosis of middle, 1293—O
and nose, acute and chronic suppuration of, direct cause of facial erysipelas, 2052—O
artificially induced hyperemia in suppuration of, 1692—ab
disease, psychical importance of, 1137—ab
diseases, intranasal conditions bearing on etiology of, 1132—ab
odor as guide in treatment of chronic suppuration of middle, 1733—O
stopper for, 314—ab
treatment of intracranial complications of middle, suppuration, 1289-O
Earp, S. E., two atypical cases of smallpox, 1484—O
Ears, functional derangement of, and upper air tract in insane, 806—ab
Eating, science and art of, 1103—E
should we sleep after, 1859—ab
Eclampsia, 1856—ab
at Olshausen's clinic, 1336—ab
Eclampsia, lumbar puncture in, 1142—ab, 1333—ab
obstetric treatment of, 313—ab
prophylactic treatment of puerperal, 539—ab
Eclampsia, puerperal, thoughts on, symposium on, 722—ab
three cases of, with recovery without delivery, 2121—ab
treatment of, 1142—ab
veratrum viride in, 721—ab
Economics, physical, 194—O
Eczema, 964—T
etiology of, 513—E
etiology and treatment of, 1515—ab
ocular, 716—T
ocular, in children, 151—ab
sketch of process and its management, 1512—ab
Edema, experimental pulmonary, 1334—ab
pulmonary, 898—ab
Edsall, D. L., attitude of clinician in regard to exposing patients to x-ray, 1425—O
Education as factor in prevention of criminal abortion and illegitimacy, 1889—O
entrance requirements, 557—O
higher standard urged, 1678—ab
medical, in London, 1111
medical, in United States, 589—E
notes, 597
standards of medical, adopted by American Medical Association, July, 1905, 627
standards of preliminary, 1928
Edwards, E. G., poisoning from oil of tansy, 937—O
Effusion, treatment of pleural, 1221—ab
Effusions and exudates, cytology of, 242—ab
differentiation of pleural, from pneumonia, 240—ab
Egdahl, E., study of blood in Banti's disease before and after splenectomy, 1149—O
Einhorn, M., dietetic treatment of diabetes mellitus, 2143—O
Eisendrath, D. N., plea for more radical operations in cancer of lips and tongue, 986—O
Elbow joint, injuries of, with report of cases, 172—O
Electric signal for wet diapers, 985
Electricity in treatment of disease, 1765—ab
Electrolysis in treatment of deafness due to stricture of Eustachian tubes, 895—ab
Elephantiasis, enormous, of both legs surgically treated, 1228—ab
nervorum of scalp, 1415—ab
non-parasitic, secondary to chronic cardiac disease and repeated edema of pregnancy, 1416—ab
Eliot, President, on future of medicine, 1382—E
Elixir eupnein, 1096—P
of life, 1629—O
saw palmetto, 1097—P
simple, as wrongly-used vehicle, 535—T
Ely, T. C., neurasthenia as modified by modern conditions, and their prevention, 1816—O
Emaciation, treatment of, 558—O
Embolism and thrombosis of mesenteric vessels, 1423—ab
of pulmonary artery in typhoid, 316—ab
of superior mesenteric artery, 2044—ab
Emergencies, doctors and medical, 870
treatment of surgical, 1332—ab
Emphysema and bronchitis, respiratory treatment of, 1520—ab
Employer, duty as, 1592—Ml
Empyema in children, 1221—ab
of gall bladder, 1417—ab
of pleura, 49
sufficiency of simple intercostal incision in acute, 306—ab
Empyroform, 1097—P
Encephalitis, acute non-suppurative, in children, 1184—O
Encephalocele, frontonasal, 1328—ab
Endocarditis, muscular rheumatism and, 2097—E
septic, 1767—ab
Endometritis, 144—ab
fetid, purulent atrophying, 1336—ab
Endothelioma of throat, 229—ab
Endotoxins, soluble, of typhoid, plague and dysentery, 971—ab
Enemas, retained, 643—ab
Enemator, new rectal, 273—O
Engelbach, W., polycythemia, 1265—O
England, J. W., use of sodium citrate as modifier of cow's milk, 1241—O
English, bad, 1579, 2108
Enno Sanders prize, award of, 956—ab
Enteric fever, treatment of, with typhoid vaccine, 1599—ab
Enteritis, avoidance of, during mercurial treatment, 1772—ab
membranous, 644—ab
Enterocolitis, dietetic treatment of, 1598—ab
medicinal treatment of, 1598—ab
Enteroptosis, surgical treatment of, 158—ab
Enucleation, uncalled-for disfiguring operations resulting from failure to recognize accessory sinus disease, 1682—ab
Enuresis, 68—T
Environment, heredity and, as factors in life and diseases of children, 76—O
in therapeutics from standpoint of physiology, 1854—ab
Epicarin, 1097—P
Epidermal fibrils, study of, 969—ab
Epidermolysis bullosa, 463—ab
Epididymitis, operative treatment of acute gonorrheal, 1414—ab
prevention of, 1955—ab
Epilepsy, 799—ab, 1509—T
borderland of, 390—ab
convulsions in children and their relation to, 1231—ab
note on peculiar attitudes in, during sleep, 1328—ab
of reflex origin, 1938
103 cases of, 1227—ab
operative treatment of genuine, 1334—ab
prize essay on, 1839
salt-free treatment of, 1323—ab
staining cerebral nervous system and relation of, to central nervous system, 799—ab
Epileptic colony, an act to establish, 2119—Ml
colony in Scotland, 1110
fits, cessation of pulse during onset of, 543—ab
symptoms, importance of early diagnosis and treatment of, 2120—ab
Epileptics, affections of spinal cord in, 1717—O
as automobilists, 1861—ab
coagulating power of blood serum in, 2046—ab
colonies for, 941—E
Epithelial proliferation, experimental production of atypical, in relation to carcinoma, 1566—E
Epithelioma, benign cystic, 1147—O
of lip, 815—ab
of tongue, operation by McCormick's method, 1687—ab
of tongue with secondary growths in glands of neck and liver treated by x-rays, 239—ab
surgical treatment of, 454—ab
total laryngectomy for recurrent, of larynx, 462—ab
treatment of, by caustic potash, 720—ab
treatment of, with Finsen phototherapy, 903—ab
x-ray treatment of, 455—ab, 888—ab
Eponymic diseases and symptoms in medicine, 1304—E
Equipment, San Francisco physician's, 221
Ergot, therapeutic value of, 305—ab, 1850—T
Erlanger, J., recent contributions to physiology of circulation, 1343—O
Erysipelas,, 456—T, 637—T
acute and chronic suppuration of ear and nose direct cause of facial, 2052—O
intrauterine, 1774—ab
of lungs, 244—ab
Erythema-nodosum, 1856—ab, 2130—ab
of mucosa, in relation to syphilis, 2177—ab
Erythrol tetranitrate, 1097—P
Esmarch chloroform inhaler, modification of, 855—O
Esophagus, cancer of, communicating with right bronchus in which there was complete absence of usual symptoms, 310—ab
carcinoma of upper end of, with perforation into trachea, 896—ab
closure of, from stomach, 976—ab
examination and surgery of upper end of, 1695—O
improved technic of radioscopic examination of, 1317
median incision of, 1517—ab
morphin in treatment of stenosis of, 1143—ab
peptic ulcer of, 808—ab
retrograde current in, 1141—ab
spontaneous rupture of, 959—ab
stricture of, treatment of traumatic, by dilatation, 539—ab
Ether air anesthesia or drop method for administration of ether, 1653—O
day, 1199—E
narcosis by rectum, 300—ab
operations during first whiffs of, 2045—ab
Ethyl-chlorid anesthesia 607, 2038-ab
as general anesthetic, 1655—O
as general anesthetic in minor operations, 502—O, 697
Ethylenediamine, 1097—P
Eucain, 1097—P
Eucaloids, 1097—P
Eucamul, 1193—P
Eucalyptus trees and malaria, 1755
Eugallol, 1193—P
Eumydrin, 1193—P
Euphorin, 1193—P
Euphthalmin, 1193—P
Euquinin, 1193—P
Euresol, 1194—P
soap, 1194—P
Euprophen, 1194—P
Everhard, E. S., case of cretinism with spontaneous improvement, 205—O
Evidence, admissible, as to value of physician's service, 1053—Ml
in action by physician against administrator, 965—Ml
non-expert, where insanity is defense to crime, 232—Ml
testimony and, in medicine, 1368—O
Evil, etiology of social, 2075—O
relation of medical profession to social, 29—O
Examination for higher medical certificate in France, 587—E
Examiners, dates of meetings of, 1852—Ml
Excremental pollution, bacterioscopic analysis of 1769—ab
Executor, power of, of will to waive privilege, 717—Ml
Exercise and sleep, influence of rest, on gastric digestion, 896—ab
effect of strenuous, on heart and kidneys, 1380—E
Exercises in treatment of spasmodic paraplegia, 393—ab
Exhibiting person with explanations by physician, 1134—Ml
Exophthalmic-goiter, 1958—ab
cardiac neuroses and, 1603—ab
clinical study of 80 cases of, 2175—ab
dietetic treatment of, 1064—ab
diphtheria antitoxin in treatment of, 1486—O
from standpoint of serum therapy, 2036—ab
heart in, 2046—ab
medical aspects of, 145—ab
new eye symptom in, 236—ab
pathology of, 1140—ab, 1855—ab
report of two cases of, in men, 1561—O
Roentgen treatment of, 1063—ab
serum having therapeutic value in treatment of, 661—O, 719—ab
surgical treatment of, 665—O, 1335—ab
symptomatology, diagnosis and medical treatment of, 1131—ab
therapy of, 1771—ab
therapeutic value of antithyreoidin in treatment of, and kindred affections, 153—ab
treatment of, with serum from thyroidectomized goats, 79—ab
Exophthalmos in leukemia, 2175—ab
pulsating, ligature of common carotid, external carotid and superior thyroid arteries, 147—ab
Expectancy, elements affecting, of life and damages for injuries, 1763—Ml
Expectorating, prohibits, in public places, 2119—Ml
Experiments, limitation of, in hospitals on patients, 522
Extremities, Bier treatment of infections and septic wounds of, 1512—ab
Exudates, pleuritic, in children, 1296—O
Eye, accommodation after middle life, 1222—ab
affections of, in relation to pelvic disorders, 1856—ab
acute glaucoma following instillation of several drops of adrenalin in cataractous, 460—ab
bacteriologic examinations of conjunctival sac in typhoid and in pneumonia, 1417—ab
ball, pathogenic bacteria of, 324—O
ball, treatment of perforating, infected wound of, 976—ab
conjugate, lateral deviation of, 490—O

Eye diagnostic significance of reflexes, 241—ab
diagnosis and treatment of injuries of, 144—ab
differential diagnosis and prognosis of tumors of uveal tract of, 409—O
droppers, improvised pocket-case for, 777—O
foreign body retained in orbit for nearly four years, 724—ab
importance of early recognition and treatment of squint, 1321—ab
inflammations, external, of doubtful origin, 1594—ab
injuries to, with birdshot, 421—O
instillation of pure carbolic acid into, 37—O
localization of foreign bodies in with x-ray, 889—ab
ocular factors in etiology of spinal curvatures, 450—ab
ocular injuries from foreign bodies in, 770—O
old and new in therapeutics of, 391—ab
ophthalmic practice of present time, 485—O
palliative surgical operations on in choked disc, 1381—E
paraffin plates as aid in operations on for extensive symblepharon, 570—O
pupil reflexes originating in viscera, 1864—ab
quinin-caffein treatment of, for hay fever, 2044—ab
relation between suppurative sphenoidal sinusitis and intracranial inflammations of, 2095—E
relation of smoke-laden atmosphere to diseases of, 384—ab
so-called leucosarcoma of iris of, 418—O
some axioms concerning ocular rotations of, 353—O
staining and examination of bacteria of, by practical methods, 89—O
-strain and crime, 960—ab
headache and, 1521—O
incurable, 734—O
physical disturbances in distant parts of the body due to, 1597—ab
striking idiosyncrasy to use of cocain in, 1486—O
study of convergence and its effects, 670—O
study of 3,436 cases of senile cataract, 1765—ab
sympathetic ophthalmia, 1222—ab
treatment of opacity of cornea by physical agents, 812—ab
treatment of progressive atrophy of optic nerve due to syphilis, 823—O
value of x-rays in ocular therapeutics, 994—O
vision douhle, 2171
visual tests for public services, 1222—ab
wood-alcohol amblyopia, 1222—ab
Eyes, relation between thyroid and, 1131—ab
v. Ezdorf, R. H., personal experience in preventing spread of yellow-fever, 11—O

F

Face lotion, 1629—O
Factors which have lowered operative mortality and have improved post-operative results, 1219—ab
Factory, dangers of, 138
Fakers, traveling, a remedy, 2171
Fat, absorption, in intestines, 975—ab
splitting of, in stomach by action of ferment, 975—ab
Fats, analogies between phosphorized, obtained from brain and kidney, 227—ab
study of absorption of, in infants, 1598—ab
Fault, whose? 949—P
Feces, examination of, of 25 starch-fed infants, with clinical observations, 1227—ab
incontinence of, following operation for fistula in ano, 453—ab
Feeding, physiologic limitations of rectal, 1854—ab
principles of, in typhoid and other fevers, 234—ab
sodium citrate in infant, 1080—O
some unheeded principles involved in dietetic management of infant, during hot weather, 398—O
trend of pediatric opinion concerning artificial, of infants, 1083—O
Fee table, American Roentgen Ray society, 889—ab
Fees, keep up, 952
medical, in country practice, 1065—O, 1498, 2122—ab
Fees, insurance examination, 438—E, 697, 1674—ab
insurance, societies take action on, 48
recent reduction in insurance, 48
Feet, brace to aid in treatment of flat or weakened, 968—ab
static disorders of, 145—ab
treatment of faulty weight-bearing in weak and flat, 2123—ab
Femur, treatment of fractures of, 581—O
treatment of intracapsular fracture of, 1755
Fenwick, E. H., vital points in technic of suprapubic enucleation of prostate for benign enlargement, 1151—O
Fergus operation for ptosis, 1595—ab
Ferguson, A. H., indications for prostatectomy and results of operation, 1153—O
Ferrichthyol, 1194—P
Ferripyrine, 1194—P
Ferropyrine, 1194—P
Ferro-silicon, poisoning from emanations of phosphin from commercial, 951
Fetation in closed accessory horn of uterus, 973—ab
Fetus, age of, 2128—ab
dystocia from cystic kidney in, 2121—ab
palpation to find position of, 1090
transmission of kidney changes to, 548—ab
Fever, glandular, 239—ab
puerperal, and monument to Semmelweis, 1920—E
puerperal, ligation of pelvic veins in pyemic form of, 1861—ab
puerperal, treated by uterovaginal drainage, 639—ab
should cold baths be given for, in young children? 459—ab
tertiary syphilitic, 244—ab
utility of saline solution in treatment of, 1551—O
Fevers, mistakes in diagnosis of, 1032
Fibroids, uterine, 1881—O, 1998—O, 2065—O
uterine, associated with gallstones, 1299—O
uterine, complicating pregnancy, 1127—ab
Fibroma, small, of ileum resulting in obstruction of bowel, with consideration of various forms of benign intestinal tumors, 1512—ab
Fibromata, 144 abdominal hysterectomies for, 1333—ab
Fibromyoma, cystic, of uterus, 1333—ab
Fibromyomata, malignant complications and degenerations of uterine, 957—ab
Fibrosarcoma, multiple, of tongue, treated with trypsin, 2003—O
Filariasis, 1683—ab
Filigree, five year's experience with original, intended to prevent and to cure abdominal herniæ, 754—O
Fingerprints, identification by,1047-ab
system of personal identification by, recently adopted for the U. S. Army, 1175—O
Finsen light, action of, on normal skin, 1772—ab
phototherapy, treatment of epithelium with, 903—ab
Firearms, effects of Japanese, 2043—ab
First aid packet, new, 897—ab
degree, report of committee to investigate comparative value of, in medical colleges, 228—ab
Fisher, J. T., types of insomnia and treatment without drugs, 1825—O
Fistula, ancurism of arch of aorta producing a broncho-esophageal, 1684—ab
in ano, incontinence of feces following operation for, 453—ab
transperitoneal operation for, (30) 1060
treatment of postoperative, by vaccines according to Wright's principle, 1601—ab
Fistulas following gastric ulcer, 901—ab
locating, in lower intestinal tract by injecting hydrogen-dioxid through anus, 111—O
new and improved method of closing vesicovaginal, 539—ab
passive congestion in treatment of tuberculous, 1142—ab
Flat residence and insanity, 1660—E
Fletcher, M. H., what is the effect on progeny of loss of teeth in ancestry? 191—O
Flexner, S., experimental cerebrospinal meningitis and its serum treatment, 560—O
Flint Medical College, record of graduates of, 793
Flint, retirement of Prof. Austin, 288
Florida medical news, 280, 368
October report, 1951
Fluid, cerebrospinal, in congenital syphilis, 1063—ab
Fluoroscopic examinations, substitute for dark room during, 1486—O
in diagnosis of aneurism, 687—O
Food adulteration, 1751
adulteration in New South Wales, 444
and food preservatives, 898—ab
boric acid in, 520
inspection and supervision, 46, 958—ab, 1666
inspection, improved system of, 2022
national supervision and standardization of, 1371—O, 1515—ab
preservatives in, 959—ab
preservatives, legislation regarding, 1515—ab
products, coloring matter in, 2023—P
prohibtis adulterating or misbranding drugs and, 2034—Ml
sailor's, 959—ab
values, new method for indicating, 136
Foods and breadmaking, regulations governing coloring of, 521
and scurvy, preserved animal, 39—E
patent medicines and artificial, in America, 1394—P
some kitchen tests to detect adulteration in common, 1956—ab
Football fatalities, 1102—E
pathology, improvement in, 1921—E
Foot, deformities of arch of and toes, 1332—ab
method of taking impressions of weight-bearing surface of, 1687—ab
prosthetic appliance for use after partial amputation of, 1739—O
Foote, C. J., pheno-bromate, 125—O
Forceps, a modified artery, 76—ab
new method of applying obstetric, 2121—ab
Foreign bodies and Roentgen examination, 1143—ab
medical news, 45, 122, 216, 283, 372, 444, 518, 603, 694, 789, 869, 947, 1031, 1110, 1205, 1312, 1389, 1498, 1575, 1665, 1750, 1840, 1928, 2021, 2101, 2168
Forgeries, medical, 2104
Formaldehyd, detection of, in milk, 1408
disinfection, 139, 288, 523, 952, 1042, 1512—ab
in smoked meat, 1840
liberation of from watery solution by calcium carbid, 2110—ab
Formalin, 1194—P
technic, improved, for biologic test, 643—ab
Formin, 1194—P
Formulary, national, 1826—O
Foster, C. L., two cases of infection with tenia nana in Philippine Islands, 685—O
Fourth-of-July, aftermath of, 121
antitetanic serum in, injuries, 500—O
injuries and tetanus, 505—O, 512—E
Fracture, compound, of patella. Tabulation of all fractures in Boston City Hospital in forty-two years, 1853—ab
of anterior superior spine of ilium by muscular action, 1853—ab
of base of skull resulting from direct violence through inferior maxilla, 1049—ab
of femur, treatment of, 581—O
of lower extremity of ulna as factor in Colles', 307—ab
of olecranon, 727—ab
of patella, treatment of, 1177—O
of upper end of tibia from indirect violence, 463—ab
spikes for external prothesis in complicated, of leg, 156—ab
supracondyloid, of humerus, 1328—ab
treatment of intracapsular of femur, 1755
treatment of, of inferior maxilla with description of a splint, 854—O
Fractures, functional treatment of, 725—ab
in insane, 1213
modern treatment of intracapsular, 1652—ab
new method for reduction of, of lower extremity, 144—ab
new splint for, of humerus, 968—ab
old, of tarsus, 887—ab
open treatment of, 66—ab
treatment of, 1676—ab, 1769—ab
Fractures, treatment of ununited and compound, with bone pins, 1507—ab
union of, 2041—ab
France, examination for higher medical certificate in, 587—E
war against venereal diseases in, 1249—O
Franklin's, Benjamin, views as to nature of colds, 381
Franz, S. I., observations on functions of association areas (cerebrum) in monkeys, 1464—O
Fraud and deception connected with so-called cod-liver oil preparations, 1207—P
how they humbug the dear people in Italy, 1111
Frauds, interstate reciprocity and, in medical schools, 878, 1118
Frazier, C. H., cerebral decompression, 679—O, 744—O, 849—O, 923—O
Freeman, L., treatment of tuberculosis of kidney and bladder by nephrectomy, 2047—O
Freer, O. T., some recent rhinologic achievements and tendencies, 162—O
Fremitus in pneumonia, 467—ab
French and German, study of, for medical students, 1111
v. Frey M., distribution of afferent nerves in skin, 645—O
Fuller's earth, treatment of cholera and various bacterial affections with, 2113
Fullerton, E. B., quinin treatment of cholera, 1986—O
Functional disorders, an important factor in causation and treatment of many so-called, 2035—ab
Funke, J., tumors of carotid gland, 469—O, 566—O
Furniture makers, gastric tumors in, 1317
Furuncles, carbuncles and phlegmons, treatment of, 1962—ab
Fussell, M. H., dispensing versus prescribing, 1786—O
Fussell, M. H., value of routine urine examination, 268—O

G

Gage, G. R., fluoroscope in diagnosis of aneurism, 687—O
Gallant, A. E., success; surgical desideratum, 1357—O
Gall-bladder and bile passages, review of 1,500 operations on, 146—ab
colic, 2125—ab
diseases, and gallstones from standpoint of physician, 905—O
empyema of, 1417—ab
multiple ulcers of, 71—ab
Gallogen, 1194—P
Gallstone affections, treatment of, 1601—ab, 1692—ab
disease, medical treatment of, 347—O
ileus, 1691—ab
patients, rest in open air for, 643—ab
Gallstones and gall-bladder diseases, from standpoint of physician, 905—O
intestinal obstruction due to, 1219—ab
medical treatment of, 231—T, 1675—ab
of large size, passed by rectum, 642—ab
some cases of, 1771—ab
uterine fibroids associated with, 1299—O
Gangosa, 1166—O
Gangrene and appendicitis considered as separate diseases, 641—ab
pulmonary, following submersion, 1939
Garceau, E., treatment of tuberculosis of urinary tract in women, 1440—O
Garcia, death of Manuel, 45
Gastric acidity, relation of excessive, to gastric symptoms, 496—O
affections, ineffectual courses of mineral waters in, 1964—ab
and duodenal ulcer, etiology and diagnosis of, 840—O
and duodenal ulcer, medical treatment of, 845—O
and duodenal ulcers, 842—O
cancer, blood in, 1212
cancer, diagnosis of, 1061—ab
juice, relations between, and intestinal putrefaction, 1334—ab
juice, secretion of, 1062—ab
neurosis (nervous dyspepsia), 231—T
syphilis, 767
tumors in furniture makers, 1317
Gastric ulcer, 14—O, 728—ab, 1678—ab
and cancer, 897—ab

Gastric and duodenal ulcer, surgical treatment of, and its results, 912-O
fistula following, 901—ab
Lenhartz treatment of, at Eppendorfer Krankenhaus, Hamburg, 392—ab
proper limitations of medical and surgical treatment of, 639—ab
results of operative treatment for perforated, 242—ab
surgical treatment of, 1232—ab
treatment of, with record of cases, 838—O
Gastritis, curability of chronic, 1141—ab
Gastroenterostomy and enteroenterostomy, technic of, 78—ab
posterior, extreme gastroptosis, motor insufficiency, epilepsy, apparent cure, 1226—ab
two cases in which, was performed in course of operation for perforated ulcer, 391—ab
Gastrointestinal disturbances associated with migraine, 1512—ab
Gastrojejunostomy, three cases of, 462—ab
Gastroptosis, its treatment, 1322—ab
Gastrostaxis or oozing of blood from mucous membrane of stomach, 1858—ab
Gastrosuccorrhea, two cases of, or gastric hypersecretion associated with atrophic cirrhosis of liver, 719—ab
Gauze, removal of adherent strips of, 1517—ab
Gelatin injections for aneurisms, 464—ab
in melena neonatorum, 2026
method of preserving specimens, 376
General medical news, 45, 121, 215, 283, 372, 444, 517, 602, 693, 788, 868, 947, 1031, 1109, 1204, 1310, 1388, 1497, 1575, 1664, 1750, 1839, 1928, 2021, 2168
Generalizing, vice of, 875—P
Genitourinary organs, congenital abnormality of, 543—ab
Genius, genesis of, 1767—ab
George, S., calcification of vas deferens and seminal vesicles, 103—O
Georgia medical news, 280, 599, 1027, 1199, 1494, 1570, 1836, 2098, 2164
German dermatological society, ninth congress of, 45
German, H. H., modification of simple mastoid operation which shortens convalescence by facilitating wound repair, 1701—O
Germann, M. K., pleuritic exudates in children, 1296—O
Germany, press and quack advertisements in, 137
Germicidal soap, 1195—P
Germicide, alcohol as internal, 690—E
Gessner, H. E., surgical aspects of tuberculosis, 1367—O
Gestation, ectopic, 1404—ab
extrauterine, operation, living child delivered weighing three pounds, 721—ab
obstetric responsibility during, 145—ab
Gies, W. J., mucoid salts, 560—O
Gingivitis, interstitial, due to autointoxication, 261—O
Girault, A. A., present status of bedbug in transmission of human diseases, 85—O
Glands, peculiar pressure symptoms due to enlarged tuberculous bronchial, 896—ab
Roentgen treatment of tubercular, 1221—ab
tuberculosis of, simulating neoplasms, 1519—ab
Glaucoma, acute, following instillation of several drops of adrenalin in a cataractous eye, 460—ab
traumatic, 904—ab
Glenn, W. F., treatment of gonorrhea in male, 1828—O
Glutol-Schleich, 1195—P
Glycerin emollient, 1195—P
Glycerophosphates, 1195—P
Glycogen, further observations on influence of alcohol on metabolism of hepatic, 1467—O
in liver, 815—ab
Glycosuria and diabetes, 242—ab
drugs in diabetic, 1226—ab
intermittent pentosuria and, 538—ab
Goat's milk, infantile mortality and, 1859—ab
Goepp, R. M., case of acetanilid poisoning from absorption, 359—O
Goiter, influence of, on growth, 904—ab
surgical treatment of, 145—ab, 1958—ab
8,000 operations for, 1233—ab
Goldberger prize goes to Obermayer and Pick, 1665
Gonorrhea, 384—T, 1413—T
acetylene gas in, of rebellious, 2114
disadvantages of injections for acute, 313—ab
gonosan and treatment of, 726—ab
passive congestion treatment of, 1061—ab
puerperal, 1235—ab
silver nitrate and zinc in chronic, 972—ab
suit for certifying to, 520
treatment of, by irrigation, 897—ab
treatment of, in male, 1828—O
up to date, 1401—ab
Gonorrheal lesions other than of genital tract, 1330—ab
Gonosan and treatment of gonorrhea, 726—ab
Gooding, J. J., monocephalus tetrabrachius tetrapus, 2159—O
Gould, G. M., headache and eyestrain, 1521—O
Gould, G. M., incurable eyestrain, 734—O
Gout, 1762—T
elimination of uric acid in, and alcoholism, 2127—ab
essence and treatment of, 312—ab
involving phalanges, 2116—T
visceral, especially gastrointestinal form, 313—ab
Gradle, H., odor as guide in treatment of chronic suppuration of middle ear, 1733—O
Graham, E. E., diagnosis of tuberculosis in infants and children, 1555—O, 1586—O
Gram-staining technic, 975—ab
Granulations, tuberculous, without tubercles, 2129—ab
Great-Britain, general medical council of, its powers and its work, 1590
medical journals of, 294
Grippe, influence of, on other infections, 902—ab
Grocco, triangular dullness of, 160—ab
Ground itch, causative factor in production of dermatitis of, (uncinariasis), 1693—O
Growth and nutrition, influence of excessive meat diet on, 542—ab
disturbances in, after brief Roentgen radiation, 78—ab
Guaiacol-salol, 1195—P
Guaiamar, 1302—P
Guajasanol, 1302—P
Gumma, contagiousness of, 305—ab
Guthrie, C. C., anastomosis of blood vessels by patching method and transplantation of kidney, 1648—O
Gwathmey, J. T., plea for scientific administration of anesthetics, 1361—O
Gymnastics, dangers of unregulated, 408
use and abuse of pulmonary, in tuberculosis, 388—ab
Gynecologic cases, ureteral symptoms in, 539—ab
operations, nervous affections after, 241—ab
Gynecologist, relation of, to general practitioner, 1321—ab
Gynecology and obstetrics, study of, in Germany, 221, 291
vaginal route in, 68—ab

H

Hagee's cordial of cod-liver oil, 1208—P
Hagen-Burger case, 2104
Haggard, W. D., surgical treatment of duodenal ulcer, 338—O
Hall, J. K., condition in case of typhoid simulating intestinal perforation, 1916—O
Hallucinations from starvation, 642—ab
of chloroform, 1110
Halsted, W. S., results of complete and incomplete occlusion of abdominal and thoracic aortas by metal bands, 2147—O
Hare-lip operation dressing after, 2090—O
Hamburg spa, dietetic regulations at, 974—ab
Hammond, P., headache due to aural disease, 1523—O
Hammond, P., technic in after-care of radical mastoid operation, 1645—O
Hands, disinfection of physician's, 2120—ab
tender, sensitive to antiseptics, 797
Handshake, an expensive, 1751
Harpoon, recovery from piercing body with hay, 1190—O
Harris, M. L., testimony and evidence in medicine, 1368—O
Harvard medical buildings, dedication, 1113
medical school, new buildings at, 50, 1100—E, 1669
Harveian oration, Osler gives, 1498
Harvey, E. B., impracticability of interstate reciprocity, 553—O
Harwood, W. E., practical lesson in reglementation, 2076—O
Hatcher, R. A., pharmacology of digitalis, 2059—O
Hawley, G. F., ethyl chlorid as general anesthetic in minor operations, 502—O
Hay-fever, 457—T
and persistent bronchial asthma relieved by treatment of antrum of Highmore, 966—ab
and ivy poisoning, 793
palliatives for, 265—O
quinin caffein external applications in, 2044—ab
simple contrivance for relief of, 1300—O
treatment of, by securing normal nostrils, 793
treatment by Dunbar's remedies (pollantin), 376, 447, 523, 605, 794
Head and neck, excision of cancer of, 1780—O
apparatus to induce hyperemia in, 1603—ab
injuries, 1945—ab
new management of occipito-posterior positions of fetal, 806—ab
unusual case of trauma of, exhibiting symptoms of astereognosis, 1049—ab
Headache and eyestrain, 1521—O
chronic, associated with pelvic disease, 1525—O
nasal, 1687—ab
neuralgia and, 1325—T
of nasal origin, 453—ab
tablets, acetanilid poisoning by, 2012—O
Headaches, constitutional, 1524—O
due to aural diseases, 1523—O
ocular, 1321—ab
of renal origin, 463—ab
Healing, rapid, in septic cases, including the use of iodoform wax in bone cases, 73—ab
Health board warns against fake, 1110
economic advisability of inaugurating a national department of, 1003—O
gives board of, to unincorporated towns, 2035—Ml
inspection as applied to individual, 651—O
law, powers under, 717—Ml
mental, of school children, 39—E
provides for annual conference for boards of, 2118—Ml
state control of, 958—ab
Healthfulness of lake region, 513—E
Heart, acute dilatation of, in newborn, 1420—ab
affections among wage-earners, 1776—ab
affections, modern treatment of, 240—ab
and arteriosclerosis, neurosis of, in consequence of trauma, 394—ab
and kidneys, effect of strenuous exercise on, 1380—E
and stomach affections, mutual relations between, 241—ab
bullet wounds of, 2044—ab
cardiac neuroses of, 1603—ab
cases, artificial Nauheim baths in chronic, 1054—ab
congenital malformation of, with malposition of certain viscera and absence of spleen, 363—O
dilatation and hypertrophy of, and some other points in cardiac pathology, 238—ab
disease, arterial blood pressure in, 1419—ab
disease, congenital, 238—ab
disease, management of advanced, 1686—ab
disease, zone of rupture in liver in, 311—ab
diseases, 1398—ab
diseases, organic, and immunity from pulmonary tuberculosis, 1596—ab
diseases, orthopercussion and relative, 1518—ab
effects of pericarditis on, 1429—O
examination of, when lying on left side, 1772—ab
exposure of, after injury, 1142—ab
failure in cardiac compensation, 2130—ab
failure, resuscitation of patient apparently dead from primary, 1687—ab
gummatous infiltration of auriculoventricular bundle, 2125—ab
Heart in exophthalmic goiter, 2064—ab
influence of bodily posture on position of, 1686—ab
in nephritis, 1354—O
massage of, in apparent death from anesthetics, 957—ab
measurement of energy of, 1775—ab
muscle, functional tests of, 544—ab
muscle, multiple rhabdomyoma of, 896—ab
percussion findings with enlargement of, 815—ab
percussion of outline of, 2127—ab
record of movements of, at left auricle, 975—ab
sound, first, 396—ab
sounds, to detect fetal, early, 1142—ab
reduplication of, 2148—O
spontaneous rupture of, 538—ab
spontaneous rupture of, in senile dementia, 538—ab
stomach and spleen, congenital protrusion of, 819—ab
study of spanemic, 807—ab
suture of perforating wound of, death on eleventh day, 1229—ab
transposed, 1737—O
treatment of cardiovascular diseases of, 1677—ab
tuberculosis of, 314—ab
Heart-block, 779—E
digitalis and, 302—ab
electro-motive changes in, 391—ab
some aspects of, 1770—ab
study of, 1518—ab
Heath, A. C., simple contrivance for relief of hay fever, 1300—O
Heaton, C. A., recovery from piercing of body with hay harpoon, 1190—O
Hedonal, 1302—P
Heiser, V. G., progress of medicine in Philippine Islands, 245—O
Hektoen, L., two cases of generalized blastomycosis, 247—O
Helminths, cancerous tumors and, 812—ab
Helmitol, 1302—P
Hematoma, diagnosis of intradural, 1335—ab
of new-born, 274—O
Hematomyelia, case of, 391—ab
Hematuria, 312—ab
endemic, 1420—ab
of vesical origin in pregnant woman, 1333—ab
Hemenway, H. B., death from bromoseltzer, 2158—O
Hemicranin, 1302—P, 1325—T
Hemisystole, Leyden's, 1235—ab
Hemogallol, 1302—P
Hemoglobinuria, case of quinin, or blackwater fever, 1959—ab
malarial, 1896—O, 1992—O
Hemolytic agent, obtained from urine in case of pernicious anemia, 1956—ab
Hemophilia, joint affections of, 1593—ab
treatment of purpuric conditions and, 1090—O
Hemoquinine, 1303—P
Hemorrhage, concealed accidental, 1857—ab
diagnosis and treatment of accidental uterine, 1219—ab
early diagnosis of abdominal, 1277—O
fatal, from perforation of intestine by gallstone, 236—ab
from stump following appendectomy, 2009—O
influence of intraperitoneal injection of warm sterile normal saline solution in intraperitoneal, 1460—O
in newborn, 1145—O
submucous, of right vocal cords, 1328—ab
treatment of, 189—O
treatment of internal, 41—E
Hemorrhages, differential value of occult in stomach affections, 464—ab
early operations for cerebral, of childhood, 147—ab
nasal, 715—T
occult gastric, 239—ab
occult, in typhoid, 306—ab
of spontaneous intracranial, associated with trigeminal nevi, 178—ab
Hemorrhoids, high, as cause for occult hemorrhage, 1141—ab
improved technic for removal of, 72—ab
simple operation for, 464—ab
Heredity and environment as causes of delinquency and crime, 301—ab
and environment as factors in life and diseases of children, 760—O
naso-sinusal, 1577

Herdman, W. J., duty of medical profession to public in matter of venereal diseases, and how to discharge it, 1246—O
Hermaphroditism, rare case of, 1885—ab
Hernia, appendectomy through operative wound for radical cure of right inguinal, 1738—O
direct abdominal, of traumatic origin, 1485—O
etiology and treatment of oblique inguinal, 155—ab
femoral, herniated appendix, and suppurative appendicitis due to pin, 155—ab
gold wires for sutures in, 608
inguinal, 305—ab
inguinal, of bladder, 361—O, 1864—ab
injection treatment of, 449
management of bowel of doubtful vitality in operations for relief of
into ileocolic fossa, 2037—ab
strangulated, and intestinal obstruction, 1219—ab
new method of utilizing sac in radical cure of, 66—ab
of appendix, probably infantile, and performed by pin while in scrotum, 155—ab
of diaphragm, 1144—ab
of ovary and tube, 1707—O
prolapsed ovary in femoral ring, simulating strangulated femoral, 968—ab
radical cure of femoral, 542—ab
radical treatment of inguinal, 642—ab, 2044—ab
saccular theory of, and radical operation, 1858—ab
seven cases of, treated by implantation of prepared filigree of silver wire, 811—ab
strangulation of appedix in, 1686—ab
Hernias, five years' experience with original filigree intended to prevent and to cure abdominal, 754—O
radical operation of large, 1234—ab
Herniotomy, femoral, 751—O
Heroin, 1303—P
hydrochlorid, 1303—P
Heromal, 1303—P
Heroterpine, 1303—P
Herpes-zoster auris, 299—ab
Herrick, F. C., gastric ulcer, 14—O
Herrick, F. C., obstruction at terminal portion of common bile duct, 1438—O
Hessert, W., hemorrhage from stump following appendectomy, 2009—O
Hetol, 1303—P
Hewes, H. F., treatment of ulcer of stomach with record of cases, 838—O
Hexamethylenamine methylen citrate, 1378—P
Heylmun, H. H., fluoroscope in diagnosis of aneurism, 687—O
High-frequency spark in treatment of premature alopecia, 459—ab
Hip, congenital dislocation of, 66—ab, 886—ab, 1094—O
results from bloodless reduction of congenital, dislocation, 1055—ab, 2038—ab
spontaneous dislocation of, 151—ab
Hirshberg, L. K., infectious diseases of doubtful nature, 433—O
History, medical, 510—E
bit of medieal, 2015—E
Hitchings, F. W., thermovibrassage; new method of treatment, 1376—O
Hodgkin's disease, relation of, to lymphosarcoma, 1854—ab
Holiday, choice of, 709
Hollenbeck, H. S., early diagnosis of abdominal hemorrhage, 1277—O
Holmes, B., hospital problem, 318—O
Holmes, B., physical and evolutionary basis of marriage, 1886—O
Hollopeter, W. C., pediatric outlook, 397—O
Holocaine hydrochloride, 1378—P
Holt, E. E., physical economics, 194—O
Holton, H. D., duty of state toward venereal diseases, 1248—O
Home, hygiene of, 958—ab
Hornihrook, E., art of medicine, 817—O
Horsley, J. S., surgical treatment of congenital hydrocephalus, 20—O
Hospital, addition to London Temperance, 1750
and dispensary, abuse of, by well-to-do, 123
failure of, or individual to warn nurse of patient having contagious disease, 1592—Ml
kitchen, value of, 1407
Hospital, liability of charitable for negligence, 1592—Ml
management of New South Wales, 2169
management, points of interest in, 1943—ab
maternity, for Turkey, 294
model public, 1750
neurologic investigations at London, 47
new public, at Berlin, 1080
plan prize awarded at St. Louis, 135, 221
problem, 318—O
reform in new light, 1593—ab
responsibility of, for suicide of patient, 694
South American, 1666
Hospitals, authorizes city, 1852—Ml
authorizes county, for treating tuberculosis, 2119—Ml
improvements at Calcutta, 1750
milk and alcohol in, 941—E
new regulations for outpatient departments in state, 871
requirements for practice of surgery in, 1492—E
responsibility of, for injuries received therein, 2021
value of, as educational institutions, 1675—ab
Hough, F. C., case of intestinal obstruction, 776—O
House of Commons, ventilation of, 870
Howard, W. L., protection of innocent, 1891—O
Hubbell, A. A., uniocular inflammations of optic nerve and retina, 1—O
Human sympathy doctor's highest need, 1120
Humerus, injuries commonly associated with displacement of head of, 154—ab
new splint for fractures of, 968—ab
supracondyloid fracture of, 1328—ab
Humidity, 293
Humiston, R., acetozone in typhoid, 1651—O
Hunt, R., comparative physiologic activity of some commercial suprarenal preparations, 790—O
Huntington's chorea, 728—ab
Huntington's chorea, with osteitis deformans, 1332—ab
Hutchins, M. B., lesions predisposing to cancer, 15—O
Hydrastin and strychnin, novel method of using in sexual and vesical weakness, 2145—O
Hydrastis canadensis and ergot, physiologic action of, on uterus, etc., 77—ab
Hydrocephalus, surgical treatment of congenital, 20—O
Hydrochloric-acid, importance of, for infantile digestion, 527
reaction to free, in stomach content, 1962—ab
Hydrocyanic acid intoxication, 1963—ab
Hydrogen dioxid, locating fistulas in lower intestinal tract by injecting through anus, 111—O
Hydrophobia, causes of failures in Pasteur treatment of, 1965—ab
existence of, 1104—E
Negri bodies in, 87—ab
paralytic accidents observed under Pasteur treatment of, 1964—ab
provides for material for treatment of, 2034—Ml
Hydrophobic patients, saliva of, 1846
Hydrotheraphy, old and new in, 312--ab
some fundamentals in, 2036—ab
Hygiene and temperance, teaching of, in British elementary schools, 2021
influence of modern, on cities, 814—ab
Japanese soldier's manual of, 2041-ab
of home, 958—ab
Hymenolepis diminuta, and hymenolepis nana, 2087—O
Hyperchlorhydria, treatment of,1863-ab
Hyperemesis, 1398—ab
Hyperemia, acute purulent otitis and mastoiditis, treated by artificially indueed, 1137—ab
apparatus to induce, in head, 1603-ab
artificially induced, as prophylactic for infected wounds, 1963—ab
artificially induced, in treatment of traumatic affections, 2129—ab
artificially induced in treatment of wounds in rabbits' ears, 2178—ab
in treatment of pulmonary tuberculosis, 1140—ab
stasis, 243—ab
study of Biers' congestive, from standpoint of endotoxin theory, 726—ab
suction, in treatment of eye affections, 1964—ab
Hyperemia, therapeutic value of artificial localized, in treatment of ambulatory or dispensary cases, 806—ab
treatment of purulent otitis by congestive, 1137—ab
Hyperidrosis, 455—T
Hyperchlorhydria, 385—T
Hypersusceptibility, 1007—O
and transmitted immunity, 1122—E
Hypnal, 1378—P
Hypnotism, motor neuroses treated with, 904—ab
Hypophysis, function of, 36
sleep and, 393—ab
Hysterectomies, 144 abdominal, for fibromata, 1333—ab.
improved technic for total abdominal, 392—ab.
renal retention of urine after vaginal, 1060—ab
utilization of broad and round uterine ligaments in supravaginal, 1219—ab
Hysteria, classical symptoms of, 1683—ab
definition of, 725—ab
from point of view of dissociated personality, 1328—ab
Hysteromymectomy, utilization of broad ligaments in complete descent of uterus, and removal of uterine appendages, 1605—O
Hysteropexy followed by repeated pregnancies, 1856—ab

I

Ice, composition of, 813—ab
cream, death from eating, 1314
Ichthalbin, 1378—P, 1565—P
Ichthammon, 1378—P
Ichthargan, 1379—P
Ichthermol, 1379—P
Ichthoform, 1379—P
Ichthyol, 1379—P
Ichthyolum austriacum, 1379—P
Icterus in pregnancy, 160—ab
postoperative, 815—ab
Idaho medical news, 368, 945, 1570
reciprocity in, 63
Identification, system of personal, by finger prints recently adopted for U. S. Army, 1175—O
Ileocecal processes, tuberculous, 1774—ah
Ileum, resection of, 235—ab
small fibroma of, resulting in obstruction of bowel, with consideration of benign intestinal tumors, 1512—ab
Ileus, acute mechanical, 1335—ab
adynamic, 1402—ab
delirium and death during convalescence from, 903—ab
gallstone, 1691—ab
gastromesenteric, 538—ab
Ilium, fracture of anterior superior spine of, by muscular action, 1853—ab
Illegitimacy, education as factor in prevention of criminal abortion and, 1889—O
Illinois April report, 294
increased requirements in, 221
July report, 1757
May report, 635, 1409
medical news, 43, 117, 210, 280, 368, 439, 514, 599, 690, 784, 866, 945, 1028, 1105, 1199, 1307, 1384, 1495, 1570, 1661, 1745, 1836, 1924, 2018, 2098, 2164
reciprocity in, 63
reciprocity report, 1410
rules governing examinations in, 1758
Illusions, sensory, in diagnosis, 437—E
Immunity, hypersusceptibility and transmitted, 1022—E
Immunization, active, against infectious diseases, 643—ab
duration of, after injection of diphtheria antitoxin, 1860—ab
protective, against joint tuberculosis, 801—ab
Impotenee caused by excessive consumption of bromo-seltzer, 508—O
Incompatibilities of some of newer remedies, 1052—T
Incontinence, urinary, 1447—O
Independence day, injuries of, 17—O
Index medicus, the, 1494—E
India, health of, 695
lack of uniformity in cocain laws in, 2169
sanitary condition of, 1315
typhoid in, 869
Indian Territory, July report, 714
Indiana May report and questions, 802
medical news, 118, 280, 440, 515, 599, 691, 784, 866, 945, 1028, 1200, 1385, 1495, 1661, 1746, 1836, 2018, 2098
Indican and skatol in urine, 311—ab
Indigestion, acute and chronic, 1415—ab
surgical treatment of, 230—ab
Individual diet, 1316
Indol, toxicity of, 227—ab
Industrial danger, a new, 521
diseases, committee on, 1841
Inebriates and dipsomaniacs, treatment of, 1048—ab
Inebriety, home and office treatment of, 1675—ab
insanity of, 799—ab
Infant feeding, principles of, 1404—ab
Infants, appendicitis in, 2126—ab
bacteriologic and blood findings in 36 cases of bowel infection of, 2141—O
dosage for, 610
medicinal doses for, 456—T
mixtures for, 1851—T, 1953—T, 2033—T, 2117—T
mortality of, and its principal cause—dirty milk, 2175—ab
novel method of encouraging care of, 2022
overlying of, 1112
prime minister and mortality of, in Great Britain, 2101
some unheeded principles involved in dietetic management of during hot weather, 398—O
study of stools of starch-fed, 763—O
trend of pediatric opinion concerning artificial feeding of, 1083—O
value of small quantities of human milk in treatment of infantile atrophy and infections of, 1904—O
Infection, determination of end of danger of, from patients who have suffered from infectious diseases, 153—ab
frequency of tuberculous, by way of digestive tract, 972—ab
local, from conjunctiva and lachrymal passages, 1049—ab
pneumococcal, during early life, 1598—ab
primary pneumococcus, of digestive tract, 160—ab
protection from cadaveric, 1335—ab
puerperal, 434—O
puerperal, from general practitioner's standpoint, 1959—ab
staphylococcus, 548—ab
Infections and intoxications, menstruation as source of, 902—ab
endogenous, 1130—ab
influence of tuberculin on experimental, 547—ab
meningococcus, 114—E
Infectious disease, an, of doubtful nature, 433—O
diseases, biologic diagnosis of, 394—ab
diseases, differential diagnosis of acute, 1328—ab
diseases, influencing of, by vaccination, 1860—ab
Inflammation, relation of nerve impulse to cutaneous, 8—O
Inflammations, hot baths in treatment of superficial, 314—ab
uniocular, of optic nerve and retina, 1—O
Inflammatory processes, why and to what extent anesthetics are useful in, 467—ab
Information, when, from observation becomes privileged, 303—Ml
Ingbert, C. E., inguinal hernia of bladder, 361—O
Inhalations, action of amyl nitrite, on blood pressure, 1399—ab
Injured, deficient provision for, 1939
Injuries commonly associated with displacement of head of humerus, 154—ab
treatment of, to extremities by mechanotherapy, 639—ab
Injury, aggravation of effect of, by use of opiates, 805—Ml
Innocent, protection of, 1891—O, 1895—O
Inoculation, therapeutic, of bacterial vaccines, 1490—E
Insane, act to regulate private institutions for, 2118—Ml
better care of, needed, 1045—ab
fractures in, 1213
functional derangement of ears and upper air-tract in, 806—ab
information wanted regarding public care and treatment of, 1124
international congress for care of, 45
negligence of profession in securing establishment of temporary detention quarters for alleged, 144—ab
pathologists in hospitals for, 1394
treatment of, 800—ab
Insanity, alleged increase of, 1383—E

Insanity, flat residence and, 1660—E
manic-depressive, and visceral disease, 1719—O
of childbirth, 1959—ab
of inebriety, 799—ab
treatment of acute, in general hospital, 83—O
Insects, disease dissemination by, 2164—E
Insomnia, types of, and treatment without drugs, 1825—O
Inspection, medical, of schools, 958—ab
parental co-operation in medical, of schools, 2097—E
Institute for chemical research, 1458
Insufficiency, aortic, 238—ab
causes of, in medical practice, 1220—ab
Insurance agent, warning against fraudulent, 1394
committee on, 1937
contract work, experience of Warren, Pa., 2106
examination fee question, county societies and, 2105
examination fees, 697, 1498, 1760—ab, 1921—E
features of life, examining which demand correction, 688—E
fees and lodge practice, 445,1937,2105
fees, life, 2109—ab
postgraduate course on medical aspect of accident, 1312
professional syphilis and accident, 1236—ab
Internal medicine, swing of pendulum or renaissance of, 1404—ab
International congress of life insurance examiners, 519
Congress for Laryngology and Rhinology, 1929
Geneva, conference, revision of, 465—ab
Medical Association of Mexico, 1929
unification of formulas for heroic drugs, 2169
Intestinal diseases of children, acute, 1399—ab
dyspepsia—a correction, 1051—T
parasities, prevalence of, in Siam, 1089—O
Intestine, acute localized inflammation of large, 152—ab
and esophagus, research on atresia of, 1864—ab
button for anastomosis of, 1141—ab
capillarity in intestinal sutures, 405-O
diagnosis of congenital atresia of small, 643—ab
experimental study of internal treatment of occlusion of, 1233—ab
invagination of, 159—ab
intestinal obstruction due to gallstones, 1219—ab
obstruction of, 776—O, 811—ab
obstruction of, in child, 1511—ab
obstruction of, new form of, methods for preventing recurrence of volvulus of sigmoid flexure, 305—ab
obstruction of, surgical treatment of, 1761—ab
obstruction of, unusual case of, 540—ab
occlusion of, from volvulus of small intestine, 1688—ab
of infants, bacteriologic and blood findings in bowel infection, 2141—O
operation of choice in chronic obstruction of, due to malignant stricture, 1228—ab
prevention of acute diseases of, of summer, 1598—ab
removal of half of, for neoplasm, 125
rupture of, 2037—ab
successful end-to-end anastomosis after partial disembowelment in runaway accident, 1829—O
surgery of, a year's experience in, 2175—ab
surgically considered with reference to its sterilization, 896—ab
treatment of chronic catarrh of, 466—ab
two cases of resection of, with recovery of patients, 235—ab
volvulus of small, in typhoid simulating perforation, 809—ab
Intestines and peritoneum, hyperplastic tuberculosis of, 146—ab
natural disinfection of, 2045—ab
study of five cases of subcutaneous or concealed rupture of, treated by laparatomy, 131—ab
Intubation, Kuhn's peroral, 1691—ab
Intussusception, case of, illustrating fallacies and dangers of inflation treatment, 1139—ab
case of, subjected to operation, 2037—ab
Iodipin, 1379—P, 1487—P
Iodoform, bone plugging, treatment of osteomyelitis with, 2090—O
Iodoform in treatment of leprosy, 394—ab
Iodoformogen, 1487—P
Iodophilia, 1660—E
Iodothyrine, 1487—P
Ion compounds with exhibition of products, 228—ab
Iowa against charlatans, 1923—E
May and June reports, 714
medical news, 43, 210, 281, 440, 785, 1028, 1106, 1308, 1571, 1746, 2165
Ireland, condition of, 520
lunacy in, 1032
Iridocyclitis, 2041—ab
Iris, new procedure for treating prolapse of, 1130—ab
so-called leucosarcoma of, 418—O
Iron and quinin in pneumonia, 272—O
Irrigator, intraocular, 236—ab
modification of Reese urethral, 1830—O
Isoform powder, 1487—P
Isopral, 1487—P
Italy, how they humbug dear people of, 1111
Ivy poisoning, hay fever and, 793

J

Jack, F. L., report of four cases showing results of Killian's operation, 165—O
Jackson, C. M., two desirable reforms, 550—O
Jackson, E., relations of superior and inferior recti muscles to convergent squint, 105—O
Jacksonian epilepsy as guide to focal affections, 1140—ab
Jacobi, A., methylthionin hydrochlorid in inoperable cancer, 1545—O
Jacobi, A., proprietary medicines, 977—O
Jameson, N. L., treatment of fracture of inferior maxilla with description of splint, 854—O
Jampolis, M., influence of intraperitoneal injection of warm sterile normal saline solution in intraperitoneal hemorrhage, 1460—O
Janeway, H. H., bed-lift, 1093—O
Jaundice, diagnostic features of surgical diseases attended with acute, 537—ab
Jaw, bilateral resection of upper, 1422—ab
cysts in lower, 2046—ab
osteoplastic operation on lower, for receding chin, 1232—ab
Jaws, correction of defective closure of, 1232—ab
rubber teat and deformities of, 1686—ab
Jejunum, peptic ulcer of, 1140—ab
Johnson, F. M., addenda to therapeutic measures in certain forms of nephritis, 1976—O
Johnson, H. L. E., national supervision and standardization of food, 1371—O
Johnston, R. H., congenital membrane in naso-pharynx, 686—O
Joint diseases, especially those of children, 71—ab
passive congestion in treatment of gonorrheal affections of, 548—ab
radiograms after injection of oxygen into, 1141—ab
tissue of little finger, 2158—O
Joints, cure of tuberculosis of, 967—ab
hemophilic, 887—ab
Jonas, A. F., neoplasms of colon, 825—O
Journal, carelessly edited medical, 49
Journals, medical, of Great Britain, 294

K

Kahn, M., bradycardia in appendicitis, 2011—O
Kansas bureau of investigation and publicity, 2023—P
June report and questions, 889
May report and questions, 889
medical news, 211, 369, 440, 599, 785, 1028, 1385, 1571
Kasagra, 1487—P
Kassabian, M. K., new table and tube holder for skiagraphy, 113—O
Kean, J. R., system of personal identification by finger prints recently adopted for U. S. Army, 1175—O
Kebler, L. F., nostrums and fraudulent methods of exploitation, 1546—O, 1623—O
Keen, W. W., tumors of carotid-gland, 469—O, 566—O
Keloid, case of multiple, 1767—ab
Kentucky August report, 1950
July reports, 962
medical news, 211, 369, 515, 785, 1106, 1308, 1495, 1571, 1747, 1924
Kentucky, profession, the, 1401—ab
Keratitis, parenchymatous, treatment of, 1064—ab
obturans, 2051—O
Kerley, C. G., further contribution to study of stools of starch-fed infants, 763—O
Kerr, I. J., new shield for use in nose and throat examinations, 775—O
Kerrison, P. D., chronic catarrhal deafness, 1806—O
Keyes, Jr., E. L., protection of innocent, 1895—O
Kidney affections, pathology of, 1422—ab
affections, physical measures in treatment of chronic, 2176—ab
and appendix affections, differentiation of, 2127—ab
and bladder, treatment of tuberculosis of, by nephrectomy, 957—ab
and colon suspension by use of nephrocolic ligament and Gerota's capsule, 1044—ab
artificial renal colic as means of diagnosis of disease of, 1056—ab
calculi of, 2111—ab
case of tuberculosis of, 1735—O
changes, transmission of, to fetus, 548—ab
congenital cystic, 479—O
cystic, and liver, 277—E
diagnosis and treatment of tuberculosis of, 1075—O
diagnosis of, calculi with x-ray, 888—ab
diseases, increased mortality in England and Wales from, with special reference to Boron preservatives as a factor therein, 2041—ab
fixation of, by shortening of nephrocolic ligament, 1045—ab
fixation, technic of, 1045—ab, 1917—O
floating, its significance and treatment with reference to method of performing nephropexy, 1634—ab
functional, tests, 2126—ab
functioning in congested kidney of pregnancy and in eclampsia, 974—ab
in scarlet fever, 1220—ab
modified operation for movable, 537—ab, 1917—O
neoplasm of, five cases of, 463—ab
permeability of, in liver affections, 2178—ab
plastic surgery of pelvis of, 811—ab
reflex symptoms and referred pains caused by stone in, 387—ab
series of interesting cases of surgical conditions of, 1911—O
stones, tendency to, in tuberculous patients under forced feeding, 247
surgical treatment of calculi of, 2111—ab
treatment of tuberculosis of, and bladder by nephrectomy, 2047—O
tuberculosis of, in infant, 2036—ab
workman's claim for compensation for dropped, 521
Kidneys, changes in, produced by Roentgen ray, 889—ab
diseases of, 1397—ab
in tuberculosis, 207—E
physiology of, 1335—ab
surgery of, 1232—ab
Kiefer, H. A., case of black tongue, 362—O
King, C. W., prosthetic appliance for use after partial amputation of foot, 1739—O
King, G. W., substitute for dark room during fluoroscopic examinations, 1486—O
Knapp, R. E., cultivation of spirillum obermeieri, 2152—O
Knee, resection of, to obtain movable joint, 801—ab
joint, exposure of, by longitudinal incision, 1516—ab
joint, operative treatment of irreducible luxation of semilunar cartilages of, 1960—ab
joint, primary sarcoma of, 545—ab
joint, study of infections of, and their treatment, 538—ab
phenomenon, aid in eliciting, 1962—ab
swelling of, 449
Kola, 1488—P
Koplik spots, their relation and interest to laryngologists, 1511—ab
Kopp's baby friend, still other deaths from, 127—P, 1393—P
Kraurosis vulvæ, 1333—ab
Kresamine, 1488—P
Kuhn's peroral intubation, 1691—ab

L

Labor, induction of premature, and accouchment forcé in first 5,000 labors in obstetrical department of Johns Hopkins University—1229—ab
injuries to child's head during, 1526—ab
management of, 309—ab
pregnancy and, complicated by anterior fixation of uterus, 1528—O
prevention of difficult, 309—ab
scopolamin-morphin anesthesia in, 77—ab
Labyrinth in various animals and birds, 1406
trephining the, for subjective sounds, 242—ab
Lac bismo, 1488—P
Lactic acid in metabolism, 1804—O
Lactophenin, 1488—P
and aspirin, 882
Lake, G. B., tissue joint of little finger, 2158—O
Lake region, healthfulness of, 513—E
Lambert, A., medical treatment of gastric and duodenal ulcer, 845—O
Laminectomy, technic of, 957—ab
Laminoids ferruginous (nascent), 1488—P
Landry's paralysis, 467—ab
Langerhans' Islands and diabetes, 1334—ab
Language, medical, 1234—ab
Laparotomies, drainage after, 814—ab
fatal affections of gastric and intestinal mucosa after, 77—ab
100 consecutive, with reference to appendicitis, 1955—ab
LaRoque, G. P., total atrophy of stomach, 583—O
Larvæ, toxins destructive of, 816—ab
Laryngectomy, total, for carcinoma, 809—ab
total, for recurrent epithelioma of larynx, 462—ab
Laryngitis, 1591—T
treatment of tuberculous, with culture products, 2175—ab
Laryngotomy in radical treatment of laryngeal cancer, 1602—ab
Larynx, displacement of, and trachea, in thoracic affections, 2128—ab
neoplasm of, three cases of, 230—ab
pancreatic extract in cancer of, 1955—ab
treatment of tuberculosis of, 1062—ab
unusual case of papilloma of, in child treated by local application of formalin, 2124—ab
Latham, V. A., pathologic features of pulp, 916—O
Law, design of, 1953—Ml
Laws, field for, against solicitation of patients in Arkansas, 457—Ml
needed reforms in medical, of state of New York, 1504
Layton, E. N., case of isolated palsy of right external rectus, 274—O
Lead in ice cream, 1520—ab
poisoning by soldered water pipes, 216
LeBreton, P., congenital dislocation of hip, 1094—O
Lecture, institution of Nothnagel, 47
Leech as means of research in regard to toxic causes, 1213
LeFevre, W. I., improved rectal operating table, 111—O
Leg, results of operative treatment of varicose veins of, by methods of Trendelenburg and Schede, 1057—ab
temporary splint for fractures of, 152—ab
treatment of varices on, with ligature of popliteal vein, 547—ab
Legal medicine, necessity for better provision for, in country, 1206, 1394
Legislation, eugenic, 1834—E
Legislation, some, of 1906, 2034—Ml
lack of, regulating practice of medicine, 1214
Legislative record, good, in Massachusetts. 1569—E
Legs, exceptional rachitic distortions of, 801—ab
Lemere, H. B., remarkable osteocalcareous tumor in nose, 271—O
Lenhartz treatment of gastric ulcer at Eppendorfer Krankenhaus, Hamburg, 392—ab
Lennigallol, 1488—P
Lens, foreign body in crystalline, extracted by electric magnet, 308—ab
Leper, wanderings of, in Europe, 1110
Lepers, foreign born, and their treatment, 438—E
Leprosy, 1945—ab

Leprosy, great increase in, Cape Colony, 1841
iodoform in treatment of, 394—ab
Jonathan Hutchinson and outbreak of, in Switzerland, 1576
national control of, 1491—E
new aspect of pathology and treatment of, 1687—ab
prevalence of, in North America and policy to be pursued with regard to it, 1945—ab
transmission of, to monkeys, 972—ab
Leptomeningitis, study of acute (streptococcus pyogenes), 1271—O
Leptothrix racemosa, botanical diagnosis of, and its relations to modern doctrine of bacteriology, 1057—ab
Lespinasse, V. D., successful removal from male bladder of lost filiform bougie by endovesical manipulations, 1189—O
Leucocyte count, value of, in appendicitis, 1138—ab
Leucocytes, classification of, 1333—ab
effects of x-rays on, in blood and bone marrow in leukemia, 462—ab
melaniferous, in diagnosis of malaria, 234—ab
Leucocytosis, artificial production of, in peritoneal infection, 815—ab
Leucorrhea, 1509—T
Leucosarcoma, so-called, of iris, 418—O
Leucotoxin, formation of, under Roentgen treatment, 974—ab
Leukemia, acute lymphatic, clinical observations in case suggesting infection as etiologic factor, 493—O
anatomic, without leukemic blood, 1061—ab
and pseudoleukemia, Roentgen treatment of, 1775—ab
effect of x-rays on leucocytes in blood and bone marrow in, 462—ab
exophthalmos in, 2175—ab
improvement of, by intercurrent infections, 1690—ab
influence of x-rays in treatment of, and Hodgkin's disease with report of cases, 1262—O
mast cells, 1422—ab
metabolism in, under Roentgen treatment, 643—ab, 2044—ab
Roentgen ray in, 547—ab, 1062—ab, 1516—ab
treated successfully with arsenic, 1120
Levison, L. A., case of purpura hemorrhagica, 936—O
Lewis, B., what shall we teach public regarding veneral diseases? 1263—O
Lewis, W. A., death from rattlesanke bite, 2012—O
Liability of company silent when services rendered, 893—Ml
Libraries, medical, of London, 2022
Library, physician's, and filing of clippings from journals, 609, 882
License of physicians practicing in two states, 525
requisites to law authorizing revocation of, 70—Ml
Licenses, rights of state boards to revoke, 1133—Ml
Licensure, interstate reciprocity in medical, 1036
requirements for, to be raised, 1679—ab
Lichty, D., dermatitis from butter coloring, 2012—O
Life-insurance examiner and agent, 942—E
features of, examining which demand correction, 688—E
fees, 438—E, 697, 1674—ab
Ligaments, shortening of round, or subperitoneal ventro-aponcurotic fixation, 1329—ab
utilization of broad and round uterine, in supravaginal hysterectomy, 1219—ab
Light and air, injurious action of, on milk, 1421—ab
influence of, in production of psoriasis. 1514—ab
treatment with, 1966—ab
Lightning dread, physical basis of, 864—E
Lime in central nervous system, 1863—ab
Limping, intermittent, 887—ab, 2122—ab
Lip, epithelioma of, 815—ab
method of operating on, 1682—ab
Lipoma, polyphoid, of tongue, 1328—ab
Lipomata, retroperitoneal perirenal, 460—ab
Lips, plea for more radical operations in cancer of, and tongue, 986—O
Liquid electricity, 1630—O
Lithium ichthyol, 1488—P
Lithopedion, case of, 1228—ab
Lithotomy, suprapubic, with enucleation of prostate in an aged patient, 2040—ab
Litigation, accident—the popular graft, 640—ab
Liver, acute atrophy of, from chloroform poisoning, 1191—O
acute yellow atrophy of, 75—ab
affections, pollakiuria in, 1241
character of thrombi and necrosis of, produced by intravenous injection of ether, 1957—ab
cirrhotic changes in, following single injury, 984—O
cystic kidney and, 277—E
degeneration of, from necrosis of pancreas, 2044—ab
diagnosis of abscess of, 316—ab
echinococcus cyst of, 388—ab
local tenderness of, 1688—ab
necrosis and venous thrombosis in horses actively immunized with diphtheria and tetanus toxins and with streptococci and their products, 1228—ab
probable rupture of, abscess into bronchus, 1687—ab
significance of various symptoms of insufficiency of, 2178—ab
surgical treatment of ascites secondary to vascular cirrhosis of, 1960—ab
syphilides of, 644—ab
tropical abscess of, 155—ab, 156—ab
two cases of gastrosuccorrhea or gastric hypersecretion associated with atrophic cirrhosis, 719—ab
two cases of abscess treated by transpleural operation, 1419—ab
two cases of rupture of, 2120—ab
wounds of, 1765—ab
zone of rupture in, in heart disease, 311—ab
Liverpool school of tropical medicine, 948
school of tropical medicine, first report of expedition to the Amazon, 1112
Lloyd, J. H., faradization of motor cortex in human brain, 1972—O
Lobe, symptoms of affections of frontal, 1143—ab
Localization, problem of, in relation to head injuries, 1227—ab
Lockjaw, urgent plea for use of larger doses of antitetanic serum for, 1134—ab
Lombard, W. P., method of recording changes in body weight which occur within short intervals of time, 1790—O
London letter, 46, 124, 372, 444, 517, 604, 790, 869, 948, 1032, 1111, 1206, 1314, 1390, 1498, 1576, 1666, 1751, 1841, 1928, 2022, 2101
medical education in, 1111
Lorenz operation, final results from, for bloodless reduction of congenital hip dislocation, 2038—ab
Los Angeles, population of, 793
Louisiana medical news, 211, 600, 785, 1200, 1571
new officers of state board of medical examiners, 963
Lourdes pilgrimage, 781—E
Lovers, insane, 718—ab
Loyalty, professional, 1935
Lues, differentiation of inflammation of retina and optic nerve in inherited, 79—ab
Lumbago, 69—T
Lumbar-puncture in diagnosis, 1317
in eclampsia, 1142—ab, 1333—ab
in tuberculous meningitis, 1061—ab
percussion of skull as means of placing indication for performance of, 1226—ab
Lunacy in Ireland, 1032
treatment, ten year's, in Lewisham infirmary, 1230—ab
Lunatics, villa asylum for, 1390
Lund, F. B., congenital cystic kidney, 479—O
Lung, abscess of, 1221—ab
cavities, operative treatment of, 908
chronic non-tuberculous affections of, 350—O
gymnastics, 1894
points in surgery of, 390—ab
tissue, using elasticity of, in treatment of injuries of thorax and its contents, 1402—ab
Lungs, abscesses in, 396—ab
clinical, anatomic and pathologic comparison of tuberculous cavities in, 1596—ab
deep breathing as therapeutic and preventive measure in certain diseases of, 967—ab
edema of, 898—ab
Lungs, erysipelas of, 244—ab
fresh air treatment of acute respiratory diseases of, with reference to pneumonia, 233—ab
injections of specific tuberculous bacteriolysins directly into, 546—ab
possibility of intestinal origin of anthracosis of, 1692—ab
primary aspergillosis of, 815—ab
primary tuberculosis and anthracosis of, and bronchial glands, 1691—ab
suction mask to act on, 1423—ab
surgery of, 815—ab
Lupulin, administration of, 1680—T
in treatment of gastro-intestinal diseases, 1134—ab
Lupus, cases of carcinoma and, 455-ab
erythematosus in early childhood, 720—ab
of mucosa of upper air passages, 725—ab
vulgaris, x-ray treatment of, 888-ab
Lusk, G., lactic acid in metabolism, 1804—O
Lycetol, 1488—P
Lydston, G. F., new method of anastomosis of vasdeferens, 169—O
Lydston, G. F., series of interesting cases of surgical conditions of kidney, 1911—O
Lymph glands in carcinoma of cervix, 973—ab
glycerinated calf, 1112
Lymphangiectasia in groin, 2043—ab
Lymphatics, behavior of, in primary syphilitic infection in women, 158—ab
Lymphosarcoma of pharynx limiting motions of jaws and axis by invading prevertebral and pterygomandibular spaces, 2123—ab
Lysidin, 1489—P
Lysol poisoning, 394—ab, 1062—ab

M

MacCallum, W. G., cirrhotic changes in liver following single injury, 984—O
Macdonald, J. A., case of brain tumor, 101—O
Mackenzie, K. A. J., hour-glass duodenum, 341—O
MacNevin, M. G., gastric-ulcer, 14-O
Magnesium sulphate, treatment of tetanus by, 146—ab
Magic word, organization, 137
foot drafts, 1628—O
Maggots, affections caused by, 79—ab
Magnet operation, another successful, but with unusual termination, 1595—ab
and other infections, relations between, 1964—ab
Maine July report, 1533
medical news, 515, 1200, 1571
Malaria, 805—T
and other infections, relations between, 1964—ab
eucalyptus trees and, 1755
in high altitudes, 217
in Greece, 1964—ab
melaniferous leucocytes in diagnosis of, 234—ab
mixed, and typhoid, 358—O
on Isthmus, 121
pathogenesis and prophylaxis of, 1600—ab
preventive measures against, in Italy, 2113
Prof. Ronald Ross' investigation of, in Greece, 1314
prophylaxis in Ceylon, 1576
successful campaign against, in south of Austria, 1666
success of campaign against, in Italy, 519
transmission of, 2042—ab
Malarial infections, therapeutic action of splenic extract in, 537—ab
Males, comparison of phthisical with non-tuberculous, 155—ab
Malformation, peculiar congenital, 363—O
Malformations, Roentgen ray in study of congenital, 1682—ab
Malone, H. H., antiseptic treatment of tuberculosis, 739—O
Malpractice and aggravation of damages in injury cases, 1680—Ml
liability same as for personal injury, 638—Ml
personal, liability of company officers, 233—Ml
Mamma, tuberculosis of, 2127—ab
Mandel, A. R., lactic acid in metabolism, 1804—O
Manila, cholera in, 1204
Manslaughter, failure of husband to call physician, 717—Ml
Manual training for medical students and instruction in principles of psychotherapy, 301—ab
Marcy, H. O., best methods of closing aseptic wounds, especially of abdomen, 2135—O
Marcy, H. O., education as factor in prevention of criminal abortion and illegitimacy, 1889—O
Marmorek's serum in surgical tuberculosis, 1962—ab
Marple, W. B., injuries to eye with birdshot, 421—O
Marriage contract, guarantee of safety in, 1887—O, 1891—O
physical and evolutionary basis of, 1886—O
Marriages, 49, 133, 219, 289, 378, 447, 528, 608, 702, 796, 880, 953, 1040, 1123, 1209, 1318, 1395, 1502, 1582, 1669, 1753, 1844, 1941, 2027, 2172
Marvel, P., acute lymphatic leukemia, clinical observations in case suggesting infection as etiologic factor, 493—O
Maryland June report and questions, 1589
medical news, 44, 118, 212, 369, 440, 515, 600, 691, 866, 1029, 1106, 1201, 1308, 1385, 1495, 1572, 1662, 1747, 1924, 2018, 2098
rules governing examinations in, 1757
tuberculosis sanatorium, 1852—Ml
Mason, H. N., further contribution to study of stools of starch-fed infants, 763—O
Massachusetts, good legislative record in, 1569—E
July report, 1215
March and May reports, 64
medical news, 118, 212, 369, 515, 600, 785, 867, 1106, 1201, 1385, 1572, 1662, 1747, 1837, 1925, 2165
September report, 1950
Mastoid disease, simulation of, 1331—ab
operation, modification of simple, which shortens convalescence by facilitating wound repair, 1701-O
operation, radical, modified to allow preservation of normal hearing, 1512—ab
operation, technic in after-care of radical, 1645—O
surgery, new apparatus; (1) an aseptic protective sheet for, and (2) a practical algesimeter, 1652—O
Mastoiditis, acute, its prevention, diagnosis and treatment, 966—ab
acute, complicated by ulceration and rupture of esophagus, 1417-ab
and acute suppurative otitis media, 1321—ab
Matas, R., radical cure of aneurism, 990—O
Materia medica and pharmacology, teaching of, 2125—ab
Maternal characteristics, inheritance of, by larvæ, 975—ab
Matter, mind and, 278—E
Maturation and senility, 229—ab
Maxilla, treatment of fracture of inferior, with description of splint, 854—O
Mayer, E., foreign bodies in bronchi, 1533—O, 1586—O
Mayo, H. N., Rocky Mountain or spotted fever, 36—O
Mayo, W. J., surgical treatment of gastric and duodenal ulcer and its results, 912—O
McAllister, A., whole milk versus laboratory milk, 1087—O
McAuliffe, G. B., description of new adenatome, 777—O
McCaskey, G. W., rôle of nuclein in animal economy, 1800—O
McClanahan, H., hemorrhage in newborn, 1145—O
McCormack, J. N., conclusions from comparative study of status of medical profession in Great Britain and United States, 1043-O
McCormack, J. N., defective organization in Tennessee, 296—O
McCurdy, S. L., elbow-joint, injuries of with report of cases, 172—O
McDonald, E., mensuration of child in uterus with new methods, 1979—O
McEwen, E. L., relation of nerve-impulse to cutaneous inflammation, 8—O
McLean, N. T., gangosa, 1166—O
Meals, small frequent, in treatment of certain biliary affections, 1135—ab
Measles, early signs of, 2176—ab
study of spread of epidemic of, 160—ab

Measurements, apparatus for corporal, 2127—ab
Meat diet, influence of excessive, on growth and nutrition, 542—ab
dyed, 790
inspection, Chicago, regulations for, 1383—E
inspection in Queensland, 519
juice, raw, in malassimilation of children, 1961—ab
purity label for, 520
Meats, analysis of canned, 869
Mecca pilgrimage, 1750
Mechanotherapy, treatment of injuries to extremities by, 639—ab
Meckel's diverticulum, clinical experiences with, and other vestiges of omphalomesenteric duct, 460—ab
Mediastino-pericarditis and its surgical treatment, 241—ab
Mediastinum, tumors of, Roentgen treatment of, 1691—ab
Medicaster, 1750
Medical and teaching professions, how may, coöperate to improve moral, mental and physical condition of young, 301—ab
association of southwest, 376
attendance, not required to provide necessary, 638—Ml
certificate, examination for higher, in France, 587—E
council, general, of Great Britain; its powers and its work, 1590
council, new, in Turkey, 1750
education in London, 111
examiner, relation of, to medical director, 780—E
fallacies, 1104—E
forgeries, 2104
inspection of school children, 521
journals, how to subscribe to French, 1041
jurisprudence, teaching of, 793, 1116, 1208
profession, conclusions from comparative study of status of, in Great Britain and United States, 1043
profession, future of, of St. Louis, 1046—ab
Record; an enemy of the American Medical Association, 860—E
Record, private gain vs. professional benefits, 942—E
schools, interstate reciprocity and frauds in, 878
services, liability of corporations for, to employés, 1319
specialism, with reference to proctology, 1365—O
Medicine and surgery, borderland of, art of, 817—O
distribution of, samples of, in Fort Wayne, 127—P
field for art in, 1243
has regular, kept pace with art of healing? 1404—ab
history of, 1408
necessity for better provision for legal, in this country, 585—E
nurses' schools and illegal practice of, 1835—E
practicing, 1953—Ml
President Eliot on future of, 1382-E
progress of, in Philippine islands, 245—O
prospects of western, in China, 1060—ab
registration required before practicing, 529
substance and shadow in, 1768—ab
Medicines, character of, dispensed by physicians, 949—P
Medico-Chirurgical College, Philadelphia, additional data, 1848
Mediterranean fever, cause of, at Malta, 1929
Meetings, attendance at medical, 527
Megrail, W. P., modification of Esmarch-chloroform-inhaler, 855-O
Melancholia, cholemia in, 292
Melena neonatorum, gelatin in, 2026
Ménière's disease, advisability of eliminating terms, and Ménière's symptoms from otologic nomenclature, 307—ab
Meningitis, cases of, with isolation of diphtheria bacillus from cerebrospinal fluid, 2138—O
curability of tuberculous, 1520—ab, 1520—ab, 1692—ab
etiology of acute, 1835—E
lumbar puncture in tuberculous, 1061—ab
Meningocele, of unusual size, 808-ab
Meningococcus, poison of, 174—O
Menstruation as source of infections and intoxications, 909—ab
during pregnancy, 1333—ab
in case of hysteria, chlorosis and heart affections, 1518—ab
Mensuration of child in uterus with new methods, 1979—O
Mental affections, family groups of, 1144—ab
affection in inhabitants of cities, 1143—ab
affections, non-recognition of, 1236—ab
disorder, hospital treatment of curable cases of, 1769—ab
disturbances, and ear affections, 1416—ab
infirmity not proved by tendency to it, 1414—Ml
Mercurol, 1489—P
Mercury, etc., in relation to tests for occult blood, 816—ab
fatal poisoning by external application of bichlorid of, 1484—O
in syphilis, 1412—T
localization of, in system, 244—ab
sozoiodolate, 881
Merrill, T., puerperal infection, 434-O
Mesenteric vessels, embolism and thrombosis of, 1423—ab
Mesentery, cysts in, 1144—ab
Mesotan, 1489—P
Metabolism in leukemia under Roentgen treatment, 643—ab, 1862—ab, 2040—ab
lactic acid in, 1804—O
Metal radiation, 468—ab
Metatarsalgia, 2152
Methaform, 1489—P
Methlyene-blue eosin stain for blood and tissues, 1236—ab
frauds, 1627—O
Methylthionin hydrochlorid in inoperable cancer, 1545—O
Metritis, chronic, 303—T
Metropolitan board of health, report of, 948
Metzenbaum, M., ether-air anesthesia or drop method for administration of ether, 1653—O
Meyer, W., osteoplastic resection of costal-arch to reach vault of diaphragm, 1069—O
Michigan checks disreputable advertising, 513—E
June report, 1126
May report and questions, 533
medical news, 212, 369, 441, 600, 786, 1029, 1107, 1201, 1386, 1573, 1747, 1837, 2018, 2099, 2165
new schedule of requirements, 533
Micrococcus tetragenus albus, serious anemia from 1520—ab
Micro-organisms, modification of virulence of, by cultivation in other species, 975—ab
study of nature of, found in mouths and throats of healthy persons, 1684—ab
Microscopes, 610
Microscopic preparations, to locate special points in, 1143—ab
Migraine, 1761—ab
and hypothermia in tuberculous, 901—ab
gastrointestinal disturbances associated with, 1512—ab
Migrainin, 1489—P
Mikulicz memorial, 45
Miliary fever and rats, 1961—ab
fever, epidemic, 1775—ab
Milk and alcohol in hospitals, 941—E
cans, prohibits placing of offal, etc., in, 1954—Ml
contaminated, in Great Britain, 124
in infectious diseases, 1614—O
injurious action of light and air on, 1421—ab
in typhoid fever, 1843
leucocyte content of, drawn from apparently healthy animals, 2110—ab
new Babcock, testing bottle, 304-O
precipitins of cow's, found in infant's blood, 725—ab
protection of, 1841
pure, and infant mortality, 1744—E
pure in Australia, 2169
question in Maryland, 1405
simple device for working directly with percentages in home modification of cow's, 438—ab
simple method for quantitative determination of proteids in, 1417 ab
skimmed, to be pasteurized, 1852—Ml
supply, 1111
supply, comparative value of bacterial and temperature regulations for city's, 2110—ab
supply, control of, 886—ab
supply, increase of power of local authorities with regard to, 899-ab
use of sodium citrate as modifier of cow's, 1241—O
value of small quantities of human, in treatment of infantile atrophy and infections of infants, 1904—O
Milk, whole, versus laboratory milk, 1087—O
Mills, C. K., unilateral ascending paralysis and unilateral descending paralysis, 1638—O
Mind and matter, 278—E
cure; its service to the community, 1405—ab
dangerous influence of overtaxing girl's, particularly at puberty, 383—ab
Mineral substances, part played by, in physiology of organism, 1516—ab
Ministers and patent medicines, 1500—P
Mink, O. J., gangosa, 1166—O
Minnesota health regulations, 783—E
reciprocity with, 52
June report and questions, 636
medical news, 213, 370, 515, 691, 786, 1107, 1573, 1925, 2099
October report, 1952
Minor, death of, from anesthetic administered for operation without father's consent, 1053—Ml
Mirror, use of small, in studying apex beat, 1918—O
Mississippi medical news, 600, 1386, 1573
Missouri April and August reports and questions, 1410
medical news, 213, 281, 370, 516, 691, 786, 945, 1029, 1386, 2099, 2165
Mitchell, S. W., sudden paralysis of pharynx, 1967—O
Mitral stenosis, false, 724—ab
stenosis, relative, 1938
Mixtures, serviceable for infants, 1851—T
Models, skeletons and, 2108
Moloney, P., latent tuberculosis in children, 1189—O
Money, tainted, 1922—E
Monocephalus, tetrabrachius tetrapus, 2159—O
Monster, dicephalous, 1738—O
Monocephalus, tetrabrachius tetrapus, 2159—O
Montana medical news, 1784
October report, 1952
Montgomery, E. E., uterine myomata complicating pregnancy, 1777—O
Moodie, E. L., contribution to study of quinin and iron in pneumonia, 110—O
Moore, J. E., treatment of bone-cavities, 345—O
Moore, T. W., striking idiosyncrasy to use of cocain in eye, 1486—O
Mooser, C. E., Rocky Mountain spotted fever, 686—O
Morax-Axenfeld, diplobacillus of, 255—O
Morbidity, puerperal, influence of disinfection of vagina on, 973—ab
Morgan, A. C., tetanus neonatorum, 2083—O
Mormon Bishop pills, 1624—O
Morphin in stenosis of esophagus, 1143—ab
poisoning, extraordinary case of, 1315
poisoning from opium or, in 7-weeks-old baby, 776—O
scopolamin, spinal anesthesia preceded by, 243—ab
separation of, from glycerin, 1407
Morphology, journal of, wanted, 135
Morrell, J., meningitis with isolation of diphtheria bacillus from cerebrospinal fluid, 2138—O
Morrow, P. A., publicity as factor in venereal prophylaxis, 1244—O
Morse, W. B., Cesarean section performed by cow, 1192—O
Mortality among athletes, 1213
among children of women working in tobacco, 1844
factors which have lowered operative, and have improved post-operative results, 1219—ab
infant, in England and Wales, 46
infantile, and health visitors, 1032
infantile and its principal cause—dirty milk, 2175—ab
national conference on infantile, 124
prime minister and infantile in Great Britain, 2101
pure milk and infant, 1744—E
Mosher, H. P., examination and surgery of upper end of esophagus, 1695—O
Mosquito breeding areas, new provision for abolishing, 2118—Ml
trap, electric, 812—ab
Mosquitoes, tastes of, 865—E, 1036
to what extent are infected present on shipboard? 2110—ab
Mothers, leaflet to give to young, 1603—ab
prizes for nursing, 1031
Motor driver's spine, 392—ab
Mouth disinfection in prophylaxis and treatment of pneumonia, 1766—ab
Mumps, blood changes in, 1569—E
ovarian inflammation in, 381
Murphy button in gastrointestinal surgery, 395 —ab
Muscle, implantation of, to repair defect in long bone, 816—ab
transplantation in treatment of infantile paralysis of arm, 1423—ab
Muscles, paralysis of ocular, after lumbar anesthesia, 581
Museum, making of, of applied anatomy, 1943—ab
preparation for (not), new method of mounting, 128
Musical instruments, effect of blowing on wind, with reference to tuberculosis, 1327—ab
Musser, J. H., management of tuberculosis, 2131—O
Musson, E. H., oil-of-tansy poisoning, 1917—O
Myasis, intestinal, 1776—ab
Myasthenia angio sclerotica, 2122—ab
gravis, 1969—O
Myelitis, 391—ab
of pregnancy, 1774—ab
Myocardium, degeneration of, in hot climates, 238—ab
Myoclonus, congenital, with nystagmus, 543—ab
epilepsy, case of, with autopsy, 1226—ab
Myoma and sarcoma of stomach, 1684—ab
results of operative treatment of, 973—ab
when to operate for uterine, 814-ab
Myomata, uterine, complicating pregnacy, 1777—O
Myomectomy during pregnancy and labor at term in elderly primipara, 2124—ab
Myopia, investigation as to cause of increasing, 1667

N

Names, catchy, and their dangers, 944—E
Narcolepsy, case of, from specific infection transmitted through five generations, 808—ab
Narcotics, test under statute as to prescribing of, 1763—Ml
Nasal passages, clinical obscrvations concerning, and relation they bear to organs of sight and hearing, 1055—ab
Nasopharynx, congenital membrane in, 686—O
treatment of sarcoma of, by injections of adrenalin, 430—O
National confederation of eclectic medical colleges, 635
department of health, a, 1023—E
department of health, economic advisability of inaugurating a, 1003—O
examining board, 877
Formulary, 1585—ab, 1826—O
health department and insurance fee campaign, endorses, 1935
Nature, defacement of, by nostrum-advertisements, 210—E
Nauheim baths, artificial, in chronic heart cases, 1054—ab
Navel, packet of aseptic materials for care of, and eyes of newborn child, 1830—O
Navy, sanitary questions in, 1128-ab
Nebraska August report, 1505
May report, 1126
medical news, 213, 370, 516, 867, 1202, 1496
new rules of state board, 963
rules governing examinations in, 1757
Needle story, migratory, 1659—E., 1842, 1934, 2024
Negri bodies in hydrophobia, 87—O , 1860—ab
Neisser to resume his syphilis research on monkeys, 1205
Nelson, L., effects of aperients on peristalsis of stomach and intestines, 1819—O
Neoplasms of colon, 825—O
Neo-vitalism, 1027—E
Nephrectomy, treatment of tuberculosis of kidney and bladder by, 957—ab, 2047—O
Nephritis, 1677—ab
acute, 1952—T
acute, after use of Peruvian balsam, 545—ab
acute, in scarlet fever, 893—T
acute (morbus brightii), 898—ab
addenda to therapeutic measure in certain forms of, 1976—O
cardiac hypertrophy as observed in chronic, 1354—O

Nephritis, complications and sequelæ of, 1678—ab
effect of dry diet in, 1232—ab
mild course of arteriosclerosis, in aged, 241—ab
operations for, 814—ab
treatment of, 241—ab, 1687—ab
uremic, 314—ab
Nephrolithiasis, 908—O, 1676—ab
Nephropexy, floating kidney, its significance and treatment witb referance to method in performing, 1684—ab
new technic of, 152—ab
Nephrotomy, renal decapsulation and, in treatment of serious forms of eclampsia, 308—ab
Nerve fibers, regeneration of, 2130—ab
grafting for peripheral facial paralysis, 1424—ab
impulse, relation of, to cutaneous inflammation, 8—O
ulnar, as landmark of elbow, 1328—ab
Nerves, distribution of afferent, in skin, 645—O
Nervous affections after gynecologic operations, 241—ab
affections in puerperium, 1518—ab
system, cancer metastasis in central, 1519—ab
system, technic of operations on central, 706—ab
Neu, F. C., report of case of brain tumor, 101—O
Neuralgia and headache, 1325—T
and nasal disease, 741—O
is, functional disease? 388—ab
neurectomy for, 548—ab
Roentgen ray in, 903—ab
surgical treatment of trigeminal, 1227—ab
treatment of, and spasmodic tic with deep injections of alcohol, 209—E
treatment of trigeminal with osmic acid, 2043—ab
Neurasthenia, 1764—ab
as modified by modern conditions; and their prevention, 1816—O
etiology of, 178
rest cure for, 954
Neurectomy for neuralgia, 548—ab
Neuritis, mental symptoms associated with alcoholic, 208—E
multiple motor, including Landry's paralysis and lead palsy, 387—ab
pseudo-optic, 1595—ab
puerperal lumbar, 315—ab
use of Roentgen ray in, 1415—ab
Neurocaine, 1489—P
Neurofibromatosis, diffuse, 1863—ab
Neurology, growth of, 1337—O
Neuromata, multiple, of skin, 1810-O
Neuronidia, 1489—P
Neuroses, cardiac and exophthalmic goiter, 1603—ab
motor, treated with bypnotism, 904-ab
Neurosis anguish, 2175—ab
of beart and arteriosclerosis in consequence of trauma, 394—ab
Nevada, May and August reports, 1411
Nevi, cases of spontaneous intracranial bemorrhage associated with trigeminal, 178—O
pathologic significance of vascular, 278—E
New and non-official remedies, 856—P, 865—E, 938—P, 1020—P, 1096—P, 1193—P, 1302—P, 1378—P, 1487—P, 1564—P, 1656—P, 1740—P, 1831—P, 1919—P, 2013—O, 2093—P
New-born, hematoma of, 274—O
hemorrhage in, 1145—O
Newell, F. S., instrumental dilatation of parturient uterus, 1531-O
New-Hampshire medical news, 370, 786, 2166
New-Jersey June report, 890
medical news, 281, 370, 600, 1108, 1386, 1573, 1662, 2099
October report, 2116
New-Mexico May report, 714
medical news, 370
Newspaper advertisements, clean, 2112
one not controlled, 126—P
Newspapers and quacks, 1568—E
New-York medical news, 44, 119, 213, 281, 371, 441, 516, 601, 691, 786, 867, 946, 1029, 1107, 1202, 1308, 1387, 1496, 1573, 1663, 1748, 1837, 1926, 2018, 2099, 2166
needed reforms in medical laws of state of, 1504
reciprocates with Ohio, 1411
Nieder, C. F., quinin and iron in pneumonia, 272—O
Night work, injurious influence of, on composition of blood, 708
working, 1743 E
Nile boils, 1599—ab
Niles, H. D., surgical conception of sigmoid pathology, 832—O
Nitrate of amyl, mechanism of therapeutic action of, 1231—ab
Nobel prize in medicine, 2016—E
prize to Golgi and Ramon y Cajal, 1750
prizes, America's neglect of, 1933
Noble, C. P., fibroid tumors of uterus, 1881—O, 1998—O, 2065—O
Nodules, cause of vocal, 230—ab
Noises, street, of London, 2022
Nomenclature, obstetric, 80—ab
official, of disease, 605
North-Carolina May report and questions, 140
medical news, 441, 601, 786, 1030, 1203, 1387, 1496, 1574, 1663, 1748, 1926, 2099, 2167
North-Dakota July report and questions, 381
medical news, 371, 601
October report, 1848
to be congratulated, 285—P
Northrup, W. P., open-air treatment of pneumonia, 1182—O
Norton, J. P., economic advisability of inaugurating a national department of bealth, 1003—O
Nose, accessory sinuses of, and pneumococcus infections, 1561—O
and throat examinations, new shield for use in, 775—O
and tbroat, relation of smoke-laden atmospbere to diseases of, 384—ab
function of accessory cavities of, 230—ab
intranasal conditions bearing on etiology of ear diseases, 1132—ab
mental symptoms due to disease of, 1955—ab
nasal discase and neuralgia, 741—O
obstruction of, 960—ab
paraffin injections for deformities of, 2130—ab
remarkable osteo-calcareous tumor in, 271—O
removal of malignant tumors in, through upper jaw, 545—ab
resection of septum for primary tuberculosis of, 902—ab
sarcoma of, 960—ab
septum of, treatment of deviations of, 2040—ab
some recent rbinologic acbievements and tendencies of, 162—O
submucous (or window) resection operation for correction of deflections of septum of, 1139—ab
value of skiagraphy in surgery of, 1131—ab
Nostrum advertisements, defacement of nature by, 210—E
advertisements in religious press, 1833—E
alcohol consumption, 2023—P
evil, physician's responsibility for, 982—O
men, tricks, of, 1667—P
regulations in Australia, 1031
Nostrums, 527
and advertising, 1117
and fraudulent methods of exploitation, 1546—O, 1623—O
and proprietary medicines, 719—ab
evade laws, 947
Novocaine, 1564—P
Novy, F. G., cultivation of spirillum obermeieri, 2152—O
Nuclein, rôle of, in animal economy, 1800—O
Nucleoproteids in septic affections, 974—ab
Nurse, liability for negligence of, in sanitarium, 1225—Ml
plea for square deal for wet, 1909-O
Nursery, Rémond, at Lyons, 1389
Nurses' schools and illegal practice of medicine, 1835—E
Nutrition, discussion on, in section of physiology, British Medical Association, 1322—ab
in various dermatoses, 1771—ab
Nutrose, 1489—P
Nystagmus, congenital myoclonus with, 543—ab
unilateral rotary, 1957—ab

O

Oath administered to Kansas students, 51
Obesity cures, 1627—O
dictetics of, 820—O
foods, 1627—O
rengo for, 1940
thyroid treatment of, 974—ab
treatment of, 819
Obstetric experiences, 723—ab
Obstetrician, successful, 1405—ab
Obstetrics, scopolamin-morphin in, 1862—ab
Obstetrics, teaching of, 706—ab
Occipito-posterior positions, treatment of persistent, 1765—ab
Occult blood, detection of, in stools, 1334—ab
bemorrbage, high hemorrhoids as cause for, 1141—ab
hemorrhages, significance of so-called, in diagnosis of ulcer and carcinoma of stomach, 639—ab
Occupation affections, 123
Ochronosis, 544—ab
Ochsner, A. J., femoral berniotomy, 751—O
Ocular muscles, paralysis of after lumbar anesthesia, 581
muscle, senile atrophy of, 975—O
rotations, axioms concerning, 353-O
therapeutics, value of Roentgen ray in, 294—O
Odor as guide in treatment of chronic suppuration of middle ear, 1733-O
Ohio June report and questions, 2114
medical news, 371, 516, 601, 692, 787, 946, 1030, 1387, 1749, 1927, 2019, 2100, 2167
medical university, state board examination statistics witb, 52
reciprocity with, 52
rules governing examinations in, 1758
Oblmacher, A. P., poison of meningococcus, 174—O
Oil of tansy, poisoning from, 509—O, 1917—O
Ointment, is boric acid, sterile? 770
Oklahoma June report, 295
medical news, 517, 1496, 1749
September report, 1951
Olander, E., poisoning from opium or morphin in 7-weeks-old baby, 776—O
Olecranon, fracture of, 727—ab
Olive oil, cholelitbiasis treated by, 1402—ab
Omentum, functions of, 465-ab, 2037-ab
Ontario, water situation in, 886—ab
Operating and office table, new, combined, 2160—O
room, to improvise an, 1420—ab
Operation, history of mastoid, 92—O
liability for performance of unauthorized, 1593—Ml
report of four cases showing results of Killian's, 165—O
Operations, some of unusual interest on women, 721—ab
technic of, on central nervous system, 706—ab
Ophthalmia, diphtheritic, 1844
sympathetic, 1222—ab
Ophtbalmic practice of present time, 485—O
Ophthalmoscope, two cases illustrating value of, as an aid in diagnosis of cause of brain lesions, 1329—ab
Ophthalmotrope, model for new, the gonioscope, 718—ab
Opiates, aggravation of effect of injury by use of, 805—Ml
Opinions of unprofessional observers as to sanity, 965—Ml
Opium drunkenness, divorce for, from medicine, 304—Ml
poisoning from, or morphin in a 7-weeks-old baby, 776—O
trade, 439—E
traffic, China and, 1493—E
Oppenheimer institute and its endorsers, 1117
Opsonic-index in medicine, 390—ab, 1722—O, 1793—O
in typhoid, 2159—O
observations on and antepneumococcal power of blood in pneumonia, 1766—ab
of tuberculous, patients undergoing sanatorium treatment, 391—ab
Shaw on, 2095—E
Optic nerve, treatment of progressive atrophy of, due to acquired syphilis, 823—O
Oral cavity, relation of systemic diseases to conditions of, 324—O
Orbit, foreign body retained in, for nearly four years, 724—ab
Orchitis, present operative necessities for cure of tuberculous, 1944—ab
Oregon May and July reports, 1215
medical news, 601, 946, 1497, 1574
Orendorff, O., improved cautery tip, 205—O
Organization, defective, in Tennessee, 296—O
how remedy defects of, 1418—ab
medical, 1418—ab
of profession in Austria, 1665
of profession in Bohemia, 2101
plea for, 1407
Organotherapy, danger in, 1563—E
Orientalism, or change to Eastern appearance, 239—ab, 367—E
Orientation, electrical, in spinal anesthesia, 387—ab
Orthoform-new, 1564—P
hydrochlorid, 1564—P
Orthopedic armamentarium, contributions to, 2041—ab
Orthopercussion and relative heart diseases, 1518—ab
Osborne, O. T., therapeutic uses of thyroid preparations, 1475—O
Osler one of biggest in bunch, 1939
Osmic-acid, in trigeminal neuralgia, 2043—ab
possible danger in therapeutic use of, 966—ab
Osmond, A. E., ethyl chlorid as general anesthetic, 1655—O
Osteitis deformans witb Huntington's cborea, 1332—ab
Osteogenesis imperfecta, 1598—ab
Osteomalacia cured by Roentgen exposures of ovaries, 46
Osteomalacia, is, thyroid affection? 543—ab
Osteomyelitis, treatment of, with iodoform bone plugging, 2090—O
Osteopathy, physician's impression of, 293
Osteoplasty, combined superior tibiofibular and astragalo-fibular, to prevent shortening after extensive osteomyelitis of tibia during adolescence, 1329—ab
Otis, E. O., tuberculosis dispensary, its methods, value and limitations, 2154—O
Otitis and mastoiditis, acute purulent, treated by artificially induced hyperemia, 1137—ab
media, acute suppurative, and mastoiditis, 1321—ab
media acute suppurative post morbillos, etiology of, 718—ab
media, results from operation for cbronic purulent, 230—ab
treatment of, 2045—ab
treatment of purulent, by congestive hyperemia, 1137—ab
wryneck from, 900—ab
Otology in its relation to rhinology and laryngology, 1809—O
Otorrbea, importance of treatment of chronic, 1682—ab
Out-patient department, reform of, in public hospitals, 48, 871
Ovaries, 381
action of Roentgen ray exposures on, and gravid uterus, 2177—ab
conservative surgery of, 1449—O
microscopic findings in rabbit, after Roentgen exposures, 77—ab
Roentgen exposure of, during pregnancy, 1142—ab
transplantation of human, 1936—ab
Ovariotomy, remote results of, 1600—ab, 2043—ab
Ovary and tube, hernia of, 1707—O
bilateral metastatic carcinoma of, 1601—ab
cysts of situated above superior pelvic strait, complicated by pregnancy, 1229—ab
large gelatinous tumor of, 1056—ab
teratoid tumors of, 1601—ab
tumor of, removal of enormous, 1135—ab
tumors of, is it permissible to remove, in sections, 1602—ab
Over-eating by poor, 367—E
Over-feeding and under-feeding, metabolic aspects of, 1761—ab
Over-nutrition and under-nutrition, 1322—ab, 1769—ab
Oversight, remarkable, 521
Overwork, signs of, 1140—ab
Ovoferrin, 1564—P
Oxaluria as cause of prostatic and urethral disturbance, 1767—ab
Oxaphor, 1565—P
Oxidation, administration of drugs to concurrently retard and stimulate systemic, 459—ab
Oxygen in gynecology, 1059—ab
radiograms after injection of oxygen into joint, 1141—ab
use of, in asphyxia neonatorum, 1765—ab
Ozena, removal of crusts in, 2178—ab
successful treatment of, with paraffin injections, 303—T

P

Paget's disease treated by x-ray with microscopic findings in one of them after prolonged treatment, 307—ab
epitheliomatosis, 1771—ab
Pain, meaning and mecbanism of visceral, 310—ab
Palate, mixed tumor of soft, 1328-ab
Palsies, etiology of cerebral, in children, 2139—O

Palsy, isolated, of right external rectus, 274—O
Panama, affairs in, 380
Health report of Isthmus of, for July, 694
Pancreas achylia, functional, 1422-ab
cancer of, 1213
complete removal of multilocular cystic tumor of, 155—ab
cysts of, 1402—ab
surgery of, 1402—ab
Pancreatic disease, nucleus test in, 1957—ab
Pancreatitis, 144—ab
acute, five cases, 1584—ab
hemorrhagic and gangrenous, 1403—ab
Papilloma of larynx, unusual case of, in child treated by local application of formalin, 2124—ab
Paracentesis, improved tecbnic for, 312—ab
Paraffin injections for deformities of nose, 2130—ab
injections, successful treatment of ozena with, 303—T
plates as an aid in operatjons for extensive symblepharon, 570—O
prothesis, 959—ab, 1422—ab
prothcsis, histopathology of, 1957-ab
Paralyses, relative value of surgical procedures for relief of, following acute anterior poliomyelitis, 1137—ab
Paralysis during croupous pneumonia, 727—ab
muscle transplantation in treatment of infantile, of arm, 1423-ab
nerve grafting for peripheral facial, 1424—ab
of pharynx, sudden, artificial feeding for four years, 1967—O
operative treatment of infantile, with reference to neuroplasty, 234—ab
pathologic study of seven cases of, without gross anatomic change, 1705—O, 1713—O
permanent, after spinal anesthesia, 727—ab
postoperative gastric, 1765—ab
principles of treatment of spinal, of children, 1424—ab
sudden of pharynx, artificial feeding for four years, 1967—O
surgical traumatism and facial, 901—ab
unilateral ascending and unilateral descending paralysis, 1638—O
Parametrium, study of, in twenty-seven cases of carcinoma of tbe cervix and its clinical significance, 1513—ab
Parapancreatic cysts, 2079—O
Paraplegia, compression, 2041—ab
exercises in treatment of spasmodic, 393—ab
Parasite, new intestinal of man, paramœba hominis, 808—ab
Parasites, prevalence of intestinal, in Siam, 1089—O
Paratyphoid affections, 1422—ab
Paratyphus and ptomain poisoning, 1422—ab
Paresis and spirochæta pallida, 1317.
blood pressure in, 1341—O
symposium on general, 798—ab
Parks, A. H., determination of normal temperature of closed inguinal fold of child, and its clinical significance, 1010-O
Parsons, J. G., improvised pocket case for eye droppers, 777—O
Parturient, new frozen section of body of, dying at expulsion period, 315—ab
Parturients, protection of, 314—ab
Pasteur treatment of bydropbobia, causes of .failure in, 1965—ab
treatment of bydrophobia, paralytic accidents observed under, 1964—ab
Patella, treatment of fractures of, 236—ab, 1177—O, 1597—ab
Patent-medicine, an instance of, habit, 697—P
before German courts, 1110
to be unprotected in Switzerland, 2021
wants to arrest, men, 607
Patent-medicines and artificial foods in America, 1394—P
German campaign against, 287—P
ministers and, 1500—P
Patents, new, 160, 396, 816, 1144, 1604, 1966
Pathologists in hospitals for insane, 1102—E, 1394
Pathology, certain phases of recent work in, and physiology, 549—O
chair of comparative, at University of Liverpool, 2022
Patients, limitation of experiments in hospitals on, 522
Patients, seeing, in one state, and sending medicine from another—no vested right, 386—Ml
tendency to kidney stones in tuberculous under forced feeding, 247
Paul, L. G., modification of Reese urethral irrigator, 1830—O
Pauperism in London, 1840
Pearce, R. M., tuberculosis of adenomyoma of uterus, 768—O
Pediatric outlook, 397—O
Pediatrician, opportunity of, 729—O
Pedicle, three cases of twisted, 1139—ab
Pegnin, 1656—P
Pelvic disease, cbronic headacbe associated with, 1525—O
disorders, affections of eye in relation to, 1856—ab
Pelvis, anatomic experimental and clinical researches on operative enlargement of, 340—ab
measurement of, 1234—ab
measurement of, with Roentgen ray, 888—ab
plastic operation on, 1142—ab
Pemphigus, limited to mucous membranes, 1736—O
neonatorum, 1336—ab
Penn, B. S., packet of aseptic materials for care of navel and eyes of new-born child, 1830—O
Pennsylvania homeopatbic examination, 140
June examination, 534
June report and questions, 139
medical news, 45, 120, 214, 282, 372, 441, 517, 601, 692, 787, 867, 947, 1030, 1108, 1203, 1309, 1388, 1497, 1574, 1663, 1749, 1838, 1927, 2019, 2100, 2167
Pentosuria, essential, in two brothers, 1416—ab
intermittent, and glycosuria, 538—ab
Pepsin, effect of alkalies and other drugs on efficiency of, 607
Peptic ulcer, 1774—ab
ulcer, case simulating, 896—ab
Percussion findings, graphic representation of, 396—ab
Pericarditis, adherent, in children, 156—ab
effects of, on beart, 1429—O
following head injury; paracentesis, 1770—ab
in children, 1332—ab
Pericardium, adherent, with ascites, 2037—ab
Pericolic inflammation, causes, sequelæ and treatment of, 1857-ab
Perineum, neglected incomplete rupture of, and its cure, 389—ab
Peritoneal adhesions, 1126—ab
Peritoneum, rôle of, and of lymphatic system in abdominal surgery, 153—ab
to enhance resisting powers of, in cancer-operations, 1142—ab
tuberculosis of, 1401—ab
Peritonitis, acute septic, 1129—ab
cure of tuberculous, 1192—O
diffuse, 1219—ab
diffuse, from perforation in course of tuberculous intestinal processes, 156—ab
pneumococcic, in children, 75—ab
pneumococcus, 394—ab
treatment of diffuse suppurative, following appendicitis, 809—ab, 2035—ab
what bas surgery left to medicine in treatment of, 150—ab
what is general suppurative, 1668
Peroxid of hydrogen in examination of sputum, 1692—ab
of hydrogen, to enhance action of, by catalysis, 1518—ab
Pertussis, 232—T
Peruvian balsam, acute nephritis after use of, 545—ab
Pessaries, uses of, 238—ab, 1691—ab
Pessary, stem, for amenorrhea and dysmenorrhea, 2133—O
Peterson, R., urinary incontinence, 1447—O
Petrolatum, liquid saponated, improved, 2023—P
Pets, transmission of diseases by, 1214
Pettenkofer prize awarded to Schaudinn, 789
Pfaff, F., effects of aperients on peristalsis of stomach and intestines, 1819—O
Phagocytosis of red corpuscles, 1766-ab
of typhoid bacteria, 1599—ab
rôle of, in pneumococcidal action of pneumonic blood, 1228—ab
studies on, 580—O
Pharmacology, 125, 285, 695, 790, 872, 1206, 1316, 1392, 1500, 1667, 1751, 1930, 2023, 2101
Pharmacology, application of physical chemistry to, 1122
Pharmacopeia, an imperial, 1321—ab
coming revision of United States, 1989—O
corrections to, 2101—P
for infants, 1762—T
new Austrian, 373
Spanish, 2101—P
supplements to, 2102—P
the next, 2163—E
United States, 1584—ab
Pharmacy, plca for more tborough course in practical, in medical schools, 1227—ab
Pharyngitis, acute, 1412—T
Pharynx, lymphosarcoma of, limiting motions of jaws and axis by invading prevertebral and pterygomandibular spaces, 2123—ab
sudden paralysis of, 1967—O
technic of tubation of, to facilitate administration of anesthetics and to prevent inhalation of blood in mouth and face operations, 539-ab
Phenacetin, 1565—P
(acetpbenetidin) vs. acetanilid, 1923—E
and acetphenetidin, 52
Pheno-bromate, 125—O, 125—P
Phenocoll hydrochlorid, 1565—P
salicylate, 1565—P
Philippine plants, 660
Philippines, cholera in, 45, 518, 1031
Phlebitis, late, following clean abdominal operations, 884—ab
Phloridzin kidney test, 1233—ab
Phosphin, poisoning from emanations of, from commercial ferro-silicon, 951
Photographing the dead for identification, 708
Phototherapy of affections due to parasites in blood, 2044—ab
Phrenosin and cerebron, facts showing that, are practically identical, 228—ab
Phthisis in Calcutta, 869
Physical behavior, relations between, and action of drugs, 975—ab
examinations, intent and requirements as to, 1414—Ml
Physician and patient, relation between company's, 150—ab
and pharmacist, 1584—ab
as independent therapeutist and prescriber and opponent of quackery in general, 389—ab
can not recover for street railway's damage, 1134—Ml
cross-examination of,—discrediting evidence, 893—Ml
delicensed, 288
duty of family, in regard to proper mental and physical development of children under his care, 301—ab
duty of injured person as to employing, 1053—Ml
in politics, 1404—ab
novel method of libeling a, 372
what is resident, 1211
Physician's best asset, 117—E
bill, right of executors to allow, 1414—Ml
service of, admissible evidence as to value of, 1053—Ml
Physicians and daily press, 2096—E
and popularity in Germany, 1569-E
attending, may testify to probabilities—cross-examinations, 717—Ml
character of medicines dispensed by, 949—P
decrease of drinking among, 690—E
employment by conductor of, for trespasser, 304—Ml
in public life, 45
in public life in Spain, 122
naming streets after living, 122
rules for resident, 258
school, act relative to appointment of, 2118—Ml
sins of, 1667—P
Physiology, certain phases of recent work in pathology and, 549—O
points in uterine and ovarian, and pathology in rabbits, 541—ab
Pigeon-toe, simple method of correcting, or inward rotation of thighs, 2123—ab
Pile cure, fifteen minutes, 1629—O
Piles, inflamed and protruding, 893-T
Pills, profits on, for charity, 1928
Pillsbury, H. C., reduplication of heart sounds, 2148—O
Pilocarpin, 684
Piperazine, 1656—P
Pisek, G. R., unheeded principles involved in dietetic management of infants during hot weather, 398—O
Pitfield, R. L., cure of tuberculous peritonitis, 1192—O
Pitfield, R. L., use of small mirror in studying apex beat, 1918—O
Pituitary body, 527
Pityriasis rubra, case of, 1515—ab
Placenta-prævia centralis, treatment of, by Cesarean section, 1229—ab
successful delivery of twins in, 1301—O
treatment of, by Cesarean section, 2122—ab
Places, change desirable in meeting, 1110
Plague and malaria, effect of, on birth rate in India, 1032
conditions in Calcutta, 1389
in India, 947, 1577, 1751
in Turkey, 1032
study of case of, 1420—ab
transmission of, by rats, 1390
Plaster-of-Paris, 887—ab
dressings, 1119
Plasters, Ordway's, 1628—O
Plastic operations on thorax, 2177—ab
Pleura, pleuritic exudates in children, 1296—O
Pleurisy and appendicitis, 2178—ab
and empyema, treatment of, 1676—ab
with effusion and pulmonary tuberculosis, 966—ab
Plummer, E. M., modification of simple mastoid operation wbich shortens convalescence by facilitating wound repair, 1701—O
Pneumococci, studies of simple and differential methods of staining encapsulated, in smear and section, 1227—ab
Pneumococcus infections, accessory nasal sinuses and, 1561—O
peritonitis, 394—ab
Pneumonia, 144—ab
alcohol in, 2178—ab
and other pulmonary infections, intestinal origin of, 1231—ab
and pleurisy, differential diagnosis of, with effusions, 1270
arsenic in, 2036—ab
bacteriologic examinations of conjuctival sac in typhoid and, 1417—ab
complicating pregnancy, 460—ab
counter-irritants in, 1124
dynamic effects of antipneumococcic sera in, 2122—ab
epidemic, 644—ab
fremitus in, 467—ab
mortality from lobar, in higb altitudes, 1594—ab
mouth disinfection in propbylaxis and treatment of, 1766—ab
open-air treatment of, 1182—O
paralysis during croupous, 727—ab
postcritical fever and other sequelæ of croupous, 730—O
postdiphtheritic, 548—ab
quinin and iron in, 110—O, 272—O
Roentgen examination in case of centrally located, 2045—ab
sugar in urine during, 466—ab
treatment of, 315—ab, 467—ab, 2174—ab
Westphal's sign in croupous, 1424—ab
when to use medicines in, 1853—ab
Pneumothorax, artificial, in treatment of tuberculous pulmonary processes, 1235—ab
Pneumotoxin, 1419—ab
Pocket case, improvised, for eye droppers, 777—O
Poisoning, acetanilid, from absorption, 359—O
acute carbolic acid, recovery, 435—O
cases, provides for analyses in supposed, 2035—Ml
chronic atropin, 639—ab
competency of witnesses to testify to, 1326—Ml
fatal, from external application of bichlorid of mercury, 1484—O
from canned beans, 1861—ab
from emanations of phosphin from commercial ferro-silicon, 951
from oil of tansy, 509—O, 937—O, 1917—O
from opium or morphin in 7-weeks-old baby, 776—O
lysol, 394—ab, 1062—ab
water gas, 958—ab
Poisonous substances, warning circular for workmen employed in, 2045—ab
Policeman health officer, authorizes appointing, 2035—Ml
Poliomyelitis, acute epidemic, 364—E
relative value of surgical procedures for relief of paralyses following acute anterior, 1137—ab
Polish, lessons in, 1775, 1940
Pollakiuria in liver affections, 1241
Pollantin (Fall), 1656—P
powder (Fall), 1657—P

Pollantin, hay-fever treatment by Dunbar's remedies, 376, 447, 523, 605, 794
Polycythemia, 727—ab, 1265—O
  vera, 510—E
  with enlarged spleen, 1060—ab 1334—ab, 1423—ab
Polypi of appendix, 359—O
  origin of choanal, 463—ab
Poor, over-eating by, 367—E
Population of cities in educational number, 1116
Porro Cesarean section for pregnancy, with complicating fibroids, 1127—ab
Porter, M. F., pyopneumo-appendix due to obstruction by fecal concretion, 435—O
Porto Rico Medical Association, annual meeting of, 1839
Postmortem examinations of burned bodies, 1305—E
Postoperative comfort, 460—ab
Posture, results of, 800—ab
Potassium iodid, incompatibility of, 716—T
Potter, G. W., congenital malformation of heart, with malposition of certain viscera and absence of spleen, 363—O
Potter, N. B., cardiac hypertrophy as observed in chronic nephritis, 1354—O
Potter, N. B., opsonic index in medicine, 1722—O, 1793—O
Potts, B. H., danger from careless use of alkaloid of suprarenal gland, 1180—O
Pott's-disease, 801—ab
  three cases of, and one of coxalgia with unique features, in adults, 1414—ab
Power, J. E., relation of systemic diseases to conditions of oral cavity, 324—O
Power of local surgeon, 1134—Ml
Pozzi's gold book, 284, 1059—ab
Practice, more than half century of, 51
Practitioner, attitude of general, toward obstetrics, 1405—ab
  business problem of general, 1417—ab
Practitioners, advertising by medical, 373
Pregnancy, actinomycosis and, 2042—ab
  and labor complicated by anterior fixation of uterus, 1528—O
  and tuberculosis, 80—ab
  case of abdominal, 235—ab
  chorea of, 976—ab
  diagnosis and treatment of ectopic, 71—ab
  evil effect of, on laryngeal tuberculosis, 727—ab
  in tabetic, 79—ab
  indications for surgical operations during, 389—ab
  influence of, on deafness, 608
  modern treatment of toxemia of, 234—ab, 1675—ab
  myelitis of, 1774—ab
  myomectomy during, and labor at term in elderly primipara, 2124-ab
  ovarian, 1139—ab
  pneumonia complicating, 460—ab
  removal of intraligamentary cyst and bilateral oöphorectomy during early, without interrupting gestation, 718—ab
  retroversio-flexions in relation to, 1849—ab
  rupture of interstitial tubal, 1419—ab
  simulated extrauterine, 1602—ab
  symposium on indications for interruption of, 1397—ab
  toxemia of, 1850—ab
  treatment of extrauterine, near term, 1060—ab
  treatment of toxemia of, 234—ab, 1675—ab
  tubal, 1864—ab
  typhoid occurring during, 809—ab
  uncontrollable vomiting in, necessitating interference, 1958—ab
  uterine myomata complicating, 1777—O
  uterine fibroids complicating, 1127—ab
Prescribing, dispensing versus, 1786—O
Prescription not competent evidence of insanity, 70—Ml
Preservatives, increase of use of, in food, 1206
  in food, 959—ab
Press, physicians and daily, 2096—E
Pressly, G. W., polypi of appendix, 359—O
Pretuberculous state, points on diagnosis and treatment of, 1227—ab
Prisoners, removal of, to hospitals for treatment, 1954—Ml
Private gain vs. professional benefits, 942—E
Privilege, power of executor of will to waive, 717—Ml
  waiver of, under statute—cross-examination, 1134—Ml
Procidentia recti, prolapsus ani, 293
Proctology, medical specialism, with especial reference to, 1365—O
Profession and its advancement, 1403—ab
  future of medical, 1674—ab, 1771—ab
  duty of medical, to public in matter of venereal diseases, and how to discharge it, 1246—O
  negligence of, in securing establishment of temporary detention quarters for alleged insane, 144—ab
  relation of medical, to social evil, 29—O
  responsibilities of, 1743—E
Professional benefits, private gain vs., 942—E
Progress, review of surgical, 81—O
Prolapsed ovary in femoral ring, simulating strangulated femoral hernia, 968—ab
Prolapsus ani and procidentia recti, 293
Proprietaries and patent medicines, 1675—ab
  and pharmacopeial preparations, comparative prices of various, 2024
  physicians and proprieties, 389—ab
Proprietary drugs and foods, labeling, 1954—Ml
  medicine question and Council of Pharmacy and Chemistry, 1674—ab
  medicines, 977—O
  medicines and their abuses, 978—O
  medicines, debasing influence of, 1501—P
  medicines, nostrums and, 719—ab
  medicines, physicians use of, 1958—ab
  preparations, pharmacopeial or, which? 683—O
  prostitutions, 1393—P
  remedies in Austria, 1407
  remedies, prescribing of, 1585—ab
Prostate, carcinoma of, cases of, 1511—ab
  enucleations of, 462—ab, 900—ab, 1960—ab
  female, 1684—ab
  four cases of, osteoplastic cancer in, 315—ab
  galvanic and other treatment of, 537—ab
  hypertrophy of, surgical treatment of, 719—ab, 726—ab, 1850—ab, 1955—ab, 1960—ab
  marked albuminuria from prostatic abscess of, 508—O
  methods in diagnosis and treatment of, 1137—ab
  surgery of, present position of, 811—ab
  vital points in technic of suprapubic enucleation of, for benign enlargement, 1151—O
Prostatectomies, suprapubic cystotomy as preliminary to, and as route for performance of considerable number of, 1137—ab
Prostatectomy, 1129—ab, 1135—ab, 1220—ab, 1228—ab
  consequences of transvesical, 155—ab
  indications for, and results of operation, 1153—O
  in two stages, phosphatic calculi following suprapubic, 1136—ab
  results of, 721—ab
  sequelæ of, 721—ab
Prostitution problem in its relation to law and medicine, 2071—O
  what effective measures are there for prevention of spread of syphilis and increase of, 1372—O
Protection of infants and young children from tuberculosis, 1596—ab
Proteid nomenclature, 1043—ab
Pruritus ani, 454—ab, 1224—T
Pseudo-digestion, putrefactive, 159—ab
Psoriasis, 804—T
  cure of, with study of 500 cases in private practice, 1630—O
  influence of light hunger in production of, 1514—ab
  sun baths for, 394—ab
Psychiatry, cerebral localization and study of, 1419—ab
Psychical faculties, scientific investigation of, or processes in higher animals, 1515—ab
Psychology, clinical, 1944—ab
  new, 799—ab
Psychoses, devolutional, 800—ab
Psychotherapy, experience with simpler methods of, and re-education, 1595—ab
  manual training for medical students and instruction in principles of, 301—ab
Ptomain poisoning and paratyphus, 1422—ab
Ptoses, rational treatment of visceral, 538—ab
Ptosis, Fergus operation for, 1595—ab
Pubiotomies, eleven, 2129—ab
  sixteen, with needle, 2043—ab
Pubiotomy, 1333—ab, 1336—ab, 1850—ab
  and artificial premature delivery, 2177—ab
  childbirth after, 1142—ab
  prevention of injury in, 1602—ab
Public health defense league, 1745—E
  diploma of, in Australia, 1110
  interest of, in medication, 1667
  proposed department of, in Ontario, 1031
  questions, medical women and, 1514—ab
  service, 51, 135, 222, 290, 379, 451, 530, 610, 703, 797, 883, 955, 1043, 1125, 1211, 1319, 1396, 1503, 1583, 1671, 1755, 1846, 1941, 2026, 2108
  smoke problem and, 384—ab
  state universities and, 949—P
  venereal diseases and, 511—E
  what shall we teach, regarding venereal diseases? 1250—O, 1253—O
Publication, priority in, 2103
Publicist, first French, 2015—E
Publicity as factor in venereal-prophylaxis, 1244—O
Puckner, W. A., chemistry of organic silver compounds, 1258—O
Puckner, W. A., solubility of acetanilid in sodium bicarbonate solutions, 1206—O
Puerperium, nervous affections in, 1518—ab
  venous thrombosis in, 1235—ab
Pulp, pathologic features of, 916—O
Pulse, cessation of, during onset of epileptic fits, 543—ab
  curves, relation of, to blood pressure, 1231—ab
  dicrotic, with aortic insufficiency, 1775—ab
  in aortic disease, 1231—ab
  reflexes, visceral, 1864—ab
Pure-food and drug legislation, state, needed, 365—E
  bill, 128
  law, 41—E, 116—E
Purgative, 1657—P
Purgatives, abuse of, 1219—ab
Purpura, 143—ab
  hemorrhagica, case of, 936—O
Purpuric conditions, treatment of, and hemophilia, 1090—O
Pusey, B., point in management of uveal sarcomas, 2159—O
Putnam, W. E., case of tetanus neonatorum with recovery, 583—O
Putrefaction, intestinal, 1406
Pyelitis, 805—T
Pylorogastrectomy for cancer of stomach, 901—ab
Pylorus, congenital hypertrophy of, 239—ab, 1598—ab
  congenital stenosis of, 158—ab, 460—ab, 1322—ab, 1958—ab
Pyramidon, 1657—P
  acid camphorate, 1657—P
  neutral camphorate, 1657—P
  salicylate, 1657—P
Pyuria, 1417—ab
  without suppurative processes, 724—ab

Q

Quack doctors and quackery, 731—E
Quackery, 708
  exposure of, doing good, 1834—E
  fighting, 1667
  in Germany, 604
Quacks convicted and sentenced in Germany, 1929
  exposure of, 1579
  German clergymen on, 1938
  newspapers and, 1568—E
  regulations against, in Austria, 2021
Quarantine, length in diphtheria, 291
  neither county nor members of board of health liable for quarantine through mistake or for loss of crops, 1224—Ml
Quartonol, 1740—P
Quincke, H., German view of specialism, 1938
Quinin, action of, on hemoglobin and test for carbon oxid in blood, 1517—ab
  and iron in pneumonia, 110—O, 272—O
  best time to give, 1417—ab
Quinin-caffein external applications in hay-fever, 2044—ab
  fever, 2035—ab
  treatment of cholera, 1986—O

R

Rabies, action of radium in, 547—ab, 816—ab
  etiology of, 644—ab
  Negri bodies in, 1860—ab
  preservation of virus of, in glycerin, 1863—ab
Race failure and race suicide, 1314
Radiographs of interesting cases, 455—ab
Radioscopy of infant's stomach, 900—ab
Radium, in rabies, 547—ab, 816—ab
  in surgery, 183—O
  in trachoma, 939, 1690—ab
  much, in Vienna, 1110
Radiumite, 1630—O
Ragweed extermination, 782—E
Railroad company, liability of, to surgeon under rules, 1510—Ml
Randolph, R. L., injuries of independence day, 17—O
Ransohoff, J., treatment of fractures of patella, 1177—O
Rations, portable, for soldiers, 1128—ab
Rattlesnake bite, death from, 2012—O
Ray, T. F., total luxation of spine, 1377—O
Reciprocity, 595—E
  and qualifications as viewed by Illinois board, 218, 373, 446
  impracticability of inter-state, 553-O
  in Illinois, 63, 450, 1410
  interstate, and funds in medical schools, 697, 878, 1036, 1118, 1208, 1578
  interstate, in medical licensure, 1036—ab, 1415—ab
  New York with Ohio, 1411
  one-year clause in, 2024
  with Minnesota, 52
  with Ohio, 52, 135, 1411
  with South Carolina, 1757
  with Texas and Georgia, 221
Recreation, gospel of, 1315
Rectal pathology due to extra-rectal causes, 454—ab
  speculum, new, 1234—ab
  tube, improved post-operative, 1057—ab
Rectum, ataxic, 454—ab, 1054—ab
  axioms in treatment of cancer of, 1327—ab
  cancer of, 453—ab, 901—ab, 2126—ab
  cancer, remote results of radical operation of, 395—ab
  ether narcosis by, 300—ab
  in its relation to diseases of women, 1323—ab
  mercurial treatment of syphilis by way of, 76—ab
  new operation for carcinoma of, 453—ab
  new rectal enemator, 273—O
  operative treatment of cancer of, 453—ab
  pseudo-tuberculosis of, 2045—ab
  retention of sphincter in removal of cancer, 1603—ab
  stenosis of, from expelled myoma, 466—ab
  technic of local anesthesia in surgery of, 454—ab
Rectus, case of isolated palsy of right external, 274—O
Red Cross pact, new, at Geneva conference, 285
Reese urethral irrigator, modification of, 1830—O
Reference table of state board reports, 635
Reflex, vago-esophageal, 228—ab
  symptoms, cases where, were proven not to be reflex, 461—ab
Reflexes, diagnostic significance of ocular, 241—ab
  of dentition, 25—O
Reforms, two desirable, 550—O
Refuse, London county council and street, 1314
Regenerative tablets, 1625—O
Registration required before practicing medicine, 529
Reglementation, practical lesson in, 2076—O
Reik, H. O., new apparatus; (1) aseptic protective sheet for mastoid surgery, (2) practical algesimeter, 1652—O
Reilly, T. F., summary of therapeutic-field for past year, 648—O
Relief committee of physicians, report of, of San Francisco, 1499
Religio-neurotic cases, medical and spiritual coöperation in, 1744—E
Remedies, incompatibilities of some newer, 1052—T

Remedies, new and non-official, 856—P, 865—E, 938—P, 1020—P, 1096—P, 1193—P, 1302—P, 1378—P, 1487—P, 1564—P, 1656—P, 1740—P, 1831—P, 1919—P, 2013—O
standardization of non-official, 1394—P
Renal decapsulation and nephrotomy in treatment of serious forms of eclampsia, 308—ab
Rengo fruit, 1628—O
for obesity, 1940
Reprints, advance, of section papers, 38—E
Requirements, entrance, 557—O
increased entrance, 1411
Resident physicians, rules for, 258
Rest cure for neurasthenia, 954
influence of, exercise and sleep on gastric digestion, 896—ab
Restorative remedies, 1625—O
Resuscitation of patient apparently dead from primary heart-failure, 1687—ab
of persons apparently drowned, 1128—ab
Retina, operative treatment of detachment of, 465—ab
uniocular inflammations of optic nerve and, 1—O
Retinal vein, obstruction of central, 1221—ab
Retinitis, albuminuric, of pregnancy, case of, 1957—ab
punctate forms of, 1958—ab
Retrodisplacement, therapeutics of, 2121—ab
Retroflexion, ventrosuspension of shortened round ligaments for, 79—ab
Retroversio-flexions in relation to pregnancy, 1849—ab
Revaccination, value of, 723—ab
Reyburn, R., medical treatment of cancer, 1539—O
Reynolds, E., conservative surgery of ovaries, 1449—O
Rhabdomyoma, multiple, of heart muscle, 896—ab
Rhein, J. H. W., pathologic study of seven cases of paralysis without gross anatomic change, 1705—O, 1713—O
Rhein, M. L., treatment of loosened teeth, 258—O
Rheumatic fever and amyloid degeneration, 2124—ab
Rheumatism, acute articular, 1224—T
acute, hyperpyrexia, recovery, 723-ab
cures, 1628—O
gonorrheal, 1592—T
hydrotherapeutic treatment of chronic, 1415—ab
in children, 1399—ab, 1598—ab
muscular and endocarditis, 2097—E
salicylates and nephritis in articular, 467—ab
salicylates in acute, 2124—ab
value of massive doses of salicylates in diagnosis and treatment of acute articular, 1416—ab
Rhinitis in infants, 1860—ab
Rhode-Island July report, 635
medical news, 1204
October report, 1951
Rhodes, J. E., treatment of sarcoma of nasopharynx by injections of adrenalin, 430—O
Rhus poisoning, 1224—T
Rhythm, gallop, 396—ab
Ribs, treatment of fractured, 897-ab
Rickets, abdominal atony of, significance and treatment, 1598—ab
congenital, 1860—ab
Ricketts, H. T., further observations on Rocky Mountain spotted fever and dermacentor occidentalis, 1067—O
Ricketts, H. T., study of Rocky Mountain spotted fever (tick fever?) by animal inoculations, 33—O, 358—O
Rider's sprain, 900—ab
Ries, E., operative treatment of cancer of cervix uteri, 1869—O
Riggs, C. E., myasthenia gravis, 1969—O
Ring, G. O., value of x-rays in ocular therapeutics, 994—O
Ringworm, varieties of, and their treatment, 641—ab
Ritter, J., pharmacopeial or proprietary preparations; which? 683-O
Riviera, Irish, 71—ab
Roberts, D., new rectal enemator, 273—O
Roberts, L. M., antidote for suprarenal preparations, 2159—O
Robertson, C. M., certain facts concerning faucial tonsils, 1725—O
Robin, A., accurate and reliable thermo-regulator, 1563—O
Robinson, W. J., impotence caused by excessive consumption of bromo-seltzer, 508—O
Robinson, W. J., novel method of using strychnin and hydrastin in sexual and vesical weakness, 2145—O
Rochester, D., treatment of asthma, 1983—O
Rocky Mountain or spotted fever, 36—O, 686—O
spotted fever and dermacentor occidentalis, 1067—O
spotted fever, transmission of, by bite of wood-tick (dermacentor occidentalis), 358—O, 366—E
Rodgers, M. A., successful end-to-end anastomosis after partial disembowelment in runaway accident, 1829—O
Rodman, W. L., gastric and duodenal ulcers, 842—O
Roentgenography of stomach, 1414-ab
Roentgenology, teaching of, in medical colleges, 887—ab
Roentgen-ray action for damages in consequence of injury produced by, 444
and metabolism, 1862—ab
attitude of clinician in regard to exposing patients to, 1425—O
burns, 715—T
burns, damages for, two actions against doctors, 125
changes in kidneys produced by, 889—ab
dangers, 1493—E, 1932, 2102
diagnosis of renal calculi with, 888—ab
dosage, method of estimating, 888—ab, 895—ab
effect of, on leucocytes in blood and bone marrow in leukemia, 462—ab
effects of on embryonic development, 227—ab
examination in case of centrally located pneumonia, 2045—ab
exposure of mediastinum to, 1691—ab
exposures, action of on ovaries and gravid uterus, 2177—ab
exposure of ovaries to during pregnancy, 1142—ab
favorable influence of, on chronic bronchial affections, 1861—ab
filter, 838—ab
in blood diseases, 889—ab
in cancer, 1541—O
in dermatology, 888—ab
in early diagnosis of pulmonary tuberculosis, 1595—ab
in exophthalmic goiter, 1063—ab
influence of, on metabolism in leukemia, 2044—ab
influence of, in treatment of leukemia and Hodgkin's disease, 1262—O
in leukemia, 547—ab, 643—ab, 1062—ab, 1516—ab
in leukemia and pseudoleukemia, 1775—ab
in neuralgia, 903—ab
in neuritis, 1415—ab
in study of congenital malformations, 1682—ab
in tuberculous adenitis, 888—ab, 1221—ab
localization of foreign bodies in eye with, 889—ab
measurement of diameter of pelvis with, 888—ab
new skiagraphic table and tube holder, 113—O
photographs in relief, 79—ab
physician victim to, 1498
pictures, improved technic for taking, 284
plus diphtheria antitoxin in pernicious anemia, 293
treatment, formation of leucotoxin under, 974—ab
treatment of epithelioma, 455—ab, 888—ab
treatment of lupus vulgaris, 888-ab
tubes, use of inferior, 49
two cases of varicose veins successfully treated with, 894—ab
ultimate results from in carcinoma of breast, 888—ab
value of, in ocular theapeutics, 994—O
work, protection of internal organs in, 1773—ab
Rogers, J., treatment of thyroidism by a specific serum, 655-O
Rolls, J. A., ainhum, 2092—O
Rolls, J. A., transposed heart, 1737—O
Rooms, disinfection of, by formaldehyd comparative bactericidal value of various methods, 1512—ab
Rosenau, M. J., hypersusceptibility, 1007—O
v. Rosthorn, A., radical operation in uterine cancer, 1872—O
Rotch, T. M., opportunity of pediatrician, 729—O
Roth, A. H., influence of x-rays in treatment of leukemia and Hodgkin's disease, with report of cases, 1262—O
Rotunda hospital, Dublin, report of, 870
Royal college of surgeons, 2022
Royster, H. A., location of fistula in lower intestinal tract by injecting hydrogen dioxid through anus, 111—O
Ruediger, G. F., bacteria in scarlatinal and normal throats, 1171—O
Russian red cross, 1046—ab
Russo's methylene blue test, 1691—ab
Ryerson, G. S., keratosis obturans, 2051—O

S

Sachs, B., injuries to the child's head during labor, 1526—O
Sahli's desmoid test of stomach functioning, 313—ab, 1420—ab
Sajous, misquotations of Dr., 1668
Salant, W., influence of alcohol on metabolism of hepatic glycogen, 1467—O
Salant, W., pathology of bile, 765—O
Sal-codeia (Bell), composition of, 291
Sal ethyl, 1740—P
Salicylates, action of, in acute rheumatism, 2124—ab
and nephritis in articular rheumatism, 467—ab
value of massive doses of, in diagnosis and treatment of acute articular rheumatism, 1416—ab
Salicylic acid, 716—T
Saliformin, 1740—P
Saline-solution, influence of intraperitoneal injection of warm sterile normal, in intraperitoneal hemorrhage, 1460—O
normal, in abdominal operations, 2038—ab
utility of, in treatment of fever, 1551—O
Salit, 1740—P
Salophen, 1740—P
Saloquinine, 1740—P
salicylate, 1741—P
Salts and drugs, contribution to general principles of pharmacodynamics, 1227—ab
mucoid, 560—O
Sanatoria, economical consumptive, 1128—ab
scope and aim of state, for tuberculosis, 317—O
tuberculosis, 144—ab
Sanatorium cases, 1,000, 1421—ab
treatment of tuberculous, 396—ab
Sanatoriums for postal workers, 1577
non-use of for tuberculosis, in France and Belgium, 789
San Francisco, report of relief committee of physicians of, 1499
Sanitarium, asks information concerning, 1755
liability for negligence of nurse in, 1225—Ml
provides for, for treatment of tuberculosis, 1852—Ml
Sanitary protection, international, 958—ab
questions in navy, 1128—ab
service, new, for India, 1110
Sanitation, international, 2014—E, 2025
victims of, 366—E
Sanity, opinions of unprofessional observers as to, 965—Ml
presumption of, 1852—Ml
Saphena, for varicositics, total resection of, 156—ab, 901—ab
Saponin, use of, in mineral water, 1565
Sarcoma and myoma of stomach, 1684—ab
Coley's serum for inoperable, 1041
fever with, 1966—ab
of male breast, 957—ab
of nose, 960—ab
primary, of adrenal gland, 808—ab
primary, of knee joint, 545—ab
primary, of spleen, 1402—ab
treatment of, of nasopharynx by injections of adrenalin, 430—O
Savage, G. C., axioms concerning ocular rotations, 353—O
Scalp, elephantiasis nervorum of, 1415—ab
wounds, treatment of, 1503
Scapula, conservative surgery for tumors of, 548—ab
Scarlet-fever and diphtheria, return cases of, 1315
early contagion of, 381
Scarlet-fever kidney in, 1220—ab
nephritis in families, 1063—ab
return cases of, 159—ab
Schaudinn medal, 1110
Scherck, H. J., antitetanic serum in Fourth-of-July injuries, 500—O
Schlotterbeck, J. O., popular synthetic remedies, their use and misuse, 1392—O
School-children, examination of, 529
health of, 458—ab
medical inspection of, 521
physical care of, 458—ab
School girls and corsets, 244—ab
physicians, act relative to appointment of, 2118—Ml
room, sanitary regulation of, with reference to vision, 382—ab
Schools, interstate reciprocity and frauds in medical, 697, 878, 1036, 1118, 1208
medical inspection of, 958—ab
parental coöperation in medical inspection of, 2097—E
Sciatica, perineural infiltration treatment of intractable, 643—ab
surgical treatment of, 158—ab
treatment of, with perineural saline injections, 1844
Sclerosis, multiple; its clinical course and pathologic anatomy, 73—ab
Scoliosis, 705—ab
result of asymmetrical growth, 904—ab
treatment of, by general practitioner, 546—ab
Scopolamin-morphin anesthesia, 302—ab
anesthesia in labor, 77—ab, 1774—ab, 1862—ab
combination of, and spinal anesthesia in 150 gynecologic operations, 1862—ab
Scorbutic syndrome due to typhoid bacilli, 2046—ab
Scorbutus, study of, 393—ab
Scotland, epileptic colony in, 1110
Scudder, C. L., dislocation of outer end of clavicle, 19—O
Scurvy, infantile, 641—ab, 1918—O
operative treatment of infantile, 242—ab
Seasickness, atropin and strychnin combined specific for, 217, 445
Section, new frozen, of body of parturient dying at expulsion period, 315—ab
Selby, C. D., direct abdominal hernia of traumatic origin, 1485-O
Self-medication, lay, and counter-prescribing, 527
limitations to, 147—ab
Seminal-vesicles, calcification of vas deferens and, 103—O
operations on, 466—ab
Semmelweis memorial, 1312, 1920—E, 1929
Senn medal essay contest, 1669
Senn, N., diseases and hospitals of Africa, 141—O, 225—O, 297—O, 531—O, 611—O, 709—O, 960—O, 1050—O, 1098—O, 1217—O
Sensibility and stereognosis, cutaneous muscular, 1416—ab
recurrent or supplementary, 1863—ab
Sepsis originating in urinary passages, 1422—ab
surgical and serum treatment of puerperal, 1858—ab
treatment of, 144—ab
Septicemia, death from puerperal, one arising from pregnancy, 536—Ml
Septum cutaneum, plastic substitute for, 466—ab
defect in interventricular, 1863—ab
deflection of, new operation for extreme cases of, 1137—ab
nasal, perforation of, 1328—ab
submucous excision of deviations and spurs of nasal, 310—ab
submucous resection of, 540—ab, 1139—ab
Sera for snake bites, 1660—E
production of cytotoxic, by injection of nucleoproteids, 1766—ab
Serotherapy, present status of, of surgical affections, 146—ab
Serpents, increase of poisonous, and protective measures, 871
Serum, action of cytotoxic, in blood-forming organs, 2130—ab
antitetanic, in Fourth-of-July injuries, 500—O
clinical use of antistreptococcic, 2176—ab
disease, calcium treatment of, 511—E
having therapeutic value in treatment of exophthalmic goiter, 661—O
prepared, toxic for peripheral nerves, 972—ab

Serum, treatment of bacterial diseases by, 1505—ab
treatment of tetanus, 146—ab
treatment of thyroidism by specific, 655—O
Servetus, monument for, 1929
Sesame oil, intoxication with, 1962—ab
Sewall, H., experiments on venous blood pressure and its relations to arterial pressure in man, 1279—O
Sextonol, 1741—P
Sexual and vesical weakness, novel method of treating with strychnin and hydrastin, 2145—O
Sheldon, J. G., relation between appendicitis and gallstones, 1458—O
Shepherd, F. J., surgical treatment of exophthalmic goiter, 665—O
Shield, new, for use in nose and throat examinations, 775—O
Ship doctor, measures to improve lot of, 1665
Ships, disinfection of, 373
Shock, surgical, 143—ab
Shoemaker, G. E., modification of technic of fixation of movable kidney, 1917—O
Shoemaker, J. V., benign cystic epithelioma, 1147—O
Shoes, flexible balancing, 1683—ab
Shop girls and factory acts, 1928
Shoulders, stiff and painful, 721—ab
Shumway, E. A., pathogenic bacteria of conjunctiva, 320—O
Sidonal, 1741—P
Sigmoid, pathology of, surgical conception of, 832—O
Sigmoiditis, 157—ab
Silk, use of, in tenoplasty, 1221—ab
Silver, bacterial action of compounds of, 898—ab
compounds, chemistry of organic, 1258—O
iodid, emulsion of, 1211
nitrate and zinc in chronic gonorrhea, 972—ab
preparations, experimental study of bactericidal power of various, 1226—ab
preparations, comparative value of, 882
preparations in conjunctival disease, 1393—P
Simon, C. E., new counting chamber for enumeration of blood corpuscles, 1737—O
Singing for soldiers, 2101
Sinkler, W., growth of neurology, 1337—O
Sinus disease, enucleation; uncalled for disfiguring operations resulting from failure to recognize accessory, 1682—ab
exostosis of frontal, and skiagraph of same, 2040—ab
infective sigmoid, thrombosis, resection of internal jugular, 1328—ab
proposed operative measure for thrombosis of cavernous, 541—ab
to retain anterior wall of, in frontal sinusitis, 1062—ab
unusual case of thrombosis of lower part of lateral, of aural origin, 1770—ab
Sinuses, accessory nasal, and pneumococcus infections, 1561—O
mental symptoms due to disease of nasal accessory, 1760—ab
Sinusitis, cerebral and ophthalmic complications in sphenoidal, 1419—ab
frontoethmoidal, 463—ab
relation between suppurative sphenoidal, and intracranial and ocular inflammations, 2095—E
Skatol, indican and, in urine, 311—ab
Skeletons and models, 2108
Skiagraphy, new table and tube holder for, 113—O
value of, in surgery of nose, 1131—ab
Skill acquired by long and diligent application, 1012
Skin, atrophic sclerosis of, and generalized myositis, 1771—ab
bacteria, identification of, 1390
bleaches and beautifiers, 1629—O
cancer, errors in treatment of, 1514—ab
cancer treated by x-rays, 455—ab
distribution of afferent nerves in, 645—O
grafting, modified open method, 1329—ab
multiple neuromata of, 1810—O
grafting, new methods in, 1138—ab
peculiar atrophic affections of, in neurotic subject, 1323—ab
relation of nerve impulse to inflammation of, 8—O
Skinner, C. E., Roentgenization in treatment of cancer, 1541—O
Skoog, A. L., bromism, 1821—O
Skull, celluloid plates to close defects in, 545—ab
endocranial tumors of, 244—ab
fracture of base of, resulting from direct violence through inferior maxilla, 1049—ab
percussion of, as means of placing indication for performance of lumbar puncture, 1226—ab
significance of, defects of, 152—ab
tuberculosis of base of, 1421—ab
use of temporal fascia to cover in defects, 809—ab
Slaughter house, regulation for new, 1206
Sleep and hypophysis, 393—ab
disorders of, 2032—ab
for children, 1334—ab
truths about, 652—O
Sleepers, closes, to persons with contagious diseases, 70—Ml
Sleeping-sickness, 239—ab, 1400—ab, 2162—E
an African cure for, 608
means of checking spread of, 391-ab
prizes for research on, 122
Sleeplessness, treatment of, 463—ab
Smallpox, counties without power or liability as to, 457—Ml
hospital, liability of board of health members from, 805—Ml
in Alabama in recent years, 540—ab
in Central America, 694
two atypical cases of, 1484—O
Smith, C. A., causative factor in production of dermatitis of ground-itch (uncinariasis), 1693—O
Smoke nuisance, practicability of preventing, 384—ab
problem and public health, 384—ab
problem, medical aspect of, 383—ab
relation of, to sickness, 41—E
Smoking, drastic bill to prevent juvenile, 790
Snake bites, sera for, 1660—E
Social evil, etiology of, 2075—O
Societies, proposed union of medical, 870
take action, 126—P, 217
Sodium and magnesium, disinfectant properties of hypochlorites of, as produced by electrolysis, 1770—ab
bicarbonate in cholera, 1140—ab
cacodylate, 1741—P
chlorid, toxicity of, 1408
cinnamate, 1741—P
citrate in infant feeding, 1080—O
citrate, as modifier of cow's milk, 1241—O
ichthyol, 1831—P
silicate, value of, in tuberculosis, 1421—ab
Solanin, 1479—O
Solis-Cohen, S., palliatives for, hay-fever, 265—O
Somers, L. S., nasal disease and neuralgia, 841—O
Somnos, 695—P, 872—P, 1033
pharmacology of, 863—E
Son not necessarily employed, 1134—Ml
Soot, experimental inhalation of, 1689—ab
Sounds for Eustachian tube, 72—ab
South Africa, disease and hospitals of interior of, 960—O, 1050—O
Southard, E. E., study of acute leptomeningitis (streptococcus pyogenes), 1271—O
Southard, J. B., simplest, easiest and best method of irrigating bladder, 112—O
South-Carolina June report, 64
medical news, 868
reciprocity, 1757
South-Dakota July report, 2116
medical news, 442,692, 868, 1204, 1750
Southern Medical College Association, 633
Southworth, T. S., trend of pediatric opinion concerning artificial feeding of infants, 1083—O
Souvenirs, gynecologic, 1059—ab
Spartein, 1052—T
Spasmodic tic, treatment of neuralgia and, with deep injections of alcohol, 209—E
Specialism, German view of, 1938
medical, 453—ab
Specimens, gelatin method of preserving, 287, 376
Speech, limitations of perception of, 1862—ab
Spencer, J. C., case of renal tuberculosis, 1735—O
Spermatic fluid, Barberio's reaction for, 1690—ab
Spikes for external prothesis in case of complicated fracture of leg, 156—ab
Spiller, W. G., cerebral decompression, 679—O, 744—O, 849—O, 923—O
Spina bifida, 1959—ab
Spinal anesthesia, 2177—ab
Spinal-cord, affections of, in epileptics, 1717—O
disease of, 1771—ab
gunshot wounds of, 1226—ab
inflammation of extradural tissue of, in epidemic cerebrospinal meningitis, 901—ab
tumor of, 1518—ab
tumors compressing, 1061—ab
Spine, cause of so-called habitual lateral curvature of, 1956—ab
curvature of, ocular factors in etiology of, 459—ab
effect of pressure on curve and rotation of, 2123—ab
etiology of juvenile lateral deformities of, 801—ab
experimental pressure on, 705—ab
percussion of, 1862—ab
sacrum and pelvis, auscultation of, 1064—ab
total luxation of, 1377—O
treatment of, curvature of, 800—ab
Spirillum obermeieri, cultivation of, 2152—O
Spirochæta duttoni, passage of, from mother to fetus, 641—ab
pallida and paresis, 1317
Spirochetes inside cells in syphilis, 815—ab
Splanchnoptosis, surgical treatment of, 884—ab
Spleen, abscess of, following malaria, 1047—ab
congenital malformation of heart, with malposition of certain viscera and absence of, 363—O
primary sarcoma of, 1402—ab
primary tuberculosis of, 1773—ab
rupture of, 313—ab
Splenectomy, case of, 1956—ab
stomach functions after, 816—ab
study of blood in Banti's disease before and after, 1149—O
successful case of, for rupture of spleen, 811—ab
Splenic extract, therapeutic action of, in malarial infections, 537—ab
Splenomedullary pseudoleukemia, with secondary myelophthisic anemia, 1416—ab
Splint, new, for fractures of humerus, 968—ab
Spondylitis, typhoid and paratyphoid with changes in vertebræ, 2175-ab
Spoons for medicines, 900—ab
Sports, dead line in, 1493—E
Spotted fever, further observations on Rocky Mountain, and dermacentor occidentalis, 1067—O
Rocky Mountain or, 36—O, 42—E, 686—O
study of Rocky Mountain (tick fever?) by means of animal inoculations, 33—O
transmission of Rocky Mountain, by bite of wood-tick (dermacentor occidentalis), 358—O
Spratt, C. N., report of brain weighing 2,069 grams (73 ounces), 37—O
Spray and electrocautery useless, 959—ab
Sputum, peroxid of hydrogen in examination of 1692—ab
sterilization of tuberculous, and articles infected by tubercle bacillus, 899—ab
Squint, importance of early recognition and treatment of, 1321—ab
relations of superior and inferior recti muscles to convergent, 105—O
Stain index of red corpuscles, 396—ab
triple, for cell and tissue, 1964—ab
Stammering and its treatment, 299—ab, 1332—ab
Standarization, physiologic, of drugs, 1658—E
Starr, M. A., present status of brain surgery, 926—O
Starvation, hallucinations from, 642—ab
State association, power of, 893—Ml
board examination, through Frenchman's eye, 951
board examinations during 1905, 590—E
board of health, nature of, and its acts—powers—revocation of certificate, 965—Ml
board reports reference table of, 635
board of health, validity and force of rules of, 304—Ml
board results in educational number, 876, 1038
duty of, toward venereal diseases, 1248—O
State society auxiliary committee, 1026—E
Steele, J. D., relation of excessive gastric-acidity to gastric symptoms, 496—O
Stenosis, pathogenesis of pure mitral, 2178—ab
relative mitral, 1938
tracheal, 80—ab
Stereoskiagraphy, 806—ab
Sterility, 1059—ab
causes of, 808—ab
due to chronic appendicitis and hydrosalpinx, 237—ab
in male; operative treatment when due to bilateral epididymitis, 1765—ab
Sterilization of undesirable degenerates, 799—ab
Stern, H., diet in albuminuria, 1621—O
Stethoscope, new, 1377—O
Stevens, G. T., new phenomenon of color conversion, 175—O
St. Louis, future of medical profession of, 1046—ab
medical profession of, of to-day, 1046—ab
Medical Society, early history of, 1046—ab
pharmacists appeal to medical profession, 1668—P
Stokes-Adams disease, 640—ab
disease and cardiac arrhythmia, 1960—ab
disease, case of, 1770—ab
Stomach, acute dilatation of, 1603—ab, 1765—ab
antiperistalsis in, 394—ab
carcinoma of, 316—ab, 538—ab, 715—T, 899—ab, 902—ab, 2041—ab
case diagnosed carcinoma ventriculi with rare and unexpected findings, 309—ab
cirrhosis of, 2037—ab
contents, retention of, 2032—ab
differential value of occult hemorrhages, in, affections, 464—ab
disorders, diagnosis of, 1120
disorders, surgical aspects of, from standpoint of internist, 1404—ab
early diagnosis of cancer of, 1331—ab
functions after splenectomy, 816—ab
indications for surgical intervention in diseases of 1594—ab
operative treatment of ulcer of, and its chief complications, 2040—ab
pathogenesis of round ulcer of, 315—ab
postmortem report of rupture of, due to gastromalacia, 2122—ab
postoperative acute dilatation of, 388—ab
pylorogastrectomy for cancer of, 901—ab
Roentgenography of, 1414—ab
sarcoma and myoma of, 1684—ab
significance of so-called occult hemorrhages in diagnosis of ulcer and carcinoma of, 639—ab
surgery, observations on experimental, 1404—ab
syphilis of, 308—ab
tardy pain in, 1689—ab
total atrophy of, 583—O
trauma and cancer of, 395—ab
treatment of ulcer of, with record of cases, 838—O
tube, improved, 273—O
ulcer and cancer of, their relationship, 73—ab
Stools, Gram stain of, method applicable in diagnosis of carcinoma of stomach, 72—ab
study of, of starch-fed infants, 763—O
Stovain, 1831—P
Strabismus, tendon grafting for, 903—ab
Stratton, R. R., acute leptomeningitis (streptococcus pyogenes), 1271—O
Streams, pollution of Canadian, 886—ab
Streptococci from scarlatinal and normal throats and other sources, 1766—ab
Strontium salts, observations on action of, on coagulability of blood, 899—ah
Strychnin as remedy in pulmonary tuberculosis, 807—ab
colloidal form of, 1408
in diabetes insipidus, 546—ab, 1233—ab
and hydrastin, novel method of using in sexual and vesical weakness, 2145—O
toxin, 882
Students, distribution of medical, 598
Study food, 1253
Stuttering, 463—ab
Stypticin, 1831—P

Styptol, 1831—P
Styracol, 1831—P
Sublamine, 1919—P
Submucous septal resection, 1147
Success; surgical desideratum, 1357—O
Suction mask to act on lungs, 1423-ab
therapy for differentiation of malignant tumors, 976—ab
therapy of interior of uterus, 1234—ab
Sugar, colorimetric determination of, in urine, 1143—ab
detection of, in urine, and its significance in life assurance, 1770-ab
in urine during pneumonia, 466—ab
Suicide, mysteries and sources of, 966—ab
no recovery for, of patient at hospital, 536—Ml
responsibility of hospital for, of patient, 694
unique case of automatic or unintentional, in epileptic, 234—ab
Sulphate of copper, 43 consecutive cases of typhoid treated by, plan, 2122—ab
of soda, is, true intestinal antiseptic? 1961—ab
Sulphonal, 1919—P
Sulpho-lythin, 1930—P
Sulphur and lead nitrate for disinfection of rooms, 1966—ab
iodized, 449
Sun baths for psoriasis, 394—ab
Sunlight, action of on bacteria with reference to bacillus of tuberculosis, 2110—ab
Sunshine, demonstration of importance of, in prevention of tuberculosis, 123
Sunstroke, what constitutes, 805—Ml
Superstition, modern, 1026—E
Supervision, medical, of children, 1577
Supply and demand, 1289
Suppuration, middle ear, as cause of retropharyngeal abscess, 229—ab
treatment of intracranial complications of middle ear, 1289—O
Suprarenal alkaloid, 1919—P
extract, pressure raising power of, 159—ab
gland, danger from careless use of alkaloid of, 1188—O
gland, large cysts of, 2042—ab
glands, résumé of recent literature relating to, and application to clinical medicine, 639—ab
preparations, antidote for, 2159—O
preparations, changes in vessels and organs after injection of, 1422—ab
preparations, comparative physiologic activity of some commercial, 790—O, 792—P
preparations, variability of, 783—E
products, standarization of, 944—E, 1116
Surgeon, extraordinary distinction for, 47
general of army, report of, 1839
relation of general, to practice of gynecology, 2121—ab
Surgeons and dentists, conflict between, 522
Surgeon's fee, liability in France for, 1407
Surgery, address in, 1221—ab
address in, Medical Society State of Pennsylvania, 1049—ab
advances in, of nervous system, 1049—ab
year's experience in intestinal, 65—ab
clinical aspect of stomach, 146—ab
conservative, for tumors of scapula, 548—ab
experiences in intracranial, 65—ab
indications for surgical intervention in infections of biliary tract, 402—O
of nasopharyngeal structures, 145—ab
requirements for practice of, in hospitals, 1492—E
Surgical cases, care of, 1677—ab
diseases, diagnostic features of, attended with acute jaundice, 537—ab
exhibition, demonstration against, 869
principles and theories, 1944—ab
procedure, continental, 1599—ab
Survival of parties drowning together, 292
Suture, intrasaccular, of aneurisms, 1017—O
modifications of mattress, 1517—ab
necrosis in tendon, and tendon transplantation, 887—ab
Sutures, capillarity in intestinal, 405—O
silver-rubber-silk instead of silver for buried, 1517—ab
Sweet, W. M., ocular injuries from foreign bodies, 770—O
Symblepharon, paraffin-plates as aid in operations for extensive, 570—O
Symphyscotomy, subcutaneous, 1234—ab
report of five operations; its advantages and its disadvantages, 809—ab
Sympus (or symmelus) dipus, case of, 1765—ab
Syncytioma malignum, 812—ab
Synthetic remedies, popular, their use and misuse, 1392—O
Synthetics, mixtures exploited as, 1668—P
Syphilides of liver, 644—ab
Syphilis and gonorrhea in internal medicine, 1849—ab
and gonorrhea, surgery of, 1849—ab
apoplexy of liver in, 1771—ab
congenital, cerebrospinal fluid in, 1063—ab
contagiousness of late, 1380—E
early diagnosis of, 1962—ab
evolution of interprimary lesions of, 1515—ab
experimental inoculation of man with, 604
hygienic measures against, 75—ab
injection treatment of, 2120—ab
intramuscular injections in treatment of, and use of sozoiodolate of mercury, 73—ab
in Turkey, 1032
late research on, 1575
manifestations of, associated with pulmonary tuberculosis, 387—ab
mercurial treatment of, by way of rectum, 76—ab
mercury in, 1412—T
of circulatory organs, 394—ab
of stomach, 308—ab
professional, and accident insurance, 1236—ab
serodiagnosis of, 79—ab
serum treatment of, 1962—ab
so-called virulent, and its treatment, 1859—ab
some little known peculiarities of teeth in hereditary, 1958—ab
spirochetes in cancer and in, 1601—ab
spirochetes inside cells in, 815—ab
tertiary, 1051—T
tertiary fever in, 244—ab
what effective measures are there for prevention of spread of, and increase of prostitution, 1372—O
wives infected with, by their husbands, 1600—ab, 1688—ab
Syphilitic affections in posterior cranial fossa, 467—ab
antibodies in cerebrospinal fluid of paralytics, 2127—ab
Syringomyelia, 1686—ab, 1687—ab

SOCIETIES.

Abbreviations:

Acad.—Academy.
Am.—American.
A.—Association.
Coll.—College.
Conf.—Conference.
Cong.—Congress.
Dist.—District.
Hosp.—Hospital.
Internat.—International.
M.—Medical, Medicine.
Nat.—National.
Phys.—Physicians.
Ry.—Railway.
S.—Society.
Surg.—Surgical, Surgery, Surgeons.

Adams Co. (Ky.) M. A., 1218
Æsculapian S. of the Wabash Valley, 1745
Allegany Co. (Md.) M. S., 1201
Allen Co. (Ind.) M. S., 1836
Alumni A. of St. Vincent's Charity Hospital, Cleveland, 2019
Alumni A. of the Western Pa. M. Coll., Pittsburg, 120
Alumni of the Coll. of Phys. and Surg. of Boston, 1572
Am. Acad. of M., 228, 301, 382
Am. Acad. of Ophthalmology and Otolaryngology, 602, 886, 959
Am. A. of Obstetricians and Gynecologists, 517, 1044, 1126, 1219, 1323, 1575
Am, Electrotherapeutic A., 693, 1109, 1575
Am. Institute of Homeopathy, 1031
Am. Internat. Tuberculosis Cong., 1748
Am. Laryngolical, Rhinological and Otological S., 229, 299, 516
Am. M. S., Vienna, 1391
Am. Orthopedic A., 704, 800, 886
Am. Pharmaceutical A., 147
Am. Pharmaceutical A., Philadelphia Branch, 1674
Am. Physico-Electro-Therapeutic A., 1109, 1575
Am. Proctological S., 453
Am. Public Health A., 2110
Am. Roentgen Ray S., 45, 798, 887
Am. Surg. A., 64, 146
Antiquackery S., 1032
Asotin Co. (Wash.) M. S., 1673
A. for Improving the Condition of the Poor, 1309
A. for Microbiology, 969
A. for the Prevention and Relief of Tuberculosis (N. J.), 600
A. of Erie Ry. Surg., 1310
A. of German Phys. and Scientists, 1313
A. of Hospital Superintendents, 1109
A. of Military Surg. of the State of Ill., 2018
A. of Military Surg., of the State of Maine, 1200
A. of Military Surg. of the United States, 956, 1046, 1128
A. of Seaboard Air-Line Ry. Surg., 602
A. of Surg. of the Penn. Lines, 1031
A. of Trustees and Phys. of State and Incorporated Hosp. for the Insane of Pa., 1497
Augusta Co. (Va.) M. S., 693
Australasian M. Cong., 122
Baltimore City M. S., 2018
Baltimore M. Club, 1747
Barren Co. (Ky.) M. S., 48
Berkeley Co. (W. Va.) M. S., 1673
Berlin Acad. of Science, 1312
Berrien Co. (Ga.) M. S., 449
Blackwell S. of Rochester, N. Y., 1107
Boston A. for the Relief and Control of Tuberculosis, 1662
Boston M. Library, 1505
Botna Valley (Ia.) M. S., 785
British A. for the Advancement of Science, 1314
British Columbia (Can.) M. S., 603
British M. A., 215, 603, 705, 798, 885, 898, 941, 958, 1047, 1112, 1129, 1221, 1321, 1399
Broome Co. (N. Y.) M. S., 282, 1837
Buffalo (N. Y.) Acad. of M., 119
Buncombe Co. (N. C.) M. S., 126
Cal. Acad. of M., 1399
Cal. Public Health A., 1570
Calumet Co. (Wis.) M. S., 1497
Cambridge (Mass.) Anti-Tuberculosis A., 1747
Campbell Co. (Ga) M. S., 449
Canadian A. for the Prevention of Consumption, 1031, 1575
Canadian M. A., 789, 2100
Canadian M. Protective A., 789
Carroll Co. (Ga.) M. S., 1218
Cayuga Co. (N. Y.) M. S., 282
Center Co. (Pa.) M. S., 48
Central Dist. (Ia.) M. S., 43
Central Minn. M. A., 1925
Charity Hosp. (Cleveland) M. S., 2019
Charity Organization S., 1574
Cherokee Co. (Ga). M. S., 449
Chi Club, 1108
Chicago Gynecological S., 1200
Chicago M. S., 1200, 1945, 2032, 2111
Chicago Urological A., 1571
Cincinnati Acad. of M., 230
Cincinnati Chapter of the Alumni A. of Miami M. College, 1387
Clarke Co. (Wash.) M. S., 1673
Clay-Becker (Minn.) M. S., 1573
Clayton Co. (Ga.) M. S., 449
Cleveland (O.) M. Library of A., 1387
Clinical S. of the Elizabeth (N. J.) General Hosp., 1663
Coffey Co. (Kan.) M. S., 1218
Coll. of Phys. of Philadelphia, 1913
Colo. State M. S., 945, 1320, 1384, 1403
Columbia Co. (N. Y.) M. S., 282
Conf. of Health Officers of Va., 1664
Conf. of Home Economics, 1310
Conf. of French-speaking Phys. of America, 694
Conf. of State and Local Boards of Health of N. J., 1386
Cong. of Insurance Examiners, 1312
Cong. of Professional M. in Belgium, 520
Cook Co. Hosp. Alumni A., 1746
Coroner's A. of Ill., 945, 1924
Corsicana Dist. (Tex.) M. A., 693
Co. M. S. of Barbour, Randolph and Tucker Co.'s (W. Va.), 1575
Crawford Co. (Ill.) M. S., 280
Crittenden Co. (Ky.) M. S. 48, 1218
Cumberland Co. (N. C.) M. S., 1574
Dallas Co. (Tex.) M. A., 1310
Dallas (Tex.) M. and Surg. S., 1109
Dane Co. (Wis.) M. S., 1673
Decatur (Ill.) M. S., 1199
Delaware Anti-Tuberculosis S., 599
Delaware State M. S., 1678
Denver Co. (Colo.) M. S., 1494
Des Moines Valley M. A., 211
Dakota Co. (Minn.) M. A., 1218
Detroit Acad. of M., 1386
Dickson Co. (Tenn.) M. A., 1108
Dominion M. and Surg. S., 1388
Door Co. (Wis.) M. S., 1673
Eastern Ore. Dist. M. S., 1497
Eastern Tenn. M. S., 1309
East Monmouth (N. J.) Practitioner's S., 1663
Elwood (Ind.) Phys. Club, 1495
Escambia Co. (Fla.) M. S., 48
Florida State M. A., 48, 280
Fort Wayne (Ind.) Acad. of M., 1661
Franklin Co. (Kan.) M. S., 1385
Franklin Co. (Pa.) M. S., 2019
Frederick Co. (Md.) M. S., 1747
French Cong. of Alienists and Neurologists, 604
French Cong. of Surg., 603
French S. of Mil. Surg., 2169
Fulton Co. (Pa.) M. S., 1588
Furnas Co. (Neb.) M. S., 1588
Garland Co. Hot Springs (Ark.) M. A., 514
Georgia Fifth Dist. M. S., 1494, 1536
Georgia Sixth Dist. M. S., 1836
German A. of Phys. and Scientists, 789
German Dermatological S., 45, 1575
German M. Press A., 1576
German Ophthalmologic Cong., 1576
German S. for the Repression of Venereal Diseases, 45
Grafton Co. (N. H.) M. S., 370
Grand Forks (N. D.) M. S., 601
Grant Co. (Ind.) M. S., 118
Greene Co. (N. Y.) M. S., 282
Hamilton Co. (Tenn.) M. S., 1310
Harlem (N. Y. City) M. A., 119
Harvard M. Alumni A., 212
Hendricks Co. (Ind.) M. S., 118
Herkimer Co. (N.Y.) M. S., 282
Hillsboro (Tex.) M. A., 442
Hosp. A. of Philadelphia, 1664
Hot Springs (Ark.) M. S., 514
Idaho State M. S., 368, 945, 1506
Ill. Fifth Dist. M. S., 1745
Ill. Sixth (Western) Dist. M. S., 1570
Ill. State Conf. of Charities, 1199, 1495, 1570
Ind. Ninth Dist. M. S., 1661
Ind. Thirteenth Dist. M. S., 1746
I. T. Fifteenth Dist. M. S., 715
I. T. Northern Dist. M. S., 715
I. T. Twenty-first Dist. M. S., 715
I. T. Twenty-third Dist. M. A., 1583
I. T. Twenty-sixth Recording Dist. M. S., 715
Institute for Cancer Research, 1312
Internat. Conf. for Cancer Research, 45
Internat. Cong. for Care of Insane, 45, 1389
Internat. Cong. for Child Study and Care of Youth, 283
Internat. Cong. for Laryngology and Rhinology, 1929
Internat. Cong. for Professional Diseases, 518
Internat. Cong. of Gynecology, 518
Internat. Cong. of Hygiene and Demography, 519
Internat. Cong. of Life Insurance Examiners, 519, 1313
Internat. Cong. of Otology, 694
Internat. Cong. on School Hygiene, 1313
Internat. Cong. on Tuberculosis, 948, 1497
Internat. M. A. of Mexico, 1576, 1929
Interstate (Kan. and Mo.) M. S., 516
Interurban (Duluth, Minn., and Superior, Wis.) Acad. of M., 1925
Iowa A. of Ry. Surg., 1308
Iowa Health Officers' A., 281
Italian Cong. of Internal M., 603, 1843
Italian Cong. of Ophthalmology, 1665
Jackson Co. (Mo.) M. S., 213, 1573
Jefferson Co. (Ala.) M. S., 1105
Jefferson Co. (Ga.) M. S., 449
Jefferson Co. (Ky.) M. A., 211
Kan. State M. S., 126
Kent Co. (Mich.) M. S., 1218
Ky. Anti-Tuberculosis A., 1571
Ky. State A. of Ry. Surg., 211
Ky. State M. A., 1308, 1400, 1495
Ky. Valley M. A., 1571
K. K. M. S. of Vienna, 1665
La Crosse Co. (Wis.) M. S.. 215
Lane Co. (Ore.) M. S., 1574
Laurens Co. (Ga.) M. S., 449
Lawrence Co. (Pa.) M. S., 2019
Lehigh Valley (Pa.) M. S., 601
Lorain Co. (O.) M. S., 371
Madison Co. (Ga.) M. S., 449
Madison Co. (N. Y.) M. S., 282
Manistee Co. (Mich.) M. S., 1747
Md. Pharmaceutical S., 1747
Md. University Alumni A., Washington Branch, 43

Massac Co. (Ill.) M. S., 715
Mass. A. of Boards of Health, 2030
Mass. M. S., 1201
Mass. Red Cross S., 1662
Matagorda Co. (Tex.) M. S., 48
M. and Chirurgical Faculty of Md., 866, 1106, 1201, 1747
M. A. of Central N. Y., 1573
M. A. of Monessen (Pa.), 601
M. A. of Northern N. Y., 1573
M. A. of the Southwest, 283, 1761
M. Club of Westbrook (Me), 1571
M. Practitioner's Club of Cedar Rapids (Ia.), 1746
M. S. of the City Hos. Alumni of St. Louis, 1584
M. S. of the Co. of New York, 1584
M. S. of the Missouri Valley, 1031
M. S. of Nova Scotia, 603
M. S. of the State of N. C., 126
M. S. of the State of Pa., 1048, 1130, 1220, 1322
M. S. of Va., 1674
Medicolegal S. of New York, 1748
Mich. State M. S., 1202
Middle Tenn. M. A., 214, 2020
Military Tract M. A., 1495
Millville (N. J.) S. for the Prevention and Relief of Tuberculosis, 2099
Minn. State M. A., 213, 217
Mississippi Valley M. A., 603, 1673, 1760, 1849, 1944
Missouri Valley M. S., 372
Minneapolis (Minn.) Red Cross S., 1107
Montour Co. (Pa.) M. S., 602
Morris Co. (N. J.) M. S., 1663
Nashville (Tenn.) Acad. of M., 1108
Nashville Acad. of M., and Davidson Co. (Tenn.) M. S., 217
Nat. A. for the Study and Prevention of Tuberculosis, 1497
Nat. A. for the Study of Epilepsy and the Care and Treatment of Epileptics, 1497, 1836
Nat. Conf.. on Infantile Mortality, 124
Nat. M. A. of Negro Phys. and Surg. of the U. S., 694
Neb. State M. A., 867
Neighborhood (Mass.) M. Club, 1572
New England Alumni of Albany M. College, 1385
N. J. State M. S., 217
N. M. M. A., 126
Newport News (Va.) M. S., 1664
N. Y. Acad. of M., 1202, 1748, 2019,
N. Y. and New England A. of R. Surg., 1497, 1926
N. Y. C. M. A., 282
N. Y. Neurological S., 1926
N. Y. State Charities Aid A., 1107
N. Y. Tri-Professional S., 1663
N. C. Tenth Dist. M. S., 1387, 1926
Northern Idaho Dist., S., 368, 1570
Northern (Conn.) M. S., 449
Northern M. A. of Philadelphia, 1664, 2020
Northwestern (Pa.) M. S., 601
Ohio Eighth Dist. M. S., 2100
Ohio First Dist. M. S., 1838
Ohio Ninth Dist. M. S., 2109
Ohio Seventh Dist. M. S., 1838
Ohio State M. A., 1030
Ohio Valley M. S., 372, 1935
Okla. State M. A., 126
Onondaga Co. (N. Y.) M. S., 282
Oneida Co. (N. Y.) M. S., 282
Ontario M. S., 789, 1031
Orange Co. (N. Y.) M. S., 282
Orange Mountain (N. J.) M. S., 217
Orange (N. J.) Practitioner's S., 1662
Ottawa (Ont.) M. A., 2100
Oxford (Eng.) Ophthal. Cong., 605
Ottawa Co. (Mich.) M. S., 600
Pacific A. of Rv. Surg., 947
Park River (Minn.) M. S., 1573
Pa. State M. S., 947
Perry Co. (Ill.) M. S.. 715
Petersburg (Va.) M. Faculty, 2100
Philadelphia Co. (Pa.) M. S., 383, 1203, 1664, 2167
Philadelphia Co. (Pa.) M. S., Kensington Branch, 2100
Philadelphia M. Club, 1388
Philadelphia S. for the Study and Prevention of Social Disease ,1849
Phys. A. of the City of Oswego (N. Y.), 1926
Phys. Club of Chicago, 118
Polk Co. (Ark.) M. S., 449
Porto Rico M. A., 1839
Practitioner's S. of Rochester, N. Y., 1107
Public Health Defense League, 1758
Queen Anne Co. (Md.) M. A., 1218
Red River Valley (Minn.) M. S., 1573
Rensselaer Co. (N. Y.) M. S., 282
Rockland County (N. Y) M. A., 2099
Roumania Annual M. Cong., 1576
St. Louis (Mo.) M. S., 67, 454, 946, 1045, 1397, 2166
St. Louis Pathologic S., 281
San Benito Co. (Cal.) M. S., 217
San Francisco Co. (Cal.) M. S., 302
Sanitary Inspectors' A., 1314
San Joaquin Valley (Cal.) Sanitary A., 279
Scott County (Ia.) M. S., 1308
Scott Co. (Mo.) M. A., 1218
Scottish A. of M. Women, 1840
Smith Co. (Texas) M. S., 48
S. for Experimental Biology and M., 227
S. for Ex-Internes of Kings Co. Hosp., Brooklyn, 1838
S. of M. Jurisprudence, (N.Y.), 1309
Somerset Co. (Pa.) M. S., 2019
South Piedmont (Va.) M. A., 1589
S. C. M. A., 868
South Fulton, Campbell and Clayton Co. (Ga.) M. S., 449
Southern Idaho M. A., 368
Southern Ill. M. A., 2098
Southern M. College A., 2109
Southern Minn. M. A., 515
Spokane Co. (Wash.) M. S., 1839
Stanislaus Co. (Cal.) M. S., 449, 2097
State M. S. of Wis., 143
Sullivan Co. (Mo.) M. S., 1588
Surg. A. of the Rock Island Lines, 1750
Sussex Co. (N. J.) M. S., 1663
Swedish M. A., 603
Talbot County (Md.) M. A., 2098
Tate Co. (Miss.) M. A., 1588
Tazewell Co. (Ill.) M. S., 1495
Tri-Co. M. S. (Sussex, Morris and Warren, N. J.), 1663
Tri-Co. (Pike, Levison and Copiah, Miss.) M. S., 1588
Tri-Co. (Rosebud, Dawson and Custer, Mont.) M. A., 1588
Tri-State M. A. of Ark., Tex. and La., 1839
Tri-State M. A. of Ind., Mich. and O., 517
Tri-State M. A. of Miss., Ark., and Tenn., 2021
Tri-State M. S. of Ala., Ga. and Tenn., 694, 1324
Tufts Coll. M. School Alumni A., 212
Tulare Co. (Cal.) M. S., 449
Tulsa Co. (I. T.) M. S., 715
Ulster Co. (N. Y.) M. S., 282
Union Dist. M. S. of Ohio and Ind., 1746
Upper Peninsular (Mich.) M. S., 600
Utica (N. Y.) M. Library A., 1496
Vt. State M. S., 1676
Vigo Co. (Ind.) M. S., 126
Vineland (N. J.) M. S., 1386
Warren Co. (N. J.) M. S., 1663
Wash. A. for the Prevention and Relief of Tuberculosis, 1109, 1927
Wash. Co. (Ga.) M. S., 714
Wash. Co. (Pa.) M. S., 2019
Wash. State M. A., 1045
Wayne Co. (Mich.) M. S., 786, 1029
West Brookfield (Mass.) M. Club, 1572
West Tenn. M. and Surg. A., 214
West Va. State M. A., 215, 865
Western Central (Minn.) M. S., 1573
Western Surg. and Gynecological A., 788, 884, 956
Williamsburgh (N. Y.) M. S., 2019
Wis. Second Dist. M. S., 602
Wis. Tenth Dist. M. S., 1927
Woman's M. Club of Columbus, Ohio, 1749
Winnipeg M. S., 1388
Woman's M. S., Denver, 1384
Woonsocket (R. I.) M. S., 1204
Wyo. State M. S., 1204
Wyoming Valley (Pa.) S. for the Prevention of Tuberculosis, 282, 517
Yates Co. (N. Y.) M. S., 1588

T

Tabes dorsalis, dystrophies of, 209—E
Table, combined operating and office, 2160—O
improved rectal operating, 111—O
Tachycardia, paroxysmal, 1417—ab, 1518—ab, 1578
Tait, W. C., cap and gown in Molière, 1557—O
Talbot, E. S., interstitial gingivitis due to autointoxication, 261—O
Talley, J. E., postcritical fever and other sequelæ of croupous pneumonia, 730—O
Tannalbin, 2013—P
Tannigen, 1919—P
Tannoform, 2013—P
Tannopin, 2013—P
Tansy, poisoning from oil of, 937—O, 1917—O
Tarsus, old fractures of, 887—ab
Taylor, A. S., dressing after hare-lip operation, 2091—O
Taylor, J. M., utility of saline solution in treatment of fever, 1551—O
Tea, action of cold or lukewarm, on bacillus typhosus, 1599—ab
Teeth, some little known peculiarities of, in hereditary syphilis, 1958—ab
treatment of loosened, 258—O
what is effect on progeny of loss of, in ancestry? 191—O
Telecardiography, 25
Temperature, determination of normal, of closed inguinal fold of child, and clinical significance, 1010—O
record, permanent, 1603—ab
Temporal fascia, use of, to cover in cranial defects, 809—ab
Temporosphenoidal lobe, abscess of, 1417—ab
Tendo Achilles, rupture of, 1420—ab
Tendon grafting, causes of failure in, 1221—ab
grafting for strabismus, 903—ab
tissue versus catgut, 1047—ab
transplantation and grafting for paralytic deformities, 387—ab
transplantation, importance of intramuscular nerve tracts in, 1692—ab
transplantation, indications and technic for, 1962—ab
Tenia nana, two cases of infection with, in Philippines, 685—O
Tennessee, annual report of secretary of state board, 1409
defective organization in, 296—O
May report, 534
medical news, 214, 693, 1108, 1309, 1838, 2020
Tenoplasty, use of silk in, 1221—ab
Tension, vascular, in chronic illness, 807—ab
Tent life, practical view of, in southwest, 1328—ab
Teratomata of inguinoscrotal region, 1684—ab
Test, action of quinin on hemoglobin and, for carbon oxid in blood, 1517—ab
another, for detection of occult blood, 1212
deviation of complement by serum plus antiserum as, for blood, 1832—E
for arsenic, phosphorus and antimony, 815—ab
improved formalin technic for biologic, 643—ab
nucleus, in pancreatic disease, 1957—ab
rapid, for albumin in urine, 1064-ab
ring, for acetone, 1773—ab
Russo's methylene blue, 1691—ab
Sahli's desmoid, of stomach functioning, 313—ab
sensitive, for albumin in urine, 816—ab, 1041
simple, for chlorids in urine, 904—ab
simplified, for uric acid in urine, 466—ab
value of indigo-carmin, as aid in diagnosis of partial and total ureteral occlusions, 1683—ab
Testicle, sufficient evidence of severe injury to, without immediate pain—inferences seemingly opposed to natural law, 1510—Ml
Testicles, free bodies in, 548—ab
Testimony and evidence in medicine, 1368—O
good and bad bases for expert, 232—Ml
weakness of expert, 1852—Ml
Tests, functional, of arteries, 1602—ab
functional kidney, 2126—ab
functional, of heart muscle, 544—ab
improved method of ring, in uranalysis, 807—ab
mercury, etc., in relation to, for occult blood, 816—ab
some kitchen, to detect adulteration in common foods, 1956—ab
visual, for public services, 1222—ab
Tetanus, 51
antitoxin, dried, as dressing for wounds, 1511—ab
an urgent plea for use of larger doses of antitetanic serum for lockjaw, 1135—ab
Fourth-of-July injuries and, 505—O, 512—E, 1677—ab
in two brothers, subdural and subcutaneous injections of serum, 1959—ab
neonatorum, 2083—O
neonatorum, case of, with recovery, 583—O
recovery from traumatic, 545—ab
serumtherapy of, 146—ab
toxin, to separate components of, 2177—ab
treatment of, 73—ab
treatment of, by magnesium sulphate, 146—ab
Tetany, appendicitis as cause of, 235—ab
Tetany, tendency to, due to lime in infant's food, 1063—ab
relations between, sexual apparatus, 1604—ab
Texas, eclectic April and October reports, 2114
medical news, 214, 442, 693, 1109, 1310, 1839, 1928, 2020, 2168
reciprocity in, 1848
Textbooks, best medical, 1214
Thayer, W. S., analysis of 808 cases of chorea, with reference to cardiovascular manifestations, 1352—O
Theobromine, 2013—P
sodium salicylate, 2013—P
Theocin, 2093—P
Theophyllin, 2093—P
Therapeutic curiosities, 547—ab
Therapeutics based on pathologic physiology, 388—ab
benefits of modern, 144—ab
commercial, and commercial therapeutists, 1678—ab
old and new in ocular, 391—ab
summary of therapeutic field for past year, 648—O
Therapy, electrochemical, 1144—ab
Thermodin, 2093—P
Thermometer, broken, in child's rectum, 1841
Thermovibrassage; new method of treatment, 1376—O
Thermoregulator, accurate and reliable, 1563—O
Thiersch flaps, after-treatment of, 2129—ab
Thiocol, 2093—P
Thompson, H. H., interesting case of acranius, 2092—O
Thomson, E. S., staining and examination of bacteria of eye by simple practical methods, 89—O
Thoracic cavity, injuries of, 1221—ab
duct, tuberculosis of, 115—E
Thorax, plastic operations on, 2177-ab
Thorington, C., mixed malaria and typhoid, 358—O
Throat and nasal disturbances, local treatment of, 456—T
endothelioma of, 229—ab
examination of, in chronic systemic infections, 2036—ab
Throats, bacteria in scarlatinal and normal, 1171—O
Thrombophlebitis, subclavian, following abdominal section, 539—ab
Thrombosis, infective, of sigmoid sinus, 230—ab
unusual case of, of lower part of lateral sinus of aural origin, 1770—ab
venous, in puerperium, 1235—ab
Thumb sucking, 151—ab
Thymus, physiology and pathology of, 1860—ab
Thyroid and parathyroid glands, relation of, 1130—ab
and parathyroid glands, structure and functions of, 1958—ab
and the eyes, relation between, 1131—ab
etiology of diseases of, 1131—ab
extract, use of, to shorten coagulation time of blood, 67—ab
feeding, influence of, on susceptibility to poisons, 1405
gland and tuberculosis, 1689—ab
amlignant disease of, 72—ab
migraine, 293
significance of enlargements of, 1331—ab
stab wound of, 156—ab
therapeutic use of preparations, 1475—O
treatment of obesity, 974—ab
Thyroidectomy, partial and complete, 66—ab
Thyroidism, treatment of, by specific serum, 655—O
Thyrotomy versus laryngectomy, 389—ab
Tibia, fracture of upper end of, from indirect violence, 463—ab
Tic-douloureux, case of, 389—ab
peripheral versus intracranial operations for, 957—ab
Ticks, transmission of Rocky Mountain spotted fever by, 366—E
Tobacco and arteriosclerosis, 1197—E
Tomlinson, H. A., motor degenerative sequence in dementia, 1338—O—O
Tongue and mouth in typhoid, 965—T
black, 362—O
causes of coated, 465—ab
curability of cancer in general and cancer of, in particular, 2041—ab
epithelioma of, operation by McCormick's method, 1687—ab
epithelioma of, with secondary growths in glands of neck and liver treated by x-ray, 239—ab
multiple fibrosarcoma of, 2003—O

Tongue, plea for more radical operations in cancer of lips and, 986—O
polypoid lipoma, 1328—ab
Tonols, 2093—P
Tonsil, death from suppurating, 305—ab
lingual, 1329—ab
Tonsillitis, Brewer's yeast in phlegmonous, 159—ab
Tonsils as entering point for tuberculosis, 1689—ab
facts concerning faucial, 1725—O
indications for surgical removal of, and best methods of doing so, 72—ab, 720—ab, 960—ab
tuberculosis of, 72—ab
Tooth, pathologic features of pulp of, 916—O
Toronto and its university, 705—ab
Torticollis, 887—ab
spasmodic, 2039—ab
Toxemia, gastrointestinal, 1404—ab
of pregnancy, 1850—ab
of pregnancy, treatment of, 234—ab, 1675—ab
unusual and unique case of, 1687-ab
Toxins destructive of larvæ, 316—ab
in blood in diphtheria, 1604—ab
Trachea, displacement of larynx and, in thoracic affections, 2128—ab
Trachoma in Italy, 1665.
radium in, 939, 1690—ab
Training of mentally and morally defective child, 383—ab
Transplantation, treatment after Thiersch, 1141—ab
Trans-uretero-urethral anastomosis, 2037—ab
Trauma and cancer of stomach, 395-ab
neurosis of heart and arteriosclerosis in consequence of, 394—ab
Traumatic epidemic in Russia, 1312
Trendelenburg, F., review of surgical progress, 81—O
Trephining, technic of, 1517—ab
the labyrinth, etc., for subjective sounds, 242—ab
Trichinosis, 1677—ab
Tricuspid valve, insufficiency of, in pernicious anemia, 1415—ab
Triplets living at 47 years of age, 288 living over eighty years, 446
Tritici, liquor, 1488—P
Truth, growth of, 1769—ab
Trypanosoma disease, 367—E
Trypanosomiasis, treatment of, by benzidin dyes, 972—ab
Trypsin and amylopsin in malignant growths, 445
multiple fibrosarcoma of tongue treated with, 2003—O
treatment of cancer, 450, 644—ab, 2119—ab
Tubercle bacilli, possible dissemination of, by insects, 1683—ab
bacillus, sterilization of tuberculous sputum and articles infected by, 899—ab
Tuberculides with report of cases illustrating papulo-necrotic variety, 71—ab
Tuberculin diagnosis of genital tuberculosis, 240—ab
diagnostic value of inhalation of, 1639—ab
experience of new, 392—ab
influence of, on experimental infections, 547—ab
in treatment of children, 79—ab
in treatment of tuberculosis, 537—ab
maximal dose in diagnostic use of, 1689—ab
old, as therapeutic measure, 814—ab
reaction and immunity, 1689—ab
report of 25 cases of tuberculosis treated with intravenous injections of Koch's, 2038—ab
test, 1690—ab
tuberculosis of adnexa diagnosed with, 728—ab
Tuberculosis, 1330—ab, 1397—ab, 1402—ab
acute intestinal, 2177—ab
agglutination in pulmonary, 1690-ab
among Indians of Arizona and New Mexico, 1853—ab
among Oglala Sioux Indians, 1596—ab
and influenza, general analogies between, 1230—ab
and nephritis, 743
and pregnancy, 80—ab
and thyroid gland, 1689—ab
antiseptic treatment of, 739—O
asses' serum in treatment of, 284
authorizes county hospitals for treating, 2119—Ml
bladder, and its cure, 903—ab
campaign against, 117—E
care of far-advanced cases of pulmonary, 895—ab
climate, in treatment of, 2016—E
Tuberculosis, clinical significance of so-called acute stages of, 1221—ab
compulsory reports and registration of, in United States, 2120—ab
congresses, light on, 1497
conjugal, 1421—ab
cortex in, 393—ab
crusade, free dispensary as factor in, 1404—ab
danger of dust as cause of, 1849—ab
demonstration of importance of sunshine in prevention of, 123
diagnosis of, in infants and children, 1555—O, 1586—O
diet in, 387—ab
disappointments and hopes in treatment of, 543—ab
dispensary, its methods, value and limitations, 2154—O
early diagnosis and treatment of pulmonary, 1401—ab, 1678—ab
effect of blowing on wind musical instruments in, 1327—ab
etiologic factors in bone, in children, 2120—ab
evil effect of pregnancy on laryngeal, 727—ab
exhibition in Toronto, 122
fifth international conference on, 948
further notes on serum diagnosis of, 1595—ab
genitourinary, 311—ab
glandular pulmonary, in Paris schools, 2042—ab
how Canada is fighting, 1665
human and bovine, 898—ab
hyperemia in treatment of pulmonary, 1140—ab
hyperplastic, of intestine and peritoneum, 146—ab
indirect diagnosis of, 393—ab
in Irish cattle, 521
intestinal origin of pulmonary, 1100—E, 1600—ab, 1742—E
in Italian army, 546—ab
is laryngeal, a primary infection? 960—ab
kidneys in, 207—E
latent, in children, 1189—O
league, 146—ab
length of survival after onset of, in Norway, 1520—ab
limitations to eradication of, 460-ab
management of, 2131—O
manifestations of syphilis associated with pulmonary, 387—ab
man's natural protective agencies against, 1853—ab
Marmorek's serum in surgical, 1962—ab
maxims for selection of climate in pulmonary, laryngeal and bone, 459—ab
of adenoma of uterus, 768—O
of adnexa diagnosed with tuberculin, 728—ab
of base of skull, 1421—ab
of cecum, ileocecal value and appendix, 391—ab
of cervix, 393—ab
of glands simulating neoplasms, 1519—ab
of heart, 314—ab
of joints, cure of, 967—ab
of lungs, clinical, anatomic and pathologic comparison of tuberculous cavities in, 1596—ab
of kidney and bladder, treatment of, by nephrectomy, 2047—O
of kidney in infant, 2036—ab
of mamma, 2127—ab
of middle ear and mastoid, 1293—O
of peritoneum, 1401—ab
of seminal tract, 75—ab
of thoracic duct, 115—E
of tonsils, 72—ab
of vulva, 973—ab
oral, 959—ab
organic heart diseases and immunity from pulmonary, 1596—ab
origin of pulmonary, 725—ab
plea for more rational therapy in, 1764—ab
pleurisy with effusion and pulmonary, 966—ab
primary, and anthracosis of lungs and bronchial glands, 1691—ab
primary, of digestive-tract, 813—ab
primary, of spleen, 1773—ab
problem in prisons and reformatories, 1853—ab
protection of infants and young children from, 1596—ab
protective immunization against joint, 801—ab
provides for sanitarium for treatment of, 1852—Ml
pulmonary, artificial pneumothorax in treatment of tuberculous pulmonary processes, 1235—ab
relations between cancer and, 1424-ab
relative value of home treatment of, 1596—ab
Tuberculosis, renal, 1735—O
renal, diagnosis and treatment of, 1075—O
report of 25 cases of, treated with intravenous injections of Koch's tuberculin, 2038—ab
resection of nose septum for primary, 902—ab
Roentgen rays in early diagnosis of pulmonary, 1595—ab
sanatorium for British Columbia, 1031
sanatorium, influence of on value of surrounding property, 2054—O
scope and aim of state sanatoria for, 317—O
sign of congenital tendency to, 314—ab
specific treatment of, 1965—ab
spontaneous, in monkeys, 313—ab
strychnin as remedy in pulmonary, 807—ab
successful immunization by mouth against, 123
superheated air plus calomel and iodin in treatment of, of mucosæ, 974—ab
suppression of, 1682—ab
surgical aspects of, 1367—O
to combat bovine, in Argentina, 869
tonsils as entering point for, 1689—ab
treatment of, in sanatoriums, 310—ab
treatment of laryngeal, 1062—ab
treatment of, of kidney and bladder by nephrectomy, 957—ab
treatment of pulmonary, 1687—ab
treatment of surgical, 463—ab
treatment of, of upper air passages and ear, 300—ab
treatment of, of urinary tract in women, 1440—O
tuberculin diagnosis of genital, 240—ab
tuberculin in treatment of, 537—ab
tuberculin in treatment of pulmonary, 234—ab
use and abuse of pulmonary gymnastics in, 388—ab
value of sodium silicate in, 1421-ab
value of study of apical outline in diagnosis of incipient pulmonary, 1595—ab
work in Europe, 1417—ab
Tuberculous, abuse of, 1307—E
anemia in the, 393—ab
disease, observations on effect of sterile caseous matter in treatment of, 970—ab
infection, primary, in monkeys, 902—ab
migraine and hypothermia in, 901—ab
sanatorium treatment of, 396—ab
Tubes and ovaries, present status of conservatism in surgical treatment of, 1454—O
Tubo-ovarian-cyst, burrowing, with remarks on its pathogenesis, 310—ab
Tucker asthma cure, cocain in, 377, 793
Tucson, Arizona, winter climate of, 1135—ab
Tuffier, T., war against venereal diseases in France, 1249—O
Tulase, Behring's, reported ineffectual, 1389
Tumor, cicatricial, studded with scraps of coal, 466—ab
remarkable osteo-calcareous, in nose, 271—O
Tumors, cancerous, and helminths, 812—ab
differential diagnosis and prognosis of, of uveal tract, 409—O
endocranial, 244—ab
importance of early recognition and operative treatment of malignant, 1470—O
multiple primary, of bones, 2126—ab
of brain, 782—E
of brain, palliative operations in treatment of, 679—O
of carotid glands, 566—O
simultaneous occurrence of two non-related, in mouse, 1237—O
suction therapy for differentiation of malignant, 976—ab
three cases of, compressing spinal cord, 1061—ab
trypsin and amylopsin in malignant 445
syphilis in, 1032
Turkey, medical and sanitary geography of, 1937
plague in, 1032
Turpentine in typhoid, 717—T
Tuttle, J. P., appendicostomy, 426—O
Twins, successful delivery of, in placenta prævia, 1301—O
Tympanic cavity, evacuation of, 959-ab
Typhoid, 1132—T, 1856—ab
acetozone in, 1651—O
afebrile, 464—ab
bacilli carriers in insane asylum, 1604—ab
bacilli, cultivation of, from coagulated blood, 643—ab
bacilli, simple test for, in blood, 395—ab
bacillus, viability of, in water, 1199—E
bacteriologic examinations of conjunctival sac in, and in pneumonia, 1417—ab
bath treatment of, in private practice, 1414—ab
biliary, 1963—ab
condition in case of, simulating intestinal perforation, 1916—O
diagnosticum, results of, 903—ab
does drinking of water give, 639—ab
due to shellfish, 605
early diagnosis of, 1307—E
early diagnosis and treatment of, 2178—ab
embolism of pulmonary artery in, 316—ab
43 consecutive cases of, treated by sulphate of copper plan, 2122—ab
influence of early feeding in treatment of, 1686—ab
in India, 869
in patient aged seventy, 1191—O
hemorrhagic diathesis in, 157—ab
milk in, 1843
mixed malaria and, 358—O
notes on, 160—ab
occurrence of occult hemorrhages in, 306—ab
occurring during pregnancy, 809—ab
177 cases of, treated in Alaska, 1136—ab
opsonic index in, 2159—O
principles of feeding in, and in other fevers, 234—ab
prognosis of, 159—ab
rapid and practical method of diagnosing, 899—ab
sequelæ, 548—ab
three cases of, with unusual complications, 896—ab
tongue and mouth in, 965—T
treatment of, 863—E, 1138—ab, 1399—ab, 1686—ab
turpentine in, 717—T
vaccine, treatment of enteric fever with, 1599—ab
yellow patch in palms and soles in, 644—ab
Typhus, Mexican, 284
Tyree's antiseptic powder, 1316—P
Tyzzer, E. E., simultaneous occurrence of two non-related tumors in mouse, 1237—O

U

Ulcer, duodenal, 1129—ab, 1771—ab
duodenal, in infants, 79—ab
gastrointestinal, 884—ab
of cornea, treatment of, 1130—ab
of stomach, pathogenesis of round, 315—ab
peptic, of esophagus, 808—ab
peptic of jejunum, 1140—ab
serpiginous, of cornea, 643—ab
surgical treatment of duodenal, 838—O
traumatic gastric and duodenal, due to trauma, 147—ab
treatment of, of stomach with record of cases, 838—O
two cases of ruptured duodenal, 75—ab
Ulcers, treatment of gastric and duodenal, and benign obstructions of pylorus, 147—ab
value of calcium iodin in treatment of, 542—ab
Ulna, lower extremity of, as factor in Colles' fracture, 307—ab
Umbilical cord, technic in caring for, and navel, 967—ab
Uncinaria, beriberi and, 1317
Uncinariasis, 1676—ab
causative factor in production of dermatitis of ground itch, 1693—O
in Mississippi, 185—O
Union, value of, in medical profession, 1418—ab
United States pharmacopeial trustees' affairs, 2101—P
Universities, state, and public health, 949—P
University of Utah, advances requirements, 1848
Upson, H. S., manic-depressive insanity and visceral disease, 1719-O
Urachus, cysts of, 1683—ab
development of, 109—O
Uranalysis, improved method of ring tests in, 807—ab
Urea, formation of, 227—ab
Uremia, 89

Ureter, consequences of temporary occlusion of, 1424—ab
large calculus of, removed by suprapubic cystotomy, 542—ab
obstruction of, sigmate, 721—ab
occlusions of, value of indigocarmin test as aid in diagnosis of partial and total, 1683—ab
wounds in, 151—ab
Ureters, three, demonstrated during life, 1327—ab
Urethra, bacteria of, as factor in etiology of cystitis in women, 1512—ab
calculi of, 395—ab
series of cases in which collections of stones formed in prostatic, 811—ab
Urethritis, operative procedures for chronic, 957—ab
systematic treatment of chronic, 2038—ab
use and abuse of injections in acute gonorrheal, 1853—ab
Urethrotomy, internal, 314—ab
Uric-acid diatbesis, 725—ab
elimination of, in gout and alcoholism, 2127—ab
simplified test for, in urine, 466—ab
solubility of, 1406
Urinary tract, treatment of tuberculosis of, in women, 1440—O
Urine, abnormalities of, and their significance, 1956—ab
colorimetric determination of sugar in, 1143—ab
detection of sugar in, and its significance in connection witb life assurance, 1770—ab
examination of, value of routine, 268—O
incontinence of, 1447—O
indican and skatol in, 311—ab
new clinical method of determining blood in, 853
new pigment in, 1519—ab
practical significance of trace of albumin in, 306—ab
rapid test for albumin in, 1064—ab
renal retention of, after vaginal hysterectomy, 1060—ab
sensitive test for albumen in, 816-ab
simplified test for uric acid in, 466—ab
Urobilinuria after chloroform, 547—ab
Uron and thialion, 1500—P
Utah July report, 637
medical news, 443, 868, 1839
October report, 2116
Uterine appendages, conservatism in connection with gonorrheal diseases of, based on records of 195 patients, 1136—ab
Uterus, abdominal section for trauma of, 1127—ab
action of Roentgen ray exposures on ovaries and gravid, 2177—ab
and ovary, points in uterine and ovarian physiology and pathology in rabbits, 541—ab
cancer of, 1602—ab, 1865—O, 1867—O, 1869—O, 1872—O
cancer of, results of abdominal extirpation of, 77—ab
carcinoma of, at Breslau, 315—ab
chronic metritis and arteriosclerotic, 1857—ab
cystic fibromyoma of, 1333—ab
fibroids of, 1771—ab, 1881—O, 1998—O, 2065—O
fibroids of, associated with gallstones, 1299—O
fibroids of, changes in, after menopause with reference to operations, 1858—ab
infantilism and hypoplasia of, 78—ab
innervation of, 2043—ab
instrumental dilatation of parturient, 1531—O
malignant complications and degenerations of uterine fibromyomata of, 957—ab
manual and instrumental dilatation of pregnant and parturient cervix of, 1534—O
mensuration of child in, with new methods, 1979—O
myomata of, complicating pregnancy, 1777—O
operative treatment of cancer of cervix, 1869—O
pharmacology of, 77—ab
plastic utilization of, for defect of vesical sphincter, 1333—ab
pregnancy and labor complicated by anterior fixation of, 1528—O
primary malignant tumors of infant, 1856—ab
puerperal gangrene of, 77—ab
radical operation in cancer of, 1872—O
Uterus, sclerotic vascular changes in, 1235—ab
study of 146 consecutive cases of ventrofixation of, 1858—ab
suction therapy of interior of, 1234—ab
symptoms of cancer of, 1865—O, 1867—O
tuberculosis of adenomyoma of, 768—O
unusual retroperitoneal tumor in mesocolon simulating impacted fibroid of, 1958—ab
utilization of broad ligaments in complete descent of, hysteromyomectomy and removal of uterine appendages, 1605—O
vaginal total extirpation in total prolapse of, 1774—ab
when to operate for myoma of, 814—ab
Uveal sarcoma, point in management of, 2159—O
tract, differential diagnosis and prognosis of tumors of, 400—O

V

Vacation courses, 522
Vaccination, 2042—ab
influencing of infectious diseases by, 1860—ab
points about law relative to, 1681—Ml
under red light, 523
Vaccine lymph, practical points about, 723—ab
Vaccines, therapeutic inoculation of bacterial, 1490—E
treatment of postoperative fistula by, according to Wright's principle, 1601—ab
Vagina, new operation for artificial, 79—ab, 1055—ab
preservation of vault of, in pelvic operations, 1220—ab
symptoms and treatment of atresia of, 1220—ab
Vaginofixation, births after vaginal Cesarean section and, 1333—ab
Valk, F., ophthalmic practice of present time, 485—O
Van der Bogert, F., case of infantile scurvy, 1918—O
Vanderhoof, D. A., two cases of exophthalmic goiter in men, 1561—O
Vander Veer, A., uterine fibroids associated with gallstones, 1299—O
Van Meter, S. D., instrument for invaginating tip of appendix, 37—O
Varicella, 1508—T
Varices, treatment of, on leg with ligature of popliteal vein, 547—ab
Varicose veins of leg, operative treatment of, 1103—E
veins of leg, results of operative treatment of, by methods of Trendelenburg and Schede, 1057—ab
Variola in Argentine republic, 1840
Varix, two unusual cases of, 1682—ab
Vas-deferens, calcification of, and seminal vesicles, 103—O
new method of anastomosis of, 169—O, 1461—ab
Vasomotor contraction, spasmodic, with true angina pectoris, 1602—ab
Vein, substitution of, for artery in aneurism, 1121
Veins, enlarged in children, 1686—ab
operative treatment of varicose, of leg, 1103—E
results of biterminal transplantation of, 1416—ab
two cases of varicose, successfully treated with x-ray, 894—ab
Venereal-diseases and public health, 511—E
duty of medical profession to public in matter of, and bow to discharge it, 1246—O
duty of state toward, 1248—O
prevention and treatment of, 1849—ab
validity of law authorizing revocation of certificate for advertising relative to, 1413—Ml
war against, in France, 1249—O
what should we teach public regarding, 1250—O, 1252—O, 1253—O
Venereal peril, 2094—E
prophylaxis, publicity as factor in, 1244—O
Ventilation of House of Commons, 870
Veratrum-viride in eclampsia, 721—ab
in increased arterial tension, 815—ab
pharmacology of, 2061—O
Vermont July report and questions, 803
medical news, 214, 1664, 2020
Verruga peruna, 543—ab
Vertebra, partial dislocation of fifth lumbar, on sacrum, 306—ab
Vertebræ, dislocation of, in lower cervical region, 2036—ab
Vesical spbincter and mechanism of closure of bladder, 811—ab
Vesicovaginal fistula, transperitoneal operation for, 1060—ab
Vessels and organs, changes in, after injection of suprarenal preparations, 1422—ab
Vibro discs, 1628—O
tablets, 1628—O
Vienna from medical student's point of view, 1391
hospitals, over-crowding of, 272
letter, 47, 125, 216, 373, 521, 871, 948, 1033, 1206, 1391, 1666, 1841
Virginia June report, 1847
medical news, 215, 443, 693, 868, 1109, 1204, 1388, 1664, 2020, 2100
Vigoro, 1627—O
Vin Mariani, 1751—P
Viscera, weights of, in infancy and childhood, with reference to weight of thymus gland, 1138—ab
Vision, disturbances of at childbirth, 80—ab
sanitary regulation of school-room with reference to, 382—ab
Vital restorative, 1626—O
statistics, registration of, 2096—E
Vitala, 1626—O
Vitality pills, 1627—O
Vitelline duct, malformations of, 152—ab
Vivisection, 2017—E
in Great Britain, 123
Vocal cords, submucous bemorrbage of right, 1328—ab
Volvulus, intestinal occlusion from, of small intestine, 1688—ab
of small intestine in typhoid simulating perforation, 809—ab
Vomiting, treatment of severe, in infants, 535—T
uncontrollable, in pregnancy necessitating interference, 1958—ab
Vulva, tuberculosis of, 973—ab

W

Wage earners, provides for compensation of quarantined, 1954—Ml
Wahrer, C. F., heredity and environment as factors in life and diseases of children, 760—O
Walker resolutions, 875
Waller's law, 544—ab
Walton, G. L., blood pressure in paresis, 1341—O
Walton, G. L., constitutional headaches, 1524—O
Warts, multiple, 893—T
Washington July report, 1672
medical news, 443, 693, 1109, 1839, 1927
Water, alcohol, hot, disinfection in obstetrics and for protection of abdominal wounds, 1424—ab
baths, continuous, for burns, 797, 1042
does drinking of give typhoid? 639-ab
gas poisoning, 958—ab
purification, 885—ab
situation in Ontario, 886—ab
supplies, supervision of sanitary works and, 1045—ab
supply, New York, an object lesson to sanitarians, 1566—E
supply, problems of, 885—ab
supply, purification of, 885—ab
Waters, influence of mineral, on gastric secreting function, 312—ab
Waterbury's metabolized cod-liver oil, 1207—P
Watson, W. T., plea for square deal for wet nurse, 1909—O
Waugh, W. F., solanin, 1479—O
Webster, G. W., entrance requirements, 557—O
Weeks, J. E., pathogenic bacteria of eyeball, 324—O
Weight, relation of, to measurements of children during first year, 1767—ab
Weiss, L., prostitution problem in its relation to law and medicine, 2071—O
Wellcome research laboratories, 1390
Welty, C. F., acute and chronic suppuration of ear and nose, direct cause of facial erysipelas, 2052—O
Westphal's pseudosclerosis, case of, 1226—ab
sign in croupous pneumonia, 1424—ab
West-Virginia July report and questions, 963
Medical Journal, 865—E
medical news, 215, 693, 1388, 1574, 2178
Whitehill, N. M., poisoning from oil of tansy, 509—O
Whiteside, G., what should we teach public regarding venereal disease? 1252—O
Whitman, R. C., new Babcock milk testing bottle, 204—O
Whooping-cough, microbe of, 1600—ab
Wiggin, F. H., multiple fibrosarcoma of tongue, 2003—O
Wilbert, M. I., coming revision of Pharmacopeia of United States, 1989—O
Wilcox, R. W., medical treatment of gallstone disease, 347—O
Wilder, W. H., paraffin plates as aid in operations for extensive symblepharon, 570—O
Wills, insanity in ancestry, suicide and sanity, 638—Ml
Willson, R. N., relation of medical profession to social evil, 29—O
Winter traveling, comfort in, 2161
Wire, gold, for sutures in hernia, 608
Wisconsin July report and questions, 1216
medical news, 215, 443, 602, 868, 1109, 1497, 1575, 1839, 1927, 2020, 2168
reciprocity report, 2116.
rules governing examinations in, 1673
Witness, admissible aid to memory of medical, 70—Ml
Wolf, H. E., meningitis witb isolation of diphtheria bacillus from cerebrospinal fluid, 2138—O
Women entitled to be examined by women physicians, 150—ab
increase of alcoholism among, 1206
medical, and public health questions, 1514—ab
Wood, Jr., H. C., pharmacology of veratrum, 2061—O
Wood tick, transmission of Rocky Mountain spotted fever by bite of (dermacentor occidentalis), 358—O
Woods, E. F., a new stethoscope, 1377—O
Woolley, P. G., prevalence of intestinal parasites in Siam, 1089—O
Work, scientific preparation for professional, 2114.
Workman, housing, in London, 1929
Worthy, forgotten, Dr. Diego Alvarez Chanca, of Seville, Spain, 1013—O
Wounds, bacteriology of aseptic, 2040—ab
best methods of closing aseptic, especially of abdomen, 2135—O
dried tetanus antitoxin as dressing for, 1511—ab
relation of technic of nurses and of hospital apparatus to healing of, 1329—ab
treatment of fresh, with heated dressings, 2129—ab
Wrist and ankle, clinical significance of variations of, 252—O
dislocation of, with protrusion of bones, 901—ab
Writers, to, of scientific papers, 380
Write-ups, advertising, presented as papers at society meetings, 1498
will blacklist authors of, 1576
Wryneck from otitis, 900—ab
treatment of, 725—ab
Würdemann, H. V., differential diagnosis and prognosis of tumors of uveal tract, 409—O
Wyeth, J. A., appendectomy through operative wound for radical cure of right inguinal hernia, 1738—O
Wyoming June report, 64
medical news, 1204
September report, 1848

X

Xeroderma pigmentosum, 1771—ab
X-ray (see Roentgen ray)

Y

Yeast, brewer's in phlegmonous tonsillitis, 159—ab
in gastroenteritis in children, 1773—ab
Yellow-fever and dengue in Cuba, 121
campaign, technic of, 1128—ab
causation and prevention of spread of, 1599—ab
coagulability of blood in, 1854—ab
diagnosis and prevention of, 2110—ab
in Cuba, 1664, 1744—E
in Honduras, 788
in Mexico, 122
personal experience in preventing spread of, 11—O
research into, 2022
Yocom, J. B., aneurism; operation, recovery, 1019—O
Young, how may medical and teaching professions co-operate to improve moral, mental and physical condition of, 301—ab
Yousof's salve, 1627—O

CURRENT MEDICAL LITERATURE

INDEX OF TITLES

Explanation: *The reading matter which appeared in* THE JOURNAL *is not indexed here,* except the original articles and the abstracts of original articles. This index includes the titles and the subjects of original articles published in the leading medical journals of the world during the past six months. The titles and the names of the journals in which they appeared were published weekly in the Current Medical Literature Department, to which references are made. The figures in parentheses refer to the paragraph; the number following, to the page in THE JOURNAL. For instance, "Heart Block, electromotive changes in, (7) 390—ab," refers to page 390 of THE JOURNAL, on which is found opposite paragraph 7 the title of the paper and the name of the author, viz., "Electro-Motive Changes in Heart Block, G. A. Gibson." This title is listed under the journal in which the article appeared, *British Medical Journal,* July 7. The "ab" indicates that an abstract of the article appeared in THE JOURNAL, which will be found below the title on page 390. Titles of articles which appeared in THE JOURNAL are indicated in the index below by an asterisk (*) before the page number. For instance, "Skin, distribution of afferent nerves in, *645," refers to page 645 of THE JOURNAL, on which is found the following article in full: "The Distribution of Afferent Nerves in the Skin," by Max von Frey. Index to authors of all articles below is on pages 2234 to 2246 of this index.

A

Abdomen (see also abdominal)
cracked-pot sound in, (68) 1141—ab
diagnosis and treatment of, contusions associated with visceral injuries, (110) 309
diseases of, (27) 1770, (42) 2041
gunshot wounds of, (42) 1417—ab, (61) 1513
penetrating wounds of, (23) 460—ab, (61) 1513
surgical treatment of certain lesions of upper, (17) 1765—ab
to facilitate palpation of, (60) 544—ab
Abdominal atony of rickets, its significance and treatment, (5) 1593—ab
cavity, treatment of suppurative conditions in, general and local, (111) 541
closures, technic of, (126) 970
contusions, (72) 2127—ab
disorders, diagnosis of acute, (49) 1685
examination, importance of, before insurance, (14) 639
exploration, (73) 722
fissure, case of, (7) 723—ab
muscles, physiology and pathology of (46½) 2121
operations, incisions in, (59) 313
operations, normal saline solution in, (49) 538, (42) 2038—ab
operations, pulmonary complications following, (29) 539—ab
operations, selected case reports of, (50) 540
operations, thrombosis and embolism following, (39) 539—ab
operations, use of rubber gloves in, (7) 1058
pain, acute, (24) 1859—ab
pain in diseases of pelvic organs, (23) 1859
pain, its surgical importance, (25) 640
pain, logic of, (49) 968, (65) 1229—ab
ptosis, hyperchlorhydria, regurgitation and rumination, (91) 237
section, 48 cases of delivery by, (25) 2121—ab
section for trauma of uterus, (101) 2124—ab
section, technic of delivery by (44) 2121
sections, series of fifty consecutive, (3) 723—ab
support, washable, (89) 1963
tumors, diagnosis of, in relation to pregnancy, (5) 1058
tumors in children, (75) 1857
viscera, pelvic girdle for ptosis of, (40) 2176
viscera, subcutaneous rupture of, with reference to intestine and kidney, (29) 1513, (71) 1857
visceral tracts, résumé of pathologic physiology of, (19) 1415
wall, actinomycosis of, (6) 542—ab
wall adenocarcinoma of, developing subsequent to removal of benign ovarian neoplasms, (38) 808
walls, care of, after delivery, (84) 1690
Abnormalities, congenital, (82) 1514
Aborigines, American, from hygienic standpoint, (8) 1594
Abortion, (24) 719
Abortion and miscarriage, treatment of, (37) 720
course and distribution of infection with septic, (74) 1336—ab
criminal, (37) 643, (97) 1514
criminal, a prevailing evil against the unborn generation, (46) 1417
diagnosis and treatment, (94) 1959
education as factor in prevention of criminal, and illegitmacy, *1889
epizoötic, (26) 311—ab
indications for artificial, (89) 1142
in myomatous uterus, (42) 1856—ab
mechanical, (31) 1333
spontaneous and criminal, from medicolegal point of view, (121) 238
tubal, (45) 1961
Abortions, what shall medical profession do to prevent, (132) 309
Abscess, acute mastoid, (91) 154
and gangrene of lungs, diagnosis and treatment of, with reference to operation, (77) 1418
brain, following otitis media, (39) 2176
dual acute otitic cerebral, operation, recovery, (10) 71
hepatic, treated by transpleural operation, (17) 1419—ab
liver, diagnosis of, (112) 316—ab
liver, in Sweden, (93) 903
liver, two cases of amebic, (6) 155—ab
lung, after typhoid fever, (137) 74
near base of bladder, simulating femoral hernia, (26) 392—ab
of brain, (35) 1684—ab
of cartilaginous nasal septum, deformity corrected by subcutaneous injection of paraffin, (30) 72
otitic extradural, with paralysis of sixth cranial nerve and double optic neuritis, (29) 812
of temporo-sphenoidal lobe, (37) 1417—ab
of temporo-sphenoidal lobe of otitic origin, (65) 390
parotid, simulating mastoid abscess, (29) 72
pelvic, and its treatment, (104) 1138
probable rupture of liver, into bronchus, (44) 1687—ab
pulmonary, ending in recovery without operation; a study by means of the Roentgen rays, (76) 1418
solution of tissue with, (66) 969
splenic, in malarial fever, (21) 723
sub-hepatic, (14) 239
sub-pectoral, (9) 895, (84) 1138
sub-periosteal, of forehead, (18) 2124
treatment of tuberculous, (6) 1598—ab
tropical, of liver, (32) 156—ab, (51) 809, (29) 971
tuberculous, of shoulder joint, mistaken for progressive muscular atrophy, (87) 1418
two cases of hepatic, treated by transpleural operation, (17) 1419—ab
uterine, (9) 1857
Abscesses, differential diagnosis of metastatic and otitic, in brain, (98) 1691—ab
in lungs, (88) 396—ab
isolated, in late stages of appendicitis, (45) 465
of spleen and liver, typhus and amebic dysentery complicated by, (69)

Absinthe, effects of, (4) 1414
Absorption, microscopic evidences of, in large intestine, (35) 1056
studies in, (34) 1056—ab
Accommodation, subnormal, as manifestation of hysteria, (59) 2039
Accouchment forcé, induction of premature labor and, in first 5,000 labors in obstetrical department of Johns Hopkins University, (48) 1229—ab
Acetanilid poisoning by headache tablets, *2012
poisoning from bromo-seltzer, *2158
poisoning, case of, from absorption, *359
solubility of, in sodium bicarbonate solutions, *1206
Acetone bodies, action of alcohol on elimination of, (79) 396—ab
bodies their occurrence and significance in diabetes and other conditions, (27) 807
ring test for, (76) 1773—ab
Acetozone in typhoid, *1651
treatment of iritis and serous iritis by, (92) 1514
two experiences with, (73) 1514
Achondroplasia, (4) 309
its occurrence in man and in animals, (11) 75
Achylia gastrica, (45) 158—ab, (102) 1143, (10) 1765—ab
Acid, aceto-acetic, in urine, (40) 643
carbolic, acute poisoning by, recovery. *435
hydrocyanic, intoxication, (68) 1963—ab, (60) 2039
instillation of pure carbolic, into eye, *37
possible danger in therapeutic use of osmic, (6) 966—ab
Acids, chlorin and biliary, under use of saline waters, (123) 547
Acne vulgaris, (63) 1856
Acranius, an interesting case of, *2029
Acromegalia, with hypertrophy of pituitary body and cyst formation, (41) 393
with interesting eye symptoms, (45) 236
Acroparesthesia, (5) 894—ab
pathology of, (92) 974
Actinomycosis, abdominal, (125) 976—ab
and pregnancy, (54) 2042—ab
atypical, (67) 2127
case of, (19) 543—ab, (43) 1957—ab
of abdominal wall, (6) 541
of appendix, (29) 1771
of cheek cured by iodid of potassium, (21) 1859—ab
pathologic anatomy of, (96) 1774
Adams-Stokes-disease, (47), 73—ab
case of, with dissociation of auricle and ventricle rhythm and lesion of His bundle, (63) 1422
Addison's-disease, blood pressure and pigmentation in, (11) 723—ab
three cases of, (132) 1966
Address, at Albany Medical College, Sept. 25, 1906, (61) 1856
at formal opening of laboratories of Rockefeller Institute for Medical Research, May 11, 1906, (112) 810
chairman's, before section on pathology and physiology at annual session of A. M. A., Boston, June 5-8, 1906, *549
chairman's, section on diseases of
Address, children at annual session of A. M. A., Boston, 1906, *397
chairman's, section on nervous and mental diseases at annual session of A. M. A., Boston, June 5-8, 1906, *1337
chairman's, section on materia medica, Iowa State Medical Society, (77) 1597
chairman's, section on medicine, Iowa State Medical Society, (106) 1230
chairman's, section on ophthalmology, British Medical Association, (5) 1139
chairman's, section on surgery, British Medical Association, (7) 1139
doctorate, Wisconsin State Medical Society, (116) 154
in medicine, Missouri State Medical Association, (40) 640
of welcome, delivered before Ohio State Medical Association, Canton, Ohio, May 9, 1906, (145) 74, (51) 721
on climatology, (11) 895
on state medicine, Medical Society of Pennsylvania, (41) 1685—ab
president's, before First Councilor District Medical Society, Cincinnati, (22) 2120
president's, before South Carolina Medical Association, (107) 74
president's, Bolivar County (Miss.) Medical Society, (100) 1058
president's, Brainard Medical Society, (88) 1058
president's, British Medical Association, (1) 1139—ab
president's, Cedar County (Ia.), Medical Society, (92) 2039
president's, Colorado State Medical Society, (48) 1685—ab
president's, delivered before Association of Life Insurance Examining Surgeons, (108) 237
president's, eighth meeting of American Laryngological Association, Niagara Falls, (4) 304
president's, Iowa State Medical Society, (132) 541
president's, Iowa Union Medical Society, Cedar Rapids, (113) 1230
president's, Kentucky State Medical Association, (71) 1514
president's, Medical Society of Pennsylvania; duties and advances of medical profession, (40) 1685—ab
president's, Medical Society of Virginia, (108) 1857
president's, Montreal Medico-chirurgical Society, Oct. 5, 1906, (117) 1959
president's, Missouri State Medical Association, (39) 640
president's, New England Urological Society, (55) 721
president's, the American Surgical Association, (29) 967—ab
president's, thirty-sixth annual session, Medical Society of State of California, (72) 722
president's, to graduates and faculty of Indiana Medical College, (55) 73
president's, Toronto Medical Society, Oct. 4, 1906, (91) 1769
report of chairman's, of section of state medicine, Iowa State Medical Association, (68) 810

Address to graduates in medicine, law, dentistry and pharmacy, at sixtieth annual commencement, University of Buffalo, June 1, 1906, (115) 722
to graduates of Samaritan Hospital Training School for Nurses, Troy, N. Y., (120) 1419
to graduating class of City Hospital Training School for Nurses, Indianapolis, (57) 73
to graduating class of Medical College of Ohio, (20) 719
to graduating class of Methodist Episcopal Training School for Nurses, Brooklyn, May 31, 1906, (87) 1330
to graduating class of St. Peter's Hospital Training School for Nurses, (106) 722
Adenatome, description of a new, *777
Adenitis, cervical lymph, as observed in babies, clinic, (61) 640
Adenocarcinoma of abdominal wall developing subsequent to removal of benign ovarian neoplasms, (38) 808
Adenoid operations, observations in one thousand, (16) 1415—ab
Adenoids, (117) 309
importance of recognition and treatment of, (97) 970
removal of, in treatment of whooping-cough, (61) 902
Adenopathy, venereal, in Italian army, (96) 1863
Adenosarcoma, of tonsillar ring; resection of both external carotid arteries, recovery, (28) 72
Adipose tissue, freezing of subcutaneous, (60) 813—ab
Adolescence, insanity of, (11) 1956—ab
Adrenal gland, primary sarcoma of, (30) 808—ab
preparations, dangers in use of, *1655
Adrenalin, acute glaucoma following instillation of several drops of, in cataractous eye, (26) 460—ab
chlorid in rattlesnake bite, (106) 1959
chlorid in variola, (92) 722
production of vascular lesions in rabbit by single injections of, (30) 1854—ab
treatment of sarcoma of nasopharynx by injections of, *430 (90) 1685—ab
uses of, in peritoneal cavity, (113) 154
Advancement, observations on methods of, (93) 970
Africa, diseases and hospitals of east coast of, *141, *225, *297, *531, *611, *709, *1098, *1217
African recurrens, (64) 721
Aged, disease in, (61) 1685—ab
surgical aspects in, (62) 1685—ab
Agglutinating substance, influence of temperature and cold baths on production of, in animals immunized against typhoid, (91) 1863
Agglutination and precipitation, influence of, on hemolytic complements, (78) 314
in pulmonary tuberculosis, (75) 1690—ab
of bacteria of typhus group by bile, (44) 1233
test, improved, (98) 1236—ab
Agglutinins and antibodies in anthrax, (122) 2130
in passive immunized organism, (91) 2045
relations between, (65) 2126
Aggressin, consideration of Bail's recent views of study of immunity and comparison of value of protective inoculation with, with that of vaccination in plague, (63) 462
Aggressins, filtration, (65) 544
priority, (117) 1965
Agoraphobia, (21) 1599—ab
Agraphia, isolated, with apraxia, (71) 1963
Ainhum, (83) 390—ab, *2092
case of, (19) 1420—ab
Air, cold, as therapeutic agent, (115) 1959
cold, in treatment of tetanus and yellow fever, (19) 805
cure, taking open, in Switzerland, (130) 1139
dangers of working in compressed, (39) 464—ab
dilatation in treatment of chronic constipation, (6) 639—ab
entrance of into veins, (29) 1059
passages, recognition of affections of upper, in school children, (87) 970
Air, rest in open, for gallstone patients, (47) 643—ab
superheated, in treatment of emphysema and bronchitis, (82) 1690—ab
superheated, plus calomel and iodin in treatment of tuberculosis of mucous membranes, (94) 974—ab
tract, functional derangement of ears and, in insane, (1) 806—ab
Albany Medical College in war time, (48) 73
Albumin, absorption of, in intestine, (54) 1860
and albumose, prostatic, (35) 1767—ab
deviation of complement and differentiation of, (90) 1690
digestion of, in infant's stomach, (106) 1691
dissolved, in feces of adults, (83) 1862
metabolism, (107) 1691
practical significance of trace of, in urine, (29) 306—ab
precipitation test of, in food, (63) 544
Albuminuria, (19) 967
cylindruria and Bright's disease, (14) 459
diet in, *1620
hematogenous, (6) 970
in pregnancy, (63) 810
marked, from prostatic abscess, *508
of pregnancy, treatment of, (76) 1058
precipitation test for, (61) 159
recognition of albumin bodies in urine, (4) 234—ab
significance of, from insurance standpoint, (94) 898
Albumosuria and albumin metabolism, (123) 976—ab
of phthisis, (62) 1418
Albumose, recognition of myelopathic, in urine, (3) 2124
Alcohol, action of, on elimination of acetone bodies, (79) 396—ab
and neuroses, (123) 1691
and other narcotics, physiologic and pathologic effects of, (74) 1597
as a beverage, (23) 724
as therapeutic agent, (14, 15) 2125—ab
comparison of effects of, and opium, (74) 309
cult, (72) 309
disinfection with, (39) 1333—ab
effect of, on throat and voice, (25) 724
ideal attitude of physican toward, as medicine, food and beverage, (20) 388, (70) 1514
in children's diseases, (24) 724
influence of, on metabolism of hepatic glycogen, *1467
in nourishment of diabetics, (86) 1862
in pneumonia, (29) 2178—ab
in treatment of typhoid, (99) 1418
physiologic and toxicologic effects of, (43) 1513
relation of, to tuberculosis, (69) 308, (69) 309
treatment of neuralgias with injections of, (23) 2120
unusual case of methyl, poisoning, (47) 236—ab
use and abuse of, (35) 1961, (34) 2125—ab
Alcoholism, (69) 314—ab
and liver cirrhosis, (87) 1774
elimination of uric acid in gout and, (60) 2127—ab
in Munich, (131) 1691
satellites, of, (27) 1232—ab
Alexander-Adams' operation, (34) 1333
Alexine and sensibilisatrice, (52) 971
Algesimeter, new apparatus (1) an aseptic protective sheet for mastoid surgery and (2) a practical, *1652
Alimentation, rectal, (20) 1960—ab
Alkaloidal medicine, state of, versus old Galenical preparations, (113) 722
Alkaloids, surgical anesthesia as produced by narcotic, with reference to antiquity of method, (15) 1135
Alkaptonuria, cystinuria and, (1) 2176—ab
Alopecia areata, transmission of, (47) 1772—ab
congenita, (84) 1229
high-frequency spark in treatment of premature, (16) 459—ab
prevention and treatment of, (50) 725
Alypin, action of, on eye, (59) 153
clinical report on use of, as local anesthetic, (83) 541
new local anesthetic, (77) 1958
Amaurosis after extraction of tooth, (97) 815
case of transient lead, (58) 153
Amaurosis following acute anemia from hemorrhage, (70) 462
hysterical binocular, (79) 1685
quinin, (102) 1857
transient bilateral, with anemic aphasia in an epileptic, (45) 312
Ambaline, *1623
Amblyopia, form of, in young children consequent on inherited syphilis, (11) 811
types of congenital symbol, *1813
Ameba, cultivation of, (63) 644
Amebiasis, comparative treatment of intestinal, (4) 458—ab
its association with other diseases, complications and after effects, (67) 462
Amenorrhea and dysmenorrhea, stem pessary for, *2133
American Medical Association, meeting of, and impressions of historic Boston, (79) 1138
Railway Association's rules, critical review of, governing visual qualifications of employés, (94) 970
Urological Association, (54) 721
Amino acids and metabolism, (7) 1769—ab
Amnion-epithelium, secretory actions of, (99) 1774
Amniotic cord groove, surgical cure in leg, (79) 545
Amputation, osteoplastic femoro-tibial, (39) 900
stump, Bunge's, weight bearing faculty of, (105) 467
successful, of leg at 94 years with account of new operation, (7) 75—ab
two cases of, of shoulder girdle, (15) 542
Amylase in serum, (100) 815
in serum and urine, (100) 815
Amyloid bodies, origin of, (94) 1774
Anaerobes, aerobic growth of, 79) 314
fluid media for cultivation of, (90) 1063
Anaerobic organisms, simple method for plating of, (67) 969—ab
Analgesia, experience with spinal, and its application to military surgery, (60) 897
spinal, (56) 73, (66) 394, (42) 1516
Anastomoses, series of intestinal, (56) 1057
of blood vessels by patching method and transplantation of kidney, *1648
Anastomosis, between femoral veins subsequent to thrombosis of left external iliac vein during typhoid, (34) 1637
button for intestinal, (67) 1141—ab
successful end-to-end, after partial disembowelment in runaway accident, *1829
Anatomic appearances, importance to surgeons of study of, in living, (62) 1514
Anatomy, teaching of, in universities and medical schools, (2) 1139, (119) 1959
Anemia, experimental in rabbit, (35) 1855—ab
in children, (31) 1515
infantile splenic, (18) 311
in pregnancy, (65) 640
insufficiency of tricuspid valve in pernicious, (26) 1415—ab
interesting case of pernicious, (5) 151
in the tuberculous, (39) 393—ab
leukemia and cancer, relations between pernicious, (72) 1963—ab
of ankylostomiasis, pathology of, (64) 644
parallelism between condition of blood and that of bone marrow in pernicious, (45) 901—ab
pernicious, in puerperium complicated with septic infection, (78) 1517
primary pernicious, (75) 1330
serious, from micrococcus tetragenus albus, (118) 1519—ab
severe, without degeneration or atrophy of bone marrow, (46) 465—ab
so-called school, (66) 1773—ab
treatment of, in ankylostomiasis, (106) 546—ab
unusual forms of, in childhood, (14) 811—ab
Anesthesia, bilateral abducent paralysis with intense pain in back of neck, after spinal, (87) 1424
choice of, (107) 1331
cocain, by Schleich's method, (41) 1516
consideration and treatment of accidents of surgical, with reference to prevalent drug treatment, (14) 151—ab
Anesthesia, cure of contractures by spinal, (65) 394
electrical orientation in spinal, (6) 387—ab
ether-air, or drop method for administration of ether, *1653
ethyl chlorid, (21) 2038—ab
in first stage of labor, (43) 538
in tonsil and adenoid operations, (72) 540
limited area of, epileptiform attacks of hemialgesia, and early muscular atrophy in case of brain tumor, (55) 1768—ab
local, (108) 1331, (40) 1516, (134) 1966
local, and anesthetic as employed in dental extractions, (16) 310
local, in treatment of rectal and anal disease, (110) 898, (10) 1415
new apparatus for lumbar, (118) 1691
permanent paralysis after spinal, (66) 727—ab
practical, (76) 2039
scopolamin in, (63) 153
scopolamin-morphin, in labor, (60) 77—ab, (102) 1774—ab
somnoform, (42) 72, (66) 237
spinal, (51) 813—ab, (42) 1516, (6) 2177
spinal, history of, (46) 643
spinal, in gynecology and obstetrics, (85) 1602—ab, (95) 1603—ab
spinal, preceded by morphin-scopolamin, (86) 243—ab, (69) 1862—ab
sterile water, in operative treatment of diseases of rectum and anus, (58) 1768—ab
surgical, produced by narcotic alkaloids with reference to antiquity of method, (15) 1135
surgical, with hyoscin hydrobromid and morphin, (16) 151, (61) 2039
to avoid mishaps in spinal, (94, 96) 1235—ab
transient paralysis of ocular muscles after spinal, (78) 1234
two cases of left abducent paralysis after spinal, (67) 726
two cases of serious respiratory disturbances from spinal, (73) 78
Anesthetic, clinical report on use of alypin as local, (83) 541
ethyl chlorid as general, in minor operations, *502
new method of administering through tracheotomy tube, (15) 1231—ab
sequences, notes on some, (41) 1687—ab
Anesthetics, choice of, (111) 154
discussion of, (117) 1603
local, in operations on chest and abdomen, (44) 1596—ab
plea for scientific administration of, *1361
technic of tubation of pharynx to facilitate administration of, and to prevent inhalation of blood in mouth and face operations, (48) 539—ab
Aneurism, arteriovenous, of neck caused by gunshot wounds, (32) 2125—ab
early diagnosis of syphilitic, of aorta, (89) 2129—Jab
extraperitoneal ligature of external iliac artery for, (38) 461—ab
fluoroscope in diagnosis of, *687
of aorta, diagnosis of, (70) 1773
of arch of aorta producing a broncho-esophageal fistula, (37) 1684—ab
of ascending aorta, with slow extravasation of blood into pericardial sac, (33) 1516
of subclavian artery, (36) 900—ab
of thoracic aorta with ulcer of esophagus and perigastritis, (91) 898
operated on by Matas method, *362
operation, recovery, *1019
radical cure of, *990
successful treatment of thoracic, threatening to rupture externally, (12) 1331—ab
true and false, *1432
unusually large, of abdominal aorta, (81) 1418
Aneurisms, gelatin injections for, (38) 464—ab
intrasaccular suture of, *1017
Angina, Vincent's, (92) 237
Angina-pectoris, (51) 465, (3) 1058, (76) 1330
its mechanism and treatment, (1) 1511—ab
spasmodic vasomotor contraction with cure, (81) 1602—ab
true and false, *1432
Angioma, diffuse cavernous, (57) 813
of leg and trunk, (57) 813
of upper lid, operation, (63) 1137
relation of sarcoma to, (96) 315

Angioneurotic edema, case of, (19) 1135
Ankle, clinical significance of variations of wrist and, *252
joint, method of drainage of, (33) 1684—ab
Ankylosis, congenital of finger-joints, (81) 1063
of spine, two cases of, chronic, (55) 643
rheumatic cricoarytenoid, (9) 1054
Ankylostome parasitism among native laborers in Transvaal, (16) 1236
Ankylostomes of Burma and Assam, (35) 1859
Ankylostomiasis, five cases of, (39) 1516
treatment of anemia in, (106) 546—ab
Anorectal diseases, local anesthesia in operative treatment of, (10) 1415
Anthracosis of lungs, possibility of intestinal origin of, (125) 1692—ab, (44) 1859—ab
primary tuberculosis and, of lungs and bronchial glands, (97) 1691—ab
Anthrax bacilli, destruction of, in guinea-pig organism, (109) 2130
edema, malignant, in Central America, (11) 971
Antiamboceptors, (31) 642
Antibodies formed after ingestion of vegetable gluten, (115) 1519
specific action of, (43) 1859
theories as to nature of, (63) 1688
Anticholera serum, (5) 971—ab
Anticrotalus and antimoccasin sera, therapeutic experiments with, (34) 1855—ab
Antidiphtheritic serum, prophylactic use of, (19) 1231—ab
Antidysentery serum, great efficacy of, (46) 972—ab
Antiperiodic-compound, a useful, (130) 54
Antipneumococcic sera, dynamic effects of, in pneumonia, (69) 1958 (59) 2122—ab
Antipyrin amaurosis, induced by 136 grains taken in forty-eight hours, (57) 153
keratitis, (71) 897
Antisepsis, prophylactic, (78) 1063
Antiseptic, is sulphate of soda true intestinal, (26) 1961—ab
Antiseptics, action of, on parasite, (31) 720, (121) 970
intestinal, systemic depoisoners, (154) 74
Antistreptococcus serum, in puerperal fever, (39) 1233, (53) of tuberculosis
serum, therapeutic action of [illegible] 1234 [illegible]al, (60) 809
Antithyreoidin, therapeutic value of, in exophthalmic goiter and kindred affections, (37) 153—ab
Antitoxin in diphtheria, (94) 541, (86) 1138
injection of, in diphtheria by intravenous method, (20) 1515—ab
intestinal absorption of, (65) 1063—ab
rash, unusual case of, (32) 808—ab
results of use of refined diphtheria, Gibson's globulin preparation in treatment of diphtheria, (23) 1854—ab
Antitoxins, oral administration of, for prevention of diphtheria, tetanus, and possibly sepsis, etc., (26) 1766—ab
Antituberculin, presence of, in tuberculous tissues, (36) 643
Antituberculosis work, present status of, in Canada, (7) 1331
Antityphoid inoculation, memorandum regarding, (34) 543
Antrum drill, trocar-pointed, (74) 1685
is it necessary to open, in every case of mastoid operation? (69) 1685—ab
of Highmore and its infections, (13) 1955
of Highmore, epithelioma of, (82) 541
plug, combined, and artificial denture, (3) 1686—ab
Anuria, (25) 1859
cases of functional, (90) 722
surgical aspects of, (47) 308, (33) 460
Anus, artificial, technic of, (75) 814
fistula of, (72) 1768
Aorta, aneurism of, (103) 154
ancurism of ascending, with slow extravasation of blood into pericardial sac, (33) 1516
ancurism of thoracic, with ulcer of esophagus and epigastritis, (91) 898
Aorta gangrene of both feet and legs due to embolism and thrombosis of abdominal, in entire extent, result of mitral stenosis and consecutive cardiac thrombosis, (13) 641
Aortas, results of complete and incomplete occlusion of abdominal and thoracic, by metal bands, *2147
Aortic insufficiency, and appendicitis, (100) 541
insufficiency, dicrotic pulse with, (110) 1775—ab
Aperient, good formula for, (38) 543
Aperients, effects of, on peristalsis of stomach and intestines, *1819
Aphasia, (9) 155, (9) 238, (3) 2176
amnesic, with transitory bilateral amaurosis in an epileptic, (45) 312
is there center for, (55) 2042
Marie's new views of motor, (44) 813—ab
motor, case of, (112) 2046
revision of question of, (44) 1772—ab
sensory, (23) 642—ab
transcortical motor, (115) 1776—ab
Aphonia, attacks of hysterical, occurring in patient subject to typical epileptic seizures, *112
Aphtha, two cases of tropical, (sprue), (24) 460
Aponeurosis, loss of extension, (90) 243
Apoplexy, cerebral localization in, (72) 237, (55) 462, (64) 1057
diagnosis and treatment, (66) 1058-ab
etiology of, (61) 1057
general symptoms of, (45) 461, (63) 1057
of liver in syphilis, (42) 1771—ab
prognosis and treatment of cerebral, (71) 237, (54) 462
prognosis and treatment of general, (62) 1057
Apparatus and therapy, electrical, (90) 1330
new, (1) aseptic protective sheet for mastoid surgery, (2) practical algesimeter, *1652
Appendages, facts and figures of end results in 100 cases of conservative operations on uterine, (45) 539—ab
Appendiceal affections, balneologic treatment of, (50) 465
Appendectomy, indications for, in ileocecal pain, (103) 467
an hour after parturition, (25) 392—ab
hemorrhage from stump following, *2009
intestinal obstruction by band eighteen months after, (29) 724
through operative wound for radical cure of right inguinal hernia, *1738
trend of times in, (103) 2124—ab
Appendices epiploicæ of hernia, (76) 1861
Appendicitis, (24) 311, (32) 812—ab, (53) 968, (25) 971, (106) 1138, (40) 1139, (5) 1327—ab, (74) 1423, (86) 1597, (63) 1772, (3) 1857—ab, (65) 2039—ab
advantage of early operation in, (101) 1331
and abscess formation, (4) 462—ab
and gallstones, relation between, *1458
and gangrene of vermiform appendix considered as separate diseases, (8) 641—ab
and its differential diagnosis in children, (102) 1419
and pleurisy, (48) 2178—ab
and typhlo-colitis, (28) 239
as cause of tetany, (38) 235—ab
as seen by country doctor, (155) 74
ascaris lumbricoides as cause of, (8) 722
atypical clinical features of, (8) 71—ab, (9) 151—ab
boric acid relative to, (14) 1332—ab, (22) 1683
bradycardia in, *2011
case illustrating association of pelvic disease with, (50) 986
case of, with complications, (26) 971
chronic, and early diagnosis and treatment of acute, in children, (8) 75—ab
differentiation of serious, (60) 813
diseases of lymphatic tissues and their relations to, (62) 466
discussion of operations for non-existent, (40) 464—ab
diverticulum in, (104) 1964
equally frequent in women and men, (55) 1062
general observations with statistics to date, (48) 2121
Appendicitis, gynecologic effects of, (35) 1059
healing of suppurative, with calcification, (45) 1856—ab
in infants, (48) 2126—ab
interval operations, (111) 2046
isolated abscesses in late stages of, (45) 465
larvata, (43) 1855
leucocyte count in, (98) 74, (77) 1138—ab
liver infection from, (74) 722
lymphatics in, (47) 1329
or typhoid, (47) 1961
peculiar case of, (26) 392—ab, (62) 897—ab
perforative, caused by a foreign body, (9) 1512—ab
plea for complete operations in pus cases, (21) 1765—ab
points commonly contested in diagnosis and treatment of, (104) 2124—ab
present status of treatment of, family physician's responsibility, (9) 718
rare case of, (26) 392—ab, (62) 897—ab
retrocecal-retroperitoneal, (95) 1769
results of early operations for, (59) 1062
treatment of, (3) 458—ab, (106) 975
treatment of, other than surgical, (92) 1958
unnecessary operations for, (53) 76—ab
when is early in operating for? (6) 1682
when should we operate in? (61) 1137
Appendicostomy, *426, (83) 2123
and cecostomy for relief of chronic diarrhea, (18) 967—ab
Appendix, actinomycosis of, (29) 1771
appendicitis and gangrene of vermiform, considered as separate diseases, (8) 641—ab
case of tying wire perforating, (15) 2036—ab
chronic inflammation of, not prerequisite for acute attacks, (54) 465
conditions within, causative of its inflammation, (97) 810
etiology of punctate hemorrhages in, (76) 78
false diverticula of vermiform, (35) 460
hemorrhages of, (45) 2125
hernia of vermiform, probably infantile, and perforated by pin while in scrotum, (13) 155—ab
instrument for invaginating tip of, *37
normal and pathologic histology of, (107) 2045
100 consecutive cases of, operation, (13) 1959
polypi of, *359
pyopneumo, due to obstruction by fecal concretion, *435
strangulation of, in hernial sacs, (20) 1686—ab
surgery of, (49) 1860
typhoid infections of, (14) 895
Appetite cure, (112) 1959
significance of morbid, with erosions and ulcers of stomach, (39) 157—ab
Appliance, lifting, for bandaging trunk, (84) 243—ab
Aquamiel, *1629
Areas, observations on functions of association, (cerebrum), *1464
Argyria, general, *1829
Arizona, winter amusements in, (117) 1331
Arkansas, surgical pilgrimage to, (61) 153
Arm, interscapulothoracic amputation for sarcoma of, (30) 1956
Army bearer corps, (32) 76
medical department of Japanese, (15) 383, (20) 459
physical examinations for United States, (33) 720
prevention of disease in, and best method of accomplishing that result, (128) 238
sanitary conditions in Japanese, (37) 724—ab, (86) 1857
Arsenic, in pityriasis rubra pilaris, (40) 720
in pneumonia, (13) 2036—ab
phosphorus and antimony test for, (85) 815—ab
success of, in treatment of 8 children with whooping-cough, (47) 1139
Arsenicum, (127) 898
Arteria hyaloidea persistens, cases of associated coloboma oculi and, (77) 1685
Arterial disease, certain clinical aspects of, (25) 812
hypertension, renal origin of permanent, (40) 724—ab
tension, constitutional low, in children, *1734
tension, veratrum viride in case of increased, (90) 815—ab
Arteries, experimental study of suture of, with description of new suture, (39) 1329—ab
functional tests of, (89) 1690
influence of acute infections on, (26) 812
sclerosis of coronary, (7) 1594—ab
Arteriosclerosis, (119) 154, (31) 235, (41) 2041
cardiac lesions associated with, (82) 1418
clinical manifestations of abdominal, (95) 545—ab
clinical manifestations, visceral and general of, (7) 1685
experimental, by adrenalin inoculations and effect of potassium iodid, (44) 640
gastrointestinal disturbances due to, (65) 814—ab
in surgery, (78) 243—ab
its relation to disease of nervous system and to disorder of its function, (9) 71, (125) 970
senile, (90) 898
Arteriovenous anastomosis, (29) 1683—ab
Artery, extraperitoneal ligature of external iliac, for aneurism, (38) 461—ab
ligature of innominate, (66) 644-ab
persistent hyaloid in both eyes, unusual variety in one eye, (69) 462
radial, sclerosis of, (78) 2044
rupture of coronary, (62) 308—ab
treatment of ancurism of subclavian, (36) 900—ab
Arthritis, case of pneumococcic, (7) 155
deformans and chronic articular rheumatism; their treatment, (64) 1514
deformans of hip, treatment of, (86) 467—ab
differential diagnosis of diseases grouped as rheumatoid, chronic rheumatism, etc., (7) 2175
gonorrheal, in children, (72) 1857
primary pneumococcal, (10) 239—ab
treatment of chronic, resulting from distant local infection, especially of mucous cavities, (19) 388
treatment of, with intravenous collargol injections, (110) 1608
tubercular, (89) 1958
two cases of gonorrheal, treated by Bier hyperemia, (60) 1597—ab
Asbestos as a surgical dressing, (58) 73—ab
Ascaris lumbricoides as cause of appendicitis, (8) 722
lumbricoides, liver abscess with reference to etiologic importance of, (61) 897
Ascites, pathogenesis of, (57) 1685
pseudo, in dyspeptic infants, (110) 2046
surgical treatment of, secondary to vascular cirrhosis of liver, (17) 1960—ab
Asemia, case of traumatic, (34) 2121—ab
Asepsis and antisepsis, obstetric, (120) 970
Aspergillosis, primary, of lungs, (77) 815—ab
fumigatus and penicillium glaucum, toxic action of, (96) 1516
mycosis of lung, (68) 1423
Asphyxia, local and gangrene of extremities of tubercular origin, (32) 239
neonatorum; its causes and treatment, (6) 1058—ab
neonatorum, use of oxygen in, (8) 1765—ab
Aspiration drainage, history of knowledge of, in empyema and other surgical conditions, (35) 967
Asthma, bronchial, (124) 976—ab
Curschmann's, spirals in bronchial, (35) 157—ab
hay fever and persistent bronchial, relieved by treatment of antrum of Highmore, (5) 966—ab
leucocytes, in, (82) 396—ab
pathogenesis of, (82) 815—ab
treatment of bronchial, (93, 94, 95, 96) 1230, (69) 1234—ab, *1983
Asthmatic paroxysm, inhibition of, (55) 2122—ab
Astigmatic accommodation; study of relative frequency in fifty cases with marked asthenopic symptoms, (76) 462

Astragalus, fracture of, (116) 1230
Ataxia, hereditary cerebellar, and general paresis, (82) 390
treatment of tabetic, by methodical exercises, (46) 1688—ab
Atheroma, of aorta, action of iodin on, when induced by adrenalin, (55) 313
Atonia gastrica in relation to cholelithiasis, (119) 74, (37) 1228—ab
Atresia ani vesicalis, (71) 395
diagnosis of congenital, of small intestine, (38) 643—ab
of small intestine, (103) 1964
Atrophy, neurotic type of progressive muscular, (86) 390, (77) 2123
of eyeball, origin of, (63) 242
total, of stomach, *583
treatment of progressive, of optic nerve due to acquired syphilis, *823
Atropin, chronic, poisoning, (11) 639—ab
sulphate, effects of full and of minimum doses of, and of homatropin hydrobromate, (72) 897
uses of, (74) 1514
Atypical the, the indefinite, (90) 541
Aural disease, headaches due to, *1523
Auricle, postoperative pyocyaneus perichrondritis of, (75) 74
Autoinfection, puerperal, from bacteriologic standpoint, (47) 1516—ab
Autointoxication, (109) 1230
acute, from fecal stasis, (59) 1330, (20) 1415
from gastrointestinal tract, (38) 640
from stenosis of pylorus, (79) 467—ab
gastroenteric; its recognition and significance and relation to arterial hypertension, (104) 1331
interstitial gingivitis due to, *261
intestinal, (54) 1137
Autolysis, organ receptors in, (60) 1140
relation of, to histologic changes occurring in necrotic areas, (41) 1056
Automobile, for physicians, (59) 725
fracture, (52) 813
Autonarcosis, (31) 239
Autoprognosis, (109) 546—ab
Autopsy as judge of bedside conclusions, (40) 153
Autotoxemia, (74) 154, (80) 1597
Avulsion of terminal branches of trigeminal nerve for cure of trifacial neuralgia, (113) 970—ab
Axis-traction apparatus, new, (18) 1055—ab

B

Babinsky reflex after scopolamin injections, (93) 1518
sign, occurrence of, in normal people during sleep, (70) 2039
Bacilli carriers, typhoid, (36) 543
saprophytic hemoglobinophilic, (91) 1690
Bacillus fluorescens putridus and diarrhea, (26) 155
of Hamilton Wright, obtained from two cases of acute beriberi, (35) 1139
of Pfeiffer, pleurisy and peritonitis caused by, (41) 2178
pestis, action of serum of various mammals on, (11) 391—ab
pestis, date of appearance and duration of, in peripheral blood in cases of bubonic plague in India, (29) 543
pyrogenes associated with febrile disease, (31) 1854—ab
typhosus, action of cold or lukewarm tea on, (45) 1599—ab
typhosus, presence of, or closely allied organism in sample of distilled water suspected to have caused typhoid, (15) 1139
typhosus, variation of in different organisms, (69) 644
Bacteria, biologic action of, in large intestine, (86) 2044
in scarlatinal and normal throats, *1171
numerical classification of, (48) 640
pathogenic, of conjunctiva, *320
pathogenic, of eye-ball, *324
simple way of using Buchner's method for cultivation of anaërobic, (38) 1056
Bacterial cell, contribution to chemistry of, and study of effects of some split products on animals, (7) 895, (1) 1054
colonies, cause of green coloration of, in blood agar, (34) 1227—ab
diseases in plants (33), 2125
vaccines, series of cases treated by injection of, (14) 1770—ab
Bacteriologic studies, practical, in surgical clinic, (24) 967
Bacteriolysins, injections of specific tuberculous, directly into lungs, (107) 546—ab
Bacterium coli commune, infections by, with reference to urinary tract, (3) 233
Balneology, modern, (60) 1517
Balneotherapy, experimental research on, (28) 642—ab
in complication occurring during menopause, (56) 543
in gynecologic affections, (35) 643—ab
in Marienbad, report of, (59) 543
Baltimore, present aspects and needs of milk supply of, (103) 309
Bandage for stump after amputation through thigh, (98) 722
Bandages, abdominal, (64) 394
Banti's-disease, and splenectomy, (11) 1959
case of, (24) 895
(splenomegalia of liver), (2) 894—ab, (26) 1231
Barberio's reaction for spermatic fluid, (83) 1690—ab
Barium chlorid, digitalis and, (11) 71—ab
Barlow sanatorium, Los Angeles, Cal., (116) 1331
Basedow's disease, internal treatment of, (88) 467
pathology and therapy of, (53) 465
Bath, substitute for four cell, (54) 725
Baths, action of carbonated thermal saline, on high pressure, (70) 1234
carbonated, and reaction of circulatory apparatus, (42) 1060
hot, in treatment of superficial inflammations, (65) 314—ab
should cold, be given for fever in young children? (13) 459—ab
Beans, poisoning from canned, (37) 157—ab, (58) 1861—ab
Bedbug, present status of, in transmission of human diseases, *85
Bed lift, a, *1093
Beef serum, precipitating properties of, trypsin digestion, (108) 1775
Belladonna, its uses and abuses, (82) 237
Benzidine, injection of, (54, 55) 971
Beriberi, a restatement and reply to some criticisms, (10) 971
bacillus of Hamilton Wright, obtained from two cases of acute, (35) 1139
mouldy rice; occurrence of in Sokor district, (36) 1139
studies in. (101) 1685—ab
Bier, congestive and suction therapy in affections of skin and genital organs, (55) 543
congestive hyperemia, from standpoint of endotoxin theory, (61) 726—ab
congestive suction treatment, technic of, (41) 643
passive congestion, (74) 1141—ab, (120) 1965
treatment of infections and septic wounds of extremities, (11) 1512—ab
treatment, value of, (12) 718
Bile, as culture medium, (93) 396
as culture medium for typhoid bacillus, (115) 1691
duct, obstruction of common, (1) 1134—ab, *1438
duct, operations on lower part of common, (2) 2040—ab
fistula, plastic anastomosis between biliary passages and gastrointestinal tract to cure, (66) 2043—ab
passages, diseases of, including liver, gall bladder and pancreas, (6) 1225—ab
pathology of, *765
Bilharzia hematobia, case of, (37) 1516
Biliary affections, small frequent meals in treatment of certain, (13) 1135—ab
apparatus, group of cases illustrating surgery of, (26) 1515—ab
passages, diseases of, including liver, gall bladder and pancreas, (7) 1225
tract, diseases of, with reference to pathology and differential diagnosis of cholecystitis and cholelithiasis, (100) 1418
tract, indications for surgical intervention in infections of, *402
tract, infections of, with reference to latent (or masked) and typhoid infections, (33) 1416—ab
tract, remote consequences of infections of, (32) 1854
tract, surgery of, (7, 8) 459, (18) 538
Bilious typhosus relapsing fever, (33) 1857
Biliousness, (102) 1331
Binder, inexpensive rubber, for compression of breasts, (63) 640
Biologists in public schools an aid to morals and prosperity, (123) 2124
Birds, notes on collection from Palawan Island, (36) 2176
notes on four, from Luzon and on species of doubtful occurrence in Philippines, (102) 1685
notes on, collected in Mindoro and in small adjacent islands, (84) 970
Birth, management of, with contracted pelvis, (60) 1772
rate, diminishing, (12) 971
so-called causes of, (62) 1600
Births after vaginal Cesarean section and vagino-fixation, (30) 1333—ab
Blackwater fever, treatment of, (59) 394—ab
Bladder affections in gynecologic cases, (30) 1055
and renal pelvis, medicinal and dietetic treatment of catarrh of, (61) 1422
cancer of, in bilharzia affections, (99) 315—ab
diverticulum of, prostatic obstruction operation, (15) 155
etiology, pathogenesis and treatment of vesical calculus in woman, (16) 234
hernia of, (13) 305, (112) 1864—ab, (54) 2038
inguinal hernia of, *361
intravesical operations with aid of cystoscope, (60) 721
irritation of, in women, consideration for its management, (24) 1683
plastic operations on, (76) 902—ab
perforation in curetting, (60) 466—ab
present status of operative intervention in exstrophy of, (84) 1330
preventive artificial filling of, during gynecologic operations, (70) 78—ab
Roentgen ray treatment of malignant disease of, through suprapubic incision, (33) 1513—ab
satisfactory vesical evacuator of, (41) 967—ab
simplest, easiest and best method of irrigating, *112
successful removal from male, of lost filiform bougie by endovesical manipulations, *1189
three cases of intraperitoneal rupture of, (27) 971
traumatic intraperitoneal rupture of, (24) 306—ab
traumatic ruptures of, (78) 972
treatment of tuberculosis of kidney and, by nephrectomy, *2047
tuberculosis of, its cure, (87) 903—ab
tuberculosis of, plea for early diagnosis, (87) 722
tumors of, results of surgical treatment of, (92) 79—ab
vesical sphincter and mechanism of closure of, (4) 811—ab
wound, treatment of, after high incision, (94) 1691—ab
Blastomycetes, soluble products in etiology of cancer, (75) 902
Blastomycosis, (110) 1138
case of, results of culture and inoculation experiments, (120) 541, (42) 1057—ab
generalized, (35) 1227—ab
generalized, two cases of, *247
Blepharitis, (22) 1332—ab
Blindness after tooth extraction, (97) 815
frequency of, due to an affection of accessory sinuses, (52) 1057
Blood, action of chloroform on, (110) 315
analysis in private practice, (133) 309
and lymphocytosis in cerebrospinal fluid, (65) 1962—ab
and seminal stains, improved methods for recognition of, (5) 1959—ab
and tissues, methylene-blue-eosin stain for, (97) 1236—ab
and urine, electrical resistance of, as test of functional efficiency of kidney, (5) 641
apparatus to obtain small quantities of, (91) 1963
chemistry of, at birth, (77) 2127
chloroform in, (52) 1688—ab
clot method of wound repair in aural surgery, (21) 1328
clot, modified, in mastoid surgery, (95) 1685, (18) 2040
Blood coagula in sputum in chronic, hemorrhagic bronchitis, (60) 1422
coagulability of, in yellow fever, (25) 1854—ab
corpuscles, action of photodynamic substances on, (46) 1334—ab
corpuscles, new counting chamber for enumeration of, *1737
corpuscles, red, resistance of in cases of vaginal and uterine cancer, (97) 315
counting, comparison of results in, between the Einhorn-Laporte and Thoma-Zeiss methods, (12) 1594
cultures, clinical value of, (31) 1136—ab
determination of viscosity of, (83) 545
direct transfusion of, in treatment of hemorrhage, *1482
diseases, (66) 1962—ab
examination, clinical value of, in otitis media purulenta and its complications, (82) 1058
examination of, by cut sections, (36) 971
examination of, in nervous affections, (62) 1517
examination of fresh, in general practice, (48) 394—ab, (68) 1856
examination of, to determine if other than Mediterranean-fever-sera would agglutinate the M. melitensis, (25) 543
experimental increase in concentration of, (114) 1864—ab
filaria, new, of man; filaria philippinensis, (32) 1416—ab
fistula of thoracic duct in relation to morphology of, (116) 2130
glands, influence of, on process of metabolism, (66) 1514
in relation to skin diseases, (12) 1514
neutrophile findings in infant's, (114) 1691
observations on action of strontium salts on coagulability of, (16) 899—ab
opsonic power of, (22) 971
parallelism between condition of, and that of bone marrow in pernicious anemia, (45) 901—ab
pipettes, method of cleansing, *1738
plates, method for differential staining of, (15) 306—ab
plates, origin of, (98) 2128
pressure and influence of food in experimental nephritis, (54) 1140
pressure and pigmentation in Addison's disease, (11) 723—ab
pressure, arterial, in heart disease, (1[illegible] in op[illegible]ab
[illegible]domen, (4[illegible]
plea for s[illegible]nges in Cheyne-Stokes *136[illegible]on, (45) 1057
[illegible]ssure, clinical value of accurate estimation of, (31) 724, (5) 1769
pressure, determination of, by use of sphygmomanometer, (69) 640
pressure, four-cell bath and, (40) 1233
pressure, experiments on venous, and its relations to arterial pressure in man, *1279
pressure, influence of variations in, on concentration of blood, (54) 2126
pressure in heart and kidney disease, (53) 2126—ab
pressure in paresis, *1341
pressure in relation to disease, (6) 1685
pressure, measurement of, (63) 726—ab, (89) 1424
pressure, measurement of diastolic, (94) 1143
pressure, relation of, to surgery, (65) 1768
pressure, symptoms and management of early stages of increased, (99) 309
relations between composition and tension of, (83) 314
résumé of recent work in clinical pathology of, (9) 806
serum, changes in concentration of, after intake of water, (80) 1862—ab
serum, coagulating power of, in epileptics, (117) 2046—ab
significance of opsonic power of, and value of estimations of opsonic index in diagnosis of tubercular and other infections, (21) 971
significance of, photoactivity of, (24) 2177
simple method of sterilizing for cultural purposes, (32) 1766
structure of red corpuscles of, (129) 547
study of, in Banti's disease before and after splenectomy, *1149

Blood, study of, in dengue, with reference to differential count of leucocytes in diagnosis, (64) 462
test, technic of biologic, (103) 1603
tests, biologic, (120) 975—ab
typhoid-bile tubes for bacteriologic examination of, (81) 1963
use of thyroid extract to shorten coagulation time of, (25) 967—ab
vacuolated mononuclear cells in, of guinea-pig, (11) 155
value of, examinations in surgical diagnosis, (24) 235—ab
vessels, anastomosis of, by patching method and transplantation of kidney, *1648
viscosity of human, (95) 1518
Bodies, foreign, in cornea and conjunctiva, (129) 541
foreign, in digestive tract, (64) 314—ab
Body cells, digesting faculty of, (101) 467
electric charges of, (54) 1334
foreign, in crystalline lens extracted by electric magnet, (57) 308—ab
linen, protection for, in gonorrhea, (80) 243
studies of new inhibiting, (124) 1691
Body weight, method of recording changes in, which occur within short intervals of time, *1790
Boil and paranephritis, relations between a, (62) 644
Bone and joint lesions, diagnosis and treatment of tuberculous, from general practitioner's standpoint, question of responsibility for deformity, (88) 722
cavities, treatment of, *345
cysts of, (92) 1138
etiologic factors in, tuberculosis in children, (6) 2120—ab
formation in goiters, (71) 545
impacted in larynx, two cases of, (31) 1328
implantation of muscle to repair defect in long, (94) 816—ab
marrow, diagnosis of tumors in, from blood findings, (94) 1518—ab
marrow, severe anemia without degeneration of atrophy of, (46) 465—ab
mechanism of fracture of metatarsal, (53) 813
pins, treatment of ununited and compound fractures with, (50) 1597—ab
reproduction of, after operation for necrosis, (80) 462
Bones and joints, diseases of, (85) 237
and joints, treatment of tuberculosis of, (18) 459
dislocation of metatarsal, (60) 809
multiple primary tumors of (44) 2126—ab
neurotic atrophy of, (112) 1775—ab
Books, medical, (18) 1686
Borborygmi, hysterical neuroses of stomach with report of case of rhythmical, of hysterical origin, (85) 1418
Boric acid relative to appendicitis, (14) 1332—ab, (22) 1682
Bottini's operation, (46) 312
Bowel, malignant disease of, (46) 1228
Brachioplegia of cerebellar type and rhythmical tremor, with attempt to explain symptoms and to localize lesions, (26) 724
Bradycardia in appendicitis, *2011
syncopal, (18) 1059
with arrhythmia and epileptiform seizures. (17) 311
Brain, abscess, (35) 1684—ab, (45) 1685—ab
abscess of, case of serous meningitis mistaken for, (85) 541
abscess of, following otitis media, (39) 2176
abscess, following traumatism and acute mastoiditis, (46) 1137
a good field for surgery, as shown by its disregard for traumatism, (67) 1229—ab
diagnosis and localization of tumors of frontal regions of, (19) 1859—ab
differential diagnosis of metastatic and otitic abscesses in, (98) 1691—ab
faradization of motor cortex in human, *1972
focal lesion, lip-tongue-throat syndrome of, (78) 814
gliomatous new growths of, (106) 1964
injuries to, diagnosis and treatment of, (95) 898
lesion of, from impact of umbrella tip, (137) 1966—ab
palliative operations in treatment of tumors of, *679
Brain pneumonia in children, (80) 467
rare case of tumor of, (45) 1233—ab
report of, weighing 2,069 grains (73 ounces), *37
senile, (48) 812
surgery of frontal lobes of, (109) 1864—ab
surgery of, present status of, *926
symptoms of affections of frontal lobe, (101) 1143—ab
tumor of, (47) 1513
tumor of, report of a case of, *101
tumor of, study of seventy cases, (5) 639—ab
tumor of, with meningitis, probably tubercular, etc., (26) 1687
two cases illustrating value of ophthalmoscope as aid in diagnosis of cause of lesions of, (42) 1329—ab
Bread, dietetics of, (39) 1139
Breast, amputation of, (74) 902—ab
cancer of, necessity for early, radical operation, (53) 1057
early diagnosis of cancer of, (64) 73
feeding, infantile derangements due to improper, with suggestions for prevention and treatment of constitutional disorders, such as rickets and marasmus, (84) 1418
new classification of benign tumors of, (8) 1853—ab
new method of incision for removal of, (1) 305—ab
new operation for cancer of, (38) 1232
plastic operation after removal of, (76) 395—ab
technic of, amputation of, (40) 2125
treatment of cancer of, (48) 896
Breathing, deep, as therapeutic and preventive measure in certain diseases of lungs, (9) 967—ab
sternomastoid, (10) 806—ab
Breech presentations, management of, (52) 1855
Breus hematom-mole, (32) 307—ab
Bright's-disease, albuminuria, cylindruria and, (14) 459
and, diabetes in relation to suppurative osteomyelitis of mastoid, (74) 540
British Medical Association, meeting of, in Toronto, August 21-25, 1906, (57) 1057, (9) 1139, (125) 1331
Medical Association, past, present and future of, (6) 309
Medical Association, preliminary program of seventy-fourth annual meeting of, (59) 1057
Medical Association, report of work of sections, (10) 1139
Medical Journal, educational number, (1) 1058—ab
Bromin in septic conditions, (105) 1058
Bromism, *1821
Bromo-seltzer, death from, *2158
impotence caused by excessive consumption of, *508
Bronchi, foreign bodies in, (33) 1420, *1553, *1586
inhalation of vapors in chronic catarrh of (41) 1060
Bronchiectasis, sucessfully treated by incision and drainage, (24) 239
Bronchitis and bronchopneumonia, (33) 463
blood coagula in sputum in case of chronic, hemorrhagic, (60) 1422
case of, with remarks on cough and perforated zinc inhaler, (2) 2119—ab
Bronchopneumonia, (87) 1958
bronchitis and (33) 463
in children, (103) 970
senile, (103) 1138
Bronchoscopy for foreign bodies, (41) 812
Buboes and their significance in plague, (17) 463
Buchner's method, simple way of using, for cultivation of anaërobic bacteria, (38) 1056
Bullet wounds, mutual mobility between skin and deeper structures and its relation to, (28) 543
Bullous disease, evidence of existence of autotoxic factor in production of, (4) 1514—ab
Burnside Lying-in Hospital, directions for nurse and home physician, (55) 1228
Burns and skin grafting, treatment of, (57) 236—ab
treatment of, (59) 236—ab
Business problem of general practitioner, (53) 1417—ab
Butter coloring, dermatitis from, *2012
Buttermilk, alkalized, in infant feeding, (56) 1062
studies in regard to, in infant feeding, (67) 1063
that will keep, (66) 1063

C

Cactus products, *1624
Cadaver, bacteriologic examination of blood in, (86) 1774
Caisson-disease, (23) 1231
frictional electricity; a factor in, (15) 899
Calcaneus, fracture of, (76) 545
Calcareous degeneration, studies on, (64) 969—ab
Calcium iodid, value of, in treatment of ulcers, (7) 542—ab
Calculi, diagnosis of renal and ureteral (20) 1854
in lungs, (65) 242
phosphatic, following suprapubic prostatectomy, (41) 1136—ab
urinary, in Egypt, (74) 395—ab
x-ray shadows of cystic and xanthic oxid, (9) 542
Calculus, chewing gum nucleus of vesical, (59) 809
of ureter removed by suprapubic cystotomy, (4) 542—ab
Calthos, *1624
Calx sulphurata U. S. P., as preventive of yellow fever, (54) 896
Cammidge reaction, (10) 310—ab
Camphor poisoning, case of, (106) 970
Camp, sanitation of, a much needed and easily effected reform in, (131) 238
Cancer (see also carcinoma), (4) 390—ab, (50) 1768, (64) 1962
abdominal hysterectomies for, (61) 77—ab
and water, (112) 468—ab
blastomycetes soluble products in etiology of, (75) 902
causes of, (33) 724
cells, idioplastic transformation of, (106) 1519
conjugal, (116) 468
curability of, in general and of cancer of tongue in particular, (49) 2041—ab
cure of, by anesthetization, (80) 1964—ab
detection of incipient, (107) 468—ab
dread of, (115) 468—ab
en cuirasse, (19) 311
errors in treatment of cutaneous, (6) 1514—ab
etiology of (3) 2120—ab
in Stuttgart, (110) 468—ab
inter-relationship of, tubercle and venereal diseases and other social calamities, (38) 2041
its cause and spread, (91) 722
lesions predisposing to, *15
medical treatment of, *1538
metastasis in central nervous system, (103) 1519—ab
methylene blue in treatment of inoperable, (90) 1229, *1545
methythionen hydrochlorid in inoperable, *1545
nature of and cancer cachexia, (39) 2125—ab
of bladder in bilharzia affections, (99) 315—ab
of breast, early diagnosis of, (64) 73
of breast, necessity for early, radical operation, (53) 1057
of breast, treatment of, (48) 896
of cervix, choice of operation, (70) 1597, *1869
of colon, (37) 967—ab
of esophagus communicating with right bronchus with complete absence of usual symptoms, (15) 311—ab
of gall bladder and ducts, (118) 309
of head and neck, plan of excision in, (71) 1597, *1780
of head and neck, technic and results in excision of, (32) 1136—ab
of larynx, (80) 540
of larynx, treatment of, by pancreatic extract (trypsin), (2) 1955—ab
of lip and tongue, early diagnosis of, (67) 73
of lips and tongue, plea for more radical operations in, *986
of liver, histogenesis of primary, (102) 315
of prostate, four cases of, (94) 315—ab
of rectum, (9) 387, (44) 901—ab, (51) 2176—ab
of rectum, axioms in treatment of, (2) 1327—ab
of rectum, remote results of radical operation of, (70) 395—ab
of rectum, treatment of, (7) 718
of sacrum, (87) 1862
of sigmoid and rectum, (28) 967—ab
of stomach, (113) 316—ab, (69) 902—ab, (48) 2041—ab
of stomach, early diagnosis of, (66) 73, (100) 244—ab, (10) 1331—ab
Cancer of stomach, negative verdict on Solomon's test for, (37) 2178
of stomach, pylorogastrectomy for, (41) 901—ab
of stomach, trauma and, (77) 395—ab
of stomach, treatment of, (7) 899—ab
of uterus, (69) 1597
of uterus, contest with, (44) 1228
of uterus, early diagnosis of, (65) 73
of uterus, symptoms of, *1865, *1867
of vagina and uterus, resistance of red blood corpuscles in, (97) 315
on dogs from human material, (114) 468
on mice, (109) 468—ab
operations, to enhance resisting powers of peritoneum in, (91) 1142—ab
operative treatment of, of large intestine, causing dangerous intestinal obstruction, (55) 809
origin of, (98) 315, (117) 468
parasite, negative verdict on O. Schmidt's, (31) 2177
pathogenesis and therapeutics of, (2) 1414—ab
poisons of, (42) 2125
possibility of development of, in cervical stump following supravaginal hysterectomy, (11) 459—ab
precipitins, (110) 1520—ab
prevention of, regarded as practical problem ripe for solution, (23) 1599—ab
prostatic, pathology of, (66) 972
radical operation in uterine, *1872
relations between, and tuberculosis, (92) 1424—ab
research, (44) 312, (49) 1233
research, brief résumé of world's recent, (3) 894—ab
research, opening of institute for, (79) 1963
research, present status of, (50) 643
research, reply to Bashford's experimental, (29) 642
retention of sphincter in removal of rectal, (96) 1603—ab
Roentgenization in treatment of, *1540
spirochetes in, and in syphilis, (67) 1601—ab
spontaneous cure of, (24) 152—ab
statistical study of deaths from in Philadelphia with reference to cancer of uterus (33) 2120
therapy of, (100) 315, (83) 309
transformation of, into connective tissue under influence of cancroin, (39) 1961
trypsin in treatment of, (58) 644—ab, (1) 2119—ab
two cases of, treated with trypsin injections and lotio pancreatitis locally, (89) 898
utcrine, (83) 1602—ab
vaginal extirpation of, (35) 240—ab
Cancers, Schuller's bodies in, (107) 1519
Cap and gown in Molière, *1557
Caput succedaneum, (58) 2043
Carbohydrates in amniotic fluid in diabetes, (97) 1774—ab
utilization of, with reference to problems of infant feeding, (77) 237
Carbolic-acid, concentrated, in treatment of external affections (9) 2177—ab
danger of weak solutions of, when used in surgical dressings, plea for restricting their sale, (18) 1135
instillation of, into eye from medicine dropper through mistake, (14) 1055—ab
arthrodesis, treatment of paralytic dislocation of hip with, (64) 1141—ab
Carbon bisulphid in croupous pneumonia, (103) 1863
dioxid gas retention as a frequent factor of disease, (3) 305—ab
Carbuncle, Bier's vacuum hyperemia in treatment of, (52) 236
Carcinoma (see also cancer) (134) 541
behavior of spleen in case of, (71) 1423
cells, growth of, within muscle fibers in carcinomatous metastases to voluntary muscle, (122) 810
cervicis uteri, study of parametrium in twenty-seven cases of, and its clinical significance, (22) 1513—ab
cutis with notes of two cases, (19) 311
in early life, (29) 152—ab
influence exerted on virulence of, in mice by subjecting tumor materials to incubation previous to inoculation, (63) 969—ab
multiple, (136) 1966

Carcinoma of cervix, lymph glands in, (83) 973—ab
of nervous system, (76) 897
of pancreas, (115) 2130
of stomach, (8) 538—ab, (38) 1965
of stomach and bowels, microscopic structure of, (105) 1519
of upper end of esophagus with perforation into trachea, (35) 396—ab
of uterus, (84) 2128
of uterus, at Breslau, (91) 315—ab
of uterus, lymph glands in, (84) 1235
of uterus, primary, (34) 1767
operative treatment of, of rectum, (45) 2121
primary, of liver, (103) 1597
primary, of peritoneum, (113) 468
problem in etiology of esophageal, (72) 1597
pseudo parasites in, (95) 315
surgery of, of upper portion of rectum and of sigmoid colon, (34) 967—ab
total laryngectomy for, (48) 809-ab
treatment of mediastinal, with Roentgen rays, (71) 154—ab
two rare cases of, (101) 315
ventriculi, spirochetes in stomach contents in, (53) 313
ventriculi, with rare and unexpected findings, (67) 309—ab
Carcinomata, bilateral metastatic, (61) 1601—ab
Cardiac compensation, failure in (114) 2130—ab
diseases, graphic methods in study of, (25) 1415—ab
inadequacy, (35) 1956
Cardiospasm, (50) 1417
Cardiovascular disease, treatment of, (110) 2039
system from insurance standpoint, (118) 898
Carotid gland, tumors of, *469, *566, (37) 1329—ab
Carpal-scaphoid, fracture of, (23) 538
Caruncula sublingualis, disease of, (63) 1517
Caseous matter, observations on effect of sterile, in treatment of tuberculous disease, (4) 970—ab
Casts, renal, and their clinical significance, (125) 74
Cataract, after-treatment of, (53) 153
black, (57) 1957—ab
causation and treatment of, (103) 1230
etiology of lamellar, (54) 153
expression (Smith's operation), (33) 1139
extraction, irrigation in, (18) 723
extraction of, in capsule versus ordinary or capsule laceration method, (32, 34) 1139, (25) 1515
extraction of, visual results after, (70) 1137
extraction with preliminary capsulotomy, (63) 1957
extractions of, some minor details frequently neglected in, (72) 1137
forms of hereditary, (39) 1513
in capsule, (22) 1515
knife-needle operation for secondary capsular, (52) 153
simple extraction of senile, by Teale's method, (35) 2041—ab
study of 3,436 cases of senile, (14) 1765—ab
Catarrh, affections characterized by gastroenteric, (23) 719
Caterpillar rash, (13) 723
Catgut from healthy cattle, (96) 2045
iodized, (118) 1138
star winding wheel for, (101) 903
sterile, ready to use, (27) 642—ab
sterilization, comparative tests of, (104) 1143
Cauda equina, syndrome of, (94) 1863
Caustic potash, treatment of epithelioma by, (38) 720—ab
Cauterization, successes and failures with steam, (85) 2128—ab
Cautery, tip for an improved, *205
Cavities, elimination of, in operative wounds, (54) 1855
Cecum, ileocecal valve and appendix, tuberculosis of, (9) 391—ab
recurrence after inflammation of, (77) 1423
region, chronic inflammation of, (98) 467
Celiotomy incision, anterior vaginal, (105) 898, (68) 1861
Cellulitis, anaërobic, or infectious emphysema, (50) 1329
Celluloid cylinders instead of napkin rings, (73) 242
plates to close defects in skull, (74) 545—ab
Central America, commercial relations with, with reference to yellow fever, (88) 309
Cephalhematom, intracranial, (20) 1594
Cephalocele, two cases of frontonasal, (33) 1961
Cerebellum, functions of, and symptoms of its disease, (6) 1328—ab
hemorrhage from, (43) 1516
traumatic hemorrhage into left lateral lobe of, operation, recovery, (26) 967
Cerebral affections, diagnosis and prognosis of acute, (96) 816—ab
decompression, *679, *744, *849, *923
localization and study of psychiatry, (3) 1419—ab
Cerebrospinal drainage, theory and technic of, (25) 1687
fever, case of, (5) 1853—ab
fever, epidemic, (13) 1139—ab
fluid, coagulability of in lesion of cauda equina, (70) 644
meningitis, (86, 87) 390, (14) 1230, (38) 1516, (129) 1691
meningitis, acute pneumococcic, of nasal origin, (36) 1513
meningitis, clinical and pathologic aspects of fulminating case of epidemic, of convulsive comatose type, (25) 1420
meningitis, differential diagnosis of epidemic and tuberculous, (119) 1965
meningitis, epidemic, (9) 310—ab, (88) 1424, (21) 1683—ab, (80) 1690—ab
meningitis, epidemic, and infection in mines, (63) 1335—ab
meningitis, epidemic, in Birmingham, Ala., during past year, (16) 1765
meningitis, epidemic, study of its etiology, diagnosis and epidemiology, based chiefly on cases occurring in Worcester, Mass., (15) 1594
meningitis, etiology and epidemiology of, (86) 1690
meningitis, experimental, and serum treatment, *560, (12) 1685
meningitis, Flexner's work on experimental and its serum treatment, (25) 1765
meningitis, inflammation of extradural tissue of spinal cord in epidemic, (48) 901—ab
meningitis, serum treatment of, (61) 242—ab
meningitis, sporadic, (91) 545
meningitis, value of tartar emetic in treatment of traumatic tetanus and, (126) 1139
Cerebrum, functions of association areas, *1464
gumma of, subcortical, accurately localized in comatose state, death, autopsy, (53) 73
remarks on surgical aspects of operable tumors of, (111) 870—ab
removal of tumor (endothelioma) which had invaded the overlying cranial bone, (10) 723
tumor of, giving rise to Jacksonian epilepsy and at later stage coma, (22) 1599—ab
tumor of, operation; recovery, (19) 155
tumor of, simulating vascular lesion, (37) 896
Certificate, higher medical in France, (43) 812
Cervical ribs, diagnosis of (82) 1862—ab
Cervix, artificial dilatation of, (38) 1228—ab
artificial dilatation of, and os uteri—indications and methods, (84) 2123
cancer of, choice of operation, (70) 1597
excision of V-shaped piece of posterior uterine wall for anteflexion of, with aid of intrauterine holder, (31) 1056—ab
lacerations of, (28) 2121—ab
lymph glands in carcinoma of, (83) 973—ab
manual and instrumental dilatation of pregnant and parturient, *1534
manual dilatation of, of gravid uterus, (34) 539—ab
new operation for anteflexion of, (21) 235—ab
tuberculosis of, (32) 393—ab
Cesarean operation, (52) 640
operations, four, and labor complicated by fibroma in which hysterectomy was performed on sixth day of puerperium, (19) 895—ab
Cesarean-section, births after vaginal, and vagino fixation, (30) 1333—ab
case of, (115) 970
deep incisions and vaginal, should be banished from obstetric practice, (59) 1234—ab
Cesarean-section for placenta prævia centralis, (116) 1138
forty-one cases of, with modifications of technic, (60) 640
in country practice, (94) 1603—ab, (52) 2121
indications for, other than pelvic deformities or tumors, (8) 1858—ab
necessitated by obstruction of pelvis by non-pregnant half of bicornate uterus, (39) 1228
performed by cow, *1192
remarks on, (3) 1593—ab
Schauta's experience with, (81) 973—ab, (52) 2121
treatment of placenta prævia by, (124) 898, (47) 1229—ab, (60) 2122—ab
twin pregnancy, multiple, fibroids, hysterectomy, (53) 721
vaginal, (33) 539—ab
vaginal in retroflexed gravid uteri with incarceration, (90) 1142
vaginal, in treatment of puerperal convulsions, (46) 1596
Cesarean sections, review of fourteen, successfully performed, (41) 808
Chalybeate waters, action of, on metabolism, (75) 1063
Chanca, a forgotten worthy, Dr. Diego Alvarez, of Seville, Spain, *1013
Chancre, case of intranasal, simulating nasal diphtheria, (16) 155
certain bodies present in, in condyloma and in blood during secondary syphilis, (19) 239—ab
multiple, five initial lesions on penis, (13) 2120
Chancres, dwarf, on lip and tongue, (43) 1771
multiple, (47) 896
Chart, an observation, (14) 718
Chauffeur, injury, typical, (100) 1597
Chemistry, application of physical, to serum pathology, (126) 1331
Chest examination, features of, of interest to life insurance examiners, (73) 1330
possible danger in exploratory puncture of, (20) 971
Chewing gum nucleus of vesical calculus, (59) 809
Cheyne-Stokes respiration, blood pressure changes in, (45) 1057
respiration, clinical and experimental observations on, (33) 1855—ab
Chicago Medical Society, present status of proposed business bureau of, (49) 461
violent deaths in, (69) 1229
Chilblains, treatment of, (89) 467—ab
Child and public school curriculum, (16) 967
constitution of, what is meant by knowing, (106) 1857
nervous system of, in relation to its development, (106) 898
position of atypical, (79) 390
plea for study of deaf, and teaching of speech to semi-deaf and semi-mute, (30) 2125
training of mentally and morally defective, (63) 1597—ab
Childbirth, after pubiotomy, (82) 1142—ab
Childhood, acute contagious diseases of, duration of danger of contagion and methods of disinfection, (43) 1136
sources of infection and manner of contagion of acute contagious diseases of, (44) 1136
Children, acute non-suppurative encephalitis in, *1184
deformities of trunk in, (11) 305
disease of, clinical pictures of, (34) 1961
heredity and environment as factors in life and diseases of, *760
inspection of public school, (19) 807
latent tuberculosis in, *1189
nervous, (83) 1138, (40) 1573
pleuritic exudates in, *1296
principles of treatment in diseases of, (7) 305
prophylaxis and treatment of summer diarrhœas of, (81) 895
pulmonary tuberculosis in, (5) 541
spastic paralysis of, (66) 242
training of mentally defective, (128) 722
China, prospects of western medicine in, (36) 1060—ab
Chinatown, three years' practice in, New York, (116) 309
Chlorids, simple test for, in urine, (96) 904—ab
Chloroform, action of on blood, (110) 315
and air, mixed anesthesia, (52) 76
Chloroform, committee, report of special, of British Medical Association, (10) 462
evaporation of, during inhalation, (5) 722
in blood, (52) 1688—ab
inhaler, modification of, *855
poisoning, acute atrophy of liver from, *1191
poisoning, delayed, (23) 2040—ab
quantity versus cardiac quality, (40) 2038
treatment by, of whooping cough, (42) 1139
urobilinuria after, (116) 547—ab
Chloroma of skull, (75) 1963
Chlorosis, treatment of, (47) 725—ab, (95) 1058
Cholecystectomy, (50) 1233
for gallstones, (35) 235
its indications and technic, (23) 151
two cases of, (34) 235
Cholecystitis, phlegmonous, (17) 1332—ab
surgical aspect of, (19) 71
typhoid, (34) 311—ab
Cholecystostomy, an improved technic, (12) 1135—ab
Cholelithiasis, (7) 966—ab
atonia gastrica in relation to, (119) 74, (37) 1228—ab
etiology of, (10) 2036—ab
fistula between gall bladder and bronchus, (58) 1335
hematemesis in, (37) 1961
prognosis and therapy of, (118) 1603
relations of pancreatitis to, (59) 540
treatment of, (96) 467
Cholera and typhus endotoxins, (60) 726
antitoxic serum in, (58) 971
differentiation of true, (76) 242
preventive station, (30) 2177
quinin treatment of, *1986
success with sodium bicarbonate in, (49) 1140—ab
toxin, protective action of liver in regard to, (113) 1519
Cholesterin, formation of, in gallbladder, (66) 1861
Cholin, influence of injections of, on embryo, (93) 1691—ab
Chondritis and perichondritis, etiology, diagnosis and treatment of auricular, (85) 1058
Chondrodystrophic dwarf, defect of both femoral heads in, (71) 2122
Chrondrosarcoma, histology of, (99) 2045
Chorea, analysis of 808 cases of, with reference to cardiovascular manifestations, *1352
considered as cerebral rheumatism, (2) 238—ab
contribution to pathology of, (19) 1599—ab
gravidarum, (19) 81, (128) 976—ab
hereditary, (1) 1853—ab
unilateral paralytic, (26) 1854
treatment of, (61) 1330
Chorioepithelial cell invasion, benign, in wall of uterus and tubes, (83) 1336
Chorioepithelioma malignum, case of, (89) 2039, (82) 2128
Choroid and orbit, case of melanosarcoma of, (70) 970
Choroidoretinal sclerosis, case of, with spontaneous dislocation of lenses, complete and incomplete, (81) 1685
Choroidoretinitis of obscure etiology, (28) 812
Chylous effusions, pseudo, (57) 902
Circulation, collateral, following ligation of femoral artery, (42) 720—ab
factors in surgical physiology of, (94) 1138
physiopathology of lymph and blood, (100) 1863—ab
recent contributions to physiology of, *1343
story of discovery of, (116) 722
viewed from periphery, (1) 970—ab, (123) 1331—ab
Circumcision, its importance in treatment and prevention of certain reflex nervous phenomena, (115) 309
Circumspection, professional, (45) 968
Cirrhosis, surgical treatment of hepatic, with reference to biliary drainage, (27) 306
Citrate of soda in infant feeding, (77) 390
Clamp pincers for suturing, (67) 466-ab
to remove small foreign bodies in leg or arm, (123) 1520
Claudication, intermittent, (56) 2042
intermittent, due to angiosclerosis of extremities, (49) 308—ab

Claudication, spinal intermittent, (41) 1961—ab
Clavicle, dislocation of outer end of, *19
dorsal fixation of arm in fracture of, (72) 1517
fracture of, (111) 1138
Clavicles, improved method of putting up fractured, (4) 1058—ab
Climate, error of, in treatment of tuberculosis, (115) 1331
maxims for selection of, in pulmonary, laryngeal and bone tuberculosis, (12) 459—ab
mountain, (52) 393
of Fort Grant, Graham County, Arizona, (85) 1769
of Prescott, Arizona, (92) 1769
resorts, observations on some, of Europe, (92) 1597
winter, of Tucson, Arizona, (9) 1135—ab
Climatic extremes, effects of, on health of battleship personnel, (59) 1513
Climatology, address on, (11) 895
Clinic, notes from Nothnagel's, (109) 74, (75) 390
Clinics, peep into foreign surgical, (94) 1857
Clothing, hygiene of women's, (22) 2177
Club-foot, treatment of congenital, (14) 1960—ab
with reference to postoperative treatment, (99) 390—ab
Coal gas, poisoning by, (55) 640
Cocain, idiosyncrasy to use of, in eye, *1486
use of, in surgery, (79) 237
Coccaceæ, statistical study of generic characters in, (27) 1227
Coccidæ, change of name in, (104) 1685
Cocillana as expectorant in pulmonary tuberculosis, (114) 154
Cocoa, fat in, (69) 544
Code, revision of civil, (22) 155
Coeducation, advantages or disadvantages of, (65, 66) 1597—ab
Coffee and cocoa, action of, on secretion of gastric juice, (95) 1143—ab
Coitus interruptus and coitus reservatus as causes of profound neuroses and psychoses, (110) 2124
Cold and heat, apparatus for local application of dry, (17) 71
Colic, artificial renal, as valuable means of diagnosis, (26) 1056—ab
gall-bladder, (46) 2125—ab
Colica mucosa, some clinical features of, (29) 1859—ab
Colitis, clinical features of types of, (2) 74
pathogenesis of experimental, and relation of colitis in animals and man, (65) 969—ab
relation of ulcerative, to dysentery, (6) 462
surgical aspects of, (20) 811—ab
surgical treatment of chronic, (12) 1960—ab
typhoid nodular, (123) 810
Colloids, influence of, on diffusion of hemolysins, (68) 969
presence of, in drinking water, (30) 900
Colobomi oculi, cases of associated, and arteria hyaloidea persistens, (77) 1685
Colon, cancer of, (37) 967—ab
neoplasms of, *825
submucous lipoma of, (117) 1519
surgery of tuberculosis of, (38) 967—ab
Color conversion, new phenomenon of, *175
Colpohysterotomy, anterior, (129) 976—ab
Columbus, Realdus, of Cremona, (18) 1594
Complement test, bacteriologic diagnosis in, (71) 1601
Complements, deviation of, in precipitation, (40) 312
hemolytic, action of agglutination and precipitation on, (78) 314
Complexion powder, *1629
Condition that precedes disease, (42½) 464—ab
Congenital syphilis, cerebrospinal fluid in, (68) 1063—ab
Congestion, passive in treatment of affections in diabetes, (68) 1335—ab
passive, in treatment of gonorrheal joint affections, (117) 548—ab
Congress, international, of tuberculosis, Paris, 1905, (89) 1597, (105) 2039
Lisbon and its medical, (52) 390
Congress of surgery, report of XXXV German, (76) 1141
Conjunctiva, diphtheria of, in far south, (55) 236
diseases of, silver preparations in, (96) 970
epithelioma of, of unusual size, (68) 462
pathogenic bacteria of, *320
treatment of affections of, (87) 1690
Conjunctivitis, (116) 74, (131) 309
Parinaud's, accompanied by erythema nodosum and tonsillitis, (56) 153
phlyctenular, (18) 1956
Conservatism, present status of, in surgical treatment of tubes and ovaries, *1454
Constipation, (68) 721
air dilatation in treatment of chronic, (6) 639—ab
causes and varieties of chronic, (18) 2176
chronic, (89) 237
dietary treatment of chronic, (20) 2176—ab
habitual, from standpoint of modern evolution of dietetics, is a physiological phenomenon, (4) 894—ab
management of, in infancy, (61) 237—ab
medical treatment of chronic, (19) 2176—ab
rational treatment of chronic, (11) 1682—ab
treatment of chronic, (112) 154, (52) 644—ab, (88, 89, 90, 91, 92, 93) 810
treatment of chronic, of children, (27) 640
Consumption (see tuberculosis).
Consumptive, cleanly, (101) 154
Consumptives, statistics in regard to, (113) 1144
statistics of diet in sanatoria for, (37) 1595
Contagion and infection, confusion between terms, or mosquito craze, (53) 1597
Contract and club practice, (48) 461, (103) 1419
Contracture, ischemic, of limbs, (56) 2042
Contractures and muscular atrophy, (5) 1682—ab
cure of, by spinal anesthesia, (65) 394
Convergence, study of, and its effects, *670
Convulsions, general, in early infancy induced by taking of food, (5) 74
hemoptysis as sequela of epileptic, (20) 967
in children and their relation to epilepsy, (18) 1230
several thousand, in four-weeks'-old infant, (97) 1138—ab
vaginal Cesarean section in puerperal, (46) 1596—ab
Copper foil, efficiency of, in destroying certain bacteria in water, (27) 460
Cornea and conjunctiva, foreign bodies in, (129) 541
anomalies of, (8) 2176
congenital pigmentation of, (82) 1685
conical, (121) 1857
gummata of, (85) 1685
treatment of opacity of, by physical agents, (34) 812—ab
ulcerations of, principles of treatment of, (98) 309
Coroner's cases, facts from, (14) 1955
Corpora lutea, cysts of, (87) 972
Corpuscles, nucleated red, (55) 901
stain index of red, (80) 369—ab
structure of red, (129) 547
Cortex, cerebral, in tuberculosis, (40) 393—ab
Costal arch, osteoplastic resection of, in order to reach vault of diaphragm, *1069
Cotton mill operatives, health and mortality of, of Blackburn, England, (3) 639
Cough, causes of irritative, (47) 389
extrapulmonary causes of, in consequence of pathologic changes in upper respiratory tract, and disturbances in function thereof, (88) 897
treatment of, in pulmonary tuberculosis, (100) 237, (46) 1329
Courts in Sonoratown, (94) 1597
Coxitis, end results of conservative treatment of tuberculous, (80) 515—ab
simplest mechanical method of treating and its results (65) 2122
Crenothrix polyspora in drinking water, (104) 1691
Creosote in tuberculosis, (61) 968
Cretinism, case of, with spontaneous improvement, *205
endemic, relations with other disturbances in development, (78) 2128
Cricothyreoideus, paralysis of musculus, (89) 903
Crime, eyestrain and, (47) 1596
syphilis in relation to, (47) 721
Criminals, recent phases in connection with Vermont observation law for insane, (101) 970
Culicidæ, new germs and species of, (103) 1685
Culture medium, improved, for typhoid bacilli, (72) 1861
Cultures, experience with blood, in study of bacterial infections, (59) 640
Cupidene, *1624
Curette for removal of gauze grown in or held by tissues, (51) 1233
Currents, high frequency oscillating and high periodicity pulsating, in medicine, (10) 387
pernicious effects of alternating of high voltage, (43) 896
Curriculum, medical, (99) 970
Curschmann's spirals in bronchial asthma, (35) 157—ab
Cyanosis, case of, with polycythemia, (15) 391
microbic, (13) 463—ab
Cyclocephalus, case of, in Guam, (28) 1055
Cycloplegia, artificial, in errors of refraction, (17) 1682
Cyst, case of maxillary or dental, hydrops antri highmori, (77) 540
echinococcus, of liver, (22) 368—ab
formation in kidneys and afferent urinary passages, (97) 1964
removal of intraligamentary, and bilateral oöphorectomy during early pregnancy without interrupting gestation, (4) 718—ab
suppurating sub-urethral, (100) 1857
Cysticercus cellulosæ of tongue with note on helminthology of a Madras jail, (22) 723
Cystinuria and alkaptonuria, (1) 2176—ab
Cystitis, caseous, (100, 101) 2129—ab
cystic, genesis of, (118) 2130
treatment of, (105) 1230
urethral bacteria as factor in etiology of, in women, (23) 1513—ab
Cystocele, (25) 1512
and uterine prolapse, treatment of cases of extensive, (25) 152—ab
cure of, (87) 2123
operative treatment of, in past one hundred years, (26) 1513
Cystoma of ovary, (84) 2128
Cystomata, when ovarian should be removed without puncturing or opening, (59) 968
Cystoscope and urethral catheter, diagnostic value of, (70) 1418—ab, (5) 1955
importance of, in diagnosis and treatment of diseases of urinary organs, (15) 639
intravesical operations with aid of, (60) 721
Cystoscopic instruments, evolution of modern, and methods, (24) 1513—ab
Cystoscopy, reflex inhibition of kidney secretions during, (60) 1861
Cystotomy, after treatment of cases of suprapubic, (22) 239
in female, (99) 1058
large calculus of ureter removed by suprapubic, (4) 542—ab
suprapubic, as preliminary to, and as route for performance of number of prostatectomies, (102) 390, (53) 1137—ab
Cysts, bone, (92) 1138
four cases of epithelial, (113) 1603
in mesentery, (114) 1144—ab
large, of suprarenal glands, (53) 2042—ab
of corpora lutea, (87) 972
of lower jaw, (114) 2046—ab
of urachus, (27) 1683—ab
ovarian, situated above superior pelvic strait, complicated by pregnancy, (50) 1229—ab
retroperitoneal, *2079
Cytodiagnosis of organic psychoses, (95) 309
of pleuritic and pericardial fluids of all sorts, (51) 1685
Cytology of effusions and exudates, (59) 242—ab

D

Dacryocystitis, treatment of acute suppurative, (58) 1957
Deafness, chronic catarrhal, *1806
dysthyroid, (84) 2044—ab
Deafness, diagnosis of obstructive and nerve, and classification of each, (129½) 898
electrolysis in treatment of, due to stricture of Eustachian tubes, (15) 895—ab
new and efficient procedure in treatment of catarrhal, (81) 237
treatment of Eustachian, (29) 900
Death, case of sudden, possibly due to vagus inhibition, (6) 898
cause of sudden, following injection of horse serum, (57) 1229
from bromo-seltzer, *2158
from rattlesnake bite, *2012
from suppurating tonsil, (10) 305—ab
frontiers of, in surgery and question of operation in extremities, (22) 311
in diphtheria, (61) 814—ab
rates, correction of, (8) 970
Deaths, medicolegal features of, from burning, (124) 1520—ab
postoperative, with no apparent lesion, (109) 2039
statistical study of in Philadelphia with reference to cancer of uterus, (33) 2120
violent, in Chicago, (69) 1229
Decidua basalis, changes in, after manual removal of placenta, (36) 240
cells, plasma and, (92) 1602
study of development of extrauterine, (45) 1228
Decidual tissue, diagnostic significance of, (19) 459—ab
Defectives, mental, their treatment and training, (93) 1959
Deformities of trunk in children, (11) 305
primary muscle angioma cause of, (67) 2043
tendon transplantation and grafting for paralytic, (7) 387—ab
Degeneracy and social disease, (76) 810
Delirium and death during convalescence from ileus, (82) 903—ab
Delivery, artificial, (67) 1861—ab
with pelvic presentation, (86) 78
Dementia, motor degenerative sequence in, *1338
paralytica, etiology of, (2) 1419—ab
paralytica, examination of spinal fluid in, (3) 150—ab
præcox, (66) 1330, (5) 1419
spontaneous rupture of heart in case of senile, (16) 538—ab
Dendrites and disease, (11) 463
Dengue and yellow fever, (58) 1597
fever, clinical notes on recent epidemic of, (12) 538—ab
in Syria, (45) 543—ab
study of blood in, with reference to differential count of leucocytes in diagnosis, (64) 462
Dentition, reflexes of, *25
Dermacentor occidentalis, further observations on Rocky-Mountain spotted fever and, *1067
Dermatitis, causative factor in production of, of ground itch (uncinariasis), *1693
from butter coloring, *2012
infectious, gangrenous, (38) 1767—ab
vegetans, case of, (9) 1514
Dermatologic review, (79) 1229
Dermatology as field for original research, (81) 1229
past of in Edinburgh, (1) 2124
place of, in medical curriculum, (2) 1514
Dermatoses and dry climate, (63) 1418
nutrition in various, (36) 1771—ab
unsuspected parasitic origin of many, (35) 1513
Dermoid of pelvic connective tissue, (38) 1333
rare forms of ovarian, (90) 314
Descensus ovariorum, (57) 1856—ab
carbohydrates in amniotic fluid in, (97) 1774—ab
Desmoid reaction, (109) 975—ab, (37) 1420
Detroit, tuberculosis in, (78) 1058
Deviation, conjugate lateral, *490
Diabetes, (51) 1513
and adiposis potatoes as food in, (58) 725
and Bright's disease in relation to suppurative osteomyelitis of mastoid, (74) 540
insipidus and diabetes mellitus, relation between, (84) 74
insipidus, treatment of, with strychnin, (99) 546—ab, (47) 1233—ab
Langerhan's islands and, (43) 1334—ab

Diabetes, lean, as sequel to mumps, (38) 1139
mellitus, case of, (53) 1513
mellitus, dietetic treatment of, (57) 543, *2143
mellitus, epileptiform convulsions in, (130) 1691
mellitus, etiology and therapeutic possibilities, (81) 309
mellitus, etiology of, (50) 390
mellitus in an infant, (98) 541
mellitus, management of, (85) 74
mellitus, rational treatment of, (11) 1054—ab, (52) 1513
prophylaxis of, and clinical determination of glycolytic functions, (102) 1959
surgical complications of, (51) 390
treatment of more common secondary symptoms of, (89) 541
treatment of, with secretin, (48) 1688
Diabetic management of the, (50) 1513
Diabetics, alcohol in nourishment of, (86) 1862
operating on, (86) 2128—ab
passive congestion in treatment of affections in, (68) 1335—ab
Diagnosis and therapy, plea for higher ideals in medical, (82) 309
eye symptoms in medical, (87) 74
laboratory, for practitioner, (97) 74
possibilities and limitations of laboratory, (48) 1596—ab
surgical, in emergency work, (3) 806
Diagnostic foibles, (110) 1230
Diaphragm, diagnosis and surgical treatment of injuries of (96) 2124—ab
hernia of, (116) 1144—ab
injuries to, (99) 898
innervation of, (71) 1773—ab
osteoplastic reaction of costal arch in order to reach vault of, *1069
paralysis of, (109) 1775—ab
participation of, in Erb's paralysis, (55) 394
two stab wounds of, (95) 1691
Diarrhea, appendicostomy and cecostomy for relief of chronic, (18) 967—ab
balneologic treatment of chronic, (95) 467
in infancy and early life, (133) 810, (128) 1139
prophylaxis and treatment of infantile, in summer, (61, 62, 63, 64) 540, (21) 895
what has been accomplished in treatment of summer, of children, (35) 640
Diarrheas, dietetic treatment of summer, of infants, (65) 540
unrecognized etiologic factor in summer, (20) 1055—ab
Didama, Henry Darwin, (62) 1768
Diet and hydrotherapy in treatment of rheumatism and gouty conditions, (89) 970
effect of dry, in nephritis, (30) 1232—ab
in albuminuria, *1621
in tuberculosis, (2) 387—ab
liberal, in typhoid, (12) 2035
of childhood, (80) 1330
principles of, in tropical campaigns, (20) 1770
quantitative estimation of, in private practice, *1616
statistics of, in sanatoria for consumptives, (37) 1595
suitable, during second year, (121) 722
Dietary, points on, in disease, (96) 390
Dietetics of obesity, *820
Diets, purin-free, (21) 1515
Digestion, chemistry of gastric, (37) 312
influence of rest, exercise and sleep on gastric, (42) 896—ab
of fats, proteids and carbohydrates in first year, (120) 722
second year disorders of infantile, (122) 722
Digestive organs, diseases of, in pathogenesis of arterial hypertension, (15) 459
organs, Head's zones in affections of, (49) 1421
processes, Pawlow's research on, (94) 903
tract, foreign bodies in, (64) 314—ab
tract, frequency of tuberculous infection by way of digestive tract, (47) 972—ab, (102) 974
tract, primary pneumococcus infection of, (72) 160—ab
tract, primary tuberculosis of, (59) 813—ab
Digitalis and barium chlorid, (11) 71—ab
pharmacology of, *2059
therapy, intravenous, with strophanthin in, (23) 2177
use of, (84) 467
Dilator, new hydrodynamic bag, cervical, (53) 1856—ab
Dionin in diseases of eye, (71) 462, (105) 1597, (60) 1957
Diphtheria, (82) 1424
and action of bacillus diphtheriæ as compared with other bacteria, (69) 73
antitoxin, duration of immunization after injection of, (55) 1860—ab
antitoxin in, (94) 541, (72) 1063, (86) 1138
antitoxin in treatment of exophthalmic goiter, *1486
arrest of, epidemic with antitoxin, (52) 159—ab
bacilli, new simple method for staining polar bodies of, (31) 1766
death in, (61) 814—ab
etiology and prevention of chronic, (100) 1235
history and prevalence of, in British army, (43) 1599
injection of antitoxin in, by intravenous method, (20) 1515
laryngeal, in an infant, (27) 724
membrane and complications of, (16) 1853
of conjunctiva, in far south, (55) 236
outbreak, history of (complicated with Vincent's angina), at Lambeth parochial schools, West Norwood, May to July, 1905, (11) 1058
present treatment of, by medical profession, (9) 1594—ab
recent investigation and complications of, (101) 1138
toxins in blood in, (119) 1604—ab
transmission of, by third persons, (77) 466
Diplobacillus of Morax—Axenfeld, *255
Diplococcus intracellularis meningitidis, relation of, to gonococcus, (66) 1234
Dipsomania, (6) 1135—ab
morbid predisposing causes in, (70) 309
Dipterous larvæ, case in which large quantities of, were passed per anum, (9) 462
Disease, adaptation of means in prevention of, (45) 1688
additional experience in treatment of pelvic, associated with psychoses, (95) 237
in aged, (61) 1685—ab
incidence of, in 1,000 cases among children, (33) 640
nature and progress of malignant, (12) 151—ab
prevention in children of disease in adults, (73) 160—ab
prevention of, in army, and best method of accomplishing that result, (128) 238
scientific foundation of modern treatment of, (9) 1682
Diseases and hospitals of Africa, *141, *225, *297, *531, *611, *709, *960, *1098, *1150
family, (33, 37) 2041
induced, (75) 2128—ab
influence of domestication on origin of, (30) 642—ab
influence of, on economy of energy during repose, (79) 1862
latent, (32) 2041
met in South Sylhet, India, (17) 76
ocular symptoms in general, (96) 74
precise definitions for many, (4) 150
prevention of venereal, (78) 237
relation of systemic, to conditions of oral cavity, *334
resolutions in regard to communicable, especially tuberculosis, (21) 155
Disinfection as measure for reducing morbidity of transmissible diseases, (39) 724
fetich of, *574
hot-water-alcohol, in obstetrics and abdominal surgery, (80) 1424—ab
of physicians' hands, (16) 2120—ab
of rooms by formaldehyd, comparative bactericidal value of various methods, (8) 1512—ab
Disorders, some obscure cases of urinary, (17) 239—ab
Dispensing versus prescribing, *1786
Distomum crassum, (39) 1859
Diuretics, action of, after removal of kidneys, (122) 975—ab
Doctor as expert and pioneer, (49) 1688
country, (76) 1958
of internal medicine, a plea for, (103) 541
Doctors, native, of Burmah, (104) 810
treatment of, (57) 1330
Doses, maximum and minimum, (64) 308
Drainage, (125) 810, (48) 1768—ab
catheters, retention of, (53) 1228
drains and, (58) 968—ab
of pelvic cavity of male (in peritonitis), (31) 1513
puerperal fever treated by uterovaginal, (8) 639—ab
Drains and drainage, (58) 968—ab
Dress reform, (103) 546
Dressing, suprapubic, (21) 1420—ab
Dressings, apparatus for cheap and speedy sterilization of, (119) 1691
Dropper and bottle, aseptic, (88) 1690
Dropsy, chylous, (79) 2044—ab
toxic, (76) 1690—ab
Drug eruptions, histopathology, and fallacies, (12) 2124
theory of, (42) 1956—ab
Drugs, action of vascular hypertension, (10) 2124—ab
action of, on uterus, (13) 2124
administration of, to concurrently retard and stimulate systemic oxidation, (6) 458—ab
combination of, (90) 467
dynamic force of, (62) 237
maximal doses of, not in German Pharmacopeia. (49) 313
relations between physical behavior and action of, (107) 975—ab
testing of, on healthy persons, (117) 975
their use and abuse, (104) 1058
Dual personality, second case of, (64) 2039
Duct, wound of thoracic, ligature; recovery, (3) 154—ab
Ductless glands, internal secretion and, (14) 899
Dullard, education of, in public school, (60½) 236
Duodenal ulcer, surgical treatment of gastric and, and its results, *912
Duodenum, acute perforation of, (15) 1858—ab
further observations on anatomy of, (22) 306—ab
hour-glass, *341
surgical treatment of ulcer of, *338, (18) 1960—ab
Dura, sarcoma in, with calcified metastases in heart, (85) 1862
Dust, passage of mineral, through walls of digestive tract, (37) 1139—ab
problem, (5) 1230—ab
Duty, are we doing our full, by laity? (75) 1768
physician's to his patient, an address on ethics, (44) 153
Dwellings, reform in construction of, (67) 1689—ab
Dysentery and typhus, case of, complicated by spleen and liver abscesses, (69) 242
case of amehic, originating in Montana, (71) 1058
endemic, in insane asylum, (16) 2177
endemic sporadic, (with Shiga's bacillus), in England, (1) 75—ab
in Italy, (119) 2130
observations on epidemiology of, in Japan, (62) 462
relation of ulcerative colitis, (6) 462
simulating rectal cancer, (56) 1140
treatment of catarrhal and gangrenous, (16) 723—ab
treatment of chronic, (61) 1063—ab
Dysmenorrhea, (121) 309, (2) 722—ab
in young girls, (91) 970
treatment of, (122) 898
Dyspepsia, (9) 75
diagnosis of some forms of, (35) 1771
due to gallstones, (30) 1859
is nervous, disease sui generis? (20) 895
surgical aspects of gastric, (97) 390
surgical treatment of obstinate, (93) 898
Dyspepsias, chronic, resulting from pelvic and abdominal diseases, and their surgical treatment, (105) 2124—ab
Dyspnea, case of marked paroxysmal, occurring in patient with double aortic disease and wherein, after death, were disclosed striking appearances of chronic mediastinitis, (24) 1420
Dystocia from cystic kidney of fetus, (32) 2121—ab

E

Ear, acute suppuration of middle, (125) 154
affections and mental disturbances, (65) 1137, (35) 1416—ab
and nasopharyngeal affections, (87) 467
and nose, acute and chronic suppuration of, direct cause of facial erysipelas, *2052
artificially induced hyperemia in treatment of suppuration of, (116) 1692—ab
purulent, disease operated on, (57)
catarrh of, middle, (35) 73
disease, great psychical importance of, (64) 1137—ab
diseases, bacteriology of suppurative, (83) 1058
diseases, examination and treatment of, (43) 2041
epithelioma of, (56) 1856.
nose and throat practice, interesting problems in, (92) 2123
odor as guide in treatment of chronic suppuration of middle, *1733
operative treatment of discharges from, (64) 1229—ab
palpation of, as means of accurate diagnosis in vertex presentations, (27) 151
pathogenic influence of aural lesions in systemic disease, (16) 2040
running and immediate cure of mastoid suppuration, (74) 2123
stopper for, (75) 314—ab
symptomatic importance of hemorrhagic discharge from, (99) 1863
syphilis of, (77) 1768
therapeutic effect of sound waves or mechanotherapeutics of, (14) 305
to what extent is it advisable to adopt conservative methods in treatment of aural diseases? (17) 2040
tuberculosis of middle, and mastoid, *1293
two cases of grave complications of 390
Ears, functional derangement of, and upper air tract in insane, (1) 806—ab
Earth worms, possible importance of, as factor in spread of disease, (16) 641
Earthquake symposium, (79) 74
Eating, should we sleep after, (42) 1859—ab
Echinococcus, alveolar, (82) 243
cysts of liver, (102) 810
scolices, (102) 1863
Eclampsia and hyperemesis, pathologic findings and causation of, (86) 722
at Olshausen's clinic, (79) 1336—ab
case of, ending fatally, (97) 541
fatal case of, after delivery of twins,
remarks on etiology and pathology of disease, (117) 1138, (28) 1513
lumbar puncture in, (88) 1142—ab
lumbar puncture in, from neurologists standpoint, (33) 1333—ab
obstetric treatment of, (61) 313—ab
operative methods in puerperal, (65) 1418, (60) 1768, (67) 1856—ab, (10) 1857
pathology, etiology and treatment of puerperal, (4) 537
prophylactic treatment of puerperal, (25) 539—ab
puerperal, (33) 971
puerperal, cured by renal decapsulation, (55) 1234
renal decapsulation and nephrotomy in treatment of serious forms of, (46) 308—ab
three cases of, with recovery without delivery, (30) 2121—ab
treatment of, (92) 1142—ab, (64) 1418, (60) 1768, (67) 1856—ab, (10) 1857
unusual case of hemorrhage in, (23) 2176
value of statistics for question of rapid delivery in, (92) 1063
veratrum viride in, (69) 721—ab
without convulsions, (80) 1517
Economics, physical, *194
Ectopia vesicæ, treatment of, (57) 809
Ectopic gestation, with bilateral suppurative salpingitis and adenomyoma of uterus, (13) 1054
Eczema, (13) 1512—ab
chronic, (149) 74
observations on etiology and treatment of, (11) 1515—ab
ocular, in children, (8) 151—ab
of lips, (101) 1235

Edema, circumscribed, of skin and mucous membranes, (43) 76
experimental pulmonary, (48) 1334—ab
of larynx, (99) 1330
of pharynx,significance of, (124) 1230
pulmonary, (1) 898—ab
Education, (90) 309
and treatment, value of, as safeguards in venereal infection through marriage, (98) 810
as factor in prevention of criminal abortion and illegitimacy, *1889
college, preparatory to study of medicine, (107) 237—ab
entrance requirements, *557
in sanitation, (79) 309
medical, and medical progress, (1) 718
theory and practice of medical, (19) 1515
universities and medical, (2) 1598
Effusions and exudates, cytology of, (59) 242—ab
differentiation of pleural, from pneumonia, (44) 240—ab
Eiselsberg's clinic, (107) 1058
Elbow joint, injuries of, with report of cases, *172
Electricity, experience with static, (59) 462
frictional, factor in caisson disease, (15) 899
in general practice, (58) 308, (56) 640, (50) 1688, (3) 1765—ab
pernicious effects of alternating currents of high voltage of, (43) 896
septic, (44) 1767—ab
Electrotherapeutics, high frequency oscillating and high periodicity pulsating currents in medicine, (10) 387
in cardiovascular affections, (90) 1424
plea for conservatism in, with remarks on dosage, (10) 1682
Electrolysis in treatment of deafness due to stricture of eustachian tubes, (15) 895—ab
Electrophysiology of heart, (90) 396
Elephantiasis, enormous, of both legs surgically treated, (42) 1228—ab
nervorum of scalp, manifestation of von Recklinghausen's disease, (24) 1415—ab
non-parasitic secondary to chronic cardiac disease and repeated edema of pregnancy, (27) 1416—ab
Elixir of life, *1629
Emaciation, treatment of, *558
Embolism and thrombosis of mesenteric vessels, (76) 1423—ab
etiology of, (88) 970
of pulmonary artery in typhoid, (114) 316—ab
of superior mesenteric artery, (82) 2044—ab
postoperative, (46) 539—ab
Emergencies, consideration of serious surgical, (123) 898
in internal medicine—treatment, (46) 153
in obstetrics—treatment, (48) 153
in surgery—treatment, (47) 153, (21) 1332—ab
in urology—treatment, (49) 153
Emergency case, for field service, (57) 896
Emigrants and immigrants, international coöperation in inspection of, (13) 1514
Emigration and public health, in France, (39) 812
Emperor Sigmund, sickness of, (1400, 1437), (94) 1063
Empbysema and broncbitis, respiratory treatment of, (125) 1520—ab
Empyema, (121) 154, (52) 1685
and bronchitis, superheated air in treatment of, (82) 1690—ab
generalized subcutaneous, result of miliary tuberculosis in a syphilitic child, (36) 640
history of aspiration drainage in, and other surgical conditions, (35) 967
operative treatment of chronic, of maxillary sinus, with special reference to intranasal method, (90) 1769
Encephalitis, acute non-suppurative, in children, *1184
experimental, (110) 2130
Encephalocele, frontonasal, (29) 1328—ab
Endarteritis, obliterative, of femoral distribution with gangrene of feet, (7) 1764
Endocarditis, acute, (115) 74—ab
case of malignant, (98) 1138
infective, involving pulmonary valves and associated with imperfection of interauricular septum, (17) 1598
Endocarditis of frontal, ethmoidal and sphenoidal cells, with abscess in orbit, serous meningitis, optic neuritis, otitis media, operation, recovery, (25) 72
of gall bladder, (36) 1417—ab
septic, (44) 1767—ab
simple method of expanding lung after operation for, (139) 74
sufficiency of simple intercostal incision in acute, (23) 306—ab
treatment of, with especial reference to irrigation of pleural cavity, (72) 154
End-of-season illness, (101) 1769
Endomastoiditis, acute, with thrombosis of lateral sinus, (54) 236
Endometritis, (104) 154
fetid, purulent atrophying, (82)1336—ab
hemorrbagic, (103) 80
Endotoxins, soluble, of typhoid, plague and dysentery, (44) 971—ab
Enemas, retained, (34) 643—ab
Enemator, a new rectal, *273
Enteric fever, infectivity of, (6) 74
is it invariably a water-borne disease? (31) 1599
latrine infection in, of India, (27) 76
treatment of, with typhoid vaccine, (37) 1599—ab
Enteritis, avoidance of, during mercurial treatment, (48) 1772—ab
membranous, (71) 644—ab
phlegmonous, (114) 810
Enterocolitis and appendicitis, (41) 464
medicinal treatment of, (10) 1598—ab
Enteroenterostomy, technic of gastroenterostomy and, (75) 78—ab
Enteroptosis, (44) 539—ab
and cardioptosis, cases of, with return to normal, (52) 1517
surgical treatment of, (44) 158—ab
Enterostomy, technic of immediate, (43) 2121
Enucleation; some uncalled-for disfiguring operations resulting from failure to recognize accessory sinus disease, (4) 1682—ab
Enuresis, (93) 1514
treatment of nocturnal, (66) 2039
Environment, heredity and, as factors in life and diseases of children, *760
in therapeutics from standpoint of physiology, (21) 1854—ab
Eosinophilia, local, of kidney, (73) 545
Epidemiology as applied to typhoid in Minnesota, (96) 1514
Epidermal fibrils, study of, (62) 969—ab
Epidermolysis bullosa, (18) 463—ab
Epididymitis, operative treatment of acute gonorrheal, (3) 1414—ab (69) 972
prevention of, (6) 1955—ab
Epilepsy, (109) 1597
borderland of, (2) 390—ab
bromid of potassium in, (50) 1139
case of reflex, (131) 722
convulsions in children and their relation to, (18) 1231—ab
different stages of, and its distinct patbology, (67) 2039
in legal medicine, (98) 1230
massive, (41) 543
methods of research into causes of, (57) 1768
one hundred and three cases of, (21) 1227—ab
operative treatment of genuine, (53) 1334—ab
peculiar attitudes in, during sleep, (9) 1328—ab
plea for earlier diagnosis and treatment of, (65) 1330
relation of late, to head injuries, (108) 309
salt-free treatment of, thirty-seven cases of, (12) 1512—ab, (43) 1685—ab
traumatic Jacksonian, (69) 813
treatment of, (110) 810, (66) 1423
Epileptic fits, cessation of pulse during onset of, (14) 542—ab
symptoms, importance of early diagnosis and treatment of, (3) 2120—ab
Epileptics, affections of spinal cord in, *1717
as automobilists, (64) 1861—ab
coagulating power of blood serum in, (117) 2046—ab
improper management of, (101) 390
Epiphora, nasal treatment of, (95) 974
Epistaxis, (89) 1138
Epithelial formations in lymph glands and spaces in pelvis, (77) 1336
metaplasia in uterus, (76) 1336
Epithelioma, benign cystic, *1147
contagion of birds, (55) 1599
distribution and treatment of, of lower lip, (23) 463
late results of x-ray treatment of cutaneous, (5) 2119
of antrum of Highmore, (82) 541
of ear, (56) 1856
of larynx, total laryngectomy for recurrent, (3) 462—ab
of lip, (84) 815—ab
of lip, rapid cure of, (85) 1514
of lip, successes and failures in Roentgen therapy of, (104) 237
of ocular conjunctiva of unusual size, (68) 462
of orbit, (25) 1594
of tongue, (32) 1687—ab
of tongue with secondary growths in glands of neck and liver treated by x-rays, (13) 239—ab
primary of vulva, (33) 2178
Roentgen ray in, lupus and tertiary syphilis, (21) 2036
treatment of, by caustic potash, (38) 720—ab
treatment of, with Finsen phototherapy, (91) 903—ab
Epithelium experimental production of proliferation of, (87) 2128—ab
permeability of germinal, (88) 1235
Epityphlitis, results of treatment of, (64) 466
Equino-varus, double congenital, in twins, (70) 2122
Erb's disease, (108) 315
paralysis, participation of diaphragm in, (55) 394
Ergot, therapeutic value of, (6)305-ab
Eruptions, bromide, pathogenesis of, (42) 76
Erysipelas, acute and chronic suppuration of ear and nose direct cause of facial, *2052
intrauterine, (100) 1774—ab
of lungs, (94) 244—ab
of pharynx, case of primary, (18) 807
Erythema autumnale, (24) 1960
induratum (Bazin), (36) 2041
nodosum, (66) 1856—ab
nodosum, etiology of, (108) 2130—ab
nodosum of mucous membranes in relation to syphilis, (17) 2177—ab
Erythrocytes, granular, (81) 395
Esmarch chloroform inhaler, modification of, *855
Esophagus and stomach, diffuse phlegmons of entire, (59) 1422
and upper air passages, direct examination of, (4) 898
carcinoma of upper end of, with perforation into trachea, (35) 896—ab
closure of, from stomach, (127) 976—ab
diagnosis and therapy in fusiform enlargement of, (53) 643
etiology of carcinoma of, (72) 1597
examination and surgery of upper end of, *1695
median incision of, (67) 1517—ab
morpbin in treatment of stenosis of, (103) 1143—ab
peptic ulcer of, (29) 808—ab
rapid and permanent cure of an old caustic stricture of, by thiosinamin, (98) 546
removal of an open safety pin from, (30) 1328, (45) 2038
retrograde current in, (61) 1141—ab
second case of vertebral echondrosis caused by kinking of, (84) 545
stenoses of, (86) 237
stricture of, treatment of traumatic, by dilatation, (47) 539—ab
traction diverticulum of, (92) 1774
Ether air anesthesia or drop method for administration of ether, *1653
more, less chloroform, (3) 2035
narcosis by rectum, (54) 1057
operations during first whiffs of, (95) 2045—ab
Ethics, medical, (104) 309, (79) 1768
Ethyl-chroid anesthesia, (41) 2038—ab
as general anesthetic in conjunction with ether, (2) 1959
as general anesthetic in minor operations, *502, *1655
Eucalyptus, acute poisoning with oil of, (15) 75
Eustachian tube, catheterization of through mouth, (70) 390
Eventration diaphragmatic, (100) 1691
Evidence, testimony and, in medicine, *1368
Evil, etiology of social, *2075
relation of medical profession to social, *29
Examination, medical, considered as an exhibit to a commercial contract, (113) 237
Examiners, life insurance, in relation to companies, (111) 237
life insurance medical, medical examiners' associations and reciprocal relations between life insurance companies and ourselves, (115) 237
mistakes made by insurance, (112) 237
Exanthemata, diagnosis of, (143) 74
Excremental pollution, bacterioscopic analysis of, (4) 1769—ab
Exercise, influence of rest, and sleep on gastric digestion, (42) 896—ab
Exercise in treatment of spasmodic paraplegia, (37) 393—ab
Exertion, effect of bodily, on opsonic index of healthy persons, (3) 541
influence of great physical, on circulatory apparatus, kidneys and nervous system, (73) 1862—ab
Exophthalmic-goiter, (35) 724, (83) 1958—ab
cardiac neuroses and, (112) 1603—ab
cause of jerking of head in, (62) 159
clinical study of 80 cases of, (4) 2175—ab
dietetic treatment of, (73) 1064—ab
diphtheria antitoxin in treatment of, *1486
Gifford's lid symptom in, (62) 1957
heart in, (115) 2046—ab
metabolism in case of, (91) 1518
nervous system, (73) 1862—ab
new eye symptom in, (41) 236—ab
operative treatment of, (57) 1335—ab
pathology of, (55) 1140—ab, (38) 1855—ab
possible case of intratracheal arteriovenous aneurism or, (125) 238
Roentgen treatment of, (63) 1063—ab
serum having therapeutic value in treatment of, *661
serum treatment of, (16) 719—ab, (7) 2036—ab, (9) 2120
surgical treatment of, *665
therapeutic value of antithyreoidin in treatment of, and kindred affections, (37) 153—ab
thyroid extract in, (71) 902
treatment of, (28) 1771—ab
treatment of, with serum from thyroidectomized goats, (91) 79—ab
two cases of, *1561
Exophthalmos in leukemia, (8) 2175—ab
pulsating, (22) 967—ab
Expedition to the Amazon, 1905, first report of, (20½) 1139
Experiments, contact, (22) 76
what value have, on frogs for application in clinic, (26) 642
Expert, modern medical, vs. St. Paul, et al, (24) 1055
Extension technic, simplified, (70) 1335
Extremities, asphyxia, local and gangrene of, of tuberculous origin, (32) 239
Bier treatment of infections and septic wounds of, (11) 1512—ab
Exudates, pleuritic, in children, *1296
Eye, affections of, in relation to pelvic disorders, (41) 1856—ab
and ear, effects of abnormalities of, on mental and physical development of children, (112) 1230
associated coloboma oculi and arteria hyaloidea persistens, (77) 1685
bacteriologic examinations of cerebrospinal conjunctival sac in typhoid and in pneumonia, (55) 1417—ab
bilateral removal of lens in high myopia following use of dionin, (42) 2176
center of motion and angle alpha, (84) 1685
choroidoretinal sclerosis with spontaneous dislocation of lenses, complete and incomplete, (81) 1685
cinders in, (41) 1417
clinic of University of Breslau, (91) 1058
compress syphon, (54) 1957
conjugate lateral deviation of, *490
couching of lens as practiced by native practitioners in India, (31) 1139
diagnostic significance of reflexes of, (53) 241—ab

Eye, differential diagnosis and prognosis of tumors of uveal tract of, *409
dionin in diseases of, (105) 1597, (60) 1957
diseases, subjective symptoms in, (40) 971
diseases, treatment of some, by general practitioner, (109) 1857
droppers, improvised pocket-case for, *777
epithelial formation in iris, (69) 970
foreign bodies in, (66) 1688
foreign body retained in orbit for nearly four years, (32) 724—ab
general diseases as cause of diseases of, (77) 722
gonococcal infection in reference to, (123) 74
grounds, changes in, in otitic diseases of brain, cerebral membranes and sinuses, (100) 2039
inflammations, external, of doubtful origin, (17) 1594—ab
influence of suction hyperemia on healthy, and on course of eye affections, (86) 1964—ab
injuries of, (76) 154
injuries to, with birdshot, *421
instillation of pure carbolic acid into, *37
instrument with which powder may be introduced readily into interior of, (53) 1957
intraocular foreign bodies in, (44) 720
melanosarcoma of inferior rectus muscle of, (71) 970
monocular visible spasm of central artery of retina, (74) 897
movable artificial, (39) 1136
new contribution to congenital pigmentation of cornea of, (82) 1685
notes on ocular syphilis, (51) 1417
observations on methods of advancement, (93) 970
ocular factors in etiology of spinal curvature, (9) 459—ab
ocular injuries from foreign bodies, *770
ocular injuries from glass and stone, (67) 897
ocular insufficiency and some of its results, (8) 1054
ocular manifestations in intracranial diseases of otitic origin, (79) 1058
ocular manifestations of nephritis, (99) 722
ocular symptoms of nasal origin, (88) 1685
old and new in ocular therapeutics, (12) 391—ab
ophthalmic practice of present time, *485
ophthalmic sins of hospitals, (78) 1685
ophthalmic subjects in Talmudic literature, (73) 897
optical defects of normal, (84) 1514
paraffin plates as aid in operations for extensive symblepharon of, *570
progress of year in recognition of eyestrain reflexes, (83) 1685
pupil reflexes originating in viscera, (108) 1864—ab
quinin-caffein treatment of, for hay fever, (88) 2044—ab
recent advances in ophthalmologic therapeutics, (27) 1594
reflexes from, in narcosomania, (71) 309
series of cases illustrating ocular complications of hysteria, (38) 2176
severe injury to left orbital region of, with paralysis of several cranial nerves, (41) 2176
so-called leucosarcoma of iris, *418
some axioms concerning ocular rotations, *353
staining and examination of bacteria of, by simple practical methods, *89
strain as a cause of headaches, (28) 463
strain and crime, (47) 1596
strain and its symptoms, (15) 463
strain, headache and, *1521
strain, hysteria due to, (82) 1768
strain, incurable, *734
strain, life and career blighted by ignored, (80) 1685
strain, physical disturbances in distant parts of body due to, (49) 1597—ab
strain reflexes, progress of a year in recognition of, (83) 1685
strain, unusual case of, (73) 2039
striking idiosyncrasy to use of cocain in, *1486
Eye, study of 3,436 cases of senile cataract, (14) 1765—ab
study of convergence and its effects, *670
subconjunctival injections in diseases of, (78) 1229
treatment of opacity of cornea by physical agents of, (34) 812—ab
treatment of progressive atrophy of optic nerve due to acquired syphilis, *823
tubercular affections of, (70) 640
two cases of optic neuritis, (30) 1687
use of electro magnet and x-ray in removing foreign bodies from, (42) 236
value of x-rays in ocular therapeutics, *994
Eye-ball, origin of atrophy of, (63) 242
pathogenic bacteria of, *324
sign, negro's, of facial paralysis, (56) 902
treatment of perforating, infected wound of, (130) 976—ab
Eyes and ears of school children, (128) 154
infection of 300, with bacteriologic examination, (77) 970
inflammation of, due to infection from hay fever conveyed by tobacco smoke, (78) 462
of new-born, (152) 74
persistent hyaloid artery in both, unusual variety in one eye, (69) 462
physiology and pathology of movements of, (121) 1691
unusual success from iridotomy in practically blind, from iridocyclitis and complicated cataract, (8) 806

F

Face lotion, *1629
Farmfield reformatory for inebriate women, (73) 309
Fat and carbohydrates, (41) 1233
appearance of, in muscles after crushing of cervical vertebræ, (106) 2045
importance of, in food of nursing women, (77) 1063
in cocoa, (69) 544
in tumors, (93) 1774
percentage, variation in, of mother's milk as factor in feeding, (30) 640, (127) 1230
reasearch on absorption of, in intestines, (114) 975—ab
splitting of, in stomach by action of ferment, (110) 975—ab
Fats, absorption of, in infants, (11) 1598—ab, (109) 1691
proteids and carbohydrates, digestion of, in first year, (120) 722
Fatigue, influence of, on dogs after partial removal of parathyroids, (98) 1863
Faucial pillar retractors, (25) 1328
Favus, (49) 1772
scutulum, anatomy of, (52) 1772
Feces, clinical examination of, (68) 154—ab, (17) 155, (46) 640—ab
dissolved albumin in, of adults, (83) 1862
examination of, of twenty-five starch-fed infants, with clinical observations, (24) 1227—ab
incontinence of, (24) 640—ab
nitrogenous constituents of infant's, (108) 1691
Fecundation, mishaps with artificial aids to, (79) 972
Feeble-minded, training of, (42) 643
Feeding, alkalized buttermilk in infant, (56) 1062
artificial, of infants in tropics, (59) 896
infant, (47) 1685, (110) 1857
infant, in wage-earner circles, (87) 1063
principles of, in typhoid and in other fevers, (13) 234—ab
physiologic limitations of rectal, (22) 1854—ab
problem, some phases of, (22) 2037
rectal, (60) 390
rôle of pure cow's milk in infant, (21) 388
sodium citrate in infant, *1080
study of proteids in infant, with special reference to whey proteids, (34) 2037
trend of pediatric opinion concerning artificial, of infants, *1083
unheeded principles involved in dieting hot weather, *398
Fees, division of, (7½) 459
feeling for, (23) 895
medical, in country practice, *1065 (62) 2122—ab
Feet, brace to aid in treatment of flat or weakened, (44) 968—ab
treatment of faulty weight bearing in weak and flat, (64) 2123—ab
Female, morbid processes in right abdominal and pelvic regions of, and their distinction, (13) 387
Femur, ambulatory treatment of intracapsular fracture of neck of, (89) 2123
fractures of upper portion of, (76) 1514
osteomyelitis of, (50) 308
treatment of fractures of, *581
treatment of old fractures of neck of, (71) 1141
Fergus operation for ptosis, (22) 1595—ab
Ferment action, determination of proteolytic, (62) 1335, (93) 2045
Ferments, proteolytic action of intracellular, (28) 2177
Ferns, new Philippine, (79) 970
Fetation in closed accessory horn of uterus, (88) 973—ab
Fetus, age of, (79) 2128—ab
amorphous anidcus, a specimen of, (40) 1855
dystocia from cystic kidney in, (3) 2121—ab
mummified, of 13 years' standing, (41) 2121
transmission of kidney changes to, (124) 548—ab
Fetuses, exceptionally large, from obstetric standpoint, (85) 1235
Fever, blood findings in puerperal, (69) 77
glandular, (34) 239—ab
in childhood due to other causes than scpsis, (7) 151
intermittent, in pneumonia, (70) 1063
is Calcutta, seven-day, a form of dengue? (36) 2125
observations in treatment of continued, (89) 722
puerperal, prevention and treatment of, (79) 1958
puerperal, treated by utero-vaginal drainage, (8) 639—ab
should cold baths be given for, in young children? (13) 459—ab
surgical, (45) 720
tertiary syphilitic, (96) 244—ab
treatment of, in pulmonary tuberculosis, (101) 237
utility of saline solution in treatment of, *1551
Fevers, classifications of the nonspecific surgical, (29) 234
treatment of puerperal, with Paltauf's streptococcus serum, (63) 1600
Fibers, formation of elastic, (94) 1964
Fibroadenoma, large, of nasal fossa, (84) 541
Fibrocystoma, multilocular, involving uterus, (87) 309
Fibroglia fibrils, significance of, an embryologic study, (43) 640
Fibroid tumors of uterus, *1881, *1998, *2065
Fibroids, etiology of uterine, (16) 1226
uterine, associated with gallstones, *1299
uterine, complicating pregnancy, (100) 2124—ab
Fibrolipoma, congenital, of palatine tonsil, (76) 74
small, of ileum resulting in obstruction of bowel, with consideration of various forms of benign intestinal tumors, (10) 1512—ab
Fibromata, 144 abdominal hysterectomies for, (25) 1333—ab
miliary follicular, (40) 1771
wandering, parasitic or aberrant retroperitoneal uterine, (125) 898
Fibromyoma, cystic, of uterus, (24) 1333—ab
Fibromyomata, some questions concerning treatment of uterine, (52) 1137
Fibrosarcoma, multiple of tongue, *2003
Fibula, fractures of, (106) 467
Field, undeveloped, advantages that may be derived from making examinations for accident insurance companies, (109) 237
Filarial larva in blood of a blackbird, (4) 1685
Filariasis, (25) 1683—ab
Filigree, five years' experience with, intended to prevent and to cure abdominal herniæ, *754
Finger joints, congenital ankylosis of, (81) 1063
Finger prints, system of personal identification by, recently adopted for U. S. army, *1175
Finsen light, action of, on normal skin, (45) 1772—ab
phototherapy, treatment of epithelioma with, (91) 903—ab
treatment, action of heat in, (54) 1961
Fire, physical effects of gun, (132) 238
Firearm wounds in peace, (73) 395
wounds of joints, (87) 243
wounds of skull, (47) 240
Firearms, effects of Japanese, (64) 2043—ab
injuries from, of small caliber, (63) 1140
First aid packet, new, (58) 897—ab
Fissures, postpartum anal, five cases of, (106) 315
Fistula, aneurism of arch of aorta producing a bronchoesophageal, (37) 1684—ab
cholelithiasis, between gall bladder and bronchus, (58) 1335
in-ano, epithelial lined, in an infant, (34) 306
of thoracic duct, in relation to morphology of blood, (116) 2130
treatment of postoperative, by vaccines according to Wright's principle, (76) 1601—ab
two cases of branchial, (22) 811
Fistulas, closure of ureterovaginal and vesicovaginal, (20) 71
following gastric ulcer, (38) 901—ab
locating, in lower intestinal tract by injecting hydrogen dioxid through anus, *111, (80) 237
new and improved method of closing vesicovaginal, (42) 538—ab
passive congestion in treatment of tuberculous, (75) 1142—ab
technic of repair of large vesical, (38) 539—ab
Fixation, field of, and methods of measuring it, (77) 462
Flat-foot, and symptomatic arches, (118) 970
diagnosis and treatment of, (67) 242
progress in treatment of, (92) 545
Flies, anatomy of biting, of genera stomoxys and glossina, (18) 76, (15) 239, (21) 392, (23) 543, (24) 812
mosquitoes, etc., to gather and preserve, (56) 971
occurrence and habits of some species of human biting, belonging to families tabanide and muscide, from west coast of Africa, (31) 1961
Flora of Lamao Forest Reserve, (78) 74
Flour in infant feeding, (65) 1517
Fluid, cerebrospinal, in congenital syphilis, (68) 1063—ab
Fluoroscope in diagnosis of aneurism, *687
Fluoroscopic examinations, substitute for dark room during, *1486
Fly, rôle of house, and other insects in spread of infectious diseases, (64) 237
observations on breeding ground of common house, and description of species of moth fly, (23) 1515
Food and digestion in warm climates, (22) 1770
and food preservatives, (3) 898—ab
are preservatives in, injurious to health? (121) 2124
factor in disease, (29) 392
natural supervision and standardization of, *1371, (16) 1515—ab
of natives of India, (21) 1770
preservatives, legislation regarding, (15) 1515—ab
typhoid water and, (43) 312
value of whey-proteids, (31) 640
values and their practical application, (105) 970
Foods, inspection of tinned, (23) 899
some kitchen tests to detect adulteration in common, (40) 1956—ab
Foot, deformities of arch of, and of toes, (21) 1231, (19) 1332—ab
method of taking impressions of weight-bearing surface of, (23) 1687—ab
perforating ulcer of, cured by stretching plantar nerve, (58) 902
prosthetic appliance for use after partial amputation of, *1739
Football injuries, (75) 722
Footholder in applying dressings, (88) 1963
Forceps, (104) 970

Forceps and its alternatives when head is arrested in pelvic brim, (20) 305
gastroenterostomy and anastomosis, new clamp for, (73) 1141
modified artery, (25) 76
new method of applying obstetric, (53) 2121—ab
technic of, (31) 151, (108) 1138
use and abuse of obstetric, (44) 1417
Foreign bodies and Roentgen examination, (93) 1143—ab
bodies in bronchi, (41) 812
Forest reserve, vegetation of Lama, (74) 237
Formaldehyd, action on bacteria, (73) 902
disinfection of rooms by, comparative bactericidal value of various methods, (8) 1512—ab
Formalin technic, improved, for biologic test, (45) 643—ab
Formulary, National, *1826
Fossæ, morphology and embryology of nasal, of vertebrates, (74) 390
of Rosenmüller, observations on, (87) 1058
Fourth-of-July injuries and tetanus, *505
injuries, antitetanic serum in, *500
injuries, with reference to prophylaxis and management of tetanus, (119) 238
Fracture, ambulatory treatment of intracapsular of neck of femur, (89) 2123
automobile, (52) 813
complications with, of long bones at wrist, (7) 537
compound, of great toe and contusion of foot followed by phlegmonous erysipelas, (93) 722
compound, of patella, tabulation of all fractures in Boston City Hospital in forty-two years, (9) 1853—ab
isolated, of greater tuberosity of humerous, (75) 545
lower extremity of ulna as factor in Colles', (67) 309—ab
of anterior superior spine of ilium by muscular action, (14) 1853—ab
of astragalus, (116) 1230
of base of fifth metatarsal bone by indirect violence, (32) 1513
of calcaneus, (76) 545
of clavicle, (111) 1138
of clavicle, dorsal fixation of arm in, (72) 1517
of fifth metatarsal by inversion, (10) 895
of metatarsal bone, mechanism of, (53) 813
of olecranon, (69) 727—ab
of radius, (58) 813
of skull, six cases of, (117) 1230
of skull, temperature 92.8 F. following, (114) 898
of inferior maxilla, treatment of, with description of splint, *854
of upper end of tibia from indirect violence, (19) 463—ab
of vault, two cases of compound, with loss of blood substance, (126) 541
supracondyloid, of humerus, (10) 1328—ab
Fractures, causes of delayed and non-united, (37) 72
complicated, (106) 74
firearm, of extremities, (68) 2043
functional treatment of, (46) 725—ab
modern treatment of intracapsular, (7) 1682—ab
of femur, treatment of, *581
of humerus, (125) 722
of humerus, new splint for, (54) 963—ab
of neck of femur, treatment of old, (71) 1141
of patella, treatment of, *1177
of upper portion of femur, (76) 1514
open treatment of, (31) 967—ab
plea for exploratory incision in suspected depressed of skull, (54) 2121
principles of treatment of, (3) 1769
principles of treatment of, of upper extremity, (88) 1418
row of spikes for external prothesis of, (33) 156—ab
some general considerations in treatment of, by country practitioner, (86) 897
treatment of, (51) 153
treatment of compound, (69) 237—ab, (52) 462
treatment of ununited and compound, with bone-pins, (50) 1597—ab
union of, (39) 2041—ab
Frambœsia tropica in monkeys, (93) 1235
France, war against venereal diseases in, *1249
Fraud, abettors and accomplices of, (85) 390
Fremitus in pneumonia, (82) 467—ab
Friederich's tabes, four cases of, (106) 2129
Functions of uterosacral and round ligaments, (36) 808
Functional disorders, an important factor in causation and treatment of many so-called, (4) 2035—ab
Funiculitis, tropical, (76) 972
Furuncles, carbuncles and phlegmons, treatment of, (63) 1962—ab

G

Gall-bladder and bile passage, surgical treatment of, (85) 897, (124) 1138, (116) 1419
and biliary tracts, medical treatment of diseases of, (49) 1513
and ducts, cancer of, (118) 309
and ducts, disease of, with reference to stomach troubles, indigestion and dyspepsia, (55) 540
colic, (46) 2125—ab
diagnosis and treatment of acute infections of, (2) 1511
diseases, gallstones and, from standpoint of physician, *905
empyema of, (36) 1417—ab
multiple ulcers of, (16) 71—ab
review of fifteen hundred operations on, and bile passages with reference to mortality, (50) 809—ab
surgery of, with reference to chronic pericholecystitis, (118) 238
Gallstone affection, fatal hemorrhagic, (68) 813
affections, prognosis and treatment of, (120) 1692—ab
clinical history and diagnosis of, in gall bladder, the cystic or common duct, (58) 540
disease diagnosis of, in its early stages, (56) 540
disease, etiology and pathology of, (83) 897
disease, medical treatment of, *347, (73) 1601
ileus, (101) 1691—ab
patients, rest in open air for, (47) 643—ab
diseases, commonly overlooked or misleading symptoms of, (57) 540
operations, fifty, (81) 314
Gallstones and gall bladder diseases from standpoint of physician, *905
and lesions of neighboring glands, (116) 1965
associated with uterine fibroids, *1299
cases of, (26) 1771—ab
diagnosis and surgical treatment of, (83) 237
diagnosis of, (84) 897
importance of early recognition of, (31) 389
intestinal obstruction due to, (106) 2124—ab
of large size passed by rectum, (14) 642—ab
treatment of, (15) 151, (108) 2039
Galvano-cauterization of uterus (84) 2128
Ganglion cell and nerve fiber, (108) 1143
Gangosa, *1166
Gangrene of both feet and legs due to embolism and thrombosis of abdominal aorta, result of mitral stenosis and cardiac thrombosis, (13) 641
of both lids after slight trauma of brow, (85) 545
of vermiform appendix, and appendicitis considered as separate diseases, (8) 641—ab
Garrulitas vulvæ, (111) 975
Gastric acidity, relation of excessive, to gastric symptoms, *496
affections, ineffectual courses of mineral waters in, (85) 1964—ab
and duodenal ulcer, etiology and diagnosis of, *840
and duodenal ulcer, medical treatment of, *845
and duodenal ulcers, *842
cancer, diagnosis of, (50) 1061—ab
cancer, plasma cells in, (80) 1774
juice, acidity of, in case of chronic obstipation, (34) 1420
juice, examination of, (33) 311
juice, relations between, and intestinal putrefaction, (42) 1334—ab
juice, secretion of, (60) 1062—ab, (59) 2126—ab
mucosa, pathologic physiology of caustic injury of, (109) 2045
Gastric neuroses, (11) 1230, (45) 1417, (75) 1597
secretion after test breakfast, (96) 974
surgery, observations on, (44) 2041
Gastric-ulcer, *14, (78) 727—ab
and cancer, (16) 807—ab
and duodenal ulcer, surgical treatment of and its results, *912
diagnosis of, (10) 966
effect of gastroenterostomy on, (37) 1232
etiology of, (9) 1955
fistulas following, (38) 901—ab
medical treatment, (37) 1956
perforating, (58) 1513
postmortem findings in, (18) 1512
proper limitations of medical and surgical treatment of, (2) 639—ab
psychical and medical treatment of conditions underlying, (12) 2120
relations to gastric cancer, (12) 1328
results of operative treatment for perforated, (58) 242—ab
salient points of, and medicinal treatment in country practice, (88) 154—ab
some features of, (19) 719
subsequent history of thirty-two cases of chronic, previously reported, (16) 639
surgical treatment of, (32) 1232—ab, (65) 1601
symptomatology and diagnosis of, (20) 1765
treatment of, with record of cases, *838
two cases of perforated successfully operated on, (29) 2125
Gastritis, curability of chronic, (62) 1141—ab
diagnosis and treatment of chronic, (107) 154
Gastroenteritis, (54) 1417
Gastroduodenal dilatation (in splanchnoptosia), (76) 390
Gastroenterostomy and enteroanastomosis, new clamp forceps for, (73) 1141
and enteroenterostomy, technic of, (75) 78—ab
effect of, on gastric ulcer, (37) 1232
its indications and limitations, (18) 151
posterior, extreme gastroptosis, motor insufficiency, etc., (14) 1226—ab
two cases in which, was performed in course of operation for perforated ulcer, (14) 391—ab
Gastrointestinal disorders, in pulmonary tuberculosis, treatment of, (99) 237
disturbances associated with migraine, (19) 1512—ab
tract, relations of, to nervous and mental diseases, (15) 807
Gastrojejunostomy, three cases of, (5) 462—ab
Gastromesenteric ileus, (14) 538—ab
Gastroptosis, (104) 898
clinical study of, (27) 896
surgical treatment of, (77) 1857
Gastrosalivary reflex, (30) 239
Gastrostaxis or oozing of blood from mucous membrane of stomach, (14) 1858—ab
Gastrostomy, new method of, (66) 1141
Gastrosuccorrhea, intermittent, (93) 237
two cases of, or gastric hypersecretion, associated with atrophic cirrhosis of liver, (15) 719—ab
Gauze, removal of adherent strips of, (71) 1517—ab
Gelatin injections for aneurisms, (38) 464—ab
Genital activity, preliminary note on new theory of female, (34) 971
secretions, of new-born female infants, bacteriologic examination of, (37) 240
Genitalia, heterologous mesodermal new growths of female, (81) 1235
Genitourinary axioms, (78) 2039
organs, congenital abnormality of, (17) 543—ab
Genius, genesis of, (43) 1767—ab
German Psychiatrical Society, historical sketch of, (77) 313
Gestation, extrauterine, operation, living child delivered weighing three pounds, (49) 721—ab
results of vaginal section and drainage in early cases of ectopic, (40) 539—ab
sac, ruptured tubal, with secondary attachment of ovum to cecum, (14) 1682
Giant growth, congenital, (71) 727
Gifford's lid symptom in exophthalmic goiter, (62) 1957
Gingivitis, interstitial, due to autointoxication, *261
Glanders in guinea-pig, (50) 1599
Glands in neck, pathology in infants, (88) 814
internal secretions of certain, which elaborate external secretions also, (50) 153
peculiar pressure symptoms due to enlarged tuberculous bronchial, (28) 896—ab
Roentgen therapy of tubercular, (100) 154
treatment of tuberculous of neck, (27) 2120
tuberculosis of, (81) 1690, (30) 1771
tuberculosis of, simulating neoplasms, (109) 1519—ab
Glandular affections, clinical considerations of acute, (120) 2124
affections, management of chronic, (69) 1768
extracts, value of, (72) 810
lesions in infancy, (88) 815
Glasses, science and art of fitting, (1) 150, (97) 898
Glaucoma, acute, following instillation of several drops of adrenalin in cataractous eye, (26) 460-ab
posterior sclerotomy as preliminary to iridectomy in acute, (75) 970
traumatic, (97) 904—ab
unusual case of, (21) 719
Glioma of retina, (73) 970
Glossitis, study of literature from 1816 to 1906, (27) 1956
Gloves, rubber, in abdominal operations, (7) 1058
Gluteal muscles, embolic necrosis of, (74) 1861
Glycerin, nutrient value of, (45) 1333
Glycogen, further observations on influence of alcohol on metabolism of hepatic, *1467
Glycolysis, physiology of, (82) 74
Glycosuria and diabetes, (57) 242—ab
drugs in diabetic, (13) 1226—ab
in mercury cures, (79) 1234
intermittent pentosuria and, (13) 538—ab
suprarenal, (90) 1774
varieties of, (83) 74
Goats, examination of, in Malta, with view to ascertain to what extent they are infected with Mediterranean fever, (21) 76
Goat's milk, infantile mortality and, (20) 1859—ab
Goiter, epidemic of, (35) 2178
influence of on growth of children, (95) 904—ab
surgical treatment of, (84) 1958—ab
three thousand operations for, (35) 1233—ab
treatment of, (85) 467
Goiters, bone formation in, (71) 545
Gonioscope, model for new ophthalmotrope, some phases of ocular motility, (13) 806
Gonococcal cutaneous metastasis in skin, (34) 76
Gonococcemia in an infant, (89) 973
Gonococcus, infected by, (120) 74
Gonorrhea, (43) 1329
acute, in male, (134) 898
and its effects in women, (105) 154
disadvantages of injections for acute, (57) 313—ab
gonosan and treatment of, (57) 726—ab
in children, (42) 1687
in women, (93) 1418
its treatment from standpoint of military surgeon, (51) 896
medicines used in treatment of, (70) 1958
passive congestion treatment of, (49) 1061—ab
protection for body linen in, (80) 243
puerperal, (83) 1235—ab
silver nitrate and zinc in chronic, (71) 972—ab
surgical treatment of, in women, (95) 722
treatment of acute, (71, 72, 73, 74) 1958
treatment of, by irrigation, (50) 897—ab
treatment of, in male, *1828
Gonorrheal lesions other than of genital tract, (52) 1330—ab
Gonosan and treatment of gonorrhea, (57) 726—ab
Gout and rheumatism, (104) 1230
elimination of uric acid in, and alcoholism, (10) 2127—ab
essence and treatment of, (38) 312—ab
successful mercurial treatment of, (105) 546
visceral, especially gastrointestinal form, (54) 313—ab

Goux system and its application to India, (28) 76
Graduates, talks to recent, (69) 1514
Graft, psychology of, (21) 72
Gram staining technic, (119) 975—ab
Granulations, exuberant, (116) 1959
Granuloma pudendi, observation of spirochetes in yaws and, (5) 1685
telangiectatic, (108) 1603
Greifswald medical school, historical sketch of, (112) 975
Griffith water sterilizer, (29) 1599
Grippe, effect of, on circulatory apparatus, (114) 1965
influence of, on other infections, (67) 902—ab
Grocco triangular dulness of, (70) 160—ab
Ground itch, causative factor in production of dermatitis of (uncinariasis), *1693
Growth and nutrition, influence of excessive meat diet on, (11) 542—ab
disturbances in, after brief Roentgen radiation, (72) 78—ab
Growths, malignant and non-malignant, (94) 722
Guarnieri's intra-epithelial bodies, (57) 1599
Gumma, bilateral, of orbits in child of eight years, (74) 462
contagiousness of, (2) 305—ab
subcortical cerebral, accurately localized in comatose state, (98) 154
Gummata of cornea, (85) 1685
Gunshot wound, penetrating of abdomen, operation with recovery, (61) 1513
Gymnastics, use and abuse of pulmonary, in tuberculosis, (17, 18) 388—ab
Gynecologic cases, ureteral symptoms in, (24) 539—ab
postoperative cures, relation of major, to country doctor, (105) 1138
service, report of year's work in, of Samaritan hospital, including technic, (11) 718
Gynecology, (92) 1058
and obstetrics, factors which have contributed to better results in, (92) 1229, (67) 1958
conservatism in operative, (40) 1417
German, (106) 1419, (107) 1959
medical treatment in, (43) 1139
recent progress in, (68) 640
relation of, to work of general practitioner, (4) 1139, (120) 1959

H

Habits, a suggestion regarding management of alcoholic and drug, (85) 154
Hair, premature loss of, (99) 467
Hallucinations from starvation, (25) 642—ab
Hammamelis virginica, (46) 1961
Hand disinfection and asepsis in laparotomies, (72) 1423
joints, portable apparatus for ankylosis of, (20) 2177
recurrent swelling of dorsum of, associated with appearance of bruising following a blow, (27) 1859
Hands of surgeons and assistants in operations, (8) 811
Harelip, genesis of, (78) 545
operation, dressing after, *2091
Harpoon, recovery from piercing of body with hay, *1190
Harvard medical school, (1, 2, 3, 4, 5) 1225
Hastings, Sir Charles, the founder of British medical association, (30) 719
Hawaii, climate of, (64) 810, (84) 1769
Hay-fever, (102) 1230
and persistent bronchial asthma relieved by treatment antrum of Highmore, (5) 966—ab
antitoxin treatment of, (27) 72
inflammation of eyes due to infection from, by tobacco smoke, (78) 462
palliatives in, *265
pollantin therapy of, (68) 1601
serum treatment of, (48) 1060, (64) 1517
simple contrivance for relief of, *1300
Head and neck, technic and results in excision of cancer of, (32) 1136—ab, (71) 1597, *1780
apparatus to induce hyperemia in, (99) 1603—ab
extraction of detached, (87) 78
injuries of, indications for immediate operation in, (107) 309
injuries of, relation of late epilepsy to, (108) 309
Head, injuries of, scope and importance of subject, (106) 309
new management of occipitoposterior positions of fetal, (6) 806—ab
nodding with nystagmus in infancy, (6) 641
removal of detached, retained in uterus, (69) 1962
rhythmic jerking of, (65) 902
sections with superior method of illustrating anatomic and surgical subjects, (109) 1959
trauma of, and psychoses, (109) 309
Headache and eyestrain, (28) 463, *1521
as symptom in intranasal disease, (51) 640
chronic, associated with pelvic diseases, *1525
intracranial disease as cause of, (26) 463
of nasal origin, (29) 463—ab, (35) 1687, (9) 2039
tablets, acetanilid poisoning by, *2012
Headaches, causation and treatment of, (24) 463, (78) 1768
constitutional, *1524
due to aural disease, *1523
notes on, (77) 154
ocular, (73) 154
of renal origin, (25) 463—ab
Head's zones in respect to affections of digestive organs, (49) 1421
Healing, rapid, in septic cases, including the use of iodoform wax in bone cases, (51) 73—ab
Health and mortality of cotton-mill operatives of Blackburn, England, (3) 639
economic advisability of inaugurating national department of, *1003
inspection as applied to individual, *651
preservation of, among personnel of Japanese army, (33) 543
state control of, (14) 1514
Hearing, functional examination of, with tuning forks in monolateral deafness, with deductions on bone conduction and function of sound-conducting apparatus, (58) 390
Heart, acute dilatation of, in newborn, (30) 1420—ab
affections among wage-earners, (117) 1776—ab
affections, modern treatment of, (48) 240—ab
and stomach affections, mutual relations between, (49) 241—ab
auriculoventricular bundle of human, (12) 811
block, electro-motive changes in, (7) 391—ab
block, study of, (89) 1518—ab, (9) 1770—ab
bullet wounds of, (72) 2044—ab
cardiac neuroses and exophthalmic goiter, (112) 1603—ab
cardiac syphiloma with bradycardia and obstruction of inferior vena cava, (12) 641
cases, artificial Nauheim baths in chronic, (2) 1054—ab
congenital malformation of, with malposition of certain viscera and absence of spleen, *363
contribution to study of spanemic, (11) 807—ab
difficulties in diagnosis of cardiac diseases, with reference to children in public schools, (12) 387
dilatation and hypertrophy of, and some other points in cardiac pathology, (3) 238—ab
disease, arterial blood pressure in, (14) 1419—ab
disease, congenital, (4) 238—ab
disease, management of advanced, (1) 1686—ab
disease, relative frequency of, in children in different countries, (32) 640
disease, zone of rupture in liver in, (32) 311—ab
diseases, diagnosis and prognosis of, (116) 898
diseases, indications for interruption of pregnancy in reference to, (99) 1959—ab
diseases, organic, and immunity from pulmonary tuberculosis, (43) 1596—ab
dulness, orthopercussion and relative, (84) 1518—ab
effects of pericarditis on, *1429
electro-physiology of, (90) 396
examination of, (131) 1966
examination of, when lying on left side, (59) 1772—ab
exposure of, in case of injury, (79) 1142—ab
failure in cardiac compensation, (114) 2130
Heart failure, resuscitation of patient apparently dead from primary, (29) 1687—ab
fatty degeneration of, (91) 74
gummatous infiltration of auriculo ventricular bundle, (26) 2125
importance of elastic tissue in, for diastole, (95) 1964
in exophthalmic goiter, (115) 2046—ab
influence of bodily posture on position of, (14) 1686—ab
in nephritis, *1354
in puerperium, (14) 234
lesions of, and surgical operations, (64) 153
light and currents of air in chronic affections of, (19) 2177
magnate's, (44) 1513
measurement of energy of, (114) 1775—ab
muscle, electric treatment of weak, (64) 1772
muscle, functional tests of, (62) 544—ab
muscle, multiple rhabdomyoma of, (29) 896—ab
neurosis of, and arteriosclerosis, in consequence of trauma, (47) 394—ab
observations in case of palpitation of, (46) 1057
organized thrombus in, (124) 1965
orthodiagraphic examination of, in children, (112) 1691
percussion findings with enlargement of, (83) 815—ab
percussion of outline of, (61, 62, 63), 2127—ab
prognosis and treatment of chronic valvular diseases of, (72) 1418
recognition and importance of chronic myocardial disease, (117) 898
record of movements of, at left auricle, (121) 975—ab
Roentgen outlining of, (40) 156
size and position of normal and its dependence on physiologic conditions, (55) 2126
some aspects of dilatation of, (13) 1770
sound, first, (92) 396—ab
sounds, reduplication of, *2148
sounds, to detect fetal early, (86) 1142—ab
spontaneous rupture of, (15) 538—ab
spontaneous rupture of, in senile dementia, (16) 538—ab
stomach and spleen, congenital protrusion of, (58) 810—ab
suture of, (74) 78
suture of perforating wound of, death on eleventh day, (11) 1230—ab
tonics and stimulants, (46) 1685
topographic percussion of child's, (85) 1690
transposed, *1737
treatment of cardiovascular disease, (110) 2039
treatment of fatty, (89, 90, 92, 93) 74
tuberculosis of, (73) 314—ab
unusual murmurs of, (140) 74
valves, tumors of, (101) 1964
valvular diseases of, in British troops, native troops, etc., (40) 1599
visceral ptosis and movable, (80) 902
Heat as means of purifying water, (30) 1599
Hebotomy, (81) 467, (28) 538, (82) 1518
Hellebore, case of poisoning with, (117) 1419
Helminths, cancerous tumors and, (36) 812—ab
Hemangioma and its treatment, (64) 1685—ab
Hemangiomata, multiple cavernous, of intestine, (115) 810
Hematemesis, complicating malaria, (115) 1857
in cholelithiasis, (37) 1961
in typhoid, (28) 724
Hematom-mole, Breus, (32) 307—ab, (32) 1333
Hematoma, diagnosis of intradural, (61) 1335—ab
of new-born, *274
sudden, of uvula, (26) 239
valvular, in new-born, (85) 1774
Hematomyelia, case of, due to trauma, (16) 391—ab
Hematosalpinx, case of, rupture and hemorrhage into peritoneal cavity (23) 640
Hematuria, (47) 312—ab, (63) 724, (84) 1857
endemic, (18) 1420—ab
Hematuria, of renal origin, (53) 640
of vesical origin in pregnant woman, (28) 1333—ab
vesical, (51) 2121
Hemianopsia, visual hallucinations on blind side in, (91) 390
Hemiplegia, intracortical, (65) 1335
two cases of infantile, (27) 1420, (98) 1603
Hemisystole, Leyden's, (77) 1235—ab
Hemoglobinuria, case of quinin, or black-water fever, (3) 1959—ab
malarial, *1896, *1992
Hemogregarine of mammals (H. Balfouri), and notes on rats, (27) 1599
Hemolytic agent, probably member of purin group obtained from urine in case of pernicious anemia, (12) 1956—ab
Hemophilia, injections of sea water in, (61) 1688—ab
joint affections of, (4) 1593—ab
treatment of purpuric conditions and, *1090
Hemoptysis as sequela of epileptic convulsions, (20) 967
a suggestion in treatment of, (25) 807
in an infant, (42) 1421
treatment of, in pulmonary tuberculosis, (98) 237
vasodilatation in, (36) 724
Hemorrhage, amaurosis following acute anemia from, (70) 462
cerebellar, (43) 1516
concealed accidental, (4) 1857—ab
direct transfusion of blood in treatment of, *1482
early diagnosis of abdominal, *1277
early operation in traumatic intracranial, (36) 1329
fatal, from perforation of intestine by gallstone, (40) 236—ab
from stump following appendectomy, *2009, (62) 2039
from uterus during gestation, (70) 1330
in new-born, *1145
intestinal, and perforation, (111) 1419
into vitreous, (47) 2038
intraperitoneal, influence of intraperitoneal injection of warm sterile normal saline solution in, *1460
observations on surgical, (31) 538
points in diagnosis and treatment of accidental, (107) 2124—ab
postpartum, (16) 811, (114) 1138, (90) 2039
submucous, right vocal cords, (27) 1328—ab
spontaneous intracranial, associated with trigeminal nevi, *178
traumatic, into left lateral lobe of cerebellum; operation; recovery, (26) 967
treatment of, *189
treatment of, from digestive tract, (51) 1334
uterine, (54) 543
Hemorrhages, differential value of occult, in stomach affections, (43) 464—ab
etiology of punctate, in appendix, (76) 78
occult gastric, (33) 239—ab
occult, in typhoid, (16) 306—ab
ordinary, from kidneys, (75) 1601
retinal, in apparently healthy eyes, (122) 541
significance of uterine, of menopause, (44) 808
tuberculosis in miliary retinal, (128) 1691
unusual, in eclampsia, (23) 2176
Hemorrhagic discharge, symptomatic importance of, from ear, (99) 1863
disease of new-born, (80) 1768, (58) 1856
Hemorrhoids, (36) 720
etiology and treatment of, (107) 722
high, as cause for occult hemorrhage, (72) 1141
improved technic for operation for removal of, (31) 72—ab
individual excision and suture in removal of, (56) 809
office treatment of, (39) 389
simple operation for, (36) 464—ab
treatment of, (64) 1234
Hemostasis, Wyeth's method of, in amputation at hip and shoulder, (39) 461—ab
Heredity and environment as factors in life and diseases of children, *760
as factor in life expectancy, (119) 898
in gynecology, (27) 234

Heredity, Mendelian, and its application to man, (1) 462
rôle of, in reducing degeneracy in man to minimum, (22) 1415
Hermaphroditism, rare case of, (39) 1855—ab
Hernia, abscess near base of bladder simulating femoral, (26) 392—ab
appendectomy through operative wound for radical cure of right inguinal, *1738
congenital, of linea alba, (94) 2128
direct abdominal, of traumatic origin, *1485
etiology and treatment of oblique inguinal, (4) 155—ab
femoral, herniated appendix, and suppurative appendicitis due to pin, (14) 155—ab
inguinal, (12) 305—ab
inguinal, of bladder, *361
inguinal, of ovary, (79) 78
into ileocolic fossa, (30) 2037—ab
intra-abdominal, (115) 1144
new method of utilization of sac in radical cure of, (40) 967—ab
of appendices epiploicæ, (76) 1861
of bladder, (13) 305, (112) 1864—ab, (54) 2038
of diaphragm, (116) 1144—ab
of ovary and tube, *1707
of ovary, inguinal, (79) 78
of vermiform appendix, probably infantile, and perforated by pin while in scrotum, (13) 155—ab
pectineal crural (Cloquet), (71) 466
prolapsed ovary in femoral ring, simulating strangulated femoral, (48) 968—ab
radical cure of femoral, (13) 542—ab, (26) 1683
radical treatment of inguinal, (21) 642—ab, (71) 2044—ab
rare variety of inguinal, (50) 2126
saccular theory of and radical operation, (16) 1858—ab
seven cases of, treated by implantation of prepared filigree of silver wire, (17) 811—ab
strangulated, (49) 73
strangulation of appendix in hernial sacs, (20) 1686—ab
suppurating omental, (25) 1226
three hundred operations for, (10) 2120
torsion of omentum retrograde incarceration with inguinal, (42) 312
Hernias, classification of femoral, (72) 545
five years' experience with original filigree intended to prevent and to cure abdominal, *754
radical operation for large, (53) 1234—ab
Herniotomy, femoral, *751
Herpes, recurring, of nates, (39) 76
Herpes-zoster auris, (19) 1328—ab, (89) 1685—ab
pruritis in, (90) 79
sexualis, (58) 2126
High-frequency currents, physiologic and therapeutic actions of, with illustrative cases, (27) 812
spark in treatment of premature alopecia, (16) 459—ab
Hip, congenital dislocation of, *1094
congenital displacement, treatment of, (111) 1864
disease, conservative treatment of, (109) 1331
disease, diagnosis and differential diagnosis of, (41) 72
joint, spontaneous dislocation of, (21) 151—ab
joints, bilateral ankylosis of, (91) 1602
results from bloodless reduction of congenital dislocation of, (19) 1055—ab, (46) 2038—ab
treatment of arthritis deformans of, (86) 467—ab
treatment of congenital dislocation of, by incision, (30) 967—ab
Hodgkin's-disease, case of, (33) 389
influence of x-ray in treatment of leukemia and, *1262
relation of, to lymphosarcoma, (24) 1854—ab
Homatropin hydrobromate, effects of full and of minimum doses of atropin sulphate and of, (72) 897
poisoning, case of, (75) 462
Homburg Spa, dietetic regulations at, (98) 974—ab
Home, hygiene of, (4) 1331
Homeopathy, plea for broader view of, (83) 1514
Honors that have come to medical profession in America, (85) 1330
Hook, use of, for freeing arm, (40) 1333
Hookworm, American (Necator Americanus), in Guam and China, (50) 1057
Horse serum, new toxic action of, (43) 1056
Hospital, observation, for mental disease, (15) 71
operative technic in Wesley, (34) 151
problem, *318
proper place for delivery and management of puerpera, (25) 1956
reform in new light, (1) 1593—ab
report of year's work in gynecologic service of Samaritan, Philadelphia, including technic, (11) 718
service, observations in traumatic, including amputations, fractures, injuries of brain and spinal cord, (126) 74
Hospitals connected with medical schools, (2) 2035
cost of building, (68) 394
isolation, (55) 1597
small, for small places, (94) 309
state, for insane, their relation to public, (123) 1138
Housing problem as it is in Los Angeles (94) 1597
Huacos (mummy grave) potteries of old Peru (study in pre-Columbian pathology), (107) 970
Huff, case of Joseph, (33) 1956
Humerus, fractures of, (125) 722
injuries commonly associated with displacement of head of, (1) 154—ab
new splint for fractures of (54) 968—ab
supracondyloid fracture of, (10) 1328—ab
Huntington's chorea, (77) 728—ab
case of osteitis deformans with, (15) 1332—ab
Huxham, John, of Devonshire, (1692, 1768), (48) 1057
Hydatid disease, leucocytosis of, (34) 1516
Hydatiform-mole, case of, (25) 2176
seven cases of, (53) 462
Hydramnios, acute, treated by tapping, (93) 2039
Hydrastin and strychnin, novel method of using in sexual and vesical weakness, *2145
Hydrastis canadensis and ergot, physiologic action of, on uterus, (54) 77—ab
Hydrocephalus, fetal, as cause of delay in labor, (91) 1418
surgical treatment of congenital, *20
Hydrochloric-acid, significance of variation in stomach contents, (117) 970—ab, (61) 1229—ab
physiologically active, in stomachs of normal mice and mice suffering from cancer experimentally produced, (23) 1960
reaction to free, in stomach content, (61) 1962—ab
superiority of Petteruti test for, (89) 1863
Hydrocyanic acid poisoning, (68) 1963—ab, (60) 2039
Hydrogen dioxid, locating fistulas in lower intestinal tract by injecting, through anus, *111
Hydronephrosis, perirenal, (60) 1335
Hydrophobia, case of, (60) 1330
causes of failures in Pasteur treatment of, (112) 1965—ab
Negri bodies in, *87
paralytic accidents observed under Pasteur treatment of, (108) 1964—ab
Hydrorrhea gravidarum, (30) 724 (83) 2123
Hydrotherapy of Basedow's disease, (100) 546
old and new in, (41) 312—ab
some fundamentals in, (18) 2036—ab
Hygiene and sanitation, points in, of rearing children, (50) 721
influence of modern, on cities, (73) 814—ab
Japanese soldier's manual of, (47) 2041—ab
of home, (4) 1331
Hymenolepis diminuta, hymenolepis nana and, *2087
Hymenoptera, catalogue of Philippine, with descriptions of new species, (83) 970
Hyoscin hydrobromid and morphin, surgical anesthesia with, (16) 151, (61) 2039
Hyoscyamin and aconitin in treatment of fever accompanying suppuration, (107) 1597
Hyperchlorhydria, treatment of, (92) 1863—ab
Hyperemesis as indication for interruption of pregnancy, (100) 1959—ab
Hyperemesis, gravidarum, (115) 154, (71) 721
syphilitic in origin with spontaneous recovery, (77) 2039
Hyperemia, acute purulent otitis and mastoiditis, treated by artificially induced, of Bier, (45) 1137—ab
apparatus to induce, in head, (99) 1603—ab
artificially induced, as prophylactic for infected wounds, (77) 1963—ab
artificially induced in traumatic affections, (103) 2129—ab
experiences with artificially induced, (65) 1861
influence of artificial on healing of wounds of rabbits' ear, (47) 2176
influence of suction, on healthy eye and on eye affections, (86) 1964—ab
in pulmonary tuberculosis, (53) 1140—ab
passive, (135) 74, (85) 243—ab
passive in tuberculous synovitis of knee and infected wounds of palm, (86) 2123
study of Bier's congestive, from standpoint of endotoxin theory, (61) 726—ab
therapeutic value of artificial localized, in treatment of ambulatory or dispensary cases, (2) 806—ab
treatment of purulent otitis by congestive, (47) 1137—ab
Hyperesthesia of gastric mucous membrane and its treatment, (98) 390
vesical, (105) 810
Hypermetropia, high, (52) 1957
of 21 diopters simulating myopia, (123) 1594
Hypernephroma of kidney, (36) 538—ab, (62) 1856
Hypersusceptibility, *1007
Hypertension, diseases of digestive organs in pathogenesis of arterial, (15) 459
Hypertropia, case of (44) 236
Hypochondriasis, diagnostic significance of, (69) 1601
Hypnosis, induction of, (9) 970
Hypnotic suggestion, treatment by, (42) 971
Hypnotism, motor neurosis treated with, (100) 904—ab
Hypodermics, diffusion of, (63) 902
Hypophysis, sleep and, (45) 393—ab
Hypospadias through five generations, (130) 154
Hypothermia, migraine and, in tuberculous, (48) 901—ab
Hysterectomies, 144 abdominal, for fibromata, (25) 1333—ab
for large fibrocystic tumor of uterus; rupture of bladder wall; closure of opening by peritoneum, (127) 74
improved technic for total abdominal, (31) 392—ab
possibility of development of cancer in cervical stump following supravaginal, (11) 459—ab
renal retention of urine after vaginal, (34) 1060—ab
thirty-three consecutive, (27) 2125
total and subtotal abdominal, (24) 1059
unjustifiable, (110) 1331
Hysteria, association of, with organic diseases of central nervous system, (18) 234
case of epileptiform, probable result of necrosing ethmoiditis, (26) 1328
classical symptoms of, (14) 1594, (19) 1683—ab, (9) 1765, (7) 1853
definition of, (44) 725—ab
due to eye strain, (82) 1768
from point of view of dissociated personality, (15) 1328—ab, (18) 1415
major symptoms of, (15) 1956, (16) 2036, (17) 2120
ocular complications of, (38) 2176
simulating brain tumor, (45) 72
subnormal accommodation as manifestation of, (59) 2039
Hysteromyomectomy, utilization of broad ligaments in complete descent of uterus, and removal of uterine appendages, *1605
simplification of difficult, (92) 541
Hysteropexy followed by repeated pregnancies, (64) 1856—ab

I

Ice, composition of, (49) 813—ab
Ichthyol and its therapeutic value, (87) 2039
Icterus in pregnancy, (67) 160—ab
postoperative, (79) 815—ab
Ideals, student, (100) 1769
Identification, system of personal, by finger prints recently adopted for U. S. Army, *1175
Idiocy, amaurotic, family, (87) 2044
Ileocecal processes, tuberculous, (79) 1774—ab
Ileum, resection of, (37) 235—ab
Ileus, acute mechanical, (59) 1335—ab
caused by obturation of left flexure of colon, (62) 1772
delirium and death during convalescence from, (82) 903—ab
Ilium, fracture of anterior superior spine of, by muscular action, (14) 1853—ab
right posterior, (99) 541
Illegitimacy and education as a factor in prevention of criminal abortion, *1889
Immune bodies, gonococcus, (67) 1234
Immunity, (76) 313
agglutinins and precipitins, (15) 2176
Bail's recent views of study of, and comparison of protective inoculation with aggressin, with vaccination in plague, (63) 462
infection and, (76) 1597
ferment, (88) 1774
new terms for new conceptions in, etc., (83) 1424
theories of, (14) 2176
Immunization, active, against infectious diseases, (43) 643—ab
duration of, after injection of diphtheria antitoxin, (55) 1860—ab
Impressions of recent trip abroad, (96) 1769
Impotence caused by excessive consumption of bromo-seltzer, *508
Incinerator, an Indian, (29) 76
Incontinence, urinary, *1447
Incubator, new model for, (77) 1861
Independence day, injuries of, *17
India, life and medical lore of natives of, (83) 243
Indian service, plea for, for all ranks of corps, (30) 543
Indican and skatol in urine, (25) 311—ab, (42) 812
Indigestion, acute and chronic, (15) 1415—ab
chronic, (81) 722
surgical treatment of intestinal, (23) 1055, (67) 1137
Indo-China, official medical organization, (37) 812
three Pasteur institutes in, (47) 812
Inebriety, insanity of, (4) 1419
Infant feeding, (104) 1419
feeding, calorimetric principle in, (52) 1417
Infantile derangements due to improper breast feeding with suggestions for prevention and treatment of ricketts and marasmus, (84) 1418
Infantilism, case of, (8) 1058
causes of, (84) 1424
sexual, with optic atrophy in cases of tumor affecting hypophysis cerebri, (56) 1768
Infants and young children, observations on care and treatment of, (144) 74
appendicitis in, (48) 2126—ab
appointment of qualified women with reference to hygiene and feeding of (12) 723
bacteriologic and blood findings in bowel infection of, *2141
feeding of, during hot weather, (2) 71
further contribution to study of stools of starch-fed, *763
intestinal disturbances in, (86) 1235
method of artificial feeding of, in tropics, (59) 896
method of identifying, in lying-in-hospitals, (26) 2176
mortality of and its principal use—dirty milk, (3) 2175—ab
some unheeded principles involved in dietetic management of, during hot weather, *398
study of stools of breast-fed, in relation to presence of starch enzyme, (29) 640
trend of pediatric opinion concerning artificial feeding of, *1083
value of small quantities of human milk in treatment of atrophy and infections of, *1904
Infection and immunity, (76) 1597
bacteriology of puerperal, (71) 77
cryptogenetic streptococcus, (47) 1957

Infection, determination of end of danger of, from patients who have suffered from infectious diseases, (42) 163—ab
frequency of tuberculosis, by way of digestive tract, (47) 972—ab
gonococcic, in women, (7) 234
mortality from puerperal, (20) 538—ab
pneumococcal, during early life (3) 1598—ab
portals of entry and sources of, in tuberculous children, (85) 1229
primary pneumococcus, of digestive tract, (72) 160—ab
protection from cadaveric, (72) 1335—ab
puerperal, *434, (96) 1959—ab
route of, in female genital tuberculosis, (60) 2043
route of, of tuberculosis, (55) 241—ab
septic through fauces, (5) 1054
sociologic aspects of gonococcus, (96) 722
some phenomena of tuberculous, (90) 1958
sources of infectious agents and ways and means of, (63) 237
staphylococcus, (119) 548—ab
systemic, through tonsils, (3) 1054
to reduce possibility of, in abdominal surgery, (62) 726, (93) 1063
two cases of multiple, (7) 970
Infections and intoxications, menstruation as source of, (53) 902—ab
by bacterium coli communis with reference to urinary tract, (3) 233
influence of tuberculin on experimental, (112) 547—ab
plea for early surgical interference in pelvic, (3) 1853
Infectious-disease of doubtful nature, *433
differential diagnosis of acute, (11) 1328—ab
influencing by vaccination, (52) 1860—ab
biologic diagnosis of, (62) 394—ab
importance of prevention of, in navy, with suggestion as to prophylactic treatment of some of acute exanthemata, (49) 896
rights and duties of municipalities in regard to, (119) 970
Inflammation, (107) 2039
relation of nerve impulse to cutaneous, *8
Inflammations, hot baths in treatment of superficial, (65) 314—ab
uniocular, of optic nerve and retina, *1
Inflammatory diseases, abort, (74) 1058
processes, why and to what extent are anesthetic measures useful in? (75) 467—ab
Influenza, otitis media and mastoiditis as sequels of, (55) 896
severe complications of, (77) 810
Inhalations, therapeutic, of sulphurous gases, (74) 159
Inheritance factor in disease, (44) 2038
Injections, intratracheal and intralaryngeal, (96) 1418
intravenous nicotine, action of, on aorta of rabbits, (11) 2176
technic and results of epidural, (77) 78
Injuries commonly associated with displacement of head of humerus, (1) 154—ab
treatment of, of extremities by mechanotherapy, (7) 639—ab
Innocent, protection of, *1891, *1895
Insane, boarding out, under administrative control, (76) 814
clinical study of, (35) 1136
delimitation of general paralysis of, (1) 1419
functional derangement of ears and upper air tract in, (1) 806—ab
further observations on pathology of general paralysis of, (73) 1137
nursing and care of our, (34) 1136
sense of shape and size in, (39) 2178
state care of, in New York, (59) 308
Insanities, unrecognized toxic, (68) 309
Insanity, adolescent, (dementia præcox), (127) 722.
and murder, (8) 238
diagnosis of, by general practitioner and consequent duties which must devolve on him, (38) 1136
evolution of, (12) 1139
manic-depressive, and visceral disease, *1719
Insanities of childbirth. (1) 1959—ab
of inebriety, (4) 1419
treatment of acute, in general hospital, *83
Insects, bites of. (102) 309
Insomnia, types of, and treatment without drugs, *1825
Inspection, health, as applied to individual, *651
improved United States, of animals, meat, and meat food products, (16) 1512
international co-operation in, of emigrants and immigrants, (13) 1514
medical, and examination of school children in New York, (124) 970
medical, in public schools, (3) 718, (111) 898, (5, 6) 1331
Instrument, an, affording quick and safe method of entering skull with minimum destruction of bone and preservation of bone flap, (112) 970—ab
Insufficiency, aortic, (5) 238—ab
Insurance examination fees, life, (34) 1956
liability, (109) 237
life, in relation to medical profession, (97) 1597
professional syphilis and accident, (103) 1236—ab
syphilis in regard to life, (81) 74
tuberculosis and, (69) 394—ab
two factors in life, medical and family histories of applicant, (120) 898
Internal secretion and ductless glands, (9) 811, (14) 899
International Geneva conference, revision of, (44) 465—ab
Internist, difficulties of, (45) 1513
problems of, which concern surgeon, (116) 970
Intestinal anastomoses, series of, (56) 1057
disturbances in infants, (86) 1235
mucosa, phosphorous — containing elements in, (36) 1420
parasites, prevalence of, in Siam *1089
Intestine, acute localized inflammation of large, (28) 152—ab
anatomy and physiology of, (17) 2176
and esophagus, atresia of, (115) 1864—ab
atresia of small, (103) 1964
bullet wounds of, (131) 154
button for intestinal anastomosis of, (67) 1141—ab
capillarity in intestinal sutures,*405
diagnosis and treatment of chronic catarrhs of large, (56) 643
diagnosis of congenital atresia of small, (38) 643—ab
experimental study of internal treatment of, (36) 1233—ab
inflammation of diverticulum of, (52) 2126
invagination of, (51) 159—ab
multiple cavernous hemangiomata of, (115) 810
multiple diverticula in small, (141) 1966
myofibroma of large, (54) 810—ab
neurosis of, (56) 1330
new form of obstruction of. Methods for preventing recurrence of volvulus of sigmoid flexure, (9) 305—ab
obstruction of, *776, (18) 811—ab, (82) 1857, (16) 1959
obstruction of, anatomy and pathology of, (33) 72
obstruction of, by band eighteen months after appendicectomy, (29) 724
obstruction of clue to gallstones, (106) 2124—ab
obstruction of, due to reflex nerve disturbance, (22) 392
obstruction of, in child, due to tuberculous peritonitis following bronchopneumonia, (7) 1511—ab
occlusion from volvulus of small intestine, (54) 1688—ab
occlusion of by Murphy button following resection of pylorus, (95) 2128
of infants, bacteriologic and blood findings in bowel infection. *2141
oiled silk to protect, in tamponing peritoneum, (73) 1517
operation of choice in chronic obstruction of, due to malignant stricture, (41) 1228—ab
operative treatment of cancer of large, causing dangerous intestinal obstruction, (55) 809
postoperative, obstruction consequent on visceral stab wounds of abdomen. (121) 1331
Intestine, prevention of acute diseases of, (8) 1598—ab
retrograde incarceration of (69) 1517
rupture of, (27) 2037—ab
stenosis of, (49) 2178
successful end-to-end anastomosis after partial disembowelment in runaway accident, *1829
surgery of, a year's experience in, (5) 2175—ab
surgery of large, (33) 967—ab
surgical treatment of obstruction, (49) 2121
surgically considered with reference to its sterilization, (44) 896—ab
technic of removal of tumors of large, causing obstruction, (33) 151
treatment of catarrh of, (56) 466—ab
tumors of, (84) 722, (55) 1513
two cases of resection of, with recovery of patients, (39) 235—ab
ulcer from stretching of walls of, with perforation, (68) 466
unusual case of obstruction of, (60) 540—ab
volvulus of small, in typhoid simulating perforation, (53) 809—ab
Intestines, extensive tuberculous ulceration of small, (10) 1959
hyperlastic tuberculosis of, (36) 967—ab
natural disinfection of, (92) 2045—ab
study of five cases of subcutaneous or concealed rupture of, treated by laparotomy, (20) 151—ab
Intoxication, study of, from tobacco, (48) 1139
Intoxications, clinical study of, (77) 902
Intubation of larynx in diphtheritic dyspnea, (20) 311
Kuhn's peroral, (102) 1691—ab
Intussusception, (97) 722, (32) 1055, (118) 1331
acute, in young children, (27) 967
case of, illustrating fallacies and dangers of inflation treatment, (20) 1139—ab
chronic, with complete inversion of appendix, (25) 2040
subjected to operation, (28) 2037—ab
Iodids, therapeutic action of, (16) 1139
Iodin, action of. on atheroma of aorta induced by adrenalin, (55) 313
how does, act? (28) 155
percutaneous application of (100) 467
Iridocyclitis, (45) 2041—ab
Iodoform bone plugging, treatment of osteomyelitis with, *2090
in treatment of leprosy, (58) 394—ab
Iridotomy, unusual success from, in eyes practically blind from iridocyclitis and complicated cataract, (8) 806
Iris, epithelial formation in, (69) 970
so-called leucosarcoma of, *418
Iritis, treatment of, and serous iritis by acetozone, (92) 1514
Iron, quinin and, in pneumonia, *272
therapeutic action of, (107) 1964
Irrigator, an intraocular, (43) 236—ab
modification of Reese urethral, *1830
Ischuria, in patient with retroflexioversion of gravid uterus, (49) 1855
Isopral, action of, (120) 2046

J

Jacksonian epilepsy as guide to focal affections, (58) 1140—ab
epilepsy due to brain tumor (87) 1418
Japan, combating plague in, (61) 462
Japanese army, preservation of health among personnel of, (33) 543
naval sanitation, (1) 894
Jaundice, (77) 1330
acute epidemic, (46) 1513
diagnostic features of surgical diseases attended with acute, (1) 537—ab
six cases of epidemic, in young, (35) 389
surgical significance of, (10) 537
value of, as diagnostic factor in disease of biliary passages, (49) 1417
with special reference to its diagnostic value, (93) 390
Jaw, bilateral resection of upper, (47) 1427—ab
cysts in lower, (114) 2046—ab
double resection for correction of protrusion of lower (60) 1137
Jaw, osteoplastic operation on lower, (94) 74, (29) 1232—ab
retention of support of soft parts of nose in resection of upper, (74) 1517
Jaws, correction of defective closure of, (28) 1232—ab
rubber teat and deformities of, (2) 1686—ab
Jejunum, peptic ulcer of, (44) 1140—ab
Johns Hopkins hospital dispensary, report of women's venereal department of, (118) 722
Joint contracture, gymnastic treatment of, by general practitioner, (101) 1603
diseases especially those of children, (6) 71—ab
ligaments, resistance to torsion of, (70) 545
practical points concerning certain injuries and diseases of, (106) 154
passive congestion in treatment of gonorrheal, affections of, (117) 548—ab
radiograms after injection of oxygen into, (59) 1141—ab
surfaces, crepitation of, (59) 1517
tissue of little finger, *2158
wounds of, (61) 390
Joints. cure of tuberculosis of, (11) 967—ab
firearm wounds of, (87) 243
gonorrheal, infection of, (121) 74
pneumococcic infection of, (37) 1859
portable apparatus for ankylosis of fingers, (20) 2177
tuberculosis of, (96) 154, (79) 243
Journalism, independent medical, necessity for profession, (2) 233

K

Kala-azar, (42) 1599
Keloids, successful electric treatment of cicatricial, (24) 632
Kane, Elisha Kent, a sketch, (87) 1857
Keloid, multiple, (41) 1767—ab
Keratitis, antipyrin, (71) 897
malarial, (57) 968
spirochæta pallida in experimental, (56) 1334
vesicular, with filamentous formation of detached epithelium, (8) 718
Keratosis obturans, *2051
Kidney affections, pathology of, (64) 1422—ab
and appendix affections, differentiation of, (68) 2127—ab
and colon suspension by use of nephrocolic ligament and Gerota's capsule, (97) 2124—ab
and liver in splenectomized animals, (110) 546
and renal pelvis, two cases of gonorrheal invasion of, (79) 2039
affections, physical measures in treatment of chronic, (5) 2176—ab
calculus and gynecologic conditions simulating ureteral disease, (84) 2039
changes in, after injury of spinal cord, (59) 902
changes in rabbit, after ligation of renal vein for two hours, (105) 1964
changes, transmission of, to fetus, (124) 548—ab
congenital cystic, *479
congenital cystic, rupture of cyst, (12) 234
diagnosis and surgical treatment of tuberculosis of, (27) 538, *1075
diseases, increased mortality from, in England and Wales, with reference to boron preservatives as factor therein, (26) 2041—ab
dropped, and its causal relation to other pathologic conditions, (75) 2039
encapsulation of in eclampsia, (68) 972
etiology and treatment of movable, (56) 968
fixation, technic of, (98) 2124—ab
floating, its significance and treatment, with reference to method of performing nephropexy, (38) 1684—ab
functional activity of, (71) 1335—ab
functioning in congested of pregnancy and in eclampsia, (90) 974—ab
gonococcal infection of, (124) 74
hypernephroma of, (62) 1856
insidious affections of in young, (31) 2120
insufficiency of, principles of treatment of, (12) 2175
lavage of pelvis of, (112) 309, (82) 2039

Kidney, local eosinophilia of, (73) 545
modified operation for movable, (6) 537—ab, *1917
movable right, the most common cause of chronic appendicitis in women, (80) 2039
necrosis of epithelium of, in infections and intoxications, (120) 810
of pregnancy, (15) 1054
plastic surgery of pelvis of, (15) 811—ab
prolapse of, from gynecologic point of view, (83) 2039
reflex symptoms and referred pains caused by stone in, (4) 387—ab
secretion, reflex inhibition of, during cystoscopy, (60) 1861
tests, functional, (57) 2126—ab
three cases of, calculus diagnosis by Roentgen ray, (113) 1864
traumatism of ureter and pelvis of, (19) 234
treatment of tuberculosis of, and bladder by nephrectomy, *2047
tuberculosis of, *1735
tuberculosis of, in infant, (11) 2036—ab
Kidneys and appendages, diseases of, (37) 2038
diseases of, as indications for interruption of pregnancy, (97) 1959—ab
estimation of functional value of, (10) 1058
limitations of surgery in diseases of, (27) 389
ordinary hemorrhages from, (75) 1601
permeability of in liver affections, (45) 2178—ab
rupture of both, with intraperitoneal hemorrhage, removal of all of left kidney and part of right, (34) 1513
surgery of, (33) 1232—ab, *1911
treatment of tuberculosis of, (50) 813
Killian's operations, (17) 1415
Kindergarten, effect of, on development of children's eyes, (36) 72
King's College Hospital, (18) 1598
Kitchen, wheeled, for troops in field, (91) 1857
Knee, internal derangement of, differential diagnosis and treatment, (28) 971
joint, access to, by anterior longitudinal incision, with section of patella, (44) 1516—ab
joint, operative treatment of irreducible luxation of semilunar cartilages of, (9) 1960—ab
passive hyperemia in synovitis of, and infected wounds of palm, (86) 2123
phenomenon, aid in eliciting, (58) 1962—ab
primary sarcoma of, (77) 545—ab
study of infections of, and their treatment, (19) 538—ab
suppurative synovitis of, (109) 1138
Koplik spots, their relation and interest to laryngologists, (4) 1511—ab
Kraurosis vulvæ, (27) 1333, (56) 1688—ab, (142) 1966
Kuhn's peroral intubation, (102) 1691—ab

L

Labor, (52) 1763
anesthesia in first stage of, (43) 538
induction of, (108) 541
induction of premature, and accouchement forcé in first 5,000 labors in obstetrical department of Johns Hopkins, (48) 1229—ab
injuries to child's head during, *1526
judgment and technic during, (28) 234
management of, (2) 309—ab
management of prolonged first stage of, (96) 1138
management of third stage of, (80) 2123
missed, (52) 901
pregnancy and, complicated by anterior fixation of uterus, *1528
prevention of difficult, (1) 309—ab
relief of pain in, (21), 1512
scopolamin-morphin anesthesia in, (60) 77—ab
some common varieties of obstructed, (27) 1055
statistics of 1,000 cases of, (26) 234
Laboratory diagnosis for practitioner, (101) 541, (97) 1230
of clinical pathology and its relation to practice of medicine and surgery, (77) 309
Labyrinth, inflammation, diagnosis and prophylaxis of, in otitis media, (58) 313
trephining the, for subjective sounds, (72) 242—ab
Labyrinthitis in secondary stage of syphilis (88) 541
Lacerations, technic of closing, in anterior and posterior segments of pelvic floor and perineum immediately after labor, (42) 2121
Lachrymal duct, experience in treating diseases of, without operation, (48) 721
gland, dislocation of, (26) 1594
Lactic acid in metabolism, *1804
La grippe, (103) 1331
Laity, how shall the, be educated on venereal diseases? (70) 810
Lamao forest reserve, vegetation of, (82) 970
La Médecine and Le Médecin in Molière, (17) 1512
Landry's-paralysis, (102) 467—ab, (6) 722
case of, with recovery, (54) 1768
Langerhan's Islands and diabetes, (43) 1334—ab
Language, medical, (74) 1234—ab
Laparotomies, drainage after, (63) 814—ab
fatal affections of gastric and intestinal mucosa after, (64) 77
for affections of uterus and adnexa in 1905, (32) 1059
to reduce possibility of infection in, (93) 1063
100 consecutive, with some general observations and a special reference to appendicitis, (1) 1955—ab
Laparotomy, exploratory, (100) 1230
Larrey, Baron, (58) 640
Larvæ, toxins destructive of, (95) 816—ab
Laryngectomy, thyrotomy versus, (40) 389
total, for carcinoma, (48) 809—ab
total, for recurrent epithelioma of larynx, (3) 462—ab
Laryngitis, rare form of tubercular, (33) 1328
treatment of tuberculous, (13) 2175—ab
what should be attitude of public? sanatoria toward cases of tubercular, general plan of treatment in sanatoria, (20) 640
Laryngology and rhinology, recent advances in, (9) 1415
Laryngoscopy, art of, (67) 640
Laryngotomy in radical treatment of laryngeal cancer, (79) 1602—ab
Larynx, cancer of, (80) 540
displacement of and trachea in thoracic affections, (88) 2128—ab
edema of, (99) 1330
indications and contraindications for intralaryngeal operation in tuberculosis of, (66) 390
intubation of, in diphtheritic dyspnea, (20) 311
laryngotomy in radical treatment of cancer of, (79) 1602—ab
papilloma of, from inhalation of flames, (32) 1328
papilloma of, in child, (5) 304, (7) 2124—ab
stenosis of, in children, opium in, (98) 1143
thyrotomy and laryngectomy for malignant disease of, (21) 2124
total laryngectomy for recurrent epithelioma of, (3) 462—ab
treatment of tuberculosis of, (51) 1062—ab
tumors of, (47) 2121
two cases of bone impacted in, (31) 1328
Lavage of pelvis of kidney, (112) 309
Law, our medical, (113) 1331
Laws, needed reforms in medical, of state of New York, (89) 1514
Lead in ice cream and ices, (116) 1520—ab
Legislation, medical, (80) 810
Leg, results of operative treatment of varicose veins of, by methods of Trendelenburg and Schede, (44) 1057—ab (106) 2039—ab
surgical cure of amniotic cord groove in, (79) 545
temporary splint for fractures of, (35) 152—ab
treatment of varices of, with ligature of popliteal vein, (113) 547—ab
Leischman body, the gregarine stage of a herpetomonas, (26) 76
stain, two modifications of, (36) 1056
Lenhartz treatment of gastric ulcer at Eppendorfer Krankenhaus, Hamburg, (19) 892—ab
Lens, bilateral removal of, in high myopia, subsequent use of dionin, (42) 2176
capsule, punctate or hyaline opacities of posterior, (61) 1957
couching of, by native practitioners in India, (31) 1139
extraction of, in capsule; experience of 311 cases and method of recording cases, (17) 723
foreign body in crystalline, extracted by electric magnet, (57) 308—ab
Lenses, new integral or fused bifocal, (29) 1594
spontaneous dislocation of both crystalline, in two members of same family, (56) 1957
Leprosy and paraleprosy, conjugal, (53) 1772
iodoform in treatment of, (58) 394—ab
new aspect of pathology and treatment of, (22) 1687—ab
transmission of, to monkeys, (49) 972—ab
Leptomeningitis, study of acute, (streptococcus pyogenes), *1271
Leptothrix, (34) 724
racemosa, botanical diagnosis of, and its relations to modern doctrine of bacteriology, (60) 1057—ab
Leucocyte-count, (54) 158
in inflammatory diseases of ear and temporal bone and in otitic intracranial complications, (74) 74
value of absolute and relative, as aid in medical and surgical diagnosis (99) 1230, (10) 2175
value of, in cases of appendicitis, 77) 1138—ab
Leucocyte reaction, experimental, to acute arsenic intoxication, (109) 1964
Leucocytes, classification of, (41) 1333—ab
effect of x-rays on, in blood and bone marrow in leukemia, (7) 462—ab
in asthma, (82) 396—ab
melaniferous, in diagnosis of malaria, (17) 234—ab
observations on life history of, (12) 899
neutrophile, qualitative change in, earliest sign of measles, (2) 2176—ab
Leucocytosis, artificially induced, (43) 240
artificial production of, in peritoneal infection, (87) 815—ab
of hydatid disease, (34) 1516
postpartum with simultaneous splenectomy, (80) 78
Leucocytozoon, note on a, found in musrattus in Punjaub, (30) 1961
Leucosarcoma, so-called, of iris, *418
Leucotoxins, formation of specific, in blood serum from use of Roentgen ray in leukemia, pseudoleukemia and lymphosarcoma, (73) 466, (89) 545, (93) 974—ab
Leukemia, acute lymphatic, clinical observations in case suggesting infection as etiologic factor, *493
anatomic, without leukemic blood, (47) 1061—ab
and pseudo-leukemia, spleen, lymph glands and bone marrow in, (14) 2177
case of mixed-celled, (36) 1687
chronic lymphatic, in child, (34)640
effect of x-rays on leucocytes in blood and bone marrow in, (7) 462—ab
exophthalmos in, (8) 2175—ab
histology of, (83) 1774
improvement of, by intercurrent infections, (78) 1690—ab
influence of x-rays in treatment of, and Hodgkin's disease, *1262
influence of rays on nitrogenous metabolism and on blood in myelogenous, (41) 971
leucocyte ferment in splecn, lymph-glands and bone-marrow in (14) 2177
mast-cell, (56) 1422—ab
metabolism in, under Roentgen treatment, (49) 643-ab, (77) 2044-ab
myeloid, and x-ray, (84) 237
Roentgen ray in, (114) 547—ab, (48) 643, (52) 1062—ab, (48) 1516—ab, (113) 1775—ab
two cases of, (72) 902
two cases of lymphatic, (7) 1135
Leukoderma in lues, psoriasis and eczema, (76) 1063
Leukoplakia of oral cavity, (72) 1234
Libraries, some benefits derived from medical, (71) 2039
Licensure, medical, (86) 970
Lichen planus, histology of, of mucous membranes, (45) 76
Lichen spinulosus, case of, (83) 1229
ruber planus of mucosa, (50) 1772
ruber pemphigoides, (57) 1772
Lid, angioma of upper, operation, (63) 1137
Lids, gangrene of both, after slight trauma of brow, (85) 545
Life, phenomena of, (65) 1514, (104) 1959
Ligaments, functions of uterosacral and round, (36) 808
shortening of round, or subperitoneal ventroaponeurotic fixation, (38) 1329—ab
shortening of round, within inguinal canals through single suprapubic transverse or median longitudinal incision, (35) 539—ab
Ligature holder, simple, (80) 1141
Light, action of, on ferments in absence of oxygen, (89) 243
action of ultraviolet, on enzymes, (49) 1333
and air, injurious action of, on milk, (46) 1421—ab
and air in chronic heart affections, (19) 2177
hunger, influence of, in production of psoriasis, (3) 1514—ab
in dwellings, (44) 1961
rays, (112) 722
treatment with, (126) 1966—ab
Lime, lack of, in central nervous system cause of eclampsia, tetany and spasmophilia, (90) 1863—ab
Limping, intermittent, (63) 2122—ab
Lip and tongue, early diagnosis of cancer of, (67) 73
distribution and treatment of epithelioma of lower, (23) 463
epithelioma of, (84) 815—ab
method of operating on, (8) 1682—ab
rapid cure of epithelioma of, (85) 1514
successes and failures in Roentgen therapy of epithelioma of, (104) 237
Lipemia, osteomalacia associated with, (40) 896
Lipoma, of pericardium, (8) 462
of uterus, (34) 2120
polypoid, of tongue, (24) 1328—ab
submucous, of colon, (117) 1519
symmetric, of backs of hands in Togo negroes, (97) 545
Lipomata, retroperitoneal perirenal, (34) 460—ab
Lips, eczema of, (101) 1235
mouth and tongue, affections of, as seen by dermatologist, (22) 72, (67) 540
plea for more radical operations in cancer of, and tongue, *986
Liquid electricity, *1630
Liquor, drinking of by school children, (97) 79
Lisbon and its medical congress, (52) 390
Lithiasis, renal, (72) 972
Lithopedion, case of, (43) 1228—ab
Lithotomy, suprapubic, with enucleation of prostate in aged patient, recovery, (4) 2040—ab
Litigation, accident—popular graft, (21) 640—ab
Little's disease, (17) 895, (118) 1965
Liver-abscess, amebic, two cases of, (6) 155—ab
diagnosis of, (112) 316—ab
etiologic importance of ascaris lumbricoides, (61) 897
insufficiency of, (38) 2216—ab
in Sweden, (93) 903
probable rupture of into bronchus, (44) 1687—ab
solitary, (51) 809
tropical, (32) 156—ab, (29) 971
two cases of, treated by transpleural operation, (17) 1419—ab
Liver, acute atrophy of, from chloroform poisoning, *1191
alcoholism and, cirrhosis, (87) 1774
acute yellow atrophy of, (13) 75—ab, (18) 1139, (31) 2041
character of thrombi and necrosis of, produced by intravenous injection of ether, (48) 1957—ab
cirrhotic changes in, following a single injury, *984
degeneration of, from necrosis of pancreas, (75) 2044—ab
diagnosis of abscess of, (112) 316—ab
echinococcus cyst of, (22) 388—ab, (102) 810
examination of, (43) 1961
fatty degeneration in infected, (99) 244—ab
glycogen in, (80) 815—ab
histogenesis of primary cancer of, (102) 315

Liver, infection of, from appendicitis, (74) 722
local tenderness of, (58) 1688
necrosis and venous thrombosis in horses actively immunized with diphtheria and tetanus toxins and with streptococci and their products, (31) 1227—ab
protective action of, in regard to cholera toxin, (113) 1519
regeneration and adenoma formation in atrophy of, (103) 2045
regenerative changes in, study of experimental lesions in dog, (37) 1056
significance of various symptoms of insufficiency of, (38) 2178—ab
surgical treatment of ascites, secondary to vascular cirrhosis of, (17) 1960—ab
surgical treatment of hepatic cirrhosis with reference to biliary drainage of, (27) 306
syphilides of, (68) 644—ab
tardy hereditary syphilis of, (44) 76
tropical abscess of, (32) 156—ab, (29) 971
two cases of gastrosuccorrhea or gastric hypersecretion with atrophic cirrhosis of, (15) 719—ab
two cases of rupture of, (18) 2120—ab
wounds of, (22) 1765—ab
zone of rupture in, in heart disease, (32) 311—ab
Lobe, symptoms of affections of frontal, (101) 1143—ab
Lobito-Katanga railway, some more obvious disease conditions seen on line of projected, (32) 1961
Loboo mountains, preliminary geologic reconnaissance of, Batangas province, (31) 970
Localization, problem of, in relation to head injuries, (19) 1227—ab
Lockjaw, an urgent plea for use of larger doses of antitetanic serum for, (5) 1134—ab
Longevity and means of attaining it, (21) 2040
Longevity, lessons in, (58) 462, (79) 722, (37) 1513
Looking backward, (97) 309
Lorenz operation, final results from, for bloodless reduction of congenital hip dislocation, (46) 2038—ab
Los Angeles, water and milk supplies of, (110) 541
Lovers, insane. (2) 718—ab
Lues as factor in general practice, (106) 541
differentiation of inflammation of retina and optic nerve in inherited, (89) 79—ab
venerea, question of origin of, among conquistodores in Mexico, (52) 896
Luffa egyptiaca mill, toxic principles of fruits of, (bitter variety), (36) 1961
Lumbar-puncture in diagnosis and therapeutics, (14) 387
in eclampsia, (88) 1142—ab, (33) 1333—ab
in treatment of nervous uremia, (80) 972
in tuberculous meningitis, (45) 1061—ab
its clinical value in intracranial complications of suppurative otitis media, (84) 1058
percussion of skull as means of placing indication for performance of, (18) 1226—ab
technics of, in children, with reference to pressure of cerebrospinal fluid, (13) 1853
Lunacy treatment, ten years', in Lewisham Infirmary, (10) 1230—ab
Lung, abscess of, after typhoid fever, (137) 74
aspergillus mycosis of, (68) 1423
causes of predisposition of apex to tuberculosis, (36) 156
chronic non-tubercular affections of, *350
hemoglobinophilia bacilli, diseases of, (81) 2044
points in surgery of, (1) 390—ab
prognosis of tuberculosis of, (66) 1335
pulmonary abscess ending in recovery without operation; study by means of Roentgen rays, (76) 1418
pulmonary complications following abdominal operations, (29) 539—ab
simple method of expanding, after operation for empyema, (139) 74
surgery of, with report of case, (35) 2125
Lung, treatment of pneumococcic infection of, (111) 2039
tuberculosis of, early bacterioscopic diagnosis from scrapings of throat, (42) 1233
Lungs, abscesses in, (88) 396—ab
and bronchial glands, primary tuberculosis and anthracosis of, (97) 1691—ab
calculi in, (65) 242
clinical, anatomic and physiologic comparison of tuberculous cavities in, (36) 1596—ab
deep breathing as therapeutic and preventive measure in certain diseases of, (9) 967—ab
diagnosis and treatment of abscess and gangrene of, with reference to operation, (77) 1418
edema of, (1) 898—ab
erysipelas of, (95) 244—ab
fresh air treatment of acute respiratory diseases of with reference to pneumonia, (1) 233—ab
injections of specific tuberculous bacteriolysins directly into, (107) 546—ab
possibility of intestinal origin of anthracosis of, (125) 1692—ab
primary aspergillosis of, (77) 815—ab
suction mask to act on, (67) 1423—ab
surgery of, (89) 815—ab
syphilis of, (114) 74, (95) 154
treatment of hysterical contractures of, (111) 1603
Lupulin in treatment of gastrointestinal diseases, (2) 1134—ab
Lupus, erythematous, (40) 76
erythematosus in early childhood, (41) 720—ab
erythematosus, unusual forms of, (86) 314
of mucosa of upper air passages, (45) 725—ab
Roentgen ray in epithelioma, and tertiary syphilis, (21) 2036
vulgaris, combined resorcin and Roentgen treatment of, (58) 1517
Luzon, non-Christian tribes of northern, (34) 2176
Lymph glands, (76) 2127
glands in carcinoma of cervix, 973—ab
glands in carcinoma of uterus, (84) 1235
glands, of neck, (109) 810
Lymphadenitis, tuberculous, and its surgical aspect, (76) 1857
Lymphangiectasia in groin, (65) 2043—ab
Lymphangioma circumscriptum, (41) 1956
Lymphatic system in relation to disease, (88) 2123
tissues, diseases of, and their relations to appendicitis, (62) 466
Lymphatics, behavior of, in primary syphilitic infection in women, (42) 158—ab
growth of, in granulation tissue, (121) 810
in appendicitis, (47) 1329
of malignancy, (73) 1597
Lymphocytes, relation of, to white blood corpuscles, (53) 390
Lymphomatosis of salivary and lachrymal glands, (98) 1964
Lymphosarcoma of pharynx, (76) 2123
Lysol poisoning, (49) 394—ab, (53) 1062—ab, (99) 1964, (133) 1966
Madagascar, malaria in, (35) 812
Madura foot, mycetoma, observation in Paris, (27) 311
Maggots, affections caused by, (93) 79—ab
Magic foot drafts, *1628
Magnesium sulphate, treatment of tetanus by, (35) 1329—ab
Magnet, foreign body in crystalline lens extracted by electric, (57) 308—ab
in diagnosis in gynecology, (83) 78
operation, another successful, but with unusual termination, (24) 1595—ab
Malachite green as culture medium for typhoid and paratyphoid germs, (62) 1062
Malacoplasia, Hansemann's, and its relation to plaque-like tuberculosis of bladder, (95) 1774
Malaria, (115) 1230, (88) 1958
acute, in typhoid, (60) 159
and its transmission, (38) 896
and mosquitoes at Lucena barracks, Philippine Islands, (133) 238
and other infections, relations between, (110) 1964—ab
at Madagascar, (35) 812
etiology and prophylaxis of, (48) 971
Malaria, further report on measures taken in 1901 to abolish, from Klang and Fort Swettenham in Selangor, Federated Malay States, (20) 392
in Greece, (111) 1964—ab, (27) 2040
its nature and origin, (88) 1514
latent, (71) 1058
melaniferous leucocytes in diagnosis of, (17) 234—ab
mixed, and typhoid, *358
negroes and, (131) 898
observations on; latent infection in natives in Philippine Islands, (65) 462
pathogenesis and prophylaxis of, (59) 1600—ab
systematic treatment of, among European troops, (32) 543
therapeutic action of splenic extract in, (2) 537—ab
treatment of, (50) 2042—ab
tropical phases of, (56) 1599
Malarial tremor, (41) 1139
Males, comparison of phthisical with non-tuberculous, (5) 155—ab
Malformation, peculiar congenital, *363
Malformations, x-ray in study of congenital, (1) 1682—ab
Maimonides, Moses, (57) 1417
Malnutrition as factor in tuberculosis, (102) 237
Malta fever, ambulatory type of, (23) 76
Mamma, tuberculosis of, (70) 2127—ab
Mammary gland, tuberculosis of, (70) 902
gland, consideration of some of diseases of, (36) 2038
gland, tumors of, diagnosis, prognosis and treatment, (86) 1418
Manchuria, medico-military notes in, (23) 967
Man, moral evolution and psychologic studies of, (117) 2124
relation of to Nature, (61) 308
with whom you must live, (57) 2122
Mandragora, historical sketch, (11) 1594
Manganese, blood producing property of, (93) 1863
Marion-Sims, life and work of Dr. J., (39) 808
Marmorek's serum in surgical tuberculosis, (57) 1962—ab
Marriage annulment, Illinois legal procedure in for prior insanity, (113) 2124
contract, guarantee of safety in, *1887, *1891
physical and evolutionary basis of, *1886
should not safeguards from venereal disease be thrown around? (99) 810
Mask to protect face, (92) 1963
Masland saw, use of, for opening cranial vault, (45) 809
Massage and exercise, history and value of, (107) 810
change needed in attitude toward its practice, (67) 810
vibration, its application to disease, (69) 1856
Mastoid, case illustrating effect of long continued pressure on interior of, by fluid of low infectivity, (16) 1135
cases with complications, (94) 237
diabetes and Bright's disease in relation to suppurative osteomyelitis of, (74) 540
disease, simulation of, (9) 1331—ab
dwarfed and deformed, sequel to imperceptible mastoiditis complicating chronic suppurative otitis media, (15) 1512
empyema, etiology and pathology of, complicating acute purulent otitis media, (102) 2039
incision, (43) 2176
inflammation, cavernous sinus thrombosis in children following, (66) 1685
operation, is it necessary to open antrum in every case of, (69) 1685—ab
operation, modification of simple, which shortens convalescence by facilitating wound repair, *1701
operation on, indications for and description of, (85) 970
operation on, modern, (5) 810
operation, radical, (31) 1687
operation, radical, modified to allow preservation of normal hearing, (14) 1512—ab
operation, technic in after-care of radical, 1645
operations, (46) 896
operations, simple and radical, under local anesthesia, (48) 1137
Mastoid process, necrosis of, (80) 722
surgery, new apparatus; (1) aseptic protective sheet for, and (2) practical algesimeter, *1652
tuberculosis of middle ear and, *1293
tenderness and pain, case of hysterical, without functional disturbance, (96) 2039
unusual growth of, fibrochondro-osteoma of mastoid antrum, (62) 390
Mastoiditis, acute, complicated by ulceration and rupture of esophagus, (39) 1417—ab
acute, prevention, diagnosis and treatment, (4) 966—ab
chronic, (98) 1769
in boy of 13, (83) 1768
indication for operative interference in, associated with acute suppurative otitis media, (63) 390, (71) 540
otitis media and, as sequel of influenza, (55) 896
preventive and abortive treatment of, (117) 1857
traumatic, (125) 1230
Mast-cells, leucocytes and lymphocytes, morphology and biology of, (75) 242
Materia-medica and pharmacology, teaching of, (16, 17), 2125—ab
working bulletin system for collective investigation and classification of newer, (11) 2124
Material, to send, for examination, (91) 1424
Materialism in medicine, (87) 154
Maternal characteristics, inheritance of, by larvæ, (113) 975—ab
impression superstition, and why it survives, (115) 898
impressions, truth about so-called, (52) 1228
Matter, incessancy of rhythmic reiteration in organic, (25) 895
origin and hereditary of, (22) 640, (22) 719, (20) 807, (26) 895, (21) 967, (23, 29) 1136, (18) 1328
Maxilla, fracture of superior, successfully treated by interdental splint, (53) 236
necrosis of inferior complicating typhoid, (85) 2123
treatment of fracture of inferior, with description of splint, *854
Mayos, a visit to the, (131) 74
Meals, small frequent, in treatment of certain biliary affections, (13) 1135—ab
Measles in adults, (108) 1230
qualitative change in neutrophile leucocytes earliest sign of, (2) 2176—ab
recent studies in, (55) 308
study of spread of epidemic of, (68) 160—ab
Measurements, apparatus for corporal, (74) 2127—ab
Meat diet, influence of excessive, on growth and nutrition, (11) 542—ab
inspection of, standard of government, (65) 237
juice, raw, in malassimilation in children, (38) 1961—ab
Mechano-therapeutics, therapeutic effect of sound waves or, of ear, (14) 305
Mechanotherapy, treatment of injuries to extremities by, (7) 639—ab
Meckel's diverticulum, clinical experience with, and other vestiges of omphalomesenteric duct, (36) 460—ab
Media, fluid, for cultivation of anaërobics, (90) 1063
Mediastino-pericarditis and its surgical treatment, (56) 241—ab
Mediastinum, tumors of, Roentgen treatment of, (99) 1691—ab
Medical acts, desirability of amending, (16) 1059
and teaching professions, how may they coöperate to improve moral, mental, and physical condition of young? (16) 1055—ab
attendance on working classes, (13) 391
council, general, its powers and its work, (18) 1515
department of Japanese army, (15) 388
lore, life and, of natives of India, (83) 243
men, relations of, to their patients, (1) 810
organization, (119) 1230
profession, conclusions from comparison study of status of, in Great Britain and United States, *1043

Medical sciences, unit of, (14) 1328—ab
specialism with reference to proctology, *1365
studies, new degree of superior, (41) 724
study, preparation for course of, (86) 1229
thoughts, facts, fads and fancies, (29) 719
Medication, electrolytic, (57) 1688
palatable, (7) 1054
phosphatic, (29) 311
Medicinal agents, choice of, for topical use in gynecology, (95) 1418.
Medicine and surgery, borderland of, as exhibited in stomach, (1) 641
--ab
—ab
business side of practice of, (87) 237
commercialism in, (40) 72
emergencies in internal, (131) 541
errors in, as a science, (99) 1597
history of clinical, in British Isles, (20) 2040, (24) 2125
how progress comes in, (96) 898
in Logan County, Ohio, from 1838 to 1842, inclusive, (88) 237
Irish school of, (47) 1057
is internal, a failure? (111) 810
modern scientific, and its relation to Union University, (46) 968
old and new in, in Indiana, (108) 154
popular, in eighteenth century, (49) 1057
popularization of, (67) 237—ab, (50) 461
position of dermatology in, (44) 1060
preventive, (102) 970, (65) 1856
progress of, in Philippine Islands, *245
prospects of western, in China, (36) 1060
skepticism in, (68) 1137
some leading men and events in history of American, (117) 722
substance and shadow in, (51) 1768—ab
tasks of historian of, (122) 1691
thoughts on decade in, (122) 1331
Medicis and Borgias, victims of, in France from medical standpoint, (109) 722
Mediterranean-fever, bacteriologic examination of the cases of, (20) 76
existence of, (42) 543
prevalence of, among British troops in Malta, 1905, (18) 899, (33, 38) 1599
reports of commission for investigation of, (24) 543
sera, examination of blood to determine if other than, would agglutinate the M. melitensis, (25) 543
Melanosarcoma, of choroid and orbit, (70) 970
of ovary, (82) 972
Menière's disease, advisability of eliminating terms, and Menière's symptoms from otologic nomenclature, (36) 307—ab
Meningitis, (123) 722, (49) 1768
cases of, with isolation of diphtheria bacillus from cerebrospinal fluid, *2138
curability of tuberculous, (119) 1520—ab, (127) 1692—ab
epidemic, of twenty hours' duration, (39) 896
lumbar puncture in tuberculous, (45) 1061—ab
operative treatment of purulent, (103) 2039
postoperative, (94) 1685
serous, mistaken for brain abscess, (85) 541
spinal, serous, (39) 1060
three fatal cases of, with peculiar ear symptoms, (92) 1685
transmission of epidemic, (32) 2177
tuberculous, (123) 541
Meningocele, of unusual size, (37) 809—ab
Meningococci in healthy throats, (52) 725
Meningococcus, poison of, *174
Menopause, balneotherapy in complications arising during, (56) 543
significance of uterine hemorrhages of, (44) 808
Menstrual cycle, its normal and morbid psychology, (93) 1857
Menstruation, apparent cervical, (107) 898
as source of infections and intoxications, (53) 902—ab
causes of painful, in young girls, (122) 154
during pregnancy, (26) 1333—ab
gleanings concerning, (10) 639
Menstruation in case of hysteria, chlorosis and heart affections, (85) 1518-ab
its significance with particular reference to recent literature, (30) 234
vicarious, left internal otitis, (72) 74
Mensuration of child in uterus with new methods, *1979
Mental affections, family groups of, (111) 1144—ab
affections in inhabitants of cities (110) 1143—ab
affections, non-recognition of, (99) 1236—ab
disease, comparative study of types of, for general practitioner, (50) 640
disease, pre-insane stage of acute, (16) 1686
disease, what can general practitioner do in early recognition and cure of, (67).1418
disorder, hospital treatment of curable cases of, (2) 1769—ab
disturbance, observation hospitals or wards for early cases of, (17) 967
disturbances, ear affections and, (35) 1416—ab
Mercurial cream, preparation of satisfactory, for intramuscular injection, (31) 543
salts, affections of, (67) 1772
Mercury, comparative speed efficacy of intravenous method of administering, in syphilis, (42) 1513
dosage of metallic, in intramuscular treatment of syphilis, (35) 543
fatal poisoning by external application of bichlorid of, *1484
histochemical demonstration of, (128) 547
in relation to tests for occult blood, (101) 816—ab
in body, (88) 1602
intravenous injections of, as therapeutic test in diagnosis of syphilis of nervous system, (86) 154, (36) 720
light therapy, (98) 2045
localization of, in system, (97) 244—ab
quartz-glass-lamp, action of, (76) 1963
salicylate, routine treatment of syphilis with intramuscular injections of, (16) 1594
Merycism, (102) 154
Mesenteric vessels, embolism and thrombosis of, (76) 1423—ab
Mesentery, cysts in, (114) 1144—ab, (73) 1773
Metabolism, action of chalybeate waters on, (75) 1063
faulty, in young children, (99) 1857
in exophthalmic goiter, (91) 1518
influence of blood glands on, (66) 1514
in leukemia under Roentgen treatment, (49) 643—ab, (41) 971, (77) 2044—ab
lactic acid in, *1804
nitrogen, in tuberculosis, (34) 393
of healthy child before and after weaning, (53) 1860
perverted, with reference to liver functions, (81) 154
x-rays in, (70) 1862—ab
Metal radiation, (104) 468—ab
Metatarsal, bone fracture of base of fifth, by indirect violence, (32) 1513
fracture of fifth, by inversion, (10) 895
Metatarsalgia, (38) 1513
Meteorism and reflexes, (102) 2129
Methylene-blue, eosin stain for blood and tissues, (97) 1236—ab
frauds, *1627
in inoperable cancer, *1545
in treatment of inoperable cancer, (90) 1229
test of urine, (66) 159
Methylthionen hydrochlorid in inoperable cancer, *1545
Metritis, chronic, 303—T
Metropolitan board of health, report of, 948
Metrorrhagia, occurrence of, after menopause in cases of ovarian tumor, (10) 155
Mett's method for estimating activity of pepsin, (36) 1684
Metzenbaum, M. ether-air anesthesia or drop method for administration of ether, 1653—O
Meyer, W., osteoplastic resection of costal-arch to reach vault of diaphragm, 1069—O
Michigan checks disreputable advertising, 513—E
Micrococcus tetragenus albus, serious anemia from, 1520—ab
Micro-organisms, modifications of virulence of, by cultivation in other species, (118) 975—ab
study of nature of, found in mouths and throats of healthy persons, (39) 1684—ab
Microphthalmus, with upper-lid cyst, (103) 1857
Microscope in diagnosis, (135) 898
Microscopic preparations, relocation of special points in, (99) 1143—ab
Microsporon canis, dermatomycosis from, (48) 76
Middle-ear, cure of chronic suppuration of, without removal of drum or ossicles or loss of hearing, (10) 811
suppuration, treatment of intracranial complications of, *1289
Midwifery, regulation of, (62) 77
Midwives, examination of, (37) 1333
Migraine, (36) 307, (60) 242
and hypothermia in tuberculosis, (46) 901—ab
gastrointestinal disturbances associated with, (19) 1512—ab
treatment of, with cannabis indica, (74) 1418
Miliary fever and rats, (40) 1961—ab
fever, epidemic, (111) 1775—ab
Military medical arrangements in Canada, present status of, (6) 1769
Militia, suggestion for greater efficiency of organized, (53) 896
Milk, as infant food, (66) 721
chemistry of, (67) 721
choice of cow's, (2) 1593
commission, report of, of Suffolk District Medical Society, (20) 2120
dangers that may lurk in ordinary, and duty of physician to educate public and authorities to necessity of pure milk supply, (17) 1135
does bacterial content of city, influence infantile death rate? (82) 1138
economy in producing and marketing certified, (109) 541—ab
favorable results of feeding infants with perhydrase, (85) 2044
how to obtain normal aseptic, (22) 642
in infectious diseases, *1614
injurious action of light and air on, (46) 1421—ab
laboratory and its relation to medicine, (12) 1598
modified, the percentage plan, (94) 2039
new Babcock, testing bottle, *204
problem from sanitary standpoint, (41) 153
public supply of pure or specially prepared, for feeding of infants, (8) 899
pure, (71) 810
precipitins of cow's, found in infant's blood, (43) 725—ab
residual nitrogen of human, (105) 1691
rôle of pure cow's, in infant feeding, (21) 388, (101) 810
simple device for working directly with percentages in home modification of cow's, (9) 538—ab
simple method for quantitative determination of proteids in, (59) 1417—ab
sodium citrate as modifier of cow's, *1241
supplies, rural city, and their relation to infant feeding, home modification versus laboratory modification, (78) 722, (108) 898
supply, Louisville's, (65) 721
supply, increase of power of local authorities with regard to, (10) 899—ab
supply, present aspects and needs of, of Baltimore, (103) 309
supply, sanitary control of, (1, 2, 3) 1331
value of small quantities of human, in treatment of infantile atrophy and infections of infants, *1904
variation in fat percentage of mother's, as factor in feeding, (30) 640, (127) 1230
whole, versus laboratory milk, *1087
wrong and right use of, in certain diseases of skin, (10) 1514
Milks, principle of top, (8) 2120
Mind and matter, (4) 74
dangerous influence of overtaxing girl's, particularly at puberty, (67, 68) 1597—ab
in medicine, (8) 1419
Mindoro, notes on birds collected in, and in small adjacent islands, (84) 970
Mineral springs, radioactivity of, (105) 974
substances, part played by, in physiology of organism, (46) 1516—ab
Mineral waters, bactericidal action of radio-active, (25) 642
waters, changes in concentration of urine and blood under influence of, (40) 1060
waters, physical laws and influence of, on stomach functions, (49) 724
Mirror, use of small, in studying apex beat, *1918
Miscarriage and its treatment, (55) 2038
Mitral-stenosis, false, (38) 724—ab
mechanical effects of experimental, and insufficiency, (116) 810
pathogenesis of, (34) 2178—ab
study of, (28) 1956
Mole, Brenshematom, (32) 307—ab
hydatidiform, (70) 237, (25) 2176
Molière, cap and gown in, *1557
Monilethrix, anatomy of, (46) 1772
Monocephalus tetrabrachius tetrapus, *2159
Monolateral deafness, functional examination of hearing with tuning-forks in, with deductions on bone conduction and function of sound-conducting apparatus, (58) 390
Monster, dicephalous, *1738
Morax-Axenfeld, diplobacillus of, *255
Mormon-Bishop pills, *1624
Morphiomaniac, on trial for murder, (133) 722
Morphin addiction, medicolegal features of, (48) 465
administration of, in abdominal section, (35) 1516
in stenosis of esophagus, (103) 1143—ab
poisoning from opium or, in 7-weeks'-old baby, *776
scopolamin, spinal anesthesia preceded by, (86) 243—ab
withdrawal of, in severe chronic affections, (108) 467
Mortality, greater, of illegitimate children, (99) 79
factors which have lowered operative, and improved postoperative results, (109) 2124—ab
infantile, and employment of married women in factory labor before and after confinement, (9) 899
infantile, and its principal cause—dirty milk, (3) 2174—ab
social-factors in causation of infantile, (10) 542
Mosquito doctrine, requirements of, (96) 1857
rôle of, in etiology of fevers, (43) 2038
trap, electric, (38) 812—ab
Mothers, leaflet to give to young, (107) 1603—ab
Motor-driver's spine, (17) 392—ab
Mountain climate and sea air in children's affections, (32) 642
sickness as observed in Andes, (130) 898
Mouse tumors, morphology of, (111) 468
tumors, study of, (104) 974
Mouth breathing in relation to mental and moral hygiene, (67) 390
breathing, its causes, effects and correction, (108) 1597
cleanliness, (17) 1328
disinfection in prophylaxis and treatment of pneumonia, (33) 1766—ab
Mucous plaques; prophylaxis and treatment, (128) 541
Mud bath, study of, (122) 1520
baths, experiments with physiologic, (43) 1060
Mumps, blood changes in, (81) 1138
lean diabetes as sequel to, (38) 1139
Munde, presentation of portrait of Dr. Carl Fortunatus, (13) 1765
Murder, scientific, (13) 718
Murmurs, origin and significance of continuous venous, (42) 2178
Murphy-button in gastrointestinal surgery, (75) 395—ab
occlusion of intestine by, following resection of pylorus, (95) 2128
Muscle fibers, wax-like transformation of, (99) 2128
implantation of, to repair defect in long bone, (94) 816—ab
transplantation in infantile paralysis, (73) 1423—ab
traumatic laceration of inferior rectus, (71) 970
Muscles, diagnosis of paralysis of individual ocular, simplified, (60) 73
ossification of, after single trauma, (31) 1232
Muscular-atrophy, progressive, of cervicobulbar type occurring with cervical rib, (7) 1327
Museum, medical, (5) 1511
Musical instruments, effect of blowing on wind, in tuberculosis, (4) 1327—ab

Mutism, in typhoid, (98) 1857
Myasthenia angio sclerotica, (63) 2122—ab
gravis, *1969
Mycosis fungoides, histology of, (51) 1772
Myelitis, (8) 191—ab
of pregnancy, (89) 1774—ab
Myeloid transformation, (48) 1421
Myeloma, (82) 1774
Myiasis, (90) 1514
dermatosa, (45) 1956
intestinal, (116) 1776—ab
Myocarditis, diagnosis and treatment of chronic, (58) 236
in acute infectious diseases, (114) 1419
so-called spontaneous focal, and occurrence of calcification of degenerate muscle fibers, (118) 810
Myocardium, degeneration of, in hot climates, (6) 238—ab
Myoclonus, congenital, with nystagmus, (46) 543—ab
epilepsy, with autopsy, (10) 1226—ab
Myofibroma of large intestine, (54) 810—ab
Myoma, conservative operations for, (74) 313
diffuse, with beginning carcinoma in hyperplastic uterus mucosa, (78) 1336
results of operative treatment of, (84) 973—ab
sarcoma and, of stomach, (34) 1684—ab
of uterus, (84) 2128
Myomata, uterine, complicating pregnancy, *1777
when to operate for uterine, (62) 814—ab
Myomectomy, (30) 463
abdominal, (31) 1059
during pregnancy and labor at term in elderly primipara, (5) 2124—ab
Myrobalans, poisoning by, (40) 1859
Myxedema and growth of skeleton, (74) 1601
two atypical cases of, (69) 1063

N

Narcolepsy, case of, from specific infection transmitted through five generations, (31) 808—ab
Narcosis apparatus, regulating, (87) 1963
Roth-Drager's apparatus for gas, (96) 545
Narcosomania, reflexes from eye in, (71) 309
Nargol in acute gonorrheal prostatitis with involvement of vesical neck, (94) 1514
Nasal cavity, stab wounds of, (113) 2130
contour, restoration of, external and internal, (135) 541
disease, cerebral complications secondary to (41) 896
fossa, large fibroadenoma of, (84) 541
passages, clinical observations concerning, and relation they bear to organs of sight and hearing, (17) 1055—ab
Nasopharynx, congenital membrane in, *686
treatment of sarcoma of, by injections of adrenalin, *430
National department, economic advisability of inaugurating, of health, *1003
Formulary, *1826
Nauheim baths, artificial, in chronic heart cases, (2) 1054—ab
baths in gynecology, (55) 1330
Navel, packet of aseptic materials for care of, and eyes of new-born child, *1830
Nebraska state hospital for crippled, ruptured and deformed children, (91) 1229
Neck, lymph glands of, (109) 810
Necrosis of mastoid process, (80) 722
Needs of body on Sunday, (29) 1960
Negri bodies in hydrophobia, *87, (46) 1860—ab
Neoplasm, five cases of, (21) 463—ab
Neoplasms of colon, *825
rare, in female urethra, (36) 1234
acute, treatment of, (102) 722, (19) 971, (85) 1138
Nephrectomy, treatment of tuberculosis of kidney and bladder by, *2047
two cases of calculous pyonephrosis with, (32) 1956
Nephritis, acute, (2) 838—ab
acute, after use of Peruvian balsam, (86) 545—ab
addenda to therapeutic measures in certain forms of, *1976
blood pressure and influence of food in experimental, (54) 1140
Nephritis, cardiac hypertrophy as observed in chronic, *1354
chronic catarrhal, (37) 1767
complicating typhoid, (101) 722
diagnosis and treatment of chronic, (103) 722, (100) 970
diagnosis of different forms of, and unreliability of nitric acid tests, (75) 309
effect of dry diet in, (30) 1232—ab
etiology of acute, (104) 722
experimental researches on surgical intervention in, (89) 1418
injections of sea water in, (77) 972
interstitial, (110) 1959
interstitial, and cirrhosis of suprarenal capsules in infant six weeks old, (18) 1858
mild course of arteriosclerotic, in aged, (54) 241—ab
ocular manifestations of, (99) 722
operations for, (66) 814—ab
pathology of chronic, (129) 154
prevention of scarlatinal, (79) 1857
prevention and treatment of acute, (73) 1418
severe in pregnancy, (91) 1602
surgical treatment of chronic, (70) 972
symptoms and diagnosis of acute, (100) 722
treatment of, (50) 241—ab
treatment of acute, (102) 722, (19) 971, (85) 1138
uremic, (71) 314—ab
Nephrolithiasis, *908
Roentgen treatment of, (78) 2123
Nephropexy, floating kidney, significance and treatment, with reference to method of performing, (38) 1684—ab
new technic of, (36) 152—ab
Nephroptosia in splanchnoptosia, (110) 74
Nerve, case in which spinal cord of rabbit was used to bridge gap in musculo-spiral, (31) 971
fibers, regeneration of, (126) 547, (112) 2130—ab
grafting for peripheral facial paralysis, 1424—ab
impulse, relation of, to cutaneous inflammation, *8
ulnar, as landmark of elbow, (16) 1328—ab
Nerves, distribution of afferent, in skin, *645
firearm wounds of peripheral, (70) 2043
of blood vessels, (103) 237
subcutaneous injuries of, (21) 538—ab
Nervous affections after gynecologic operations, (51) 241—ab
affections, examination of blood in, (62) 1517
affections in puerperium, (77) 1518—ab
and mental diseases, clinical analysis of 979 cases of, (86) 74
and mental diseases, relations of gastrointestinal tract to, (15) 807
diseases, etiology of functional, (125) 1138
disease, prophylaxis of, with reference to educational influences in growing child, (75) 1418
system, advances in surgery of, considered from standpoint of neurologist, (8) 1414
system, cancer metastasis in central, (103) 1519—ab
system, demonstrations on diseases of, (26) 1859
system, microscopic changes in, in chronic dourine, (6) 810
system, technic of operations on central, (2) 970—ab, (24) 1136—ab, (124) 1331—ab
system, theory of typical degeneration of, (61) 465
system, wear and care of, (88) 1769
Neuralgia, (43) 720
avulsion of terminal branches of trigeminal nerve for cure of trifacial, (113) 970—ab
facial, and subcutaneous operation on infraorbital nerve, (80) 309
is, functional disease? (8) 388—ab
nasal disease and, *741
neurectomy for, (120) 548—ab
osmic-acid injection for trifacial, (56) 236, (69) 2043—ab
Roentgen-treatment of, (88) 903—ab
surgical treatment of trigeminal, (20) 1227—ab
Neuralgias, deep alcohol injections in facial and other, and in histrionic spasm, (14) 75, (23) 2120
selection of remedies for, (132) 74
Neurasthenia, (83) 722, (2) 1764—ab
as modified by modern conditions, and their prevention, *1816
border line cases of, (38) 2038
Neurasthenia, climatic treatment and balneotherapy of, (80) 1602
conception of, (78) 1601
gastric, (15) 1686
its nature and treatment, (3) 390
modern views of, and its treatment, (81) 810
non-reason founded phobias of, (111) 2124
prognosis and its relations to medical selection, (47) 461
uterus and ovary of, (100) 74
Neurectomy for neuralgia, (120) 548—ab
operation of optico-ciliary, (37) 2125
Neuritis, alcoholic multiple, (30) 306
multiple, diagnosis and treatment, (103) 1058
multiple motor, including Landry's paralysis and lead palsy, (1) 387—ab
peripheral, (153) 74
pseudo-optic, (28) 1595—ab
puerperal lumbar, (89) 315—ab
63 cases of descending optic, probably result of pneumococcal infection, (72) 462
x-rays in, (11) 1415—ab
Neurofibrils, lesions of in pathologic states, (56) 308
Neurofibromatosis, diffuse, (107) 1863—ab
Neurologist, public obligations of, (75) 897
Neurology, growth of, *1337
Neuroma, plexiform, of orbit, (55) 153
Neuromata, multiple, of skin, *1810
Neuromyelitis, optic, (86) 396
Neuroses, (104) 390
alcohol and, (123) 1691
motor, treated with hypnotism, (100) 904—ab
of stomach, (134) 309
Neurosis, anguish, (41) 2125—ab
cardiac and exophthalmic goiter, (112) 1603—ab
of heart and arteriosclerosis in consequence of trauma, (47) 394—ab
traumatic, (68) 902
Nevi, spontaneous intracranial hemorrhage associated with trigeminal, *178
New-born, hematoma of, *274
hemorrhage in, *1145, (58) 1856
New York, history of medical society of state of, (48) 153, (26) 388, (103) 810, (89) 1229, (63) 1768, (124) 2124
needed reforms in medical laws of state of, (89) 1514
state care of insane in, (59) 308
Nicotine injections, intravenous, action of on aorta, (11) 2176
Nile boils, (25) 1599—ab
Nil desperandum as article of refractionist's materia medica, (118) 1419
Nitrite of amyl, mechanism of therapeutic action of, (22) 1231—ab
Nitrogen evolved from alkaline sodium hypobromite solutions, (50) 1957
residual, of human milk, (105) 1691
Nomenclature, obstetric, (104) 80—ab
proteid, (6) 1139
Nose, accessory nasal sinuses and pneumococcus infections of, *1561
accessory sinuses of, certain factors in diagnosis and treatment of suppurative lesions in, (11) 2039
anatomy of accessory sinuses of, (12) 2040
and throat examinations, new shield for use in, *775
and throat, relation between diseases of, and those of general system, (105) 237
case of primary syphilitic infection in, (64) 390—ab
conservative treatment of supplemented disease of accessory sinuses of, (79) 1063
diagnosis of inflammatory diseases of accessory sinuses of, (56) 1137
empyema of accessory sinuses of, (80) 154
inflammatory, obstruction as etiologic factor in production of sputum, (20) 2124
malformations and diseases of nasal accessory sinuses, (86) 1330
mental symptoms due to disease of, (4) 1955—ab
morphology and embryology of, fossæ of vertebrates, (99) 1685
nasal disease and neuralgia, *741
obstruction of, cause of deafness, (73) 390
obstruction of, importance of early recognition of, and its relation to later respiratory disturbances, (18) 1765
operations in sarcoma of, with plea for more extended use of electrocautery in suitable cases, (69) 2039
Nose, operative treatment of deviated septa of, (91) 2123
pyemia of, (75) 727
remarkable osteocalcareous tumor in, *271
removal of malignant tumors in, through upper jaw, (90) 545—ab
resection of septum of, for primary tuberculosis, (50) 902—ab
retention of support for soft parts of, in resection of upper jaw, (74) 1517
sarcoma of, (72, 73) 1685, (7) 2120
saw and sinus opener for intranasal operations, (71) 813
septum of, submucous resection of, (66) 1768, (8) 1955
septum of, treatment of deviations of, (5, 6, 7) 2040—ab
skiagraphy as aid in diagnosis and treatment of diseases of accessory sinuses of, (13) 2040
some recent rhinologic achievements and tendencies, *162
systemic disturbances secondary to pathologic conditions in, (119) 1138
throat and ear, effect of tobacco on, (41) 389
unilateral secretion, obstruction and pain in foreign body in, (62) 902
what is present status of operative treatment of deviation of, septum? (67) 1685
Nostrum evil, attitude of physician toward, (123) 970—ab
evil, physician's responsibility for, *982
Nostrums and fraudulent methods of exploitation, *1546, *1623
and proprietary medicines, (28) 719—ab
Nothnagel's clinic, notes from, (105) 1419, (108) 1959
Nothnagel's yellow mucous granules, nature of, in infants' stools, (38) 1420
Nuclein, rôle of, in animal economy, *1800
Nucleoproteids in septic affections, (91) 974—ab
Nurse and house physicians, directions for, Burnside Lying-in Hospital, Toronto, (102) 1597
plea for square deal for wet, *1909
trained, in public schools as a factor in education of children, (42) 1685
Nursing bottle, standard, (88) 545
Nursling consultations, results of, (25) 239
Nutrition during first year, (119) 722
in various dermatoses, (36) 1771—ab
Nystagmus, congenital myoclonus with, (46) 543—ab
head nodding with, in infancy, (6) 641
toxic, (72) 1601
unilateral rotary, (51) 1957—ab

O

Obesity, (65) 810
and its complications, treatment of, (66) 1229—ab
cures, *1627
dietetics of, *820
food, *1627
thyroid treatment of, (101) 974—ab
Obsessions, hallucinatory, (43) 393
Obstetric amenities, (38) 307
asepsis and antisepsis, (60) 1229
cases, two recent, (83) 1857
experiences, (4) 723—ab
incident, an, (60) 1856
measurements, simplification of technic of, (81) 1518
Obstetrics, dark and bright side, (91) 2039
more rational practice of, by general practitioner, (82) 154
review of progress in, (73) 1234
scopolamin-morphin in, (59, 75) 1862—ab
teaching of, (3) 970—ab
year's work in, (71) 1418
Obstipation, acidity of gastric juice in case of chronic, (34) 1420
Occipito-posterior positions, treatment of persistent, (15) 1765—ab
Occult blood, improved technic for detection of, (52) 1334—ab
hemorrhage, high hemorrhoids as cause for, (72) 1141
hemorrhages, significance of so-called, in diagnosis of ulcer and carcinoma of stomach, (13) 639—ab
Occupation, hints and helps in choice of an, (131) 1139
Ochronosis, (51, 52) 544—ab
Ocular injuries from glass and stone, (67) 897

Ocular insufficiency and some of its results, (8) 1054
manifestations in intracranial diseases of otitic origin, (79) 1058
muscles, senile atrophy of, (116) 975—ab
muscles, transient paralysis of, after spinal anesthesia, (78) 1234
rotations, axioms concerning, *353
symptoms of nasal origin, (88) 1685
therapeutics, value of x-rays in, *994
Odor as guide in treatment of chronic suppuration of middle ear, *1733
Officer, medical, and the line, (60) 1513
Ohio State Medical Association, report of president of, (52) 721
Oil of tansy, poisoning from, *509, *1917
Olecranon, fracture of, (69) 727—ab
Ombuta, bite of (clotho arietans, gray), treated with potassium permanganate, recovery, (13) 71
Omentum, experiments on great, (25) 306
functions of, (55) 465—ab, (25) 2037—ab
primary sarcoma of, (32) 460
torsion of greater, (50) 1855
torsion of, retrograde incarceration with inguinal hernia, (42) 312
Open air treatment at lying-in-hospital, (21) 2176
Operating and office table combined, *2160—O
room, to improvise an, (31) 1420—ab
rooms, construction and equipment of modern, (52) 1961
Operation, history of mastoid, *92
report of four cases showing results of Killian's, *165
operations of unusual interest on women, (62) 721—ab
recent surgical, (69) 1418
saw and sinus opener for intranasal, (71) 813
Operations, plastic, on thorax, (7) 2177—ab
Ophthalmia, gonorrheal, in children, (73) 1857
neonatorum, (84) 390—ab, (72) 466, (107) 1857
neonatorum, septic infection following, (21) 1594
neonatorum, silver acetate to prevent, (123) 1603
Ophthalmic practice of present time, *485
sins of hospitals, (78) 1685
subjects in Talmudic literature, (73) 897
Ophthalmology, plea for more catholic and broader views in, (6) 151, (12) 2036
review of, (26) 1956
Ophthalmoscope as aid to general practitioner, (5) 387, (42) 389
two cases illustrating value of, as aid in diagnosis of cause of brain lesions, (42) 1329—ab
Ophthalmotrope, model for new, the gonioscope, some phases of ocular motility, (6) 718—ab, (13) 806
Opisthorchis sinensis, anatomic characteristics of, and statistics of its occurrence in United States, (89) 1857
Opium, a practical study, (78) 1514
comparison of effects of alcohol and, (74) 309
in stenosis of larynx in children, (98) 1143
poisoning from or morphin, in 7-weeks'-old baby, *776
Opsonic factors, their estimation and use in therapeutics, (32) 463
theory, (68) 2039
theory and its practical application to medicine and surgery, (5) 390—ab
therapy, clinician's observations of, (8) 2035
Opsonic-index, effect of bodily exertion on, of healthy persons, (3) 541
in medicine, *1722, *1793
in typhoid, *2159
(Wright and Douglas) in tuberculosis, (23) 807
note on, (28) 1420
observations on and antipneumococcal power of blood in pneumonia, (28) 1766—ab
of tuberculous patients undergoing sanatorium treatment, (6) 391—ab
Opsonins and aggressins, (96) 237
and bacterial vaccines, (9) 2124
Optic nerve, treatment of progressive atrophy of, due to acquired syphilis, *823
neuritis, two cases of, (30) 1687
Oral cavity, relation of systemic diseases to conditions of, *334
sepsis in operations on throat, (24) 1686
Oration on surgery—Medical Society of New York, (45) 389
Orbit, endothelioma of, (72) 970
epithelioma of, (25) 1594
foreign body retained in, for nearly four years, (32) 724—ab
plexiform neuroma of, (55) 153
Orbits, bilateral gumma of, in child of eight years, (74) 462
Oregon National Guard at San Francisco disaster, (90) 1857
Organization, (81) 1857
how remedy the defects of, (68) 1418—ab
medical, (80) 897, (119) 1230, (66) 1418—ab, (114) 1597
medical societies of New York county with reference to need of better, of medical profession, (9) 2035
Organizations, to what extent should insurance, educate their insured as to healthful living, (114) 237
Organotherapy, advantages of combining with other measures, (53) 543
latest in, (68) 313
Orient, message of, (33) 1136
Orientalism or change to an eastern appearance, (12) 239—ab
Orientation, electrical, in spinal anesthesia, (6) 387—ab
Ornithodoris, Moubata, Murray; a disease-bearing African tick, (92) 390
habits of, (24) 543
Orthocystoscopy, (105) 1603
Orthodiagraphy, development of, (94) 396
Orthopedic armamentarium, contributions to, (24) 2041—ab
surgery, scope and aim of, (115) 1419
Orthopercussion and relative heart-dulness, (84) 1518—ab
Osmic acid injection for trifacial neuralgia, (56) 236, (69) 2043—ab
possible danger in the therapeutic use of, (6) 966—ab
Osmosis in physiology and pathology, (19) 642
Ossiculectomy, technic of, (86) 1058
Osteitis, tuberculous, (81) 1768
Osteitis-deformans, (92) 903
with Huntington's chorea, (15) 1332—ab
Osteoarthropathy hypertrophiante pneumique, (96) 1964
Osteogenesis, imperfect, (31) 896, (4) 1598—ab
Osteoma, two cases of, of orbit successfully treated by operation, (76) 970
Osteomalacia associated with lipemia, (40) 896
case of, (38) 1859
is, thyroid affection? (44) 543—ab
pelvis and ovaries in, (80) 2128
Osteomyelitis, acute, of temporal bone, (68) 540
of femur, (50) 308
purulent, acute and subacute, of spine, (73) 2043
treatment of, with iodoform bone plugging, *2090
Osteopath, (89) 154
Osteoplasty, combined superior tibiofibular and astragalo-fibular, to prevent shortening of leg after osteomyelitis of tibia during adolescence, (40) 1329—ab
Osteotomy, lever for, (52) 1233
Otitis and mastoiditis, acute purulent, treated by Bier's induced hyperemia, (45) 1137—ab
four fatal cases after purulent, (51) 1137.
interna sinistra hemorrhagica; vicarious menstruation, (72) 74
media acuta suppurativa post morbillos, contribution to etiology of, (5) 718—ab
media, acute therapeutic, with reference to etiology, (39) 643
media and mastoiditis as sequel of influenza, (55) 896
media and mastoiditis, postural treatment of, (27) 1854
media as complication or sequel of scarlet fever, (28) 460
media, aspiration of tympanic cavity in, (98) 1685
media, diagnosis and prophylaxis of labyrinth inflammation in, (58) 313
media, modern treatment of chronic purulent, (89) 1769
media, purulent, clinical value of blood examination in, and its complications, (82) 1053
Otitis media, results from radical operation for chronic purulent, (65, 86, 87) 1685—ab
media, streptococcus mucosus as cause of acute, (131) 975
media, treatment of acute suppurative, (81) 1058
media, Vincent's bacillus and spirillum, causal agent of chronic suppurative, necessitating radical operation, (54) 1330
mineral water sprays in, (46) 812
steam treatment of, (46) 812
treatment of, (89) 2045—ab
treatment of purulent, by congestive hyperemia, (47) 1137—ab
what cases of chronic purulent, require the radical operation? (73) 74
wryneck from, (32) 900—ab
Otogenic pyemia, (67) 813
Otology, dangers to, (3) 1139
recent progress in, (9) 1058
in relation to rhinology and laryngology, *1809
Otoprojectoscope, (122) 1230
Otorrhea, how to manage, (127) 541
importance of treatment of chronic, (2) 1682—ab
Otosclerosis, nature of, in light of heredity, (98) 2039
Ottawa tent colony, (126) 238, (63) 1229
Ourselves as others see us, (85) 722
Ova, twin, (60) 1688
Ovaries, anatomy of, before puberty, (59) 2043
conservative operations on, (37) 539—ab, (90) 1138, *1449
microscopic findings in rabbit's after Roentgen exposures, (56) 77—ab
Roentgen exposure of, during pregnancy, (87) 1142—ab, (26) 2177—ab
transplanation of human, (74) 1963—ab
tubes, and remains of uterus, behavior of, after total or partial removal of uterus in rabbits, (80) 1336
Ovariotomy, remote results of, (60) 1600—ab, (57) 2043—ab
Ovary and tube, hernia of, *1707
bilateral metastatic carcinomata, (61) 1601—ab
cystoma of, (84) 2128
cystomata of, infection of, (49) 1228
cysts situated above superior pelvic strait, complicated by pregnancy, (50) 1229—ab
fetich of, (29) 1055
large gelatinous tumor of, (33) 1056—ab
melanosarcoma of, (82) 972
physiologic variations in structure of normal, and chronic oöphoritis, (57) 77
rare forms of dermoid of, (90) 314
removal of an enormous tumor of, (10) 1135—ab
superficial papilloma of and its relation to cystadenoma, (103) 1774
teratoid tumors of, (64) 1600—ab
tumor of, with chorionepithelioma-like metastases in peritoneum, (66) 77
tumors of, is it permissible to remove in sections? (84) 1602—ab
when ovarian cystomata should be removed without puncturing or opening, (59) 968
Over-feeding and under-feeding, metabolic aspects of, (93) 2124—ab
Over-nutrition and under-nutrition, (8) 1769—ab
Overwork, signs of, (52) 1140—ab
Ovum, possibility of embedding of, above internal os, (104) 1774
Oxaluria as cause of prostatic and urethral disturbances, (36) 1767—ab
Oxidation, administration of drugs concurrently to retard and to stimulate systemic, (6) 459—ab
Oxygen in gynecology, (26) 1059—ab
radiograms after injection of, into a joint, (59) 1141—ab
Ozena, removal of crusts in, (36) 2178—ab

P

Paget's disease of nipple, (19) 311, (37) 1771—ab
disease treated by x-ray with report of microscopic findings, (42) 307—ab
Pain, (105) 1331
meaning and mechanism of visceral, (1) 238, (5) 310—ab
significance of, in gynecologic diagnosis, (128) 309
sudden abdominal, its significance, (60) 308, (66) 309
Palate, cleft, (91) 243
explanation of alveolar cleft, (51) 1688
mixed tumor of soft, (23) 1328—ab
perforation of soft, to tertiary syphilis, staphylorrhaphy, (6) 2035
Palawan Island, notes on collection of birds from, (36) 2176
Palmar arch, injury to superficial, (83) 1597
Palsies, etiology of cerebral in children, *2139
Palsy, isolated, of right external rectus, *274
Paltauf's streptococcus serum, treatment of puerperal fevers with, (62) 1600
Panas' operation, cases illustrating, (49) 390
Pancreas achylia, functional, (57) 1422—ab
and diabetes, (68) 242
carcinoma of, (115) 2130
complete removal of multilocular cystic tumor of, (12) 155—ab
disease of, (60) 236
postoperative fistula after pancreatic hemorrhage, (87) 1602
Pancreatic disease, nucleus test in, (49) 1957—ab
Pancreatitis, acute, cause of death in, (74) 2043
acute hemorrhagic, (23) 971
acute hemorrhagic, following obstruction of bile papilla, (117) 810
relations of, to cholelithiasis, (59) 540
Panophthalmitis, metastatic, (97) 1330
Paper-making, Philippine fibers and fibrous substances; their suitability for, (60) 462
Papilloma of larynx from inhalation of flames, (32) 1328
of larynx in child, (5) 304
of plica semilunaris, (30) 1594
superficial, of ovary, and its relation to serous cystadenoma, (103) 1774
unusual, of larynx in child treated by local application of formalin, (7) 2124—ab
Papillomata, operative treatment of laryngeal, in children, (16) 542
Paracentesis, improved technic for, (48) 312—ab
of pericardium, (13) 1685
Paraffin injections for deformities of nose, (104) 2130—ab
plates as aid in operations for extensive symblepharon, *560
prothesis, (50) 1422—ab
prothesis, histopathology of, (44) 1957—ab
Parakeratosis variegata, case of, (39) 1767
Paralyses, comparative frequency of, (94) 545
relative value of surgical procedures for relief of, following acute anterior poliomyelitis, (59) 1137
Paralysis, acute descending, Landry's, (58) 1057
agitans, treatment of, (98) 1418
bilateral abducent, with intense pain in back of neck, after spinal anesthesia, (87) 1424
delimination of general, of insane, (1) 1419
diagnosis and treatment of progressive, (96) 1691
during croupous pneumonia, (70) 727—ab
four cases of chronic atrophic, (13) 1682
further observations on pathology of general, of insane, (73) 1137
immunity of syphilitic to general, (39) 543
muscle transplantation in infantile, (73) 1423—ab
negro's eyeball-sign of facial, (56) 902
nerve grafting for peripheral facial, (79) 1424—ab
of cricothyroid muscle, (89) 903
of facial nerve due to Eustachian electro-bougie, (28) 1854
operative treatment of infantile, with especial reference to neuroplasty, (6) 234—ab
pathologic study of seven cases of, without gross anatomic change, *1705, *1713
permanent, after spinal anesthesia, (66) 727—ab
postoperative gastric, (4) 1765—ab
principles of treatment of spinal, of children, (81) 1424—ab
pseudobulbar, (84) 396
spastic, of children, (66) 242
sudden, of pharynx, *1967
surgical traumatism and facial, (49) 901—ab

Paralysis, two cases of abductor, (14) 2040
two cases of left abducent, after spinal anesthesia, (67) 726
unilateral ascending, and unilateral descending paralysis, (63) 308, *1638
Parametrium, careful study of, in 27 cases of carcinoma of cervix, and its clinical significance, (22) 1513 —ab
Paranoia, (67) 1330
acute, exhibiting cyclical relapses, (31) 306
Parapancreatic cysts, *2079
Paraplegia, (8½) 459
compression, (29) 2041—ab
exercises in treatment of spasmodic, (37) 393—ab
Parasite, new intestinal, of man; parameba hominis, (26) 808—ab
Parasites, prevalence of intestinal, in Siam, *1089
Paratyphoid affections, (65) 1422—ab
glands, surgical relations of, (15) 1959
Paratyphus, ptomain poisoning and, (52) 1422—ab
Parenchymatous keratitis, treatment of, (88) 1064—ab
Paresis. (38) 1417
blood pressure in, *1341
sphincter reflexes in tabes dorsalis and, (78) 897
Paris medical world, miscellany from, (83) 1418
Parotid, abscess of in puerperal septicemia, (24) 2176
abscess of, simulating mastoid abscess, (29) 72
Parturient, new frozen section of body of, dying at expulsion period, (92) 315—ab
Parturients, protection of, (88) 314 —ab
Parturition, mechanism of, with frontal presentation and mento-posterior expulsion, (81) 1336
value of time and natural uterine efforts in, (62) 153
Pasteur treatment, causes of failures in hydrophobia, (112) 1965—ab
treatment, paralytic accidents observed under, of hydrophobia, (108) 1964—ab
Patella, compound fracture of, tabulation of all fractures in Boston City Hospital in 42 years, (9) 1853 —ab
mechanical treatment of fracture of, (48) 236—ab
treatment of fractures of, (82) 897, *1177, (51) 1597—ab
Patent and proprietary remedies, (126) 722
Pathologic Institute of Berlin, (38) 1060
Pathology and bacteriology, progress in, (77) 1058
and general medicine, relation between, (87) 1769
and physiology, *549
certain phases of recent work in, review of recent work in clinical, sputum, gastric contents, feces, (19) 1765
Patients, dietetic observations on, (69) 1423
importance of more careful observation of, after operations on pelvic viscera, (76) 722
individual care of, at health resorts, (93) 1963
Pediatric outlook, *397
Pediatrician, opportunity of, *729
Pedicle, three cases of twisted, (17) 1139—ab
Pelvic cavity, drainage of, of male in peritonitis, (31) 1513
disease, case illustrating association of, with appendicitis, (50) 968
disease, chronic headache associated with, *1525
girdle vs. abdominal bandage, (87) 810
measurement, simplification of, (85) 1142
organs, operation on, during pregnancy, (114) 309
organs, review of surgery of female, (41) 539—ab
viscera, importance of more careful observation of patients after operations on, (76) 722
Pelvis, anatomic, experimental and clinical researches on operative enlargement of, (38) 240—ab
and perineum, plastic operations of (69) 1141
capacity of small, (65) 972
measurement of, (60) 1234—ab
plastic operation on, (81) 1142 —ab
promontory of, (45) 1139
Pelvis, simplified measurement of, (105) 1143
smallest contracted, among 50,000, (89) 1235
Pemphigus, case of, limited to mucous membrane, *1736
neonatorum, (73) 1336—ab
vegetans, (44) 307
Penis, extirpation of, with resection of scrotum, (65) 1141
plastic induration of, (97) 2045
technic of partial amputation, (67) 972
Pennsylvania, physician, his rights, duties, and liabilities under laws of, (37) 389
Pennsylvania's chance to provide outdoor work for thousands of convalescents, (133) 1139
Pentosuria, essential, in two brothers, (29) 1416—ab
intermittent, and glycosuria, (13) 538—ab
two cases of, (92) 1518
Pepsin, Mett's method for estimating activity of, (36) 1684
Peptic ulcer, (91) 1774—ab
ulcer, case simulating, (32) 896—ab
Percussion findings, graphic representation of, (89) 396—ab
Pericarditis, (119) 1857
adherent, in children, (34) 156—ab
and aortic valvular affections, relations between, (97) 1863
following head injury, (17) 1770 —ab
case of purulent, (125) 541
effects of, on heart, *1429
general symptoms and physical signs, mechanical effects of fluid distension of sac, (54) 1685
in childhood, (7) 641, (20) 1332—ab, (28) 1687
tuberculous, with presentation of specimen, (146) 74
Pericardium, adherent, with ascites, (33) 2037—ab
lipoma of, (8) 462
paracentesis of, (13) 1685, (17) 1956
Pericolic inflammation, causes, sequelæ and treatment of, (2) 1857—ab
Perinephritis as cause of symptoms simulating stone in kidney, (46) 1957
Perineum, female, and its repair, (92) 1418
neglected incomplete rupture of, and its cure, (38) 389—ab
Periosteum, observations on extensive separation of, in displaced bone fragments, (46) 2121
Peritoneum and lymphatic system, rôle of, in abdominal surgery, (45) 153—ab
care of primary carcinoma of, (118) 468
to enhance resisting powers of, in cancer operations, (91) 1142
Peritonitis, acute septic, (19) 1959
cure of tuberculous, *1192
differential diagnosis and clinical significance of, (8) 305, (59) 1685
diffuse, from perforation in course of tuberculous intestinal processes, (30) 156—ab
drainage of pelvic cavity of male in, (31) 1513
etiology, prognosis and indications for surgical treatment of tuberculous, (39) 1595
management of acute diffuse septic, (128) 898, (49) 809—ab
more common forms of acute, (142) 74
pathogenesis, etiology and pathology of, (50, 58) 1685
pneumococcic, (56) 394—ab
pneumococcic, in children, (10) 75 —ab
treatment of diffuse suppurative, following appendicitis, (1) 2035—ab
treatment of tuberculous, (20) 239
tubercular, (129) 74, (4) 1134
what has surgery left to medicine in treatment of, in adults and children, (2) 150—ab
Perityphlitis, complications in blood vessels during, (63) 466
Peroneus, compensating hypertrophy of, in old dislocation of tibia, (30) 812
Peroxid of hydrogen, catalytic action of colloid silver and permanganate to enhance action of, (79) 1518 —ab
of hydrogen in examination of sputum, (117) 1692—ab
Personality, dissociation of, (93) 1597
Pertussis, intubation for severe paroxysms of, (99) 1769
Peru, Huacos (mummy-grave) potteries of old (study in pre-Columbian pathology), (107) 970
Peruvian balsam, acute nephritis after use of, (86) 545—ab
Pessary, stem for amenorrhea and dysmenorrhea, *2133
Pessaries, uses of, (7) 238—ab, (12) 895, (113) 1691—ab
Pfeiffer, bacillus of, in pleurisy and peritonitis, (41) 2178
Phagocytosis of red corpuscles, (27) 1766—ab
of typhoid bacteria, (39) 1599—ab
rôle of, in pneumococcidal action of pneumonic blood, (36) 1228 —ab
studies on, *580, (93) 1138—ab
Pharmacopeia, an imperial, (8) 1139
coming revision of, of United States, *1989
Pharmacy, plea for more thorough course in practical, in medical schools, (22) 1227—ab
Pharyngotomia suprahyoid, (78) 1141, (70) 1517
Pharynx and tonsils, diseases of, due to faulty metabolism, (114) 1857
congenital fistula of, (87) 541
disturbances of, produced by voice use, (19) 2124
erysipelas of, (18) 807
lymphosarcoma of, (76) 2123—ab
significance of edema of, (124) 1230
sudden paralysis of, *1967
technic of tubation of, to facilitate administration of anesthetics and to prevent inhalation of blood in mouth and face operations, (48) 539—ab
Phenobromate, *125
Phenomena, photodynamic, (47) 1333.
Philadelphia County Medical Society —its problems of the future, (109) 970.
Philippine acanthaceæ, new, (27) 2176
asclepiadaceæ, new, (32) 2176
burmannia, new, (33) 2176
coals and their gas-producing power, (35) 2176
ferns, new, (28) 2176
fibers and fibrous substances; their suitability for papermaking, (60) 462
fungi, a list of known, (31) 2176
gramineæ, notes on, (29) 2176
Islands, progress of medicine in, *245
Philippinenses, myrsinaceæ novæ, (30) 2176
Philosophy, bearing of, on psychiatry, (11) 1685
Phimosis, circumcision in treatment, (125) 1965
Phlebitis following aseptic abdominal operations, (59) 1768
Phleboliths, in tube fimbriæ, (92) 1235
Phlegmons, gas, (90) 2128
Phloridzin kidney test, (34) 1233—ab
Phosphates in therapeutics, (46) 1139
Phototherapy of affections due to parasites of blood, (80) 2044—ab
Phthisis, albumosuria of, (62) 1418
Phthisis, influence of rainy winds on, in 23 parishes of North Devon, (1) 1857
notification of pulmonary, (8) 542
pulmonalis, early diagnosis and treatment of, (59) 1597
some factors that predispose to, (8) 1134
throat and nose in relation to, (18) 239
tuberculin in, (97) 1143
Physical behavior, relations between, and action of drugs, (107) 975 —ab
Physician, advantages and disadvantages of being, (120) 1331
and some of his duties, (110) 722
and truth, (28) 311
as independent therapeutist and prescriber, and opponent of quackery in general, (29) 389—ab
attitude of, toward nostrum evil, (123) 970—ab
and physical development of children under his care, from infancy to adolescence. (62) 597—ab
duty of, in regard to tuberculosis, (104) 2039
family, as children's specialist (126) 154
his rights, duties, and liabilities under laws of Pennsylvania, (37) 389
ideal attitude of, toward alcohol as medicine, food, and beverage, (20) 388
mental attitude of, toward tuberculous patient, (52) 540
of to-day, (26) 640
relation of, to sanitation and hygiene, (12) 966, (112) 1138
practical discourse to embarking, (57) 462
Physician should be interested in politics, (96) 810
Physician's duty to fellow practitioner, (88) 1330.
Physio-chemistry in relation to therapeutics, (24) 1231
Physiology, certain phases of recent work in pathology and, *549
pathologic, (15) 1226
some points in uterine and ovarian, and pathology in rabbits, (1) 541 —ab
teaching of pathologic, (113) 810
Phytolacca decandra, report on, (81) 1597
Pigeon-toe, simple method of correcting, (72) 2122
Pile cure, fifteen minute, *1629
Pituitary body, hypertrophy of, with cyst formation in acromegalia, (41) 393
Pityriasis-rubra, case of, (8) 1515 —ab
case of, of Hebra's type, (43) 307
pilaris, arsenic in, (40) 720
Placenta, Bossi's dilatation in premature detachment of, (81) 1142
premature separation of, from its normal position, (91) 1138
site of, with regard to birth, (41) 240
Placenta-prævia, (90) 1058
cervicalis, (67) 77
etiology, symptomatology and diagnosis of, (89) 1058
successful delivery of twins in, *1301
treatment of, by Cesarean section, (124) 989, (85) 228—ab, (60) 2122 —ab
version in, (85) 1063
Placentation, physiology and pathology of, (89) 1602
Plague, account of, in Bengal, (24) 1515, (36) 1859
combating, in Japan, (61) 462, (47) 1859
date of appearance and duration of bacillus pestis in peripheral blood in bubonic, in India, (29) 543
effects of rat extermination on incidence of, in selected area in Azamgarh City, (26) 1139
epidemiology of, (15) 1059, (32) 1516, (38) 2125
fighting, in Japan, (5) 234
how, is spread, (21, 23, 25, 27) 1139
in Madras, (24) 1139
natural history of, (22) 1139
rat killing for prevention of, (29) 1139
studies in, (23) 812
study of a case, (20) 1420—ab
Plants, new or noteworthy Philippine, (97) 1418
Plaster-of-Paris and how to use it, (123) 238
casts, proper preparation of, in treatment of fractures of extremities, (112) 898
Plasters, Ordway's, *1628
Pleura, paravertebral resonant triangular area in pleuritic exudates of, (39) 312
pleuritic exudates in children, *1296
Pleurisies and pericarditis, treatment of, (56) 1685
Pleurisy and appendicitis, (48) 2178 —ab
and pericarditis, diagnosis of effusive, (55) 1685
with effusion and pulmonary tuberculosis, (3) 966—ab
Pleuritis, epidemic, rheumatic, (106) 815
general symptomatology and physical signs of, (53) 1685—ab
Pleuropneumonia, transmission of, in sheep and goats, (51) 971
Plica semilunaris, papilloma of, (30) 1594
Plimmer's bodies, origin of, in degeneration of nuclei, (104) 315
Pneumococci, studies on simple and differential methods of staining encapsulated, in smear and section, (30) 1227—ab
Pneumococcus as cause of single multiple and general infections, (126) 1230
infections, accessory nasal sinuses and, *1561
peritonitis, (56) 394—ab
Pneumonia, (95, 117) 74, (121) 1230
abortive form of lobar, (85) 1857
acute lobar, in pygmy, (13) 899
alcohol in, (29) 2178—ab
and other pulmonary infections, intestinal origin of, (25) 1231—ab
arsenic in, (13) 2036—ab
bacteriologic examinations of conjunctival sac in typhoid and in, (55) 1417—ab

Pneumonia, brain, in children, (80)467
carbon bisulphid in croupous, (103) 1863
complications of, and their treatment, (18) 971
complicating pregnancy, (29) 460—ab
croupous, (84) 1597
croupous, nervous symptoms of, (66) 902
dynamic effects of antipneumoccic sera in, (59) 2122—ab
early treatment of, (60) 968
effects of antipneumococcic sera in, (69) 1958
epidemic, (60) 644—ab
fremitus in, (82) 467—ab
in four days' old infant, due to bacterium mucosus, (44) 72
increasing mortality from, (79) 462
intermittent fever in, (70) 1063
its present day status and treatment, (121) 1138
lobar, early diagnosis and treatment, (56) 462
lobar, followed by miscarriage and empyema, (62) 640
medical complications and treatment of, (12) 1415
mortality from lobar, in high altitudes, (5) 1594—ab
mouth disinfection in prophylaxis and treatment of, (33) 1766—ab
open-air treatment of, *1182
outbreak of, in reformatory school, (12) 542
paralysis during croupous, (70) 727—ab
pathology of lobar, (103) 390
postcritical fever and other sequelæ of croupous, *730
postdiphtheritic, (125) 548—ab
quinin and iron in, *110, *272
Roentgen examination in case of centrally located, (100) 2045—ab
sugar in urine during, (57) 466—ab
traumatic, (93) 815
traumatic fibrinous, (93) 815
treated with fixation abscesses, (33) 900
treatment of, (4) 71, (111) 315, (83 467—ab, (113) 1138, (1) 2174—ab
Westphal's sign in croupous, (85) 1424—ab
when to use medicines in, (6) 1853—ab
Pneumothorax, (4) 806
artificial, in treatment of tuberculous pulmonary processes, (75) 1235—ab
Pneumotoxin, (11) 1419—ab
Pocket case, improvised, for eye-droppers, *777
Podagra, (99) 1514
Poisoning, acetanilid, by headache tablets, *2012
acetanilid, from absorption, *359
acute carbolic acid, recovery, *435
by coal gas, (55) 640
by salicylates in children, (13) 310
camphor, (106) 970
case of, by X. L. all vaporizing fumigator, (19) 1770
chronic atropin, (11) 639—ab
fatal, by external application of bichlorid of mercury, *1484
fatal case of scopolamin, (20) 1512
from canned beans, (58) 1861—ab
from oil of tansy, *509, *937, *1917
from opium or morphin in seven-weeks' old baby, *776
hydrocyanic acid, (60) 2039
lysol, (53) 1063—ab
scare, sequel to wholesale, (91) 541
with hellebore, (117) 1419
Poisonous substances, warning circular for workmen employed in, (90) 2045—ab
Poliomyelitis and cerebrospinal meningitis, (15) 2177
anterior acute in adult, (96) 1143
anterior acute, epidemic of, (120) 1520
relative value of surgical procedures for relief of paralyses following acute anterior, (59) 1137—ab
Politics, should physician be interested in? (96) 810
Pollantin therapy of hay fever, (68) 1601
Polyarthritis chronic deforming, (51) 1421
polymyositis in acute, (76) 2044
relations of chronic villous to dumb-bell shaped bacilli, (28) 807
Polycythemia, (68) 727—ab, *1266
case of myelopathic or splenomegalic, (28) 2125
three cases of, with enlarged spleen, (70) 1423—ab
Polycythemia vera (Vaque's—Osler's disease); description of new clinical entity, with method of estimating viscosity of blood, (14) 971
with enlarged spleen, (37) 1060—ab, (44) 1334—ab
Polymyositis in acute polyarthritis, (76) 2044
Polypharmacy, (95) 541
Polypi of appendix, *359
origin of choanal, (16) 463—ab
Poppy capsules, (86) 1424
Porokeratosis, three cases of, (33) 76
Porro-Cesarean section for pregnancy, with complicated fibroids, (99) 2124—ab
Position, diagnosis and management of occipito-posterior, (112) 1597
Postgraduate work in Europe, (48) 1513
Postoperative comfort, (42) 461—ab
Postpartum period, treatment of, (93) 314
Posture as aid in surgery, (7) 1959
Potassium bromid, in epilepsy, (50) 1139
iodid, effect of small doses of, (13) 971
Potatoes in diabetes and adiposis, (53) 725
Pott, was Percival; really entitled to honor of having a certain spinal disease called by his name? (69) 2122
Potteries, Huacos (mummy-grave), of old Peru (study in pre-Columbian pathology). (107) 970
Potters' trade, dangers of, from life insurance standpoint, (121) 898
Pott's-disease, Kernig's sign in, (79) 902
three cases of and one case of coxalgia in adults, and presenting unique features, (6) 1414—ab
Pozzi livre d'or, (22) 1059—ab
Practice act, imperfections of present medical, of Texas, (86) 309
what value have experiments on frogs for application in? (26) 642
Practitioner, business problem of general, (53) 1414—ab
general, and specialist, (17) 459
laboratory diagnosis for, (101) 541
Preacher's hand in multiple sclerosis, (85) 396
Precipitins, cancer, (110) 1520—ab
Pregnancy, abdominal, carried to term with placenta implanted on under surface of liver and gall bladder, (56) 313
actinomycosis and, (54) 2042—ab
acute toxemias of, (65) 1958
albuminuria in, (63) 810
and delivery, complication of, with prolapse of loop of intestine with mucosa outside. (63) 77
and labor complicated by anterior fixation of uterus. *1528
case of abdominal, (32) 235—ab
case of ruptured tubal gestation sac with secondary attachment of ovum to cecum, (14) 1682
chorea of, (128) 976—ab
diagnosis and treatment of ectopic, (3) 71—ab
ectopic, (25) 234, (56) 313, (30) 1136—ab, (11) 1139—ab, (91) 1330, (119) 1331, (12) 1419—ab, (111) 1597, (12, 18, 80, 105, 113) 1857, (110) 1864—ab, (31) 1956, (95, 118) 1959
ethics and laws regarding interruption of, (101) 1959—ab
evil effect of, on laryngeal tuberculosis, (65) 727—ab
extrauterine, (25) 234, (56) 313, (30) 1136—ab, (11) 1139—ab, (91) 1330, (119) 1331, (12) 1419—ab, (111) 1597, (12, 13, 80, 105, 113) 1857, (110) 1864—ab, (31) 1956, (96, 118) 1959
hyperemesis as indication for interruption of, (100) 1959—ab
indications for interruption of, in reference to heart diseases, (99) 1959—ab
indications for surgical operations during, (28) 389—ab
intraligamentary, at term, (35) 1333
kidney of, (15) 1054
multiple, followed by eclampsia, (22) 2176
myelitis of, (89) 1774—ab
myomectomy and labor at term in elderly primipara, (5) 2124—ab
necrobiotic fibroids and, (21) 239
operations on pelvic organs during, (114) 309
ovarian, (11) 1139—ab
pneumonia, complicating, (29) 460-ab
Porro-Cesarean section for, with complicated fibroids, (99) 2124—ab
Pregnancy, primary abdominal, (11) 1597
removal of intraligamentary cyst and bilateral oöphorectomy during early, without interrupting gestation, (4) 718—ab
rupture of interstitial tubal, (12) 1419—ab
simulated extrauterine, (93) 1602—ab
supravaginal amputation of cervix at fifth month, (91) 1602
tuberculosis as indication for interruption of, (98) 1959—ab
tubo-abdominal, at term, (25) 234
twin, (41) 1859
two cases of ectopic, with some unusual features, (94) 1418
typhoid occurring during, (43) 809—ab
uncontrollable vomiting in, (66) 1958—ab
uterine fibroids complicating, (100) 2124—ab
uterine myomata complicating, *1777
with rupture of bicornate uterus—operation and recovery, (23) 234
Prenatal influence and postnatal suggestions, (98) 970
Prescribing, dispensing versus, *1786
Prescriptions, old, (104) 546
Presentation, vertex, (65) 77
Presentations, transverse or oblique, (26) 538
Preservatives, are, in food injurious to health? (121) 2124
Pressure, case illustrating effect of long continued, on interior of mastoid by fluid of low infectivity, (16) 1135
Pretuberculous state, points on diagnosis and treatment of, (23) 1227—ab
Priapism from nasal reflex, something for rhinologists, (67) 1514
Procedure, continental surgical, (30) 76
Processes, morbid, in right abdominal and pelvic regions of female, and their distinction, (13) 387
Proctology, medical specialism with reference to, *1365
Profession, collateral interests of medical, (67) 154
duties and responsibilities of medical, (116) 238
duty of medical, to public in matter of venereal diseases and how to discharge it, *1246
future of medical. (13) 1328—ab, (87) 1597—ab, (31) 1771—ab, (19) 1956—ab, (19) 2036—ab, (118) 2124—ab
honors that have come to medical, in America, (49) 640, (85) 1330
how may medical and teaching, coöperate to improve moral, mental and physical condition of young? (61) 1597—ab
how medical can aid in perfecting of hospital management, (125) 541
issues which confront medical of State of Washington, (95) 1514
relation of medical to social evil, *29
what shall medical do to prevent abortions? (132) 309
why should medical, be thoroughly organized? (114) 1230
Prognosis, measures of precision influencing, (117) 238
Progress, medical and surgical, (90) 154, (136) 541, (74) 810
review of surgical, *81
Projectiles, effect of large, from battle ships, (44) 2125
Prolapse of urethral mucosa, (70) 813
Prolapses ovari in femoral ring, simulating strangulated femoral hernia, (48) 968—ab
Proprietaries, physicians and proprieties, (46) 389—ab
Proprietary medicines, (90) 970—ab, *977
medicines and other abuses, *978, (75) 1958—ab
medicines, objectionable influence of, on young practitioner, (98) 1514
preparations, pharmacopeial or, which? *683
remedies, patent and, (126) 722
Prostate, carcinoma of, (3) 1511—ab
conservative treatment of enlarged, (114) 970—ab
enucleations of. (18) 305, (2) 462—ab, (27) 900—ab, (6½) 1960—ab
female, (108) 970, (31) 1684—ab
four cases of, osteoplastic cancer in, (94) 315—ab
galvanic and other treatment of, (5) 537—ab
marked albuminuria from abscess of, *508
Prostate, massage of, untoward effects of, (111) 309
methods in diagnosis and treatment of hypertrophy, (69) 1137—ab
observations on removal of, for cure of prostatic dysuria, (38) 153
pathology of cancer of, (66) 972
physical examination in hypertrophy of, (103) 1959
surgery of, present position of, (27) 719—ab, (2) 811—ab
treatment of hypertrophy of, (64) 726—ab, (95) 1597, (3) 1955—ab, (6) 1960—ab
treatment of hypertrophy of, with radioactive waters, (84) 314
treatment of inoperable conditions of, (39) 153
vibratory massage of, (73) 972
vital points in technic of suprapubic enucleation of, for benign enlargement, *1151
Prostatectomies, suprapubic cystotomy as preliminary to, and as route for performance of considerable number of, (53) 1137—ab
Prostatectomy, consequences of transvesical, (27) 155—ab
for prostatic hypertrophy, (11) 1135—ab
four cases of, (120) 309, (135) 1966
indications, contraindications and management of, (58) 721
indications for, and results of operation, *1153
in two stages, (30) 1683—ab
mooted questions pertaining to, (40) 1228—ab
observations on, (1) 71
phosphatic calculi following suprapubic, (41) 1136—ab
results of, (56, 57) 721—ab
total suprapubic, (63) 972
Prostatitis, chronic cystoparesis, (62) 1861
nargol in acute gonorrheal, with involvement of vesical neck, (94) 1514
radical operation for, (58) 1062
Prostitution problem in relation to law and medicine, *2071
prophylaxis and treatment of, (99) 1138, (44) 1685
what effective measures are there for prevention of spread of syphilis and increase of? *1372
Proteid constituents, present state of knowledge in regard to, of animal body, (111) 1857
Proteids, study of, in infant feeding with special reference to whey proteids, (34) 2037
synthesis of, (67) 313
Protopathic and epicritic sensibility, question of, and distribution of trigeminus nerve, (66) 1137
Protozoa, flagellated, in perineal abscess, (9) 641
Protozoan affections, (74) 466
Prurigo following intestinal catarrh, (124) 1603
lymphadenitic, (35) 76
Pruritus, aspects of, (37) 971
in herpes zoster. (90) 79
vulvæ cured with blue arc light, (103) 1691
Pseudo-arthrosis. artificial, of forearm, (18) 2215
Pseudo-digestion, putrefactive, (59) 159—ab
Pseudo-parasites, of cancer, (14) 725
Psoriasis, cure of, with study of 500 cases of disease, in private practice, *1630
influence of light hunger in production of, (3) 1514—ab
sun baths for, (53) 394—ab
Psychiatry and neuriatry in medical press, (115) 2124.
bearing of philosophy on, (11) 1685
cerebral localization and study of, (3) 1419—ab
Psychical faculties, scientific investigation of, or processes in higher animals, (17) 1515—ab
Psychoencephalonasthenia or cerebrasthenia simplex and psychoencephalonasthenia or cerebrasthenia insaniens, (129) 722
Psychology, clinical, (20) 1956—ab, (95) 2124—ab
Psychoses, cytodiagnosis of organic, (95) 309
head trauma and, (109) 309
suggestion in treatment of certain, (81) 897
toxic, (68) 1330
types of devolutional, (6) 1419
Psychotherapy, analytic method in, (12) 1765
experience with simpler methods of, and re-education, (31) 1595—ab

Psychotherapy, rational, (9) 1419
Ptomain poisoning, (81) 1514
poisoning and paratyphus, (52) 1422—ab
Ptoses, rational treatment of visceral, (11) 538—ab
visceral, and movable heart, (80) 902
Puberty, dangerous influence of overtaxing girl's mind, at, (67, 68) 1597—ab
Pubiotomics, eleven, (93) 2129—ab
sixteen, with needle, (61) 2043—ab
Pubiotomy, (87) 1235. (36) 1333—ab, (75) 1336—ab
and artificial premature delivery, (12) 2177—ab
and its relative indications, (58) 2122
child-birth after, (82) 1142—ab
dangers and means to prevent, (90) 1602—ab
healing of wound after, (73) 2127
instrumentarium for, (78) 1773
Public health, are tuberculous clinics dangerous to? (32) 72
health questions, medical women and, (1) 1514—ab
health work, importance of, (66) 640
school curriculum, child and, (16) 967
schools, medical supervision of, (76) 309
what shall we teach, regarding venereal disease? *1250, *1253
what should we teach, regarding venereal disease? *1252
Publicity as factor in venereal prophylaxis, *1244
Puerperal eclampsia, thoughts on, symposium on, (70) 722—ab
fever, antistreptococcus serum in, (39) 1233
fever, ligation of pelvic veins in pyemic form of, (83) 1861
morbidity, influence of disinfection of vagina on, (86) 973—ab
Puerperium, management of second and third week of, (79) 2123
nervous affections in, (77) 1518—ab
venous thrombosis in, (90) 1235—ab
nervous diseases in (85) 78
Pulp, some pathologic features of, *916
Pulse, alternating, (83) 1963
alternating with partially alternating heart action, (84) 1963
cessation of, during onset of epileptic fits, (14) 542—ab
curves, relation of, to blood pressure, (13) 1231—ab
dicrotic, with aortic insufficiency, (110) 1775—ab
in aortic disease, (13) 1231—ab (15) 971
rate of 56 in internal hemorrhage from tubal pregnancy, (71) 242
Pupil, immobility of, traumatic (81) 243
reflexes originating in viscera, (108) 1864—ab
Pupils, hysterical attacks in immobility of, (70) 313
voluntary dilation of, (71) 2127
Purgatives, abuse of, (108) 2124—ab
Purin-free diets, (21) 1515
Purpura, (65) 1058—ab
hemorrhagica and tuberculosis, (45) 812
hemorrhagica, case of, *936
Purpuric conditions, treatment of, and hemophilia, *1090
Puru of Malay peninsula, (19) 76, (16) 239
Pus, cytology of gonorrheal, (55) 1961
Pyelonephritis, (14) 2120
gravidarum, (80) 1235
Pyelitis, acute, (37) 2176
in infancy, (22) 1956
Pyemia, indications for ligation of internal jugular vein in otitic, (15) 2040
of nose, (75) 727
orbital cellulitis and death following use of mesotan, (73) 462
otogenic, (67) 813
Pygmies in sickness and in health, (13) 1059
Pyloric spasm, in an infant, (9) 1225
stenosis, diagnosis of, (94) 1058
Pylorogastrectomy for cancer of stomach, (41) 901—ab
Pylorus, autointoxication from stenosis of, (79) 467—ab
cancer simulating pernicious anemia, (139) 1966
congenital hypertrophy of, (50) 158—ab, (11) 239—ab, (31) 460—ab, (27) 1515, (13, 15) 1598—ab, (48) 1855, (80) 1958—ab, (140) 1966
surgical treatment of stenosis of, (113) 74
Pylorus, treatment of gastric and duodenal ulcer and benign obstructions of, (52) 809—ab
Pyocyaneus sepsis in an adult, (64) 1335
Pyonephrosis, two cases of calculous, with nephrectomy, (32) 1956
Pyuria, (20) 1231, (43) 1417—ab, (63) 1514
without suppurative processes, (42) 724—ab

Q

Quadriceps extensor tendon, rupture of, (130) 309
Quillaja bark, treatment of diseases of respiratory tract with infusion of, (54) 643
Quinin and iron in pneumonia, *110, *272
best time to give, (47) 1417—ab
caffein treatment of eye for hay fever, (88) 2044—ab
fever, (5) 2035—ab
test of blood spots, (57) 1517—ab
treatment of cholera, *1986

R

Rabies, action of radium in, (115) 547—ab, (92, 103) 816—ab, (52) 1599, (88) 1863, (127) 1695
and dog catching, (42) 464
etiology of, (59) 644—ab
Negri bodies in, (46) 1860—ab
preservation of virus of, in glycerin, (104) 1863—ab
resistance of virus of, to putrefaction, (106) 1863
Race question from medical standpoint, (78) 810
Rachitis, (77) 1229—ab
abdominal atony of, significance and treatment, (5) 1598—ab
adolescent or late, (21) 1960
congenital, (48) 1860—ab
in Italy, (96) 2128
scorbutus and cretinism, etiology of, (127) 1139
urine in, (111) 1691
Radiation, present position of, in treatment, (78) 1138, (73) 1768
Radioactivity of mineral waters, (105) 974
Radioscopy of infant's stomach, (34) 900—ab
Radiotherapy, aids to accuracy and efficiency in, (11) 1853
in skin disease, (28) 1515
Radium, action of, in rabies, (115) 547—ab, (92, 103) 816—ab, (52) 1599, (88) 1863, (122) 1965
action of on muscles, (78) 902
in physiology and therapeutics, (31) 900
in surgery, *183
in treatment of trachoma, (79) 1690—ab
Radiumite, *1630
Radius fracture of, (58) 813
Railway injuries, classification of causative factors of, and allied injuries based on kinesic states assumed by injured individuals, with analysis of, (82) 361, (105) 309
Rat extermination, effects of, on incidence of plague in selected area in Azamgarh City, (26) 1139
fleas, experimental investigation as to potency of various disinfectants against, (28) 1139
Rattlesnake bite, adrenalin chlorid in treatment of, (106) 1959
bite, death from, *2012
Reaction, diazo, value of, in children, (110) 1691
precipitant, (71) 1861
Reciprocity, an agreement of in medical licensure between States of New York and Ohio, (19) 1854
how may interstate, be best accomplished? (21) 1136
impracticability of interstate, *553
interstate, in licensing, (41) 307, (7) 1414—ab
Rectal speculum, new, (65) 1234—ab
tube, improved postoperative, (55) 1057—ab
Rectum, ataxic, (6) 1054—ab
axioms in treatment of cancer of, (2) 1327—ab
cancer of, (9) 387, (44) 901—ab, (51) 2126—ab
cancer of sigmoid and, (28) 967—ab
ether narcosis by, (54) 1057
fistula, treatment of, (41) 1513
importance of postoperative treatment of diseases of, (92) 154
mercurial treatment of syphilis by way of, (47) 76—ab
new rectal enemator for, *273
pseudo-tuberculosis of, (108) 2025—ab
Rectum, relation of, to diseases of women, (102) 2124—ab
remote results of radical operation of cancer of, (70) 395—ab
retention of sphincter in removal of rectal, (96) 1603—ab
stenosis of, from expelled myoma, (69) 466—ab
surgery of carcinoma of upper portion of, and sigmoid colon, (34) 967—ab
treatment of cancer of, (7) 718
Rectus, case of isolated palsy of right external, *274
paradoxic, (54) 73
Reed, Walter, U. S. army general hospital, District of Columbia, (24) 1956
Reese urethral irrigator, modification of, *1830
Reflex arc, value of, in diagnosis, (112) 1857
paradox, (54) 73
symptoms, cases where, were proven not to be reflex, (46) 461—ab
Reflexes, cerebral element in, and its relation to spinal element, (53) 1768
diagnostic significance of ocular, (53) 241—ab
of dentition, *25
Refraction at a toric surface, (101) 1857
errors of, among children attending elementary schools in London, (3) 641
Reforms, two desirable, *550
Regenerative tablets, *1625
Reglementation, a practical lesson in, *2076
Relapsing fever, clinical picture of, (22) 543
Remedies, popular synthetic, their use and misuse, (91) 309
standard, in treatment of diseases, (89) 390
Renal decapsulation and nephrotomy in treatment of serious forms of eclampsia, (46) 308—ab, (55) 1234
surgery, (43) 1233
Rengo fruit, *1628
Reproduction, processes of, (33) 808
Requirements, entrance, *557
Research work, suggestions in special lines of, for women, (91) 1514
Resistance, methods of conserving natural, in surgical cases, (119) 309
Resorts, observations on European climatic, (65) 154
Respiration and pulse, changes in relations between, (52) 465
arrest of, after operation on skull, (45) 1516
Respiratory tract, obstructions in upper, (93) 541
training, defects of present system of, for soldier, with hints toward its improvement, (47) 1599
Rest, employment of, in rational treatment of pulmonary tuberculosis, (101) 1058
exercise and sleep, influence of, on gastric digestion, (42) 396—ab
vs. passive exercise, (101) 898
why, is so essential in treatment of tuberculosis, (129) 1139
Restorative remedies, *1625
Resuscitation of patient apparently dead from primary heart failure, (29) 1687—ab
Retina, concerning signs in, of persistent high arterial tension and their diagnostic and prognostic import, (95) 970
glioma of, (73) 970
monocular visible spasm of central artery of, (74) 879
operative treatment of detachment of, (48) 465—ab
pigmentation of, after opticociliary neurectomy in man, (74) 970
retinal hemorrhages in apparently healthy eyes, (122) 541
uniocular inflammations of optic nerve and, *1
Retinitis, albuminuric, of pregnancy, (55) 1957—ab
diabetic, (71) 640
punctate forms of, (59) 1958—ab
Retrodisplacement, therapeutics of, (26) 2121—ab
Retroflexion, ventrosuspension of shortened round ligaments for, (78) 79—ab
Revaccination, value of, (20) 723—ab
Rhabdomyoma of female genitalia, (102) 2045
Rhabdomyoma, multiple, of heart muscle, (29) 896—ab
Rheumatic affections, sal-ethyl in treatment of, (58) 1229
complications, notes on, (17) 641
Rheumatic fever and amyloid degeneration, (4) 2124—ab
infection, manifestations of, in children, (63) 1685—ab
Rheumatism, (68) 1229
action of salicylates in acute, (2) 2124—ab
acute; hyperpyrexia; recovery, (15) 723—ab
articular, treated without salicylates, (93) 467
as factor entering into eye and throat diseases, (138) 74
cures, *1628
diet and hydrotherapy in treatment of, and gouty conditions, (89) 970
hydrotherapeutic treatment of chronic, (13) 1415—ab
in children, (7) 1598—ab
observations on, and its treatment with mineral baths of Mount Clemens, (52) 1596
salicylates and nephritis in articular, (92) 467—ab
value of massive doses of salicylates in diagnosis and treatment of acute articular, (30) 1416—ab
Rhinitis in infants, (50) 1860—ab
membranous (non-diphtheric), (79) 540, (101) 1230
Rhodan compounds, physiologic importance of, (90) 1518
Rhythm, gallop, (78) 396—ab
Ribs, clinical significance of cervical, (47) 1855
treatment of fractured, (56) 897—ab
Rice bodies, origin of, in tuberculous processes, (105) 315
Rickets (See Rachitis)
Rider's sprain, (21) 900—ab
Rinderpest, (80) 970
Ringworm, varieties of, and treatment, (4) 641—ab
x-ray treatment of, of scalp, (39) 971
Riviera, Irish, (7) 71—ab
Rocky-Mountain or spotted fever, *36, *686, (126) 810—ab
spotted fever, transmission of, by bite of wood-tick (dermacentor occidentalis), *358, *1067
Roentgenization in treatment of cancer, *1540
Roentgenography of stomach, (5) 1414—ab
Roentgen-ray (see also x-ray)
diagnosis of nepbrolithiasis, (7) 2123
evolution of, (93) 154
exposure of ovaries during pregnancy, (87) 1142—ab, (26) 2177
in early diagnosis of pulmonary tuberculosis, (33) 1595—ab
in epithelioma, lupus and tertiary syphilis, (21) 2036
influence of, on metabolism in leukemia, (77) 2044—ab
in leukemia, (114) 547—ab, (48) 643, (52) 1062—ab, (48) 1516—ab
photographs, in relief, (94) 79—ab
physiologic action of, (55) 1856
physiologic actions and therapeutic uses of, (12) 639
pictures, plastic, (106) 1603
production and therapeutic value of, (151) 74
technic, (69) 1773, (21) 2177
therapy, practical, (111) 1959, (21) 2177
therapy, results in, (4) 1853
treatment, formation of leucotoxin under, (93) 974—ab
treatment, metabolism in leukemia under, (49) 643—ab
treatment of exophthalmic goiter, (63) 1063—ab
treatment of leukemia and pseudoleukemia, (113) 1775—ab
treatment of malignant disease of bladder through suprapubic incision, (33) 1513—ab
treatment of malignant growths by, (110) 1597
treatment of mediastinal tumors, (99) 1691—ab
treatment of neuralgia, (88) 903—ab
two cases of sarcoma improved by, (55) 1772
value of, in surgical diagnosis, (120) 238
value of, in therapeutics, (123) 810
work in war, (88) 243
work, protection of internal organs in, (68) 1773—ab
Romanowsky stain, (69) 1335
Rooms, disinfection of, by formaldehyd, comparative bactericidal value of various methods, (8) 1512—ab
Rosenstein, N. Rosen von, 1706-1773, (102) 903
Rotunda hospital, clinical report of, (12) 1059, (26) 1420
Russo's methylene blue test, (92) 1691—ab

S

Sacrococcygeal tumor (teratoma), (40) 2120
Sacro-iliac synchondroses, relaxation of, (15) 2120
Sacroteratoma, case of, (8) 966
Sacrum, cancer of, (87) 1862
Sadism, (134) 722
Safety pin, removal of open, from esophagus, (30) 1328
Sahli's desmoid test of stomach functionating, (62) 242, (52 313—ab, (51) 1057, (37) 1420—ab, (77) 1690
Sal-ethyl in treatment of rheumatic affections, (58) 1229
Salicylates, action of, in acute rheumatism (2) 2124—ab
and nephritis in articular rheumatism, (92) 467—ab
value of massive doses of, in diagnosis and treatment of acute articular rheumatism, (30) 1416—ab
Saline-solution, influence of intraperitoneal injection of warm sterile normal, in intraperitoneal hemorrhage, *1460
normal, in abdominal operations, (49) 538, (42) 2023—ab
uses and method of administering normal, (126) 1857
utility of, in treatment of fever, *1551
Salt action and salt solution, (82) 722
and working capacity, (35) 393
starvation, (64) 972
Salts and drugs, contribution to general principles of pharmacodynamics of, (29) 1227—ab
mucoid, *560
Sanatoria, advantages of local, in treatment of pulmonary tuberculosis, (91) 1597
for children, (58) 543
scope and aim of state, for tuberculosis, *317
Sanatorium, analysis of results obtained at Sidlaw, (18) 155
and its mission, (100) 898
cases, a thousand, (43) 1421—ab
treatment of the tuberculous, (91) 390—ab
Sandal oil emulsion in gonorrhea, (105) 2129
Sanitary department of armies and military medical officer, (48) 308, (108) 722
science and quarantine, (70) 1229
Sanitation and hygiene, relation of physician to, (12) 966, (112) 1138
education in, (79) 309
humor of Indian, (35) 1599
in war, (29) 1420
résumé of work of, performed by San Francisco board of health, from April 18, 1906, to date, (51) 2038
Saphena, total resection of, in varicosities of leg, (29) 156—ab, (43) 901—ab
Sarcoma and myoma of stomach, (34) 1684—ab
diagnosis of, (2) 2174
fever with, (127) 1966—ab
improved, by Roentgen ray, (55) 1772
in dura with calcified metastases in heart, (85) 1862
interscapulothoracic amputation for, of arm, (30) 1956
metastasis in transplanted, of mouse, (51) 1517
multiple giant celled, (30) 538
of both faucial tonsils, (73) 540
of nasopharynx, (90) 1685—ab
of nose, (72) 1685, (69) 2039, (7) 2120
papillary, (42) 240
pathologic and clinical diagnosis of, (24) 1765, (23) 1956, (23) 2036, (24) 2120
primary, of adrenal gland, (30) 808—ab
primary, of knee, (77) 545—ab
primary, of omentum, (32) 460
relation of to angioma, (96) 315
retroperitoneal, (98, 133) 898
transplantation of round-celled, (102) 1519
treatment of, of nasopharynx, by adrenalin, *430
uveal, point in management of, *2159
Sarcomata, three cases of primary, of stomach, (17) 1059
Sauerbruch's operative chamber; history, experiments and experiences, (26) 306
Scabies, points in diagnosis, infection and treatment, (38) 971
Scalp, elephantiasis nervorum of; manifestation of von Recklinghausen's disease, (24) 1415—ab
x-ray treatment of ringworm of, (39) 971
Scaphoid, incomplete enucleation of, (40) 900
Scapula, conservative surgery for tumors of, (121) 548—ab
malformation of, (37) 900
Scarlet-fever, (129) 898, (102, 107) 1138
acute edematous hypertrophy of tongue in, in adult, (25) 155
body weight and milk diet in, (97) 1519—ab
early course and diagnosis of, (17) 1853
etiology, transmission and diagnosis of, (51) 1330
nephritis, family cases of, (71) 1063—ab, (68) 1768
otitis-media as complication or sequel of, (28) 460
return cases of, (56) 159—ab
serum, (82) 314
Schistosoma Japonicum, three cases of infection with, in Chinese, (26) 1599
Schleich's method, cocain anesthesia by, (41) 1516
School and corset, (93) 244—ab
room, sanitary regulation of, with reference to vision, (64) 1597—ab
School-children, examination of 538, of East Cleveland schools, (106) 810
health of, (1) 458—ab, (93) 1769
health of New York, from point of view of department of health, (45) 1767
physical care of, (2) 458—ab
results of Allport's plan of examination of eyes and ears of public, in Orange, (98) 1330
Schools and hospitals, advantages of separate organizations for training, (17) 807
medical inspection of, (3) 718, (69) 810, (111) 898, (6) 1331
Schuller's bodies in cancers, (107) 1519
Sciatica, perineurial infiltration treatment of intractable, (51) 643—ab
surgical treatment of, (49) 158—ab
true, and diseases of posterior urethra and adnexa, (106) 1331
Science and quarantine, (70) 1229
important discoveries and progress in medical, since time of Hippocrates, (93) 309
religion and physician, (105) 541
Sciences, unity of medical, (88) 1597—ab, (119) 2124—ab
Scleroma, case of, (18) 542, (28) 1960
neonatorum, case of (18) 542, (28) 1960
Sclerosis, early signs of insular, (11) 2175
multiple, clinical course and pathologic anatomy, (52) 73—ab, (105) 722
preacher's hand in multiple, (85) 396
Sclerotomy, posterior, as a preliminary to iridectomy in acute glaucoma, (75) 970
Scoliosis, dorsal, (24) 155
the result of asymmetrical growth, (99) 904—ab
treatment of, by general practitioner, (101) 546—ab
Scopolamin hydrobromid, (37) 1136
in anesthesia, (63) 153
injections, Babinski reflex after, (93) 1518
morphin, and spinal anesthesia, (69) 1862—ab
morphin anesthesia in labor, (60) 77—ab, (102) 1774—ab, (59, 75) 1862—ab
poisoning, fatal case of, (20) 1512
Scorbutus, study of, (46) 393—ab
syndrome due to typhoid bacill, (113) 2046—ab
Scotomata, mapping, precise position of double images in paralysis, (64) 1957
Scrofula, (40) 2178
Scrotum, extirpation of penis with resection of, (65) 1141
Scurvy, infantile, (2) 641—ab, *1918
operative treatment of infantile, (70) 242
two cases of infantile, (88) 390
Sea shore for scrofulous children, (57) 1140
water, injections of, in nephritis, (77) 972
water, injections of, in hemophilia, (61) 1688—ab
Section, new frozen, of body of parturient dying at expulsion period, (92) 315—ab
Secretin, treatment of diabetes with, (48) 1688
Seminal duct and vesicle, irrigation and drainage of, through vas deferens, (105) 1959, (38) 2120
Seminal-vesicles, affections of, (79) 1514
calcification of vas deferns and, *103
gonococcal infection of, (122) 74
operations on, (58) 466—ab
Sensibility and stereognosis, cutaneous muscular, (34) 1416—ab
recurrent or supplementary, (105) 1863—ab
Sepsis originating in urinary passages, (58) 1422—ab
puerperal, (22) 234, (113) 309, (4) 639, (56) 1513, (11) 1858, (36) 1956
puerperal, complicated by parotid abscess, (24) 2176
treatment of, (67) 1768
treatment of, with collargol, (67) 544
Septicemia, staphylococcus, (66) 544
Septum, abscess of cartilaginous nasal, deformity corrected by subcutaneous injection of paraffin, (30) 72
contribution to technic of submucous, operation, (69) 540, (70) 540—ab
cutaneum, plastic substitute for, (70) 466—ab
defect in interventricular, (101) 1863—ab
deflection of, new operation for extreme cases of, with presentation of successful result in adult case, (75) 1137—ab, (20) 1328—ab
perforation of, nasal, (28) 1328—ab
perforations of, intra-auricular, (40) 543
submucous excision of deviations and spurs of nasal, (8) 310—ab, (14) 1139—ab
Sera, antagonism between normal and immune bactericidal, (121) 1603
production of cytotoxic, by injection of nucleoproteids, (29) 1766—ab
Serum, action of cytotoxic on blood-forming organs, (117) 2130—ab
antitetanic in Fourth-of-July injuries, *500
antistreptococcic, use of, (16) 2176—ab
component, third, (33) 1227
disease, (42) 640
effect on new-born animals of parental injection of heterologous, (10) 2176
having therapeutic value in treatment of exophthalmic goiter, *661
negative action of antistreptococcus, (56) 725
pathology, a fundamental error in current attempts to apply physical chemistry to, (32) 1227
prepared, toxic for peripheral nerves, (60) 972—ab
therapy, (21) 459, (28) 1859
therapy of tetanus, (39) 967—ab, (34) 1329
therapy, present status of, in surgical affections, (7) 1955
therapy, progress in, during year ending June 1, 1906, (68) 237—ab, (51) 461, (82) 1330
treatment of thyroidism by specific, *655
Sesame oil, intoxication with, (53) 1962—ab
Sesamoid bones of metatarsophalangeal joints, (82) 1963
Sexual and vesical weakness, strychnin and hydrastin in, *2145
life, relations between, and origin of mental affections, (57) 1860
variants, problem of, (21) 1055
Shield, new, for use in nose and throat examinations, *775
Shock, surgical, (14) 310, (2) 966, (102) 1058, (63) 1330, (64, 76) 1768, (34) 1859
Shoes, flexible balancing, (20) 1683—ab
Shoulder girdle, two cases of amputation of, (15) 542
joints, tuberculous abscess of, mistaken for progressive muscular atrophy, (87) 1418
recurring dislocation, (31) 812
Shoulders, stiff and painful, (46) 721—ab
Siam, pathologic and medical organization, (40) 812
Sigmoid, angulation at, (29) 2036
cancer of, and of rectum, (28) 967—ab
surgery of carcinoma of upper portion of rectum and, (34) 967—ab
surgical conception of, *832
Sigmoiditis, (38) 157—ab
Silk, oiled, to protect intestine in tamponing peritoneum, (73) 1517
Silver acetate to prevent ophthalmia neonatorum, (123) 1603
bacterial action of compounds of, (6½) 898—ab
clinical and experimental experience with colloidal, and virulent streptococcus, (29) 1854
compounds, chemistry of organic, *1258
nitrate and zinc in chronic gonorrhea, (71) 972—ab
oxid and silver suboxid, (76) 237
preparations, experimental study on bactericidal power of various, (8) 1226—ab
Sinus, course of sigmoid, in child's skull, (77) 74
demonstration of suction method in diagnosing disease of, (78) 540
disease, enucleation; uncalled-for disfiguring operations resulting from failure to recognize accessory, (4) 1682—ab
disease, etiology of accessory, (55) 1137
disease, of sphenoidal, (96) 541
disease, ocular signs and complications of accessory, (46) 236, (58) 1137
disease, use of x-ray in, (123) 1230
exostosis of frontal, (8) 2040—ab
infective sigmoid, thrombosis, resection of internal jugular, (22) 1328—ab
infective, thrombosis; varieties of general infection and treatment, (56) 390
operation, maxillary, that has yielded best results, (75) 1685
proposed operative measure for thrombosis of cavernous, (76) 541—ab
some cases of maxillary, empyema treated intranasally, (81) 540
suppuration of maxillary, with involvement of ethmoidal cells and sphenoidal sinuses, (48) 1417
symptoms and treatment of disease of, and jugular thrombosis, (55) 390
thrombosis, cavernous, in children following mastoid inflammation, (66) 1685
thrombosis, infective sigmoid, (91) 1685—ab
thrombosis of, circulatory disturbances following ligation of internal jugular vein in, (71) 74
thrombosis, treatment of, (55) 158
to retain anterior wall of, in frontal sinusitis, (57) 1062—ab
two cases of radical operation on maxillary, and ethmoid, (71) 1685
unusual case of thrombosis of lower part of lateral, (16) 1770—ab
unusual cases of frontal suppuration, (10) 2039
Sinuses, accessory nasal, and pneumococcus infections, *1561
nasal, diagnosis of inflammatory diseases of accessory, (56) 1137
treatment of diseases of accessory, (57) 1137
Sinusitis, cerebral and opthalmic complications in sphenoidal, (10) 1419—ab
external or internal operation in suppurative, (56) 1961
frontoethmoid, (31) 463—ab
suction treatment of, (80) 1063
Skatol and indican in urine, (25) 311—ab, (42) 812
Skiagrams in relief, (68) 544
Skiagraph, value of bismuth, shadow in determining topography of gastrointestinal tract, (27) 896
Skiagraphy, new table and tube holder for, *113
Skin, analysis of 65 cases of bullous diseases of, (40) 1767
and genital organs, Bier's congestive and suction therapy in affections of, (55) 543
atrophic sclerosis of, and generalized myositis, (39, 41) 1771—ab
bleaches and beautifiers, *1629
disease, radiotherapy in, (28) 1515
diseases, blood in relation to, (12) 1514
diseases, lymph lavage in treatment of certain, (28) 392
diseases, methods of diagnosis in, (46) 2041
diseases, pathology of, (9) 723
distribution of afferent nerves in, *645
errors in treatment of cutaneous cancer of, (6) 1514—ab
gonococcal metastasis of, (34) 76
grafting, new methods in, (87) 1138—ab, (48) 1329—ab
lesions, treatment of non-malignant and non-tubercular, (56) 1229

Skin, linear affections of, (58) 1772
multiple neuromata of, *1810
mutual mobility between, and deeper structures and relation to bullet wounds, (28) 543
pigment, protecting action of, (56) 1772
relation of nerve impulse to cutaneous inflammation of, *8
treatment, therapy of cancer of, (71) 159, (83) 309
yeast for affections of, (54) 901
Skull, an instrument affording quick and safe method of entering, with minimum destruction of bone and preservation of vital bone flap, (112) 970—ab
arrest of respiration after operation on, (45) 1516
celluloid plates to close defects in, (74) 545—ab
chloroma of, (75) 1963
defects of, significance of, (30) 152—ab
diagnosis and fracture of, (124) 238
endocranial tumors of, (98) 244—ab
firearm wounds of, (47) 240
plea for exploratory incision in suspected depressed factors of, (54) 2121
percussion of, as means of placing indication for performance of lumbar puncture, (18) 1226—ab
six cases of fracture of, (117) 1230
temperature 92.8 F. following fracture of, (114) 898
tuberculosis of base of, (44) 1421—ab
use of Masland saw for opening the cranial vault, (45) 809
use of temporal fascia to cover in defects of, (46) 809—ab
Sleep and the hypophysis, (45) 393-ab
Babinski's sign in normal people during, (70) 2039
for children, (55) 1334—ab
influence of rest, exercise and, on gastric digestion, (42) 896—ab
some truths about, *652
Sleeping sickness, (27) 239—ab
means of checking spread of, (10) 391—ab
Sleeplessness and its treatment, (39) 307, (22) 463—ab
Smallpox in Alabama in recent years, (53) 540—ab
two atypical cases of, *1484
Sneezing, origin of custom of salutation after, (23) 1683
Social evil, etiology of, *2075
factors, some, in causation of infantile mortality, (10) 542
Societies, medical, of New York county with reference to need of better organization of medical profession, (9) 2035
Society, benefits to be derived from well-organized country, (11) 722
county medical, and its benefits to medical profession, (114) 1331
inebriates and moral perverts, (54) 540
Soda, further observations on citrate of, (34) 896
Sodium and magnesium, disinfectant properties of hypochlorites of, as produced by electrolysis, (18) 1770—ab
bicarbonate, success with, in cholera, (49) 1140—ab
citrate in infant feeding, *1080
citrate, use of, as modifier of cow's milk, *1241
silicate in treatment of pulmonary tuberculosis and participation of silicic acid in production of lung stones, (40) 1421—ab
Solanin, *1479
Soldier, health of, with reference to preventable diseases, (19) 899
Soldiers, preserving health of, in field, (31) 76
Solomon's test, for cancer of stomach, (37) 2178
Solutions, new theories in relation to medicine, (24) 1231, (32) 1420
Somnoform anesthesia, (42) 72, (66) 237
Soot, experimental inhalation of, (72) 1689—ab
Sound conducting apparatus, incorrect deductions from experiments with tuning forks on function of so-called, (59) 390
conduction, theory of, (99) 2039
waves, therapeutic effect of, or mechano-therapeutics of ear, (14) 305
Sounds for Eustachian tube, (23) 72—ab
South Africa, disease and hospitals of interior, *960, *1050
African stock diseases, (24) 899
Souvenirs, gynecologic, (25) 1059—ab
Spa treatment of cardiac dilatation, (22) 1859
Spasm, monocular visible, of central artery of retina, (74) 897
Specialism in its modern significance, (26) 1227—ab
is, a psychic advance or a retrogression, (114) 2124
Specialist, general practitioner and, (17) 459
Specialists and specialties, (100) 1143
Speech, disturbances of, in childhood, (49) 1137
limitations of perception of, (81) 1862—ab
occurrence and absence of crossed paralyses and disturbances of, in otitic suppurations of brain and meninges, (101) 2039
Spermatic cord, tropical inflammation of, (76) 972
fluid, Barberio's reaction for, (83) 1690—ab, (118) 2046
fluid reaction to homologous, subcutaneously injected, (63) 1234
Sphygmomanometer, determination of blood pressure by use of, (69) 641
Spikes, row of, for external prothesis of fractures, (33) 156—ab
Spina bifida, (91) 159—ab
Spinal analgesia in forceps delivery, (74) 1229
anesthesia, (6) 2177
Spinal-cord, affections of, in epileptics, *1717
changes in, after injection of blood, (118) 1775
changes in kidney after injury of, (59) 902
disease of, (23) 1771—ab
gunshot wounds of, (14) 1135—ab, (12) 1226—ab
inflammation of extradural tissue of, in epidemic cerebrospinal meningitis, (48) 901—ab
of rabbit used to bridge gap in musculo-spiral nerve, (31) 971
three cases of tumors compressing, (46) 1061—ab
tumor of, (87) 1518—ab
Spine, cause of so-called habitual lateral curvature of, (16) 1956—ab
chronic rigidity of, (24) 971
concussion of, with remarks on concussion in general, (13) 1331
congenital deformity of, (6) 2122
curvature of, ocular factors in etiology of, (9) 459—ab
effect of pressure on curve and rotation of, (66) 2123—ab
fracture dislocation of, (8) 1959
osteomyelitis purulent, acute and subacute of, (73) 2043
percussion of, (84) 1862—ab
sacrum and pelvis, auscultation of, (84) 1064—ab
simple method of recording torsion in lateral curvature, (73) 2122
total luxation of, *1377
two cases of chronic ankylosis of, (55) 643
Spirilla of mouth, (27) 1960
Spirillum obermeieri, cultivation of, *2152
of bat, (45) 971
of fowls, (59) 971
Spirochæta-duttoni, passage of, from mother to fetus, (11) 641—ab
structure of, (17) 899
Spirochæta-pallida, (45) 240, (130) 1966
diagnostic significance of, (59) 1961
improved smear technic to show, (100) 1603
in congenital syphilis, (64) 544, (99, 103) 974, (107) 1143
in nerves of prepuce in syphilitic initial sclerosis, (54) 813
in syphilitic products, (94) 2045
in tertiary syphilis, (54) 394, (106) 1143
in tissues, (51) 313
staining of, (76) 466, (91) 1063
Spirochete, new, found in a mouse, (19) 1139
silver, (66) 160, (51) 1961
specific nature of, of African tick fever, (20) 155
Spirochetes, cultivation of, on artificial solid media, (64) 242
in cancer and in syphilis, (67) 1601—ab
inside the cells in syphilis, (86) 815—ab
observation of, in yaws and granuloma pudendi, (5) 1685
study of living, (108) 975
Splanchnoptosis, (102) 74
genital tract in, (108) 1419
introduction to study of fundamental cause of—abdominal incompetence, (19) 640, (17) 719
Spleen, behavior of, in carcinoma, (71) 1423
Spleen, congenital malformation of heart with malposition of certain viscera and absence of, *363
primary tuberculosis of, (61) 1773—ab
rupture of, two cases of, (62) 313—ab
x-ray in enlargements of, (14) 966
Splenectomy and Banti's disease, (11) 1959
case of, (29) 1956—ab
study of blood in Banti's disease before and after, *1149
stomach functions after, (98) 816—ab
successful case of, for rupture of spleen, (13) 811—ab
Splenic abscess in malarial liver, (21) 723
extract, therapeutic action of, in malarial infections, (2) 537—ab
Splenomedullary pseudoleukemia, with secondary myelophthisic anemia, (32) 1416—ab
Splenomegaly, parasite of tropical, (72) 813
tropical febrile, (66) 462
Splint, new for fractures of humerus, (54) 968—ab
Spondylitis, etiology and diagnosis of tubercular, in infancy and childhood with fatal coma following administration of alcohol, chloroform and ether anesthesia for diagnostic purposes, (30) 896
typhoid and paratyphoid with cerebral changes, (9) 2175—ab
Spoons for medicines, (35) 900—ab
Spotted fever, (104) 541
four cases of, in Colorado, (85) 810
further observations on Rocky Mountain and dermacentor occidentalis, *1067
Rocky Mountain or, *36, *686, (126) 810—ab
study of Rocky Mountain (tick fever?), by animal inoculations, *33
transmission of Rocky Mountain, by bite of wood-tick (dermacentor occidentalis), *358
Sprains, successful treatment of, with mechanical vibration, (106) 1058
Sprue and chronic intestinal lesions, (22) 1420
Sputum, examination of, by expert laboratory methods and its clinical significance, (78) 309
peroxid of hydrogen in examination of, (117) 1692—ab
sterilization of tuberculous, and articles infected by tubercle bacillus, (11) 899—ab
Squint, observations on Worth's treatment of convergent, in young children with presentation of cases, (68) 897
relations of superior and inferior recti muscles to convergent, *105
Stain index of red corpuscles, (80) 396—ab
neuroglia, (107) 2129
triple, for tissues, (102) 1964—ab
two modifications of Leischman, (36) 1056
Stammering and its treatment, (16) 1332—ab
Starvation, hallucinations from, (20) 642—ab
State, duty of, toward venereal diseases, *1248
Static current, fragmentary clinical therapy of, from generalist's scrap heap, (75) 1229
Status lymphaticus, clinical diagnosis of, (23) 388
Steel comb, use of, for dissection in axilla, (41) 461—ab
two splinters of, removed from interior of eye with magnet, (59½) 236
Stenosis, pathogenesis of mitral, (34) 2178—ab
persistence of laryngeal after intubation or tracheotomy in children, (65) 644
tracheal, (98) 80—ab
Stereoskiagraphy, (7) 806—ab
Sterility, (23) 1059—ab
and its surgical treatment, (35) 808
causes and treatment of, in male, (76) 1137
causes of, (34) 808—ab
due to chronic appendicitis and hydrosalpinx, (61½) 237—ab
in male, (11) 1765—ab
in women; its causes and management, (94) 390
Sterilization, proposed, of certain mental degenerates, (7) 1419
Sterilizer, improved office, (26) 72
Stethoscope, new, *1377
Still's disease, (88) 1229
Stock diseases, South African, (27) 543, (32) 1599
Stokes-Adams disease, (18) 640—ab, (99) 815, (16) 971, (14) 1059, (10) 1770—ab
disease and cardiac arrhythmia, (22) 1960—ab
Stomach, acute dilatation of, (109) 1603—ab, (4) 1765—ab
acute postoperative paralysis of, with secondary duodenal obstruction, (91) 1235
and gynecologic lesions, associated, (34) 72
and intestines, therapy of hemorrhage of, (113) 1419
and upper duodenum, stenosis of, (75) 1423
antiperistalsis in, (57) 394—ab
as etiologic factor in disease, (92) 898
atony of, (51) 540
cancer of, (113) 316—ab, (8) 538—ab, (38) 1956
case of diagnosed carcinoma ventriculi; with rare and unexpected findings, (67) 309—ab
cirrhosis of, (26) 2037—ab
contents, analysis of, (88) 1138
diagnosis of cancer of, (66) 73, (100) 244—ab, (16) 895, (10) 1331—ab
differential value of occult hemorrhages in affections of, (43) 464—ab
dilatation of, (18) 1332
diseases, methods and principles of diagnosis in, (57) 1513
diseases of, requiring surgical treatment, (99) 154
fat-splitting capacity of, (35) 1420
functions after splenectomy, (98) 816—ab
hysterical neuroses of, with report of case of rhythmical borborygmi of hysterical origin, (85) 1418
indications for surgical intervention in diseases of, (6) 1594—ab
neuroses of, (134) 309, (15) 1686
operative treatment of cancer of, (48) 2041—ab
pathogenesis of round ulcer of, (107) 315—ab
postmortem report of rupture of, due to gastromalacia, (56) 2122—ab
postoperative acute dilatation of, (24) 388—ab
pylorogastrectomy for cancer of, (41) 901—ab
radioscopy of infant's, (34) 900—ab
Roentgenography of, (5) 1414—ab
Sahli's desmoid test of, (62) 242—ab
sarcoma and myoma of, (34) 1684—ab
significance of so-called occult hemorrhages in diagnosis of ulcer and carcinoma of, (13) 639—ab
Solomon's test for cancer of, negative verdict on, (37) 2178
surgery, clinical aspect of, (101) 1419
surgery of, history of, (107) 541
surgical treatment of perforating ulcer of, (33) 392, (1) 2040—ab
symptomatology of cancer of, (69) 902—ab
syphilis of, (51) 308—ab
tardy pain in, (65) 1689—ab
total atrophy of, *583
trauma and cancer of, (77) 395—ab
three cases of primary sarcoma of, (17) 1059
treatment of cancer of, (7) 899—ab
treatment of ulcer of, with record of cases, *838
tube, improved, *273
tube, use and abuse of, (124) 309
ulcer and cancer of, their relationship, (50) 73—ab
ulceration of, (40) 1136
Stomoxys, internal anatomy of, (25) 899
Stool, clinical examination of infant's, (109) 898
Stools, further contribution to study of, of starch-fed infants, *763
gram stain of, method applicable in diagnosis of carcinoma of stomach, (39) 72—ab, (19) 151—ab
study of, of breast-fed infants in relation to presence of starch enzyme, (29) 640
Stovain in spinal anesthesia, (51) 236
Strabismus and diplopia, cases illustrating Panas' operation for, (49, 54) 390
cure of convergent, by orthoptic treatment at age of 20, (69) 897
tendon grafting for, (85) 903—ab
Street cars, use of discarded, in open-air treatment of tuberculosis, (80) 1418

Streptococci, evolution of, (23) 2125
from scarlatinal and normal throats and from other sources, (30) 1766—ab
pathogenic for man, (12) 1230, (11) 1331, (15) 1419
pathogenesis of peptonizing, (101) 1774
to distinguish, (83) 1063
Streptococcus lysin, (53) 971
mucous as cause of acute otitis media, (131) 975
Stricture, rapid and permanent cure of old caustic stricture of esophagus by thiosinamin, (98) 546
Stridor, congenital, laryngeal, (6, 22) 2124
Strontium salts, observations on action of, on coagulability of blood, (16) 899—ab
Structure, study of, in relation to practical medicine, (44) 589
Strychnin and hydrastin, a novel method of using, in sexual and vesical weakness, *2145
as remedy in pulmonary tuberculosis, (12) 807—ab, (108) 810
treatment of diabetes insipidus with, (99) 546—ab, (47) 1233—ab
Students, our duty to prospective medical, (79) 1330
Stumps, gynecologic operations in treatment of, (116) 1603
Stuttering, (12) 463—ab
Subconjunctival injections in diseases of eye, (78) 1229
Success, subsidiary contributions to medical, (108) 74
the surgical desideratum, *1357
Sucking reflex in infants, in senile, and in insane, (60) 902
Suction mask to act on lungs, (67) 1423—ab
therapy, improved appliance for, (115) 1603
therapy for differentiation of malignant tumors, (126) 976—ab
therapy, of interior of uterus, (61) 1234—ab
Sugar, colorimetric determination of, in urine, (109) 1143—ab
influence of temperature on elimination of, (87) 396
in urine during pneumonia, (57) 466—ab
test for, in urine, (78, 97) 467, (53) 1421, (15) 1770—ab
Suicide, mysteries and sources of, (1) 966—ab
nervous phenomena following attempted, by hanging, (12) 310
375 attempts at, (67) 1335
unique case of automatic or unintentional, in epileptic, (8) 234—ab
Sulphate of copper plan, 43 cases of typhoid treated by, (61) 2122—ab
of soda, is true intestinal antiseptic, (26) 1961—ab
Sulphur and lead nitrate for disinfection of rooms, (115) 1966—ab
Sun baths for psoriasis, (53) 394—ab
Suppuration, treatment of acute middle-ear, (73) 810
treatment of intracranial complications of middle-ear, *1289
Suprarenal extract, changes in organs under influence of, (54) 1517
extract, pressure raising power of, (63) 159—ab
gland, danger from careless use of alkaloid of, *1188
glands, large cysts of, (53) 2024—ab
glands, résumé of recent literature relating to, and their application to clinical medicine. (9) 639—ab
preparations, antidote for, *2159
preparations, changes in vessels and organs after injections of, (54) 1422—ab
preparations, comparative physiologic activity of some commercial, *790
Surgeon, relation of general to gynecology, (35) 2121—ab
house of, at Pompeii, (63) 73
some problems of internist which concern the, (116) 970
Surgery, (80) 1229
anesthesia in minor, (82) 545
clinical training in, (90) 903
conservative for tumors of scapula, (121) 548—ab
European, (89) 1330, (34) 1599—ab
indications for surgical intervention in infections of biliary tract, *402
limitations of, in diseases of kidneys, (27) 389
oration on—Medical Society of New Jersey, (45) 389
principles of, (36) 389
review of, of female pelvic organs, (41) 539—ab
self-restraint in, (3) 2039
Surgery, then and now in, (17) 1686
triumphs of American, (41) 640
twentieth century featural (cosmetic), (122) 238
Uncle Josh on modern, (77) 1514
vaginal versus the abdominal route in pelvic, in women, (36) 235
Surgical diseases, diagnostic features of, attended with acute jaundice, (1) 537—ab
notes from Japan, '86) 1063
opportunity, (132) 898
principles and theories, (21) 1956—ab, (94) 2124—ab
procedure, continental, (34) 1599—ab
Survivals, mixoscopic adolescent, in art, literature and pseudo-ethics, (130) 722, (116) 2124
Susceptibility of ruminants and monkeys, (53) 1599
Suture, Chambers' abdominal, (70) 73
intrasaccular, of aneurisms, *1017
modifications of mattress, (76) 1517—ab
secure, looped, single-stitched advancement, with consideration of scleral anchorage, (70) 897
Sutures, capillarity in intestinal, *405
silver-rubber-silk, instead of silver wire for buried, (68) 1517—ab
Sweden, medical degrees in, (117) 1144
Symblepharon, paraffin plates as aid in operations for extensive, *570
Symbolism, erotic, (132) 722, (112), 2124
Symphysectomy, case of, (27) 392
report of five operations and consideration of advantages and disadvantages, (40) 809—ab
subcutaneous, (57) 1234—ab
Symptoms, treatment of, rational and scientific procedure, (3) 1327
Sympus dipus, case of, (23) 1765—ab
Syncytioma malignum, (21) 812—ab
Synorchidia, artificial, (62) 972
Synovitis, (11) 2130
passive hypermia in tubercular, of knee, and in wounds of palm, (86) 2123
two cases of suppurative, of knee, (100) 1138
Synthetic remedies, popular, their use and misuse, *1392
Synthetics, therapeutics of, in general use, (92) 309
Syphilides of liver, (68) 644—ab
Syphilis, (112) 74
and general paralysis in Arabs, (51) 76
apoplexy of liver in, (42) 1771—ab
are modern methods of diagnosing, scientifically accurate? (66) 1517
as factor in general practice, (106) 541
by what data, signs or symptoms can cure of, be determined? (25) 388
common errors in diagnosis of, (124) 1857
comparative speed efficacy of intravenous method of administering mercury in, (42) 1513
congenital, cerebrospinal fluid in, (68) 1063—ab
congenital, spirochæta pallida demonstrated in, (30) 392
crime in relation to, (47) 721
development of multiple and successive initial syphilitic lesions and pathology of, (82) 1239
diagnosis and treatment of, (98) 1597
differentiation of inflammation of retina and optic nerve in inherited, (89) 79—ab
diffuse hyperplastic laryngitis and pharyngitis of congenital, (31) 2125
does, in some cases spontaneously abort in primary stage? (70) 1857
dosage of metallic mercury in intramuscular treatment of, (35) 543
early diagnosis of, (49) 1962—ab
etiology of, (127) 309
evolution of intraprimary lesions of, (7) 1515—ab
hygienic measures against, (16) 75—ab
infection from cadaver, (129) 1966
injection treatment of, (21) 2120—ab
in regard to life insurance, (81) 74
intramuscular injections in treatment of, and use of sozoiodolate of mercury, (68) 73—ab, (45) 307, (21) 311
intravenous injections of mercury as therapeutic test for, (35) 720
labyrinthitis in secondary stage of, (88) 541
Syphilis, length of primary incubation stage of, (39) 720
little known peculiarities of teeth in hereditary, (68) 1958—ab
manifestations of, associated with pulmonary tuberculosis, (3) 387—ab
mercurial treatment of, by rectum, (47) 76—ab
modern treatment of, (17) 971
observations on microbiology of, (21) 1059
ocular, (51) 1417
of caruncula sublingualis, (48) 1233
of circulatory organs, (50) 394—ab
of ear, (77) 1768
of lungs, (114) 74, (95) 154
of nasal fossæ, (6) 1764
of stomach, (23) 155, (51) 308—ab
of testicle, (50) 2121
over-treatment of, (128) 810
preparation of satisfactory mercurial cream for intramuscular injection, (31) 543
professional, and accident, (103) 1236—ab
question of origin of, among conquistadores in Mexico, (52) 896
relapsing, (103) 74
relation of, to cancer of mucous membrane, (90) 390
Roentgen ray in epithelioma, lupus and tertiary, (21) 2036
routine treatment of, with intramuscular injections of mercury salicylate, (16) 1594
serodiagnosis of, (88) 79—ab
serum treatment of, (50) 1962—ab
so-called virulent, and its treatment, (17) 1859—ab
some atypical cases of, (20) 1136
spiral organisms in relation to, (57) 2039
spirochæta pallida in congenital, (99, 103) 974
spirochæta pallida in tertiary, (106) 1143
spirochete of, (38) 76, (46) 158, (86) 815—ab, (67) 1601—ab, (114) 1519
successful inoculation of eyelids of monkeys with, (36) 76
technic of intramuscular injections for, (10) 151
tardy hereditary of liver, (44) 76
tertiary, (50) 1685
tertiary fever of, (96) 244—ab
tertiary, which resembled phthisis in its course and symptoms, (94) 154
treatment of, (129, 130, 131, 132) 810
treatment of acquired, (115) 1138
virus, how long is, contagious? (126) 1520
what effective measures are there for prevention of spread of, and increase of prostitution? (13) 151, *1372
when to begin to treat, (82) 810
wives infected with, by their husbands, (58) 1600—ab, (53) 1688—ab
Syphilitic affections in posterior cranial fossa, (91) 467—ab
antibodies in cerebrospinal fluid of paralytics, (66) 2127—ab
inherited pseudo paralysis, (102) 815
Syphiloma, cardiac, with bradycardia and obstruction of inferior vena cava, (12) 641
Syringe, automatic suction, (92) 243
improved, for injecting precise amounts, (36) 1855
Syringomyelia, (10) 1686—ab, (33) 1687—ab
temporary disappearance of sensory symptoms in, (77) 897
unilateral, (48) 158
with involvement of cranial nerve probably syringobulbia, (81) 390
Systemic diseases, relation of, to otitis media purulenta and its complications, (80) 1058

T

Tabes-dorsalis analgesia of tendo achilles in Abadie's symptom), (93) 545
and gravidity, (82) 79—ab
and paresis, sphincter reflexes in, (78) 897
cases of, in which widespread cutaneous sensory manifestations completely disappeared, (18) 641
early diagnostic signs of, (11) 387
hydrotherapy of, (62) 1962
treatment of, in preataxic stage, (11) 234
typical case of, in negress, (13) 1594
with many complications, (73) 727
Table, combined office and operating, *2160
heated, for winter work out-of-doors, (132) 1139
Table, improved rectal operating, *111
Tabor, George R., M.D., state health officer and surgeon general of Texas, (128) 309
Tachycardia, paroxysmal, (58) 1417—ab, (86) 1518—ab
Talmudic literature, ophthalmic subjects in, (73) 897
Tampon, vaginal, some points of practical interest, (19) 1594
Tansy, poisoning from oil of, *509, *937, *1917
Tartar emetic, value of, in traumatic tetanus and cerebrospinal meningitis, (126) 1139
Taste sensations, (106) 1775
Tea, action of cold or lukewarm, on bacillus typhosus, (45) 1599—ab
Teaching, correlation of medical, (123) 154
Technic, modern skiagraphic, (60) 153
points in surgical, (44) 461
Teeth, little known peculiarities of, in hereditary syphilis, (68) 1958—ab
treatment of loosened, *258
what is effect on progeny of loss of, in ancestry? *191
Temperature, determination of normal, of closed inguinal fold of child, and its clinical significance, *1010
fluctuations in, in experimental tuberculosis, (42) 2178
influence of, on elimination of sugar, (87) 396
measurement of skin, (97) 974
record, permanent, (104) 1603—ab
Temporal bone, demonstration of sequestrum of, obtained during mastoid operation, (71) 390
bone disease, points in diagnosis of complications of, based on a study of 135 fatal cases, (95) 2039
bone, section of, of child; metal cast of ear, (69) 390
fascia, use of, to cover in cranial defects, (46) 809—ab
Temporosphenoidal lobe, abscess of, (65) 390, (37) 1417—ab
lobe, two cases illustrating points in diagnosis of tumor or other lesion of uncinate region of, (7) 310
Tendo Achilles, unusual case of ruptured, (23) 1420—ab
Tendon and muscle transference, (90) 237
grafting for strabismus, (85) 903—ab, (119) 2046
transplantation and grafting for paralytic deformities, (7) 387—ab
transplantation, indications and technic for, (48) 1962—ab
transplantation of, importance of intramuscular nerve tracts in, (126) 1692—ab
Tenia nana, two cases of infection with, in Philippines, *685
Tension, arterial, and its practical significance, (106) 237
vascular, in chronic illness, (21) 807—ab
Tent life, practical view of, in southwest, (8) 1328—ab
Teratomata of inguinoscrotal region, (32) 1684—ab
Test for arsenic, phosphorus and antimony, (85) 815—ab
for sugar in urine, (78) 467
for uric acid, (58) 466—ab, (55) 813
electrical resistance of blood and urine as, of functional efficiency of kidney, (5) 641
improved formalin technic for biologic, (45) 643—ab
nucleus, in pancreatic disease, (49) 1957—ab
precipitation, of albumin in food, (63) 544
quinin, of blood spots, (57) 1517—ab
rapid, for albumin in urine, (82) 1064—ab
ring, for acetone, (76) 1773—ab
Russo's methylene blue, (92)1691-ab
Sahli's desmoid, of stomach function, (62) 242, (52) 313—ab, (51) 1057
sensitive, for albumin in urine, (91) 816—ab
simple, for chlorids in urine, (96) 904—ab
Solomon's, for cancer of stomach, negative verdict on, (37) 2178
superiority of Petteruti, for hydrochloric acid, (89) 1863
technic for tuberculo-opsonic, (24) 808—ab
type cards, a time-saving addition to, (104) 1857
value of indigo-carmin, as aid in diagnosis of partial and total ureteral occlusions, (28) 1683—ab

Test, Widal, killed cultures for, (79) 727
Testicle, explosive rupture of, from trauma, (85) 2039
histology of undescended, (95) 1863
internal secretion of, with ectopy of that organ, (37) 543
syphilis of, (50) 2121
technic of surgical treatment of ectopic, (43) 2125
Testicles, artificial fusion of, (62) 972
free bodies in, (118) 548—ab
functions of, (17) 639
surgical means of access to, (121) 1965
Testimony and evidence in medicine, *1368
expert medical, (21) 305
Tests, diagnosis of different forms of nephritis and unreliability of nitric acid, (75) 309
fifty bacteriologic, of hands, brushes, gloves, Pasteur-filtered water, steam and formaldehyd sterilizers and formaldehyd disinfection of rooms, (32) 720, (122) 970, (59) 1229—ab
functional kidney, (57) 2126—ab
functional, of arteries, (82) 1602—ab, (89) 1690
functional, of heart muscle, (62) 544—ab
improved method of ring, in urinalysis, (14) 807—ab
of oxidation processes, (122) 547
some kitchen, to detect adulteration of common foods, (40) 1956—ab
value of clinical, in typhoid, (109) 1419
Tetanus antitoxin, dried, as a dressing for wounds, (6) 1511—ab
an urgent plea for use of larger doses of antitetanic serum for, (5) 1134—ab
case of, (105) 74, (75) 810
cold air in treatment of, and yellow fever, (19) 305
endoneurial injection of serum in, (85) 314
Fourth-of-July injuries and, *505, (112) 2039
in two brothers, (4) 1959—ab
neonatorum, *2083
neonatorum, with recovery, *583
recovery from traumatic, (87) 545—ab
serum therapy of, (39) 967—ab, (34) 1329
toxin, to separate components of, (25) 2177—ab
three cases of traumatic treated with serum, (70) 1601
treatment of, (61) 73—ab, (120) 1138
treatment of, by magnesium sulphate, (35) 1329—ab
value of tartar emetic in treatment of traumatic, and cerebrospinal meningitis, (126) 1139
Tetany, (129) 309
appendicitis as cause of, (38) 235—ab
of children, (56) 1860
relations between, and sexual apparatus, (122) 1604—ab
tendency to, due to lime in infant's food, (64) 1063—ab
Texas, imperfections of present medical practice act of, (86) 309
Then and now in surgery, (16) 1598
Therapeutic curiosities, (111) 547—ab notes, (72) 1514
Therapeutics, accuracy in, (78, 79) 1597
a summary of therapeutic field for the past year, *648
based on patnologic physiology, (16) 388—ab
old and new in ocular, (12) 391—ab
Therapy, active principle, or need of a revival of therapeutics, (95) 810
electrochemical, (118) 1144—ab
electro-medicinal, (69) 2127
essentials of successful Roentgen ray, (69) 154
Thermoregulator, an accurate and reliable, *1563
Thermovibrassage, new method of treatment, *1376
Thiersch flaps, after-treatment of, (91) 2129—ab
Thigh, bandage for stump after amputation through, (98) 722
Thiosinamin, rapid and permanent cure of old caustic stricture of esophagus by, (98) 546
Thoracentesis, accidents following, (6) 2175
Thoracotomy for traumatic hemothorax due to wound of intercostal artery, (16) 1419
Thorax, plastic operations on, (7) 2177—ab
Thoughts, facts and fancies, medical, (104) 1597
Throat, affections of, (18) 391
and neck, acute septic infection of; Ludwig's angina, (47) 809
and nose, in relation to phthisis, (18) 239
examination of, in chronic systemic infections, (17) 2036—ab
reflex, (77) 242
sore, bacteriology of, (28) 1599
sore, etiology and therapeutics, (17) 305
sore, in pulmonary tuberculosis, (97) 237
Throats, bacteria in scarlatinal and normal, *1171
Thrombophlebitis, subclavian, following abdominal section, (22) 539—ab
Thrombosis and embolism following abdominal operations, (39) 539—ab
cerebral, (124) 722
comparative research on, (100) 1964
infective sinus, varieties of general infection and treatment, (56) 390
mesenteric, (47) 1688
of placental vein, (54) 1233
primary cavernous sinus, secondary to osteomyclitis of petrous pyramid, (97) 2039
rare case of, of cavernous sinus following orbital thrombophlebitis, (78) 970
symptoms and treatment of sinus and jugular, (55) 390
unusual case of, of lower part of lateral sinus, (16) 1770—ab
venous, in puerperium, (90) 1235—ab
Thumb sucking, (11) 151—ab
Thymus, physiology and pathology of, (51) 1860—ab
Thyroid and parathyroid glands, ablation and atrophy of, (82) 1958
and parathyroid glands, structure and functions of, (81) 1958—ab
apparatus of, cretin do~ (42) 1767
extract in exophthalmic goiter, (71) 902
extract, use of to shorten coagulation time of blood, (25) 967—ab
gland, and tuberculosis, (64) 1689—ab
malignant disease of, (43) 72—ab
preparations, therapeutic uses of, *1475
signficance of some enlargements of, (8) 1331—ab
stab wound of, (31) 156—ab
treatment of obesity, (101) 974—ab
Thyroidectomy, experiences in operation of, partial and complete, (32) 967
Thyroidism, treatment of, by specific serum, *655
Thyroiditis, acute suppurative, with pressure symptoms relieved by intubation, (33) 896
Thyroids, lateral aberrant, (37) 1855
Thyrotomy and laryngectomy for malignant disease of larynx, (21) 2124
versus laryngectomy, (40) 389
Tibia, compensatory processes in luxation, (30) 812
cure of congenital pseudoarthrosis of, by periosteal transplantation, (68) 2122
fracture of, from indirect violence, (13) 463—ab
Tic douloureux, case of, (34) 389—ab
Timidity, (66) 154, (92) 970
Tinnitus, objective, (50) 1137
Tobacco, effect of, in health and disease, (88) 74
effect of, on nose, throat and ear, (41) 389
poisoning, chronic, (115) 1597
study of intoxication from, (48) 1139
Tongue, case of black, *362
causes of coated, (47) 465—ab
curability of cancer in general, and of cancer of, in particular, (49) 2041—ab
cysticercus cellulose of, with note on helminthology of one of Madras jails, (22) 723
depressor, practical, (76) 1685
epithelioma of, (32) 1687—ab
epithelioma of, with secondary growths in glands of neck and liver treated by x-rays, (13) 239—ab
multiple fibrosarcoma of, *2003
plea for more radical operations in cancer of ...ps and, *986
polypoid lipoma of, (24) 1328—ab
Tonsil and adenoid operations, anesthesia in, (72) 540
as factor in infectious diseases, (80) 1514
Tonsil as portal of microbic and toxic invasion, (28) 640
congenital fibrolipoma of palatine, (76) 74
death from suppurating, (10) 305—ab
diseased faucial, and its operative treatment, (30) 389
diseased faucial, as causal factor in respiratory and gastric diseases, (12) 1054
lingual, (44) 1329—ab
Tonsillectomy by electrocautery dissection, (62) 1229
Tonsillitis, acute, (94) 810
Brewer's yeast in phlegmonous, (64) 159—ab
Tonsillotome, a new, (72) 390
Tonsils as entering point for tuberculosis, (68) 1689—ab
certain facts concerning faucial, *1725
indications for surgical interference in disease of faucial, and methods of choice in operating, (38) 72—ab, (66) 540, (34) 720—ab
operation for painless and bloodless removal of submerged and adult, (68) 390
sarcoma of both faucial, (73) 540
tuberculosis of, (24) 72—ab
use of cold wire snare in removal of faucial, (15) 1682
use of cold wire snare in removal of hypertrophied, (19) 2040
Tooth, some pathologic features of pulp of, *916
Torticollis or wry neck, (2) 154
spasmodic, (56) 2039—ab
Toxemia of pregnancy, (20) 234—ab, (64) 640, (65) 1958
unusual and unique case of, (43) 1687—ab
Toxins, destructive of larvæ, (95) 816—ab
in blood in diphtheria, (119) 1604—ab
Toxolecithid in poison of bee, (60) 1962
Trachea, intrathoracic diseases and displacement of, (102) 1603, (88) 2128—ab
tumors of, (119) 1419
Trachelo-hysterotomy, its scope and technic, (120) 1857
Tracheotomy, (30) 1515
or intubation, (58) 159
preliminary to operations about tongue and pharynx, (126) 898, (51) 968
Trachoma, (8) 1135
Tractus vascularis, and tractus nervosus in splanchnoptosia, (110) 1058
vascularis, pathologic physiology of, (17) 151
Training, physical, factor in psychologic development, (10) 1054
Transformation, myeloid, (48) 1421
Trans - uretero - urethral anastomosis, (31) 2037—ab
Transplantation, embryonal, (65) 1772
treatment after Thiersch, (70) 1141—ab
Travel, impressions of a recent trip abroad, (96) 1769
Treatment, scientific foundation of modern, (9) 1682
Tremor, epidemic, among school children, (75) 1773
Trephine, new, (81) 814
Trephining, technic of, (75) 1517—ab
the labyrinth, etc., for subjective sounds, (72) 242—ab
Treponema pallidum, technic and staining of, (58) 2039
Tribes, non-Christian, of northern Luzon, (34) 2176
Trichiniasis, two cases of, and reference to four other cases infected from same source, (65) 308
Trichinosis, (124) 154
Tricuspid valve, insufficiency of, in pernicious anemia, (26) 1415—ab
Trigeminus nerve, question of protopathic and epicritic sensibility and distribution of, (66) 1137
Tropical diseases, study of, (1) 1598, (31) 1859
splenomegaly, parasite of, (72) 813
Tropics, observations in, (11) 1226
Trunk, deformities of, in children, (11) 305
Truss, passing of, (99) 74
Truth, growth of, as illustrated in discovery of circulation of blood, (18) 1683, (1) 1769—ab
search after, (32) 539—ab
Trypanosomata and trypanosomiasis, (102) 546, (39) 1056
Trypanosome, of frog, culture of, (57) 971
Trypanosomiases of beriberi in 1905, pulmonary, (52) 308, (72) 1058
Trypanosomiasis and pregnancy, (104) 815
diagnosis of, (45) 1859
of horses, (43) 971
of newt, (40) 1056
treatment of, by benzidin dyes, (54) 972—ab
Trypsin in treatment of cancer, (58) 644—ab, (2) 1955—ab, (1) 2119—ab
injections and lotio pancreatitis locally, two cases of cancer treated with, (89) 898
Tube, removal of tracheotomy, impacted in left bronchus, (23) 239
Tubercle bacilli, animal tissues as culture medium for, (81) 902
behavior of, at entering point, (52) 240
experimental absorption of dead, (61) 1517
possible dissemination of, by insects, (16) 1683—ab
sterilization of tuberculous sputum and articles infected by, (11) 899—ab
Tubercular disease, of upper respiratory tract, treatment of, (38) 1687
Tuberculides, with report of cases illustrating the papulonecrotic variety, (5) 71—ab
Tuberculin, curative action of, (71) 1689
diagnosis of genital tuberculosis, (39) 240—ab
diagnostic, injections of, (43) 158, (69) 1689—ab
diagnostic value of inhalations of, (70) 1689—ab
experience with new, (24) 392—ab
general principles of therapeutic inoculation with reference to, (19) 1059
influence of, on experimental infections, (112) 547—ab
in phthisis, (97) 1143
in treatment of children, (95) 79—ab
in treatment of tuberculosis, (3) 537—ab, (49) 2038—ab
old, as therapeutic measure, (74) 814—ab
reaction and tuberculin immunity, (73) 1689—ab
test, (74) 1690—ab
therapeutic use of, combined with sanitarium treatment of tuberculosis, (22) 808—ab
tuberculosis of adnexa diagnosed with, (76) 728—ab
Tuberculo-opsonic test, technic of, (24) 808—ab
Tuberculosis, (114) 722, (79) 810, (49) 1330—ab, (41) 1421, (85) 1597, (122) 1857
acute intestinal, (13) 2177—ab
agglutination in pulmonary, (75) 1690—ab
among Indians of Arizona and New Mexico, (15) 1853—ab
among negroes, (41) 1595
among Ogalala Sioux Indians, (42) 1596—ab
and influenza, general analogies between, (3) 1230—ab
and insurance, (69) 394
and pregnancy, (100) 80—ab
and purpura hemorrhagica, (45) 812
and thyroid gland, (64) 1689—ab
anemia in, (39) 393—ab
antiseptic treatment of, *739
as indication for interruption of pregnancy, (98) 1959—ab
care of far-advanced cases of pulmonary, (8) 895—ab
causes of predisposition of lung apex to, (36) 156
clinical, anatomic and pathologic comparison of tuberculous cavities in lungs, (36) 1596—ab
cocillana as expectorant in pulmonary, (114) 154
compulsory registration and fumigation, most important of prophylactic measures in prevention of pulmonary, (50) 2038
compulsory reports and registration of, in United States, (11) 2120—ab
conjugal, (39) 1421—ab
creosote in, (61) 968
diagnosis and treatment of incipient, (123) 1857
diagnosis and treatment of incipient pulmonary, (52) 308, (72) 1058
diagnosis of, (109) 154
diagnosis of, in infants and children, *1555, *1586
diet in, (2) 387—ab
disappointments and hopes in treatment of, (49) 543—ab
dispensaries, address on, and coördination of measures against tuberculosis, (10) 1955

Tuberculosis dispensary, methods, value and limitations, *2154
disseminated, in relation to thoracic duct and vascular tubercles, (119) 810
duty of physician in regard to, (104) 2039
early symptoms of, and how they may be developed when applicant attempts to conceal them, (9) 234
effect of blowing wind musical instruments with reference to, (4) 1327—ab
error of climate in treatment of, (115) 1331
etiologic factors in bone, in children, (6) 2120—ab
evil effect of pregnancy on laryngeal, (65) 727—ab
experimental investigations regarding, (4) 2176
fluctuations in temperature and weight in connection with pathologic anatomic changes in experimental, (42) 2178
forms of surgical, in children, (29) 1515
fresh air and rest in treatment of, (86) 810
genitourinary, (30) 311—ab
glandular pulmonary, in Paris schools, (52) 2042—ab
hematologic studies in, (34) 1595
heredity in, (116) 2046
human and bovine, (5) 898—ab, (100) 974
hyperplastic, of intestines, (36) 967—ab
in Detroit, (78) 1058
indirect diagnosis of, (36) 393—ab
inflammatory, neoplastic, (50) 76
in Italian army, (108) 546—ab
in miliary retinal hemorrhages, (128) 1691
in military service, (92) 1857
in state hospitals, (73) 1058, (112) 1143
intestinal origin of, of tracheobronchial glands, (112) 1331
its consideration in relation to risks in life insurance, (74) 1330
its etiology prophylaxis and treatment, (45) 1329
laryngeal, treatment of, (51) 1062-ab
latent, in children, *1189
length of survival after onset of, (121) 1520—ab
limitations to eradication of, (25) 460—ab
malnutrition as factor in, (102) 237
management of, *2131
man's natural protective agencies against, (2) 1853—ab
Marmorek's serum in surgical, (57) 1962—ab
maxims for selection of climate in pulmonary, laryngeal and bone, (12) 459—ab
medical treatment of, of upper air passages and ear, (96) 1685—ab
miliary, and cancer, (56) 1517
morphology of bacillus of Koch in pulmonary, (44) 2178
mortality from, in Italy during 1897-1902, (57) 159
municipal control of, (30) 460
necessity of state and national control of, (127) 810
of adenomyoma of uterus, *768
of adnexa diagnosed with tuberculin, (76) 728—ab
of base of skull, (44) 1421—ab
of bladder, and its cure, (87) 903—ab
of bones and joints, treatment of, (18) 459
of cattle, how it may be repressed, and its relation to public health, (125) 1857
of cecum, ileocecal valve and appendix, (9) 391—ab
of cervix, (32) 393—ab
of colon, surgery of, (38) 967—ab
of glands, (81) 1690
of glands simulating neoplasms, (109) 1519—ab
of heart, (73) 314—ab
of joints, (79) 243, (11) 967—ab
of kidney in infant, (11) 2036—ab
of larynx, indications and contraindications for intralaryngeal operation in, (66) 390
of mammary gland, (70) 902. (70) 2127—ab
of middle ear and mastoid, *1293
of seminal tract, (12) 75—ab
of tonsils, (24) 72—ab
of upper air passages and ear, surgical treatment of, (54) 1513, (100) 1685
of upper air tract climatic treatment of, (68, 97) 1685—ab
of urinary tract in women, treatment of, (104) 74
Tuberculosis of vulva, (85) 973—ab
open air treatment of, (23) 392, (39) 1687
opsonic-index (Wright and Douglas) in, (23) 807
organic heart diseases and immunity from pulmonary, (43) 1596—ab
our duties as citizens in prevention of, (10) 718, (92) 1330
peritoneal, (101) 1597
physiologic therapy and its application as adjuvant to drug treatment of, (10[illegible] 74
plea for more rational therapy in, (1) 1764—ab
posterior vertebral, (30) 971
prevention of, (1, 2) 1230
preventive legislation against, (57) 640
primary, and anthracosis of lungs and bronchial glands, (97) 1691—ab
primary, of digestive tract, (59) 813—ab, (102) 974
primary, of spleen, (61) 1773—ab
primary, uveal, (86) 1602
problem in prisons and reformatories, (12) 1853—ab
protection of infants and young children from, infection, (40) 1596—ab
pulmonary, (122) 1138
pulmonary and pleurisy with effusion, (3) 966—ab
pulmonary, artificial pneumothorax in treatment of tuberculous pulmonary processes, (75) 1235—ab
pulmonary, during school age, (46) 240
pulmonary, early bacterioscopic diagnosis of from scrapings of throat, (42) 1233
pulmonary, early diagnosis and management of, (150) 74
pulmonary, early diagnosis and prognosis of, (61) 810, (71) 1330
pulmonary, early diagnosis of, (80) 74
pulmonary, hyperemia in treatment of, (53) 1140—ab
pulmonary, in children, (5) 541
pulmonary, in relation to obstetrics, (53) 308
pulmonary, intestinal origin of, (49) 1600—ab
pulmonary, management and treatment of, at climatic resort, (55) 968, (86) 1769
pulmonary, management of, (45) 1596
pulmonary, manifestations of syphilis associated with, (3) 387—ab
pulmonary, method of treating, (86) 1514
pulmonary, origin of, (51) 725—ab
pulmonary, pretubercular stage of, (118) 1230
pulmonary, prognosis of as determined by morphology of tubercle bacillus in sputum, (95) 390
pulmonary, rest in treatment of, (101) 1058
pulmonary, results of treatment in ninety-four cases of, (81) 1330
pulmonary, review of present day therapy of, (18) 895
pulmonary, Roentgen rays in early diagnosis of, (33) 1595—ab
pulmonary, sore throat in, (97) 237
pulmonary, statistics of, in registration area of United States from 1890 to 1894, (54) 1597
pulmonary, strychnin as remedy in, (12) 807—ab, (108) 810
pulmonary, tendency of organism to limit, (100) 1330
pulmonary, treatment of, (141, 148) 74, (48) 389, (103) 898, (37) 1687—ab
pulmonary, treatment of cough in, (100) 237
pulmonary, treatment of fever in, (101) 237
pulmonary, treatment of gastrointestinal disorders in, (99) 237
pulmonary, treatment of hemoptysis in, (98) 237
pulmonary, tuberculin in treatment of, (15) 234—ab, (3) 537—ab
pulmonary, value of study of apical outline in diagnosis of incipient, (32) 1595—ab
question, doubtful phases of, (4) 1230
relation of alcohol to, (69) 309
relation of state to, (59) 73
relations between cancer and, (92) 1424—ab
relative value of home treatment of, (38) 1596—ab
renal, *1735
renal, diagnosis and surgical treatment of, (27) 538, *1075
renal, treatment of, (50) 813
Tuberculosis, report of 25 cases of, treated with intravenous injections of Koch's tuberculin, (49) 2038—ab *317
resection of nasal septum for primary, (50) 902—ab
route of infection of, (55) 241—ab
Russell treatment of, applied to tuberculous bones and joints, (87) 1514
sanatorium, influence of a, on value of surrounding property, *2054
sanatorium treatment of, (11) 310—ab, (91) 396—ab, (91) 1597, (63) 2039
scope and aim of state sanatoria for,
serum diagnosis of, (35) 1595—ab
sign of congenital tendency to, (80) 314—ab
specific treatment of, (113) 1965—ab
spontaneous, in monkeys, (50) 313—ab
state and municipal control of, (127) 238
stray thoughts on, (8) 155
sulphur metabolism in, (50) 1333
superheated air plus calomel and iodin in treatment of mucous membranes, (94) 974—ab
suppression of, (3) 1682—ab
surgical aspects of, *1367
therapeutic use of tuberculin combined with sanitarium treatment of, (22) 808—ab
three cases of, (33) 235
tonsils as entering point for, (68) 1689—ab
treatment of laryngeal, (25) 1960
treatment of, of kidney and bladder by nephrectomy, *2047
treatment of surgical, (14) 463—ab
tuberculin diagnosis of genital, (39) 240—ab
two years' experience in sanatorium treatment of, in pineries of northern Wisconsin, (118) 154
use and abuse of pulmonary gymnastics in, (17, 18) 388—ab
use of discarded street cars in open-air treatment of, (80) 1418
value of sodium silicate in, (40) 1421—ab
verrucosa cutis, (128) 74
why rest is so essential in treatment of, (129) 1139
work in Europe, (56) 1417—ab
Tuberculous disease, observations on effect of sterile caseous matter in treatment of, (4) 970—ab
hints and helps to the, (102) 898
infection, primary, in monkeys, (64) 902—ab
migraine and hypothermia in the, (46) 901—ab
nitrogen metabolism in the, (34) 393
patients, report of management of, applying for treatment to dispensary of Samaritan Hospital, Philadelphia, (83) 1330
subjects, bacteriologic and histologic study of organs removed from, (37) 2120
suggestions for future of, patients of working classes, (10) 641
the, and their hygienic surroundings at home, (34) 2041
Tuberosity, greater, of humerus, isolated fracture of, (75) 545
Tubes and ovaries, present status of conservatism in surgical treatment ment of, *1454
Tubo-ovarian cyst, burrowing, its pathogenesis, (3) 310—ab
Tucson, Arizona, winter climate of, (9) 1135—ab
Tumor between cerebellum pons and temporal lobe, (74) 242
cicatricial, studded with scraps of coal, (66) 466—ab
formation, theory of, (103) 315
obscure intracranial, meningeal sarcoma with extension to fourth ventricle, (7) 810
of fourth ventricle, (84) 802
remarkable osteocalcareous, in nose, *271
removal of cerebral (endothelioma), which had invaded overlying cranial bone, (10) 723
spontaneous disappearance of, during later months of pregnancy, (20) 1039
three interesting cases of papillomatous, (35) 971
two cases illustrating points in diagnosis of, or other lesion of uncinate region of temporosphenoidal lobe, (7) 310
Tumors, cancerous, and helminths, (36) 812—ab
earliest possible recognition of malignancy in, (34) 1771
endocranial, (98) 244—ab
Tumors, etiology of, (133) 1966
experimental investigation into growth of; development of sarcoma and carcinoma after inoculation of carcinomatous tumor of submaxillary gland in Japanese mouse, (47) 640
fibroid, of uterus, *1998
importance of early recognition and operative treatment of malignant, *1470
multiple primary, (81) 1774
multiple primary, of bones, (49) 2126—ab
of body of uterus, position of operative treatment of fibroid, (32) 971
of brain, palliative operations in treatment of, *679
of carotid gland, *566
of cerebrum, focal diagnosis of operable, (110) 970—ab
of cerebrum, surgical aspects of operable, (111) 970—ab
of intestine, (84) 722
of larynx, (47) 2121
of uterus, review of evolution of modern surgical treatment of fibroid, (5) 458
of uveal tract, differential diagnosis and prognosis of, *409
scrotal, in the tropics, (29) 239
simultaneous occurrence of two nonrelated, in mouse, *1237
spontaneous postoperative implantation, (73) 1963
suction therapy for differentiation of malignant, (126) 976—ab
teratoid, in pelvic connective tissue, (115) 975
three cases of, compressing spinal cord, (46) 1061—ab
Turbinate, nasal, as vasomotor index, (93) 1685
Turbinectomy, nasal obstruction, submucous, (25) 1770
Twins, successful delivery of, in placenta prævia, *1301
Tympano-mastoid region, surgery of, of infant and young child, (30) 1513
Type in school books and college textbooks, (20) 1599
Typhlocolitis, appendicitis and, (28) 239
Typhoid, (69) 160—ab, (25) 719, (59) 1856—ab
accidental, infection with bacillus of malignant edema in, (46) 72
acetozone in, *1651
afebrile, (34) 464—ab
alcohol in treatment of, (99) 1418
anastomosis between femoral veins subsequent to thrombosis of left iliac vein during, (34) 1687
and colon bacilli, method for isolating from drinking waters, (33) 307—ab
and colon bacilli, toxic effects of certain acids on, in relation to degree of their dissociation, (28) 1227
and paratyphoid bacteria, relations between, (123) 1965
and paratyphoid germs, malachite green as culture medium for, (62) 1062
anomalies of, (26) 719
atypical or irregular, (84) 309
bacilli, behavior of, in blood in respect to bactericidal substances, (74) 1063. (114) 1603
bacilli carriers, (36) 543
bacilli carriers in insane asylum, (120) 1604—ab
bacilli, cultivation of, from coagulated blood, (44) 643—ab
bacilli, improved culture medium for, (72) 1761
bacilli, simple test for, in blood, (63) 395—ab
bacillus, bile as culture medium for, (115) 1691
bacteria, phagocytosis of, (39) 1599—ab
bacteriologic examinations of conjunctival sac in, and in pneumonia, (55) 1417—ab
bath treatment of, in private practice, (1) 1414—ab
biliary, (70) 1963—ab
complicated case of, and autopsy, (74) 2039
condition in case of, simulating intestinal perforation, *1916
diagnosis of, (18) 1853
diagnosticum results of, (83) 903—ab
does drinking of water give, (1) 639—ab
early and differential diagnosis of, (68) 1058
early diagnosis and treatment of, (27) 2178—ab
embolism of pulmonary artery in, (114) 316—ab

Typhoid, epidemic of, character of recent, in Eugene, Ore., (82) 462
epidemiology as applied to, in Minnesota, (96) 1514
43 cases of, treated by sulphates of copper plan, (61) 2122—ab
hematemesis in, (28) 724
hemorrhagic diathesis in, (41) 157—ab
influence of early feeding in treatment of, (9) 1686—ab
influence of temperature and cold baths on production of agglutinating substance in animals immunized against, (91) 1863
in patient aged 70, *1191
management of, in private homes, (112) 1419
mixed malaria and, *358
mutism in, (98) 1857
occult hemorrhages in, (16) 306—ab
occurring during pregnancy, (43) 809—ab
of childhood, (147) 74
177 cases of, treated in Alaska, (42) 1136—ab
opsonic index in, *2159
presence of bacillus typhosus or closely allied organism in sample of distilled water suspected to have caused, (15) 1139
principles of feeding in, and in other fevers, (13) 234—ab
prognosis of, (65) 159—ab, (110) 1419
prophylaxis of, with influence of soil, fabrics and flies in its dissemination, (79) 897
public and professional indifference to, prophylaxis in rural districts, small towns and cities, (69) 1058
rapid and practical method of diagnosing, (20) 899—ab
rare after-affections of, (54) 1062
relations between duration of disease and age of intestinal lesions in, (62) 1422
round worms, cholecystitis, cholangitis, hepatic abscesses, (45) 896
sequels, (127) 548—ab
sources of infection of, (67) 1058
statistics, (72) 2039
three cases of, with unusual complications, (36) 896—ab
treatment of, (75) 154, (95) 1138—ab, (113) 1597, (8) 1686—ab
treatment and prevention of relapses (74) 1137
vaccine, treatment of, with, (37) 1599—ab
water and food, (43) 312
water supplies of cities and towns as bearing on prevention and spread of, (70) 1058
with hyperexia, (88) 1518
yellow patch in palms and soles in, (61) 644—ab

U

Ulcer, duodenal, (24) 1771—ab
duodenal, in infants, (96) 80—ab
from stretching of walls of intestine with perforation, (68) 466
of cornea, serpiginous, (33) 643—ab
of duodenum, surgical treatment of, *338
of duodenum, two cases of ruptured, (3) 75—ab
of stomach, pathogenesis of round, (107) 315—ab
of stomach, treatment of, with record of cases, *838
peptic, of esophagus, (29) 808—ab
peptic, of jejunum, (44) 1140—ab
perforating, of foot cured by stretching of plantar nerve, (58) 902
perforating of foot, etiology of, (65) 466
serpiginous, (90) 2123
tropical, bacteriology of, (51) 1139
Ulcers, treatment of gastric and duodenal, and benign obstructions of pylorus, (52) 809—ab
value of calcium iodid in treatment of, (7) 542—ab
Ulna, lower extremity of, as factor in Colles' fracture, (37) 307—ab
Ulnar nerve, traumatic luxation of, (74) 727
Umbilical-cord, cysts of, (40) 240
technic in caring for, (42) 967—ab
nerves and vessels in, (81) 2128
Umbilicus, disorders of, in new-born and infants, (90) 1418
Uncinariasis, (85) 309
causative factor in production of dermatitis of ground itch, *1693
in Mississippi, *185
(hook-worm disease), its relation to grave anemia, (21) 1415
Uncle Josh on modern surgery, (77) 1514
Union, value of, in medical profession, (68) 1418—ab
United States Marine Hospital at San Francisco, and great earthquake and fire of 1906, (88) 1857
Urachus, cysts of, (27) 1683—ab
development of, *109
Uranalysis, improved method of ring tests in, (14) 807—ab
Uremia, thoughts on, (113) 898
treatment of, (8) 2124
Ureter, blind with cystic dilatation of bladder, (97) 2128
consequence of temporary occlusion of, (78) 1424—ab
large calculus of, removed by suprapubic cystotomy, (4) 542—ab
lavage of, (98) 1058
sigmate, obstruction of, (59) 721—ab
surgery of, (96) 1058
symptomatology of, diseases of, (97) 1058
wounds of, (22) 151—ab
Ureters, cystoscopy and irrigation of, (61) 972
three, demonstrated during life, (1) 1327—ab
Urethra and bladder, foreign bodies in, (51) 901
bacteria of, as factor in etiology of cystitis in women, (23) 1513—ab
calculi of, (72) 395—ab
diverticulum and cul-de-sacs of, (5) 806, (14) 1415
injuries to, traumatic strictures, and their rational treatment, (46) 1855
multiple, stricture of, with complications, (50) 236
prolapse of mucosa, (70) 813
rupture of, (81) 2039
series of cases in which collections of stones formed in prostatic, (3) 811—ab
stricture of, (62) 810
urethrotomy for ruptured, (62) 1137
various gross pathologic conditions of, as revealed by urethroscope, (94) 1769
Urethral cannula, three-way, (75) 972
mucosa, prolapse of, (70) 813
Urethritis, membranous, probably influenzal in origin (117) 154
systematic treatment of chronic, (48) 2038—ab
use and abuse of injections in acute gonorrheal, (10) 1853—ab
Urethrotomies, (93) 1058, (78) 1330
Urethrotomy for ruptured urethra, (62) 1137
internal, (87) 314—ab
internal and external, combined, (68) 1514
Uric-acid, (82) 1597
elimination of, in gout and alcoholism, (60) 2127—ab
diathesis, (96) 309, (48) 725—ab
direct precipitation test for, (55) 1422
test for, (55) 813
therapy, (107) 1230
true significance of, (78) 1418
Urinalysis, (43) 389, (14) 807—ab
Urinary calculus and its detection with x-rays, (17) 1230
organs, importance of cystoscope in diagnosis and treatment of diseases of, (15) 639
tract, treatment of tuberculosis of, in women, *1440
Urine, abnormalities of, and their significance, (39) 1956—ab
aceto-acetic acid in, (40) 643
acute retention of, treated by immediate progressive dilatation, (113) 1959
amino acids in, (50) 543
and blood, changes in concentration of, under influence of mineral waters, (40) 1060
and feces, technic of examination of, in suspected cases of disease of pancreas, (54) 1228
bedside examination of, (67) 644
behavior of iron in, (107) 1775
casts in, their origin and significance, (17) 538—ab
changes in conductibility of, in presence of albumin, (56) 2126
colorimetric determination of sugar in, (109) 1143—ab
determination of acidity of by amount of primary phosphates, (64) 2126
determination of sugar in, (53) 1421
enzyme in, in nephritis, (46) 2216
extravasation of, (79) 154
extravesical, separator of Heusner, (77) 1773
hyaline casts in, (47) 158
incontinence of, (18) 719, *1447, (41) 1599
Urine, indican and skatol in, (25) 311—ab, (42) 812
in rachitis, (111) 1691
methylene blue test of, (66) 159
neurotic vesical retention of, (75) 2123
new pigment in, (108) 1519—ab
practical significance of tract of albumin in, (29) 306—ab
rapid test for albumin in, (82) 1064—ab
recognition of myelopathic albumose in, (3) 2124
renal retention of, after vaginal hysterectomy, (34) 1060—ab
résumé of recent work in clinical pathology of, (13) 966
sediments, durable preparations of, (67) 394
segregation of, (111) 1519
sugar in, and its significance in life assurance, (21) 1686, (15) 1770—ab
urethral impediments to evacuation of, (28) 2041
value of routine examination of, *268
Urobilinuria after chloroform, (116) 547—ab
Urogenital apparatus, rare malformations of, (101) 2045
Urology, (52) 2038
Urticaria, etiology and pathology of, (83) 154
pigmentosa, (23) 311, (54) 1772
symptoms and treatment of, (84) 154
Uterine appendages, conservatism in gonorrheal diseases of, based on records of 195 patients, (36) 1136—ab
segment, lower, (105) 1774
Uterus, abdominal section for trauma of, (101) 2124—ab
action of drugs on, (13) 2124
action of Roentgen ray exposures on ovaries and gravid, (26) 2177—ab
and ovary, points in uterine and ovarian physiology and pathology in rabbits, (1) 541—ab
and vagina, treatment of advanced forms of prolapse of, (45) 640—ab
atony of non-pregnant, (83) 1518
best method of removing, through vagina, (130) 74
cancer of, (127) 154, (44) 1228, (83) 1602—ab, (69) 1597, (34) 1767, *1865, *1867, *1869
cancer of, early diagnosis of, (65) 73
cancer of, results of abdominal extirpation of, (61) 77—ab
carcinoma of, (84) 2128
carcinoma of, at Breslau, (91) 315—ab
choice of methods for dilating gravid, (51) 1228
chronic metritis and arteriosclerosis of, (5) 1857—ab
cystic fibromyoma of, (24) 1333—ab
displacements of, (136) 74
epithelial metaplasia in, (76) 1336
etiology, pathology and treatment of fibroid tumors of, (78) 1857
fibroids of, *1881, *1998, *2065
fibroids of, changes in, after menopause considered with reference to operations, (7) 1858—ab
fibroids of, importance of some symptoms of, (125) 309
fibroids of, unusual cases of, (33) 1771—ab
fibromyomata of, development of treatment of, within last twenty-five years, (1) 722
forceps to hold, in abdominal operations, (90) 1963
galvano-cauterization of, (84) 2128
hemorrhage from, (54) 543
hemorrhage from, during gestation, (70) 1330
infantilism and hypoplasia of, (68) 77—ab
instrumental dilatation of parturient, *1531
innervation of, (62) 2043—ab
lipoma of, (39) 2120
lymph glands in carcinoma of, (84) 1235
manual and instrumental dilatation of pregnant and parturient cervix of, *1534
manual dilatation of cervix of gravid, (34) 539—ab
mechanism of inversion of, (27, 28) 1059
mensuration of child in, with new methods, *1979
multilocular fibrocystoma involving, (87) 309
myoma of, (63) 2043, (84) 2128
myomata of, complicating pregnancy, *1778
Uterus, nerves, influence of, on atony of non-puerperal uterus, (58) 1234
146 consecutive cases of ventrofixation of, (6) 1858—ab
operative treatment of cancer of cervix, *1869
operative treatment of fibroid tumors of, (5) 548, (32) 971, (96) 1597
partial retroflexion of, gravid (81) 78
pharmacology of, (59) 77—ab
plastic utilization of, for defect of vesical sphincter, (29) 1333—ab
posterior displacements of, with a description of Mayo's operation, (106) 1597
pregnancy and labor complicated by anterior fixation of, *1528
primary malignant tumors of infantile, (44) 1856—ab
prolapse of, (61) 1768
prolapse of at age of 16, (83) 2128
puerperal gangrene of, (58) 77—ab
radical operation in cancer of, *1872
reciprocal relations between affections of, and its appendages and rest of body, (25) 2125
relaxation and atony of non-puerperal, incident to dilatation and curettage, (29) 2120
removal of, for chronic inflammation, (76) 1229—ab
report of cases of uterine fibroids associated with gallstones, *1299
retrodeviation of, (71) 1768
retrodisplacements of, treatment of, (13) 895, (147) 901, (47) 968
Roentgen ray exposure, effect of on ovaries and during pregnancy, (26) 2177—ab
rupture of, (61) 1418, (36) 1516
sclerotic vascular changes in, (82) 1235—ab
sepsis in, (10) 234
shortening of round ligaments or subperitoneal ventro-aponeurotic fixation, (38) 1329—ab
some questions concerning treatment of fibromata of, (52) 1137
steam cauterization of, (101) 80
suction therapy of interior of, (61) 1234—ab
symptoms of cancer of, *1865, *1867
tamponing puerperal, (36) 2120
treatment of retroflexion of pregnant, (134) 74
tuberculosis of adenomyoma of, *768
two cases of double, (12) 71
unusual retroperitoneal tumor in mesocolon simulating impacted fibroid of, (85) 1958—ab
utilization of broad ligaments in complete descent of, hysteromyomectomy and removal of uterine appendages, *1605
vaginal extirpation in case of total prolapse of, (98) 1774—ab
ventrofixation of, after interference with childbirth, (55) 1517
ventrofixation of; its effects on subsequent pregnancy, (101) 74
wandering parasitic or aberrant retroperitoneal uterine fibromata of, (125) 898
when to operate for uterine myoma of, (62) 814—ab
Uveal sarcoma, points in management of, *2159
tract, differential diagnosis and prognosis of tumors of, *409
Uvula, double, in child, (18) 71
sudden hematoma of, (26) 239

V

Vaccination, (51) 2042—ab
in Algiers, (33) 812
influencing infectious diseases by, (52) 1860—ab
Vaccine lymph, practical points about, (19) 823—ab
Vaccines, treatment of postoperative fistula by, according to Wright's principle, (76) 1601—ab
Vaccinia, (70) 1768
Vagina, absence of, and double uterus, (74) 1857
construction of new, (84) 79—ab, (25) 1055—ab, (27) 1573
reaction of secretion of, (55) 77
Vaginal Cesarean section with living child, (62) 1234
section, indications, limitations and technic in pelvic suppuration, (73) 1229
section, results of, and drainage in early cases of ectopic gestation, (40) 539—ab
Vaginitis, gonococcus, in children, (20) 2036

Vaginofixation, births after Cesarean section and, (30) 1333—ab
Vagus reflex, diagnostic and prognostic sign in life insurance work, (72) 1330
Valvular lesions, indirect effects of, (100) 390
Varicella, forms of, simulating smallpox, (81) 545
histology of skin lesions in, (73) 237
Varices, total resection of, (47) 2125
treatment of, on leg with ligature of popliteal vein, (113) 547—ab
Varicocele, high operation for, (51) 1855
Variola, adrenalin chlorid in, (92) 722
and vaccinia, (122) 2124
Varix, two unusual cases of, (12) 1682—ab
Vas-deferens, calcification of, and seminal-vesicles, *103
new method of anastomosis of, *169, (37) 460—ab
Vasomotor contraction, spasmodic, with true angina pectoris, (81) 1602—ab
Vasomotors, importance of clear understanding of, and utilization of their function to get best therapeutic results, (5) 1764
Veins, enlarged, in children, (19) 1686—ab
induration of peripheral, (130) 547
results of biterminal transplantation of, (28) 1416—ab
results of operative treatment of varicose, of leg by methods of Trendelenburg and Schede, (74) 1768—ab, (106) 2039—ab
varicose, successfully treated with x-rays, (6) 894—ab
Venereal-diseases, duty of medical profession to public in matter of, and how to discharge it, *1246
duty of state toward, *1248
legal measures to prevent, (100) 810
prevention of, (39) 2038
review of recent work in, (32) 1859
should not safeguards from, be thrown around marriage, (99) 810
ulcers, circumcision in treatment, (125) 1965
war against, in France, *1249
what should we teach public regarding, (70) 810, *1250, *1252, *1253
Venereal prophylaxis, problems of, remedial suggestions relating to it, (4) 1054.
prophylaxis, publicity as factor in, *1244
Ventricle, tumor of fourth, (84) 902
Veratrum, pharmacology of, *2061
Veratrum-viride in increased arterial tension, (90) 815—ab
in eclampsia, (69) 721—ab
Verdicts, absurd, in cases of insanity, (64) 1330
Vermont, recent phases in connection with, observation law for insane criminals, (101) 970
Verruga peruana, (20) 543—ab
Version, cases of, (69) 1330
Vertebræ, dislocation of, in lower cervical region, followed by symptoms of complete severance of spinal cord, etc., (24) 2036—ab
Vertebra, partial dislocation of fifth lumbar, on sacrum, (28) 306—ab
Vertigo, (2) 541, (97) 1769
from nose and throat lesions, (43) 543
so-called laryngeal, (86) 541
Vesical sphincter and mechanism of closure of bladder, (4) 811—ab
Vesicovaginal fistula, transperitoneal operation for, (30) 1060—ab
Vesiculitis, seminal, (62) 1330
subacute and chronic, (43) 968
Vessels and organs, changes in, after injection of suprarenal preparations, (54) 1422
Vibro discs, *1628
tablets, *1628
Vienna, its opportunities for postgraduate work, (47) 1768
Vigoro, *1627
Vincent's bacillus and spirillum, causal agent of chronic suppurative otitis media necessitating radical operation, (54) 1330
Viola odorata, further work on chemistry of, (30) 2041
Viscera, weights of, in infancy and childhood, with reference to weight of thymus gland, (80) 1138—ab
Viscosimeter, clinical, (20) 463
Vision, apparatus to test, (66) 313, (89) 1063
critical review of American railway association's rules governing visual qualifications of employes, (94)970
disturbances of at childbirth, (102) 80—ab
Vital restoratives, *1626
Vitala, *1626
Vitality pills, *1627
Vitelline duct, malformations of, (26) 152—ab
Vitreous, case of hemorrhage into, (47) 2038
Vocal cords, submucous hemorrhage of right, (27) 1328—ab
Voice, notes on training of, (28) 900
speaking and singing, as affected by abnormal conditions of nose and throat, (62) 73
Volvulus, methods for presenting recurrence of, of sigmoid flexure, (9) 305—ab
of small intestine in typhoid, simulating perforation, (53) 809—ab
of small intestine, occlusion from, (54) 1688—ab
Vomiting, (102) 541
case of uncontrollable, in pregnancy, (66) 1958—ab
clinical types of persistent, (79) 1418
nervous, simulating pyloric obstruction; operation, (97) 154
recurrent, with acetonuria, (37) 640
significance of, (133) 74
toxemic, of pregnancy, (23) 1415
Vulva, phlegmonous gangrene of, in pregnant woman, (83) 1142
plastic operation for covering exposed surfaces with skin after excision of extensive growths of, (32) 151
primary epithelioma of, (33) 2178
tuberculosis of, (85) 973—ab

W

Waller's law, (61) 544—ab
Washstand, portable, for army surgeons, (71) 1234.
Water alcohol disinfection, further proofs of permanent, deep action of, of the hands, (67) 1962
alcohol, hot, disinfection in obstetrics and abdominal surgery, (80) 1424—ab.
and milk supplies of Los Angeles, (110) 541.
choice of mineral for digestive and metabolic disturbance (78) 1953
does drinking of, give typhoid? (1) 639—ab.
drinking, (120) 1230.
internal use of, in prevention and cure of disease, (86) 2039
metabolism of, (54) 308.
practical methods for purification of drinking, (129) 238.
presence of colloids in drinking, (30) 900.
questions, general, (9) 1230
supplies, (8) 1230.
supplies, artificial purification of, (7) 1230.
supplies of cities and towns as bearing on prevention and spread of typhoid, (70) 1058
supply, bacteriologic examination of Melbourne, (27) 1687
supply of drinking, in India and its connection with subsoil water, (30) 1139
supply problems, basic efforts of present day, (6) 1230
Waters, influence of mineral, on gastric secreting function, (35, 36) 312—ab
of crater lakes of Taal, with note on phenomena of radio-activity, (75) 237
Wearing out from over function, (72) 313
Weber's syndrome, (105) 815
Weeds, medicinal, (22) 459
Weight, fluctuations in temperature and in, in connection with pathologic anatomic changes in experimental tuberculosis, (42) 2178
relation of, to measurements of children during first year, (10) 1768—ab
Westphal's pseudosclerosis, case of, (17) 1226—ab
sign and croupous pneumonia, (85) 1424—ab
Whey proteids, food value of, (31) 640
Whooping-cough, microbe of, (54) 1600—ab
removal of adenoids in treatment of, (61) 902
success of arsenic in treatment of 8 children with, (47) 1139
treatment of, by chloroform, (42) 1139
Widal reaction. use of killed cultures for, (79) 727
Winthrop, Governor John, jr., of Connecticut as physician, (90) 1597
Witness, suggestions to medical, (75) 1058
Woman, care of parturient, (89) 309
Women, appointment of qualified, with reference to hygiene and feeding of infants, (12) 723
gonococcic infection of, (78) 154
local treatment of, (118) 1857
medical, and public-health questions, (1) 1514—ab
Wood-tick, transmission of Rocky Mountain spotted fever by bite of, (dermacentor occidentalis), *358
Words and things, (12) 1770
Workmen's compensation bill, (24) 1599
Worms, round, in adult, (60) 1418
Worth's method, observations on, of treatment of convergent squint in young children with presentation of cases, (68) 897
Worthy, a forgotten, Dr Diego Alvarez Chanca, of Seville, Spain, *1013
Wound, gunshot of abdomen, with nineteen perforations, operation with recovery, (61) 1513
Wounded, disposal of, of mounted troops, (46) 1599
removal of, in hill warfare, method lately introduced into practice in 30th Punjabis, (22) 899
transport model for conveying recumbent, over rough and mountainous roads, (130) 238
Wounds, bacteriology of aseptic, (22) 2040—ab
best methods of closing aseptic, especially of abdomen, *2135
dried tetanus antitoxin as a dressing for, (6) 1511—ab
firearm, in peace, (73) 395
gunshot, of spinal cord, (14) 1135
observed during Japanese-Russian War, (61) 721
open treatment of, with skin transplantation, (77) 1141
relation of technic of nurses and hospital apparatus to healing of, (41) 1329—ab
treatment of fresh, with heated dressings, (92) 2129—ab
Wright's opsonic theory, principles and applications of, (46) 1233
Wrist, clinical significance of variations of, and ankle, *252
complication with fracture of long bones at, (7) 537
dislocation of, with protrusion of bones, (42) 901—ab
resection of, by lateral incision, (40) 460
Wryneck from otitis, (32) 900—ab
treatment of, (55) 725—ab
Wyeth's method of hemostasis in amputation at hip and shoulder, (39) 461—ab

X

Xanthoma multiplex, with interesting throat complications, (70) 1685
tuberous, in diabetics, (118) 74
Xeroderma pigmentosum, (38) 1771—ab
X-L-all-vaporizing fumigator, case of poisoning by, (19) 1770
X-radiations, adjustment of, for various physiologic effects, (70) 154
X-ray (see also Roentgen ray)
apparatus, hints regarding management and use of, (24) 76, (26) 543, (26) 899, (36, 48) 1599
as means of thoracic diagnosis, (83) 810
attitude of clinician in regard to exposing patients to, *1425
in splenic enlargements, (14) 966
in study of congenital malformations, (1) 1682—ab
late results of, treatment of cutaneous epithelioma, (5) 2119
management and use of, (24) 76
shadows of cystic and xanthic oxid calculi, (9) 542
therapy, practical, (111) 74, (78) 390, (109) 1058, (107) 1419
treatment of ringworm of scalp, (39) 971
use of, in diagnosis of pulmonary diseases, (84) 810
use of, in sinus disease, (123) 1230
X-rays, effect of, on leucocytes in blood and bone marrow in leukemia, (7) 462—ab
influence of, in treatment of leukemia and Hodgkin's disease, *1262
influence of, on nitrogenous metabolism and on blood in myelogenous leukemia, (41) 971
influence of, on chronic bronchial affections, (61) 1861—ab
in metabolism, (70) 1862—ab
measure for quantity of, (22) 895—ab
two cases of varicose veins successfully treated with, (6) 894—ab
use of, in neuritis, (11) 1415—ab
value of, in ocular therapeutics, *994

Y

Yaws, observation of spirochetes in, and granuloma pudendi, (5) 1685
Yeast, brewer's, in phlegmonous tonsillitis, (64) 159—ab
for cutaneous affections, (54) 901
in gastroenteritis in children, (74) 1773—ab
Yellow-fever, an epidemic history of, (57) 1597
calx sulphurata U. S. P., as preventive of, (54) 896
causation and prevention of spread of, (44) 1599—ab
coagulability of blood in, (25) 1854—ab
cold air in treatment of tetanus and, (19) 305
dengue and, (58) 1597
difficult diagnosis of, cases, (126) 309, (95) 1857
epidemic of 1905, experiences during, (72) 1229
in New Orleans and its bearing on health of state, (71) 1229, (97) 1857
our commercial relations with Central America with special reference to, (88) 309
personal experience in preventing spread of, *11
situation, how, was handled in Kenner in 1905, (56) 1597
Yousof's salve, *1627
studies of, (49) 236
Young children, acute intussusception in, (27) 967

Z

Zygoma, vertical division of, (120) 2130

CURRENT MEDICAL LITERATURE

INDEX OF AUTHORS

In this index are the names of the authors of articles which have appeared in THE JOURNAL of the American Medical Association and of articles which have been listed from week to week in the Department of Current Medical Literature as having appeared in other journals. Thus it practically includes the names of all who have published articles in the leading journals of the world during the past six months. The * preceding the page reference indicates that the article appeared in full in THE JOURNAL. The numbers in parentheses indicate the numbered paragraphs on the page referred to. The numbers not in parentheses indicate pages.

A

Aaron, C. D., (8) 2035
Abbe, R., *183
Abbott, W. C., (132) 74, (5) 1764, (72) 2039
Abell, I., (136) 74
Abeles, R. A., (107) 1775
Abeles, S., (65) 2126
Abrahams, R., (118) 74
Abrams, A., (55) 2122
Abt, I A., *1184
Achucarro, N., (94) 1774
Aeree, S. F., 1408
Adam, J., (4) 1959
Adamkiewicz, A., (39) 1961
Adams, E., (12) 718
Adams, P. A., (108) 541
Adams, S. S., (32) 896
Adie, J. R., (30) 1961
Adler, H. M., (108) 1691
Adler, J., (11) 2176
Adler, Jr., L. H., *1365
Ager, L. C., (11) 305
Agéron, E., (85) 1963
Agramonte, A., (12) 537
Ahlberg, N. A., (92) 903
Ahlfeld, G., (89) 1142
Akermann, J. H., (114) 1144
Albers-Schonberg, (60) 394
Alcock, N. H., (19) 1515
Alden, E., (19) 538
Aldershoff, H., (57) 1599
v. Aldor, L., (73) 1601
Alexander, A., (52) 313
Alexander, D. M., (19) 1419
Alexander, H. C. B., (114) 2124
Alger, E. M., (8) 1054
Alglave, P., (29) 156, (43) 900, (54) 1688
Ali, K., (73) 1063
Allan, G. A., (25) 1420
Allan, J., (16) 1419
Allard, E., (123) 975
Allard, F. E., (110) 237
Allard, H., (68) 813
Allaria, G. B., (110) 2046
Allbutt, T. C., (6) 1685, (12) 1770
Allchin, W. H., (27) 1770, (40, 42) 2041
Allee, W. S., (92) 1958
Allen, C. W., (50) 236, (60) 1597
Allen, D. P., (19) 538, (31) 1329
Allen, E. S., (109) 2039
Allen, L. M., (40) 808
Allen, M., (19) 2176
Allen, R. A., *1829
Allen, R. McD., (65) 721
Allen, S. G., (41) 1599
Allen, T. C., (88) 1958
Allen, T. G., (69) 1229
Allfeld, F., (67) 1962
Allison, N., (59) 1137
Allport, F., *92, (91) (128) 154
Almy, L. B., (57) 896
Altmann, S., (84) 314
Ambar, L., (40) 724
Amberg, E., (72) 74, (35) 306, (65) 1137, (35) 1416
Amos, C. B. S., (16) 723
Anders, J. M., (1) 233, (109) 970, (76) 1418, *1432, *2083
Andersen, K., (132) 1966
Anderson, A. R. S., (21) 723
Anderson, A. V. M., (43) 1516
Anderson, B., (107) 810
Anderson, J. F., *1007, (43) 1056, (57) 1229
Anderson, R., (99) 1230
Anderson, W. S., (62) 73
Andrew, C. F.. (75) 1958
Andrewes, F. W., (12) 1230, (11) 1331, (15) 1419, (23) 2125
Andrewes, J. W., (97) 1514
Andrews, E. W., (20) 151
Andrews, F. T., *1707
Andrews, O. W., (3) 1857
Angney, W. M., (58) 896
Annand, W. F., (10) 75
Annandale, T., 708
Anthony, H. G., (39) 1767
Anton, G., (101) 1143, (84) 1424
Apelt, F., (61) 1335
Apetz, W., (85) 545
Apolant, H., (104) 315, (29) 642, (50) 643
Arehambault, J. L., *768
Archibald, W., (6) 74, (9) 310
Ard, F. C., (99) 1330
Argutinsky, P., (74) 1601
Arkel, S., 608
v. Arlt, B. R., (118) 1691
Armstrong, G., (45) 1329
Armstrong, G. E., (33) 967, (11) 1959
Armstrong, H., (20) 971
Armstrong, J. M., (127) 309
Arneth, J., (41) 1333
Arnold, I. A., (60) 1330
Arnold, J., (75) 242, (82) 467, (48) 643
Aronson, H., (68) 1234
Aronstam, N. E., (5) 806, (14) 1415, (94) 1769, (78) 2039
Aschaffenburg, G., (57) 1860
Aschoff, (9) 1769
Aschoff, L., (54) 465, (72), 1689, (105) 1774, (66) 1861
Asbeck, E., (92) 2128
Ash, E., (9) 970
Ashburn, P. M., (31) 1415
Ashby, H., (3) 1598
Ashhurst, A. P. C., (24) 306
Ashmead, A. S., (61) 308, (107) 970, (117) 2124
Aspell, J., (25) 234, (19) 895
Assfalg. (98) 2045
Assmann, G., (97) 1235
Astrop, C. W., (90) 722
Atkinson, D. T., (97) 970
Atkinson, J., (26) 719
Atkinson, W. H., (33) 389
Atwood, L., (26) 1136
Aubertin, C., (45) 901, (48) 1576
Aubineau, E., (46) 543
Audry, C., (34, 47) 76, (37) 1771
Auerbach, B., (53) 643
v. Auffenberg, F., (105) 467
v. Auffenberg, G., (29) 1232
Austin, A., (30) 724
Austin, C. K., (83) 1418
Austin, M. A., (106) 154, (14) 895
Austin, R. F. E., (47) 1599
Auverny, G. A., (113) 2046
Axhausen, (71) 466, (72) 545
Ayres, S. C., (73) 970
Ayres, W., (15) 639, (98) 1058
Ayrignac, J., (37) 76, (36) 1771.

B

Baar, G., (5) 718
Bab, H., (82) 972
Babbitt, J. A., (93) 1685
Babcock, W. W., (15) 1135
Babes, V., (50) 1517, (46) 1859
Babler, E. A., (135) 74, (15) 151
Baccarani, U., (119) 547, (77) 814
Bach, H., (47) 724
Bachrach, B., (68) 1229
Backer, J., (42) 240
Bacon, C. B., (92) 898
Bacon, G., (17) 2040
Bacon, R. F., (75) 237
Baer, J., (28) 2177
Baer, J. S., (60) 1857
Baermann, (93) 1235
Baeslack, F. W., (63) 969
Baglioni, G., (71) 902
Bagolan, A., (60) 902
Bahadur, C. L. B., (36) 1961
Baides, (73) 1861
Bailey, (40) 1956
Bailey, A. C.. (76) 1330
Bainbridge, W. S., (94) 722, (3) 894
Baird, A. W., (17) 71
Baisch, K., (86) 972, (85) 1602
Baker, A. R., (42) 236, (129) 541
Baker, L. K., (106) 810
Baker, M. R., (113) 1331
Baker, S. C., (75) 1768
Baker, S. J., (124) 970
Baker, T. H., (122) 1857
Baker, W. A., (41) 153
Baker, W. H., (21) 234
Baldassari, L., (76) 902
Baldauf, L. K., (30) 1854
Baldoni, A., (116) 1519
Baldwin, A., (13) 542, (21) 1332
Baldwin, H., 1408
Baldwin, J. F., (53) 721, (69) 1597, (99) 2124
Baldwin, W. H., *2054, (11) 2120
Baldy, J. M., (37) 538, (90) 1138
Ball, C. R., (129) 309
Ball, J. M., (21) 719
Ball, M. V., (55) 1957
Ballance, C. A., (16) 1598, (17) 1686
Ballance, H. A., (26) 967
Ballantyne, J. W., (91) 1418
Ballenger, E. G., *508, (35) 1767
Balleray, G. H., (78) 1857
Balzer, F., (71) 972
Bandelier, (68, 69, 70, 71) 1689
Bandi, I., (36) 314, (117) 1965
Bandler, S. W., (55) 1330
Bane, W. C., (96) 1685
Banfield, A. P., (74) 1514
Bangs, L. B., (1) 71
Banks, C. S., (103, 104) 1685
Bannan, T., *274
Barach, J. H., (14) 718
Baradoulin, 1212
Baratynski, P., (94) 1691
Barba, S., (48) 2178
Barbagallo, P., (63) 644
Barbour, A. H. F., (4) 1139, (120) 1959
Barbour, L. P., (3) 1134
Barbour, P. F., (67) 721
Barclay, R., (92) 2123
Bard, L., (38) 724
Bardes, A., (6) 1764
Barendt, F. H., (37, 38) 971
Barker, A. E., (26) 1515
Barker, A. E. J., (8) 811
Barker, L. F., (31) 1595, (7) 1769
Barker. M. R., (12) 1328, (18) 1512, (20) 1765, (9) 1955, (12) 2120
Barling, H. G., (10) 723
Barling, J. E. V., (34) 1516
Barlocco, A., (61) 159
Barnes, F. L., (125) 309
Barnes, N. P., (25) 1956
Barnett, A. M., (94) 1597
Barnett, B. M., (38) 1956
Barnett, C. E., (108) 970, (31) 1683
Barnhill, J. U., (107) 2039
Barnsby, H., (33) 1059
Baroni, G., (58) 902
Barr, J., (1) 970, (22) 1136, (123) 1331, (10) 1769
Barr, J. S., (57) 390, (29) 812
Barr, M. W., (128) 722, (10) 1054
Barras, W. G., (55) 1771
Barratt, H. J., (19) 899
Barret, G., (24) 642, (34) 900
Barrett, E. M., (93) 1959
Barrett, J. W., (26, 30, 31) 1687
Barrs, A. G., (9) 75
Barry, D. T., (34) 2041
Bartlett, W., *754
Barton, P. H., (81) 1514
Bartram, J. D., (83) 722
Barueh, S., (1) 1414
Barwell, H., (18) 239, (25) 1960
Baseh, K., (51) 1860
Base, D., 952
Bashford, E. F., (44) 312
Bass, C. C., *185
Basset-Smith, P. W., (25) 543
Bassenge, L., (87) 1862
Basso, U., (95) 1863
Bassoni, C., (124) 1965
Bastedo, W. A., (4) 1764
Bateman, H. R., (42) 1599
Bates, F. W., (14) 2036
Bates, H. L., (48) 640
Bates, M. E., (99) 541
Bateson, W., (1) 462
Batta, P. G., (73) 159
Bauer, J., (43) 724
Bauer, S., (102) 80
Baughman, G., (86) 722
Baum, H., (79) 1773
Baumann, E., (83) 1063
Baumann, L., (111) 1691
Baumann, W., (77) 242
v. Baumgarten, P., (81) 1689
Baumstark, R., (17) 155, (35) 312
Baxter, J. M., (26) 392
Bayer, C., (76) 78, (72, 73) 1517
Bazet, (69) 972
Bazy, L., (45) 1961
Beach, W. M., (39) 389
Beadles, F. H., (83) 154
Bean, J. W., (64) 73
Beard, C. H., (55) 153
Beattie, J. M., (4) 2124
Beatty, W., (23) 311
Bebb, R. A., (70) 1058
Beek, A., (89) 1063
Beek, C., (120) 238, (1) 304, (46) 809, (7) 966, (64) 1685, (46) 2121
Beek, J. C., (45) 2121
Beeker, E., (96) 1235
Beeker, H. A., (23) 538
Beebe, S. P., *661
Beebee, E. L., (14) 1853
Beecher, C. H., (75) 1330
Beede, S. C., (43) 1228
Beer, A., (51) 313, (108) 975
Beer, E., (2) 806, (28) 1683
Beeson, C. F., (118) 1230
Behrman, M., (18) 1956
Beitzke, H., (99) 974, (49) 1233
Beleher, C. E., (98) 970
Belfield, W. T., (6) 1955, (105) 1959, (38) 2120
Beling, C. C., (11) 1955
Bell, C., (57) 640
Bell, J., (35) 896, (9) 1959
Bell, J. F., (120) 722
Bell, J. W., (58) 236
Bell, R., (2) 1414
Bell, W. B., (34) 971
Bellander, N., (69) 813
Bellucci, O., (65) 902
Belot, J., (28) 1515
Belt, A. L., (79) 1597
Benee, J., (70) 1423
Bendix, E., (109) 1143
Benedict, A. L., (101) 154, (79) 1330 (69) 1514, (8) 1594, *1616, (57) 2122
Benedict, H., (86) 1862
Benedikt, M., (61) 465
Bengelsdorff, R., (55) 77
Benhamou, (61) 1688
Benjamin, A. E., (28) 389
Benjamin, E., (70) 1861
Benjamin, J., (15) 75
Benmosche, M., *1738
Benn, W. J., (80) 722
Bennecke, A., (90) 1142, (60) 2043
Bennecke, H., (108) 1603, (72) 1689
Bennett, Jr., A. B., (27) 1956
Bennett, C. D., (140) 74
Bennett, F. C., *1655
Bennett, J. W., (84) 1857
Bennett, T. J., (60) 390
Benoit, M. L., (17) 1682
Bensaude, R., (45) 812
Benthall, A., (24) 1599
Bentz, C. A., (38) 1767
Bentzen, S., (75) 727
Berard, L., (30) 156
Berg, A. A., (1) 537
Berg, H. W., (2) 150
Bergé, A., 1939
Berger, C., (76) 242
Berger, F. R. M., (76) 466

Berger, R. M., (91) 1063
Bergey, D. H., *580, (48) 640, (93) 1138
Bergh. R., (42) 158
Beriel, (40) 543
Beriel, L., (42) 1771, (49) 2126
Berka, F., (102) 2045
Berlin, W. C. K., (93) 810
Bernard, F. R., (57) 1597
Bernard, I., (31) 311
Bernart, W. F., (103) 74, (86) 154, (35) 720, (42) 1513
Berndt, F., (31) 1232
Berner, O., (41) 1966
Bernhardt, M., (55) 1140, (79) 1423
Bernheim, F., (55) 2042
Bernheim-Kerrer, (69) 1063
Bernstein, E. P., (32) 1766
Bernstein, J., (6) 722
Berry, J., (30) 1515
Berry, J. M., (44) 968, (62) 1856
Berry, W. D., (101) 970
Berti, A., (106) 546, (64) 644
Besredka, (44) 971
Besta, C., (84) 902, (117) 2046
Bestelmeyer, R., (85) 243
Bettmann, (90) 79, (58) 2126, (20) 2177
Bevan, A. D., *1075
Beveridge, W. W. O., (23) 899
Beyea, H. D., (45) 640, (38) 1684, (77) 1857
Beyer, H. G., (49) 896
Bezold, (58) 390
Bickel, A., (60) 1062
Biddle, T. C., (86) 1330
Bielschowsky, A., (121) 1691
Bienstock, (50) 971
Bier, A., (46) 643
Bierring, W. L., *1149
Biland, J., (54) 1422
Bill, A. H., (32) 306, (28) 538
Billings, F., (103) 154, *840
Binder, G., (80) 1517
Bindi, F., (62) 644
Bing, R., (62) 1517
Bingel, A., (94) 1143
Bingham, C. A., (6) 1959
Binnie, J., (104) 1419
Binnie, J. F., *109
Binz, C., (89) 467
Birchmore, W. H., (113) 237, (39) 307, (107) 1597, (101) 1769
Birdwood, G. T., (17) 723
Birge, R. H., (21) 538
Birnbaum, R., (39) 240, (91) 1235
Birt, C., (26) 76, (37, 42) 1599
Bishop, E. S., (16) 811
Bishop, F. B., (153) 74
Bishop, L. F., (42) 153, *651, 293, *1734, (106) 1857
Bispham, W. N., (62) 897
Bissell, D., (35) 808
Bisson, A. O., (20) 1515
Bittoroff, A., (80) 467
Black, N. M., (94) 970
Black, R. S., (22) 1686
Blackader, A. D., (7) 1598, (14) 2124
Blackburn, I. W., (30) 807
Blackett, E. J., (19) 1770
Blackham, R. J., (28) 76
Blaine, J. M., (63) 1418
Blair, J., (33) 971
Blair, V. P., (60) 1137
Blake, C. J., (14) 305, *1809, (18) 2040
Blake, J. A., (35) 1329, (6) 1594
Blanchard, (38) 812
Blanchard, R., (35) 812
Bland, P. B., (33) 2120, (41) 2121
Bland-Sutton, J., (26) 1770
Blau, A., (35) 240
Blecher, (74) 545
Bledert, C. C., (28) 460
Bleibtreu, M., (114) 975
Bles, V. A., (45) 1417
Blesh, A. L., (113) 74
Bliss, M. A., (107) 309
Bloch, C. E., (50) 158
Bloch, E., (84) 2044, (71) 2127
Blodgett, A. N., (31) 807
Blodgett, W. E., (38) 1513
Bloodgood, J. C., (34) 967, *1479
Bloom, I. N., (124) 1857
Bloom, J. D., (48) 236, (94) 1857
Blum, F., (92) 1518
Blum, L., (1) 2176
Blume, C. A., (42) 1233
Blumenkranz, R., (50) 240
Blumenthal, F., (53) 1062
Blumer, G. A., (120) 1419
Blumreich, L., (63) 77, (92) 314
Blystone, H. B., (147) 74
Boas, I., 1212
Bocciardo, (62) 159
Bocher, E., (71) 727
Bocthke, J., (68) 394
Bodin, E., (26) 155
Bodtker, A., (135) 1966
Boeckel, J., (24) 1059
Bœnninghaus, G., (99) 2039
Boeri, G., (100) 1863
Bœsser, (88) 2044
Boettcher, H. R., (74) 1685
Bogart, A. H., (48) 809
Boggess, W. F., (118) 898, (123) 1851
Boggs, R. H., (70) 154, (12) 639
Boggs, T. R., (51) 1057, (59) 1417
Böhm, M., (16) 1956
Böhme, A., (85) 2044
Boice, C. A., (89) 154, (114) 1230
Boinet, (39) 464
Boise, E., (46) 538
Boisliniere, L. C., (18) 1594
Boisson, 381
Bok, E. M., (116) 309
Bokelmann, (67) 544
Bolton, P. R., (33) 1683
Bond, C. J., (1) 541, (19) 1959
Bond, G. D., (56) 640
Bongiovanni, A., (115) 547, (92, 95) 815, (52) 1599, (88) 1863, (122) 1965
Bonhoeffer, K., (58) 1140
Bonnes, J., (25) 155
Bonney, S. G., *350, (8) 895, (10) 1594
Bonney, V., (102) 1964
Bookman, A., (110) 1691
Booth, D. S. (134) 722, (110) 2124
Borchardt, M., (46) 1060, (75) 1517
Borchgrevink, O., (134) 1966
Bord, B., (43) 1771
Borden, W. C., (24) 1956
Bordet, J., (52) 971, (54) 1599
Bordoni, T., (88) 815
Borelius, J., (90) 903
Borgnis, (69) 1962
Borrel, A., (36, 39) 812
Borri, A., (36) 1420
Borrmann, R., (117) 468, (97) 2129
Borutau (54) 725
Boss, J. W., (117) 1419
Bossi, L. M., (59) 1234
Boston, L. N., (83) 74, *1141
Boucher, (51) 1139
Boucher, J. B., (4) 1134, (17) 1765
Bouet, G., (57) 971
Bouffard, G., (59) 971
Bouffleur, A. J., (45) 153
Bourland, O. M., (83) 390
Bourneville, 1844
Bouvier, E. L., (56) 971
Bovaird. Jr., D., (80) 1138, (85) 1229
Bovee, J. W., (36) 235, (36) 538, (95) 722, (36) 808, (20) 1854
Boveri, P., (55) 313
Bowditch, V. Y., *317
Bowen, J. T., (42) 1056, (83) 1229
Bowen, W. H., (10) 75
Bowers, W. C., (13) 1594
Bowlby, A., (39) 2041
Bowser, J. E., (3) 1769
Boyd, F. D., (57) 968
Boyd, G. M., (37, 41) 808, *1528
Boyer, S. H., (121) 1138
Boyle, R. C., (40) 1136
Bracchi, E., (66) 902
Bracken, H. M., (49) 1329
Bradbury, J. B., (17) 2124
Braden, J. M., (85) 810
Bradford, E. H., (90) 237, (30) 967, (73) 2122
Bradford, S. S., (4) 387
Bradley, E. B., (23) 807, *1722, *1793
Bradshaw, T. R., (21) 971, (3) 2124
Brady, G. P., (73) 1514
Brainerd, H. G., (79) 74
Braislin, W. C., (83) 1768, (56) 1856
Bramlett, E. S., (71) 721
Bramson, L., (53) 158
Bramwell, B., (9) 155, (9) 238
Branch, C. W., (7) 74
Brandweiner, A., (51) 1772
Branham, J. H., (69) 1418
Brasch, W., (87) 396, (50) 1333
Brau, (58) 971
Brav, A., (26) 460, (73) 897
Brawley, F. E., (78) 540
Breakey, W. F., (35) 1513
Breathwit, W., (85) 390
Brehmer, C., (67) 1063
Breinl, A., (20) 155, (11) 641, (19) 1139
Breisacher, L., *558
Breiter, N., (12) 387
Breitung, (92) 1963
Brem, W. V., *1869, *1992
Breiner, J. L., (35) 1056
Bremmerman, L. W., (58) 1229
Brenner, A., (71) 2043
Brentano, A., (87) 243, (71) 1234,
Brewer, I. W., (9) 1135, (5) 1593, (54) 1597, (85, 92) 1769, (15) 1853
Brewster, M. P., (121) 722
Briekner, W. M., (32) 1513
Bridge, N., *652, *905
Bridges, W. O., *1065, (62) 2122
Briggs, H. H., (93) 541
Briggs, L. V., (15) 71, (17) 967
Briggs, W. A., (104) 1331
Brinton, W., (9) 234
Briscoe, J. F., 1213
Bristow, A. T., (59) 1768
Broadbent, W., (22) 463, (6) 1685
Broca, A., (8) 75
Brock, W. R., (75) 810
Brocq, L., (36) 1771
Brodhead, G. L., (20) 234, (15) 1765
Brodzki, J., (54) 1140
Broer, (88) 1424
Broers, C. M., (57) 1599
Bronner, A., (5) 810, (16) 1770, (7) 2124
Brönnum, A., (46) 158, (105, 108) 2129
Brooke, B., (28) 1420
Brooke, R., (104) 309
Brooks, H., (7) 1594
Brooks, H. T., (88) 1514
Brooks, P. B., (3) 150
Bröse, P., (82) 1336, (84) 1689
Brothers, A., (4) 718, (62) 721, (25) 1055, (27) 1573, (120) 1857
Broughton, L. C. S., (14) 155
Broun, Le. R., (5) 458
Brower, D. R., *83
Brown, E. J., (117) 970, (61) 1229
Brown, E. V. L., (55) 153, *418
Brown, G. S., (39) 1228
Brown, H. C., (95) 1230
Brown, I., *362
Brown, J. J., (42) 389
Brown, J. Y., (96) 2124
Brown, L., (25) 867
Brown, N. W., (72) 1597
Brown, O. H., *1265, 1408, (25) 1765, (1) 2174
Brown, P. K., (2) 1054
Brown, R. E., (83) 970
Brown, R. H., (66) 1768
Brown, S., (75) 462, (11) 2175
Brown, W. C., (6) 238
Brown, W. H., (24) 392
Brown, W. L., (40) 1417
Browning, C. C., (80) 74
Browning, C. H., (31) 642
Browning-Smith, S., (21) 1139
Brownson, J. J., (5) 1327
Brubaker, G. M., (115) 970
Bruce, D., (26, 27) 543, (24) 899, (32) 1599
Bruce, F., (24) 76, (26) 899, (36, 48) 1599
Bruck, C., (88) 79, (62) 394, (67) 1234
Bruess, J., (113) 1419
Bruggeman, H. O., (70) 1768
Brugnola, A., (118) 1519
Brugsch, T., (88) 467
Bruhns, C., (50) 393
Brumby, [illegible] M., (88) 309
Brumke, (70) 313
Brumpt, (27) 311
Brumpt, E., (27) 239
Brunet, G., (61) 77
Brunk, T. L., (87) 1058
v. Bruns, H., (79) 1602
Bruns, H. D., (55) 236, (72) 1229
Bruns, O., (96) 1143
Brunton, L., (88) 74, (21) 2040
Brush, A. C., (5) 639
Brush, E. N., (115) 722
Bryan, W. A., (124) 228, (95) 1597
Bryant, A. G., (17) 1055, (19) 2040
Bryant, J. D., (12) 151, (35) 967
Bryant, W. S., (125) 238, (1) 806, (64) 1137, (14) 1572, (95) 1685, (117) 1857
Bryce, P. H., (13) 1514
Buchanan, F. G., (96) 541
Buchanan, R. J. M., (11) 310, (7) 462, (36) 971
Büchler, A. F., (47) 896
Buchman, A. P., (105) 970
Buchner, G., (82) 1063
Buckley, C. F., (8) 1682
Buckwalter, J. C., (88) 897
Bucura, C. J., (89) 1235
Budin, P., (25) 239
Bueri, P., (99) 244
Buhlig, W. H., (27) 460
Bukowski, R., (82) 314
Bulette, W. W., (80) 154, (26) 1328, (76) 1685
Bulkley, L. D., (10) 1514, (68) 1597, *1630
Bull, C. G., (76) 722
Bull, Jr., C. P., (88) 1229
Bull, C. S., *823
Bull, P., (127, 133) 1966
Bull, R. J., (27) 1687
Bull, W. T., (111) 154
Bullard, F. D., (79) 74
Bullard, W. N., *1717
Bullitt, J. B., (120) 309, (118) 1331, (28) 2036
Bullock, Jr., W. A., *1017
Bülow-Hansen, V., (111) 1864
Bunim, E., (92) 314, (36) 1333
Bunge, O., (86) 78
Bunting, C. H., (117) 810, (35) 1855
Bunts, F. E., (83) 237 (47) 538
Burckhard, G., (80) 1336
Burdick, 1120
Burgevin, F. E., (127) 541
Burgi (Berne), E., (65) 242
Burk, W., (88) 1963
Burkhard, A. F., *1486
Burkard, O., (63) 1600
Burke, J., (14) 1226
Burke, M. O., *583
Burnet, E., (38) 76, (55) 1599
Burnet, J., (16) 1139
Burnett, J. A., (130) 541
Burnett, S. G., (75) 1229, (64) 2039
Burnett, W. F., (55) 2038
Burns, T. M., (42) 967
Burr, A. H., *1887
Burr, C. W., (30) 306, (91) 390, (77) 897, (10) 1226
Burr, W. R., (110) 1138
Burroughs, W. J., (17) 391
Burwash, H. J., (68) 1768
Burwinkel, O., (51) 465
Busalla, (71) 242, (53) 1517
z. Busch, J. P., 294
Buschke, A., (45) 240
Busck, G., (80) 2044
Bushnell, G. E., (92) 1857
Buskett, N. H., (112) 1959
Busse, W., (69) 1861
Bussey, W. J., (112) 1230
Butler, A. F., (91) 722
Butler, C. S., (53) 896
Butler. G. F., (95) 74, (27) 640, (95) 1058, (85) 1138, (3) 1327, (98) 1418, (66) 2039
Butler, T. L., (63) 1330
Butler, W. J., *2139
Büttner, O., (90) 973
Butzke, E. J., (89) 1058
Buxton, B. H., (34) 1056
Buzzard, T., (7) 310
Byers, (1) 1514
Byles, F. G., (91) 810
v. Bylicki, L., (81) 1518

C

Cabot, F., (124) 74, (63) 721
Cabot, H., (57) 721
Cabot, R. C., (16) 338, *982
Caffey, H. B., *1738
Cahier, L., (52) 2126
Caillaud, (26) 1231, (62) 1688
Cain, A. [illegible] (119) 1331
Cairns, D. W., (90) 1514
Calabrese, A., (103) 815
Caldwell, C. E., (23) 460
Calewras, C., (107) 1964
Caley, H. A., (2) 74
Calmette, A., (47) 971, (25) 1231, (112) 1331, (49) 1599
Cameron, H. C., (7) 1139
Cameron, J. A., (18) 2176
Cameron, J. S., (12) 723
Cameron, M., (13) 1857
Cammidge, P. J., (54) 1228
Campana, R., (114) 1519
Campani, A., (71) 159, (111) 546
Campbell, A. M., (69) 640
Campbell, D., (81) 462
Campbell, D. A., (124) 722
Campbell, Jr., G., (109) 309
Campbell, J. T., (64) 390
Campbell, O. B., (105) 898
Campbell, W. C., *763
Campbell, W. F., (93) 898, (87) 1330
Campora, G., (79, 87) 814
Cannaday, J. E., (87) 1138, (70) 1418, *1454, (22) 1765, (5) 1955
Canon, (57) 313
Cantamessa, G., (35) 2178
Cantelli, O., (81) 814
Cantlie, J., (14) 239, (22) 1420, (22) 1770
Cantrell, C. E., (87) 309, (58) 968
Cantrowitz, M., (67) 1063
Capasso, P., (82) 902
Capillery, C., (40) 900
Cappellani, S., (125) 547
Carel, H. C., (94) 1330
Carleton, J. C., (61) 968
Carletti, M., (66) 159
Carlini, V., (70) 462
Carll, W. E., (90) 1857
Carlson, B., (93) 903
Carnot, P., (23) 1231
Carpenter, C. R., (2)* 537
Carpenter, E. W., (78) 1768
Carpenter, G., (18) 541, (18) 1858
Carpi, U., (60) 1962
Carr, H., (36) 1516
Carrel, A., (28) 1415, *1648
Carrier, A. E., *1250
Carriére, G., (80) 972
Carroll, F. F., (25, 30) 76, (34) 1599
Carroll, J., (71) 1229
Carson, H. W., (13) 1959
Carstens, J. H., *1889, (19) 1956, (19) 2036, *2133, (98) 2124
Carter, J. C., *37, (14) 1054
Carter, N. McL., (130) 1139
Carter, W., (13) 971
Carter, W. S., (79) 309
Carter, W. W., (70) 540
Cartledge, A. M., (28) 2036
Carusi, A., (120) 2046
Carver, A. E., (6) 462
Cary, E. H., (80) 309
Casciani, P., (123) 547
Casper, (75) 1601
Cassady, D., *2012
Cassel, (55) 1334
Casselberry, W. E., (38) 72, (66) 540

Cassidy, J. J., (4) 1331
Castellani, A., (8) 722
Castle, H. A., (103) 541
Castronuovo, G., (115) 1519
Caswell, B. H., (14) 151
Cathoire, (42) 543
Catlin J. J., (135) 898
Catola, G., 1317, (94) 1774
Cattle, C. H., (9) 462, (33) 463
Caulkins, J. S., (58) 462, (79) 722, (37) 1513
Cautley, E., (13) 1598
Cazely, W. H., (38) 1859
Cazenave, W., (25) 1333
Center, C. D., (55) 896, (67) 1229
Cerletti, U., (42) 1767
Chaldecott, J. H., 607
Chalmers, A. K., (10) 899
Chamberlin, W. A., (29) 389
Chambers, G., (93) 237, (104) 898, (11) 1514
Chambers, J. Q., (49) 1417
Chambrelent, (46) 308, (68) 972
Champeaux, M., (52) 1139
Chance, B., (8) 718
Chandler, M. L., (77) 1330
Chantemesse, (39) 812, (40) 1961
Chapin, C. V., *574
Chapin, H. D., (8) 2120
Chapman, C. W., (12) 641
Chaput, H., (31) 392
Charles, J. R., (48) 1688
Charles, J. W., (63) 1137
Charrin, A., (46) 1516
Chase, I. C., (86) 309
Chase, R. F., *273
Chase, R. H., (10) 806
Chassaignac, C., *2075
Chatterjee, G. C., (7) 970
Chatterji, K. K., (37) 1859
Chaulin, (38) 812
Chauvel, (30, 34) 812
Cheatham, W., (121) 1857
Cheatle, G. L., (23) 463, (28) 543
Cheinisse, L., (34) 239, (37) 1060, (56) 2042
Chenhall, W. T., (35) 724
Cheshire, W. L., (82) 462
Chetwood, C. H., (30) 1683
Chevrier, L., (39) 900
Chierici, L., (61) 902, (99) 1863
Child, Jr., C. G., (26) 1513
Child, S. P., (106) 898
Chill, E., 1212
Chiodi, W., (119) 1965
Chittenden, R. H., (8) 1769
Christensen, C., *247
Christian, H. A., *549
Christian, H. M., (53) 640, (114) 970
Christiansen, V., (106) 2129
Christianson, J. T., (16) 2176
Church, A., (80, 81) 390, (83) 1138, (40) 1513, (77) 2123
Church, W. F., *1614
Cigheri, M., (84) 1235
Cignozzi, O., (105) 315, (120) 547, (109) 1579, (114) 2046
Cilley, A. H., (87) 1514
Cipolletta, A., (34) 2178
Civatte, A., (46) 76
Claiborne, J. H., *490, *1813
Clairmont, P., (85) 314, (33) 1232
Clark, C. F., (71) 1137
Clark, C. P., *2159
Clark, E. E., (109) 1959
Clark, F. S., (25) 538, (96) 1138
Clark, J. D., (36) 1956
Clark, J. G., *1865, *1867
Clarke, A. P., (67) 1597
Clarke, C. B., (27) 2176
Clarke, C. K., (5) 1419
Clarke, F. S., (82) 1597
Clarke, J. J., (67) 2122
Clarke, T. W., (30) 1415
Clausen, (56) 1334
Clay, J., (3) 74
Claytor, T. A., (28) 1956
Cleaver, L., (67) 154
Clegg, J. T., (70) 1330
Clejat, C., (39) 1771
Cleland, J. B., (33) 724, (20) 1419, (27) 1599
Clemens, J. R., (17) 234
Clemens, F., (90, 91) 1518
Clement, M., 51
Clements, J., (99) 1597
Clemesha, W., (24) 1515, (36) 1859
Clift, F., (98) 1230
Cline, B. F., (125) 74
Cline, L. C., (72) 540
Clinton, F. S., (65) 2039
Clinton, M., (44) 1596
Clogg, H. S., (20) 1686
Clowes, G. H. A., (24) 151, (63) 969
Clubbe, C. P. B., (22) 392
Clutton, H. H., (21) 1960
Coakley, C. G., (13) 2040
Cobb, F., (32) 460
Coble, P. H., (77) 2039
Coburn, E. B., (73) 462
Cocoa, A. F., (43) 640
Cockle, W. P., (13) 1059, (15) 1230
Cocks, E. M., *1736
Codivilla, A., (68) 2122
Codman, E. A., (46) 721, (11) 1572
Coe, H. C., (49) 1228
Coe, J. W., *1090
Coffey, R. C., (9) 718, (31) 1055
Coffin, T. H., (121) 810
Coffman, W. H., (46) 1329
Cogan, J. E., (93) 970
Cohen, B., (60) 1768
Cohn, E., (82) 1689
Cohn, J., (46) 312
Cohn, M., (56) 813
Cohn, P., (88) 1063
Coit, H. L., (119) 722
Colburn, J. E., (44) 236
Colby, B. D., (88) 390
Cole, C. S., (85) 1514
Cole, F. H., (30) 392
Cole, G. L., (106) 541
Cole, L. G., (5) 1414
Coleman, J. M., (152) 74
Coles, S., (28) 2120
Coley, T. L., (10) 2124
Coley, W. B., (26) 1683
Collins, A. N., (62) 153
Collins, J., (9) 71, (125) 970
Collins, M., (125) 541
Colman, W. S., (12) 463
Colmers, F., (88) 243, (68) 2043
Cololian, 292
Colotti, A., (118) 547
Colt, G. H., (22) 239, (21) 1419
Combéléran, C., (49) 76
Comforti, G., (88) 815
Conroe, J. H., (11) 1415
Comte, C., (45) 971
Conaty, T. J., (105) 541
Condon, A. P., (124) 898, (47) 1228, (60) 2122
Congdon, C. E., (101) 2124
Conkey, C. D., (73) 540
Conn, J. E., (88) 2039
Connell, F. G., *405
Conner, L. A., (23) 388
Conradi, H., (102) 1235, (115) 1691
Constantin, E., (41) 76
Conti, A., (63) 159, (97) 244, (68) 902
Cook, A. M., (78) 722, (108) 898
Cook, J. C., *2141
Cook, J. E., (67) 309
Cook, J. R., (85) 722
Cook, P. B., (17) 2214
Cooley, T. B., (61) 73
Coolidge, E. L., (61) 640
Cooper, C. E., (77) 1958
Cooper, C. M., (73) 722
Cooper, J. M., (72) 970
Copeland, B. G., (126) 898, (51) 968
Copeland, E. B., (79) 970, (28) 2176
Copeman, S. M., (23) 1960
Copetti, G., (65) 644
Coplin, W. M. L., (30) 460, (40) 2120
Corbett, J. F., (133) 898
Cordier, A. H., *908
Corlett, W. T., (9) 1514, (40) 1767
Cornell, W. S., (9) 1594, (16) 1853
Corner, E. M., (21) 1231, (13) 1331, (19) 1332
Cornick, B., (55) 968, (86) 1769
Corning, J. L., (6) 387
Corwin, F. M., (46) 389
Corwin, T. W., (48) 389
Coston, H. R., (133) 74
Cott, G. F., (69) 1685
Cottingham, C. E., (95) 898
Cotton, A. C., *1080
Cotton, F. J., (10) 895, (16) 1328, (81, 85) 2039
Couch, L. B., (3) 304
Coues, W. P., (18) 71
Coughlin, R. E., 1213
Coulter, F. E., (43) 720
Couteaud, (30) 812, (42) 900
Cowan, J. M., (26) 812
Coward, F. A., (130) 898
Cowgill, W. M., (44) 720
Cowie, D. M., (78) 722, (108) 898
Cox, A. J., (35) 2176
Cox, W. A., (114) 722
Crafts, L. M., (88) 1769
Craig, C. F., (65) 462, (26) 807
Craig, C. G., *1484
Craig, J. D., (46) 968
Craig, R. H., (41) 896
Craigh, H. A., (29) 640
Cramer, H., (88) 545, (74) 1963
Cramp, A. J., (103) 390
Crandall, F. M., (9) 2035
Crandon, L .R. G., (20) 1683
Crane, W. W., (19) 305
Crawford, D. D., (31) 971
Crawford, J. P., (134) 541
Crawford, W., (94) 237
Credé, (78) 1063
Credé, B., (84) 1142
Crees, R., (89) 970
Cremer, M., (90) 396
Cresswell, A., (29) 900
Cresswell, G., (29) 900
Crews, G. B., (53) 1513
Crichton-Browne, J., (2) 1598
Crile, G. W., *189, (30, 31) 538, (32) 1136, (94) 1138, *1482, (71) 1597, *1780
Crismond, J. W., (75) 2039
Crisp, J. D., (90) 810
Crittenden, A. M., (109) 1138
Crockett, E. A., *1293
Croft, B. P., (8) 1135
Crofton, A. C., (89) 541, *820, (13) 1220, (66) 1229
Cronin, J. J., (45) 1767
Crook, J. L., (97) 1597
Croskey, J. W., 607
Crossen, H. S., (52) 1137
Crosthwait, W. L., (100) 1418
Crothers, T. D., (48) 73, (68, 73) 309, (133) 722, (4) 1419
Crouse, H., (12) 1135
Crowder, T. W., (26) 1594
Crum, F. S., (3) 639
Crummer, L., (117) 238
Cubbins, W. R., (22) 151
Cuff, A., (6) 541
Culbertson, L. R., (71) 1685
Cullen, E. K., (118) 810
Cullen, G., (90) 154, (136) 541, (7 810
Cullen, T. S., (56) 1057
Cummings, S., (14) 1686
Cummins, W. T., (44) 640
Cumston, C. G., (13) 151, (16) 234, (27) 306, (47) 308, (22) 311, (10) 459, (33) 460, (58) 721, (109) 722, (39, 40) 1228, (23) 1332, *1372.
Cunningham, J. H., Jr., (25) 1683.
Curlo, G., (65) 159, (57) 644
Currier, A. F., (11) 459
Curschmann, H., (51) 1421, (81) 1602
Curti, O., (63) 159
Curtis, H. H., (81) 540
Curtis, W. H., (61) 1685
Cuscaden, G., (38) 1516
Cushing, H., *178, (24) 1415, (56) 1768
Cushing, H. E., *1191
Cushing, H. W., (55) 809
Cushny, A. R., (13) 2124
Cutler, E. G., (7) 1225
Cumberbatch, A. E., (43) 2041
Cutter, J. B., *435, (116) 1230
Czyzewicz, A., (82) 2128

D

Dabney, T. S., (99) 1857
Dabney, W. R., (28) 72, (68) 540
Da Costa, J. C., (38) 389, (6) 537, (58) 640, (37) 1329, (34) 2120
Daggett, W. G., *1191
Daireaux, P., (33) 900
Dalgetty, A. B., (17) 76
d'Amato, L., (96) 244, (54) 1517
Dame, F. R., *365
Dammermann, (59) 394
Dana, C. L., (66) 1137, (6) 1327
Danforth, I. N., (37) 1767
D'Anfreville, (29) 239
Daniel, F. E., (123) 309
Daniel, W. B., (155) 74
Daniell, G. W. B., (2) 1959
Daniells, R. P., (77) 1138
Danna, A., (56) 236
Danziger, F., (49) 1961
Daremberg, G., (25) 311, (42) 812
Darling, S. T., *1561
Darnall, W. E., *1810
Davenport, A. B., (26) 640
Davenport, F. H., *1525
Davidsohn, E., (63) 1517
Davidson, C., (85) 1862
Davidson, J. P., (44) 1329
Davie, G. H. G., (7) 810
Davies, A. M., (18) 899, (33, 38) 1599
Davies, D. S., (45) 1688
Davis, A. B., (60) 640, (24, 26) 2176
Davis, A. E., (1) 150
Davis, D. J., *87
Davis, E., (97) 898
Davis, E. P., (51) 1228, (25) 2120, (44) 2121
Davis, G. G., (47) 809, (27) 896
Davis, L., (51) 2121
Davis, N. S., *1429, (56) 1685
Davis, R. H., (89) 898
Davis, T. G., (9) 639, (57) 2039
Davis, T. O., (87) 1958
Dawson, A. W., (30) 1139
Dawson, J. A., (48) 461
Dawson, P. M., (6) 1333
Dax, R., (47) 1333
Day, H. B., (30) 1859
Day, J. A., (123) 898
Deaderick, W. H., *2087
Dean, J. Mc.B. (101), 1597
Dean, J. S., (62) 308
Deaver, J. B., (97) 390, *402, (15) 1415, (5) 2174
De Beck, D., (77) 1685
DeBey, H. B., (40) 72
De Blasi, A., (60) 644
Debove, (39) 2125
De Bovis, R., (47) 1516
de Brun, H., (45) 543
de Cigna, V., (62) 902
Decker, C. J., (59) 1513
Deetjen, H., (107) 1519
Deetz, E., (95) 1235
de Gaulejac, R., (37) 543
DeJarnette, J. S., (109) 1597
Dejerine, J., (23) 642, (44) 812
de Korte, W. E., (19) 239
de LaCarriere, G. C., (74) 1418
de Lapersonne, F., (43) 812
Delaunay, H., (59) 1688
Delaup, S. P., (27) 719
Delavan, D. B., (5) 1511
Delearde, A., (112) 1331
DeLee, J. B., (120) 970, (60) 1229
de Léon, M., (28) 1059
Delfino, E., (70) 902, (47) 2178
Delore, X., (29) 1059
Delsaux, V., (18) 2124
Deming, M. F., (9) 537
De Nancrede, G. B. G., (36) 967
Dench, E. B., *1289, (65, 87) 1685
Denchfield, L. J., (85) 1058
Denenholz, A., (15) 2036
Denier, (58) 971
Denison, C., (25) 460
de Nittis, J., (47) 1139
Denker, A., (90) 545
Denning, A. D. P., (20) 463
Dennis, W. A., (96) 1330
Denny, F. P., *1904
v. den Velden, R., (23) 2171
De Polini, G., (106) 815
Derby, G. S., (8) 1225
Dercum, F. X., (5) 1419
de Renzi, E., (49) 543, (114) 547, (68) 644, (72) 902, (116) 1965, (40) 2178
Dernini, G., (115) 2046
de Rossi, G., (83) 902
de Rothschild, H., (42) 1139, *293
Desai, V. G., (22) 543
de Schweinitz, G. E., (95) 970
Desfosses, P., (24) 155, (47) 1859
Desgrez, A., (37) 76
De Singler, J. V., (41) 1228
d'Este, S., (117) 1519
de Tarnowsky, G., (49) 461
Determann, (83) 545, (95) 1518
Deutschlander, C., (46) 724
Deutschmann, E., (82) 396
de Vecchi, B., (81) 902
Devic, (49) 2126
Devic, E., (44) 76, (42) 1771
Devine, W. H., (129) 238
Devor, J. H., (115) 970
De Vris, J. C., (122) 238
Dewarker, E. V., (29) 1055
Dewey, E. L., *583, *1301
Dewing, O. M., (50) 640
Dewis, J. W., (10) 1512
DeWitt, J. P., (148) 74
DeYbarra, A. M. F., *1013
Dickerson, L. D., (104) 1058
Dickinson, G. K., (25) 2036
Dickinson, R. L., (100) 74
Dickson, F. L., 1120
Dickson, W. E. C., (14) 641
Dide, M., (26) 155
Diefendorf, A. R., (2) 1419
Dieffenbach, W. H., (3) 2119
Diehl, C. L., *1826
Diehl, W. S., (37) 389
Diepgen, P., (85) 1518
Diesing, (58) 394
Dieterle, T., (78) 2128
Dietlen, H., (55, 63) 2126
Dieudonné, (43) 643
Dieulafe, L., (74) 390, (99) 1685
Dieulafoy, (53) 76
Diez, S., (87) 814, (59) 902, (37) 2178
Diller, T., *112
Dillingham, F. H., (11) 1328
Dillon, J., (80) 897
Dinger, A. N., (79) 1689
Dinkelspiel, M. R., (10) 1853
Dirk, A., (102) 1691
Disen, C. F., (23) 1226
Ditman, E. L., (23) 807
Ditman, N. E., *1722, *1793
Dittrick, H., (29) 538
Divine, T., (10) 542
Dixon, A., (52) 1228
Dixon, F. L., (58) 1513
Dixon, S. G., (1) 1230, (41) 1685
Dixon, W. E., (12) 2124
Djewitsky, W. S., (101) 1964
Djurberg, V., (98) 903
Dmitrenko, 1938
Doberauer, (74) 2043
Doca, V., (78) 1336
Dock, G., *978, (13) 1685
Dodd, H. W., (12) 238
Dodd, J. M., (67) 1768
Dodds, W. T. S., (109) 154
Döderlein, (83) 1602
Dodge, W. T., (118) 1138, (37) 2038
Doerfler, H., (95) 2128
Doerling, H., (55) 725
Doherty, C. E., (38) 1136
Dohrn, R., (37) 1333
Dolcetti, (74) 78

ley, D. H., *189
ninici, H., (31) 900
nald, A., (23) 1859
naldson, R., (19) 1419
nath, J., (102) 467
nati, A., (109, 122) 2130
nati, M., (73) 2043, (47) 2178
nitz, A., (94) 1235
noghue, F. D., *2079
olittle, H. M., (36) 1417
pter, C., (46) 971
ran, A., (5) 2124
rland, W. A. N., (92) 1418
Ormea, A., (78) 814
rrance, G. M., *854, (39) 1329, *2090
rsett, W. B., (85) 1958
ugherty, D. S., (83) 1058
uglas, C. C., (13) 463
uglas, C. J., (6) 1134
uglas, J., (111) 541
uglas, R., (39) 1595
utrelepent, (54) 394
wney, J. H., *581, *2160
wnie, W., (22) 811
xiades, A., (110) 1964
aper, A. S., 1120
audt, M., (18) 545
ayer, L. P., (104) 970, (69) 1768
ennan, J. C., (14) 1514
ew, D., 293
eyer, G., (79) 727
eyfus, G., (81) 243, (99) 1235
iver, W. E., (15) 1512
rueck, C. J., (36) 720, (41) 1513
rummond, D., (3) 390
uane, A., (51, 64) 1957
ubois, P., (9) 1419
ubreuilh, W., (35, 39, 45) 76, (40) 1771
uckworth, D., (2) 238
udgeon, G. C., (31) 1961
udgeon, L. S., (25) 306, (35) 1139
udley, E. C., (32) 151, *1605
uff, D., (16) 1419
uffield, W. L., (37) 72
ührssen, A., (33) 538, (44) 1228, (68) 1861, *1891
ujardin-Beaumetz, E., (51) 971
unavant, H. C., (65) 1958
unbar, W. P., (85) 309
uncan, A., (20) 1770
unger, R., (71) 313, (92) 1691
unham, H. B., (18) 388
unham, J. D., (8) 537, (72) 1058
unham, K., (22) 895
unin, T., (78) 1601
unin-Karwicka, M., (93) 1774
unlop, J., (15) 2120
unn, C. H., *25
unn, J., (42) 1329
unn, J. S., (25) 1420
unn, T. F. J., (13) 2035
u Pan, M., (44) 900, (51) 2126
upuy, H., (54) 236
ürck, H., (91) 1424
uret, (40) 464
usciau, I., (31) 239
wight, T., *252, (3) 1225
yer, I., (102) 309

E

Eager, B. F., 1407
Eagleton, W. P., (71) 74
Earp, S. E., *1484, (74) 2039
Eastman, B. D., (64) 1330
Eastman, E. H., (115) 1597
Eastman, J. R., (53) 1228
Eastmond, C., (14) 966, (55) 1856
Eaton, F. B., (59) 2039
Eberhart, N. M., (111) 74, (78) 390, (106, 109) 1058, (107) 1419, (111) 1959
Ebermayer, (79) 243
Ebner, A., (68) 466
Ebstein, W., (64) 394, (81) 545, (94) 1063, (60) 1422
Eccles, R. G., (91) 541, (1) 639
Eckstein, H., (50) 1421
Edebohls, G. M., (55) 1234
Edel, M., (73) 242
Edenhuizen, H., (76) 2044
Eder, M. D., (20) 543
Edgar, J. C., *1534
Edgeworth, F. H., (31) 2041
Edinger, A., (90) 1518
Edlefsen, G., (61) 1422
Edmenson, M. M., (99) 390
Edmunds, A., (18) 811
Edsall, D. L., (82) 74, (31) 1136, *1425, (22) 1854
Edwards, E. G., *937
Edwards, T. C., (108) 1331
Egdahl, E., *1149
Ehrendörfer, (58) 2043
Ehrhardt, O., (80) 1141
Ehrlich, F., (70) 1962
Ehrlich, P., (29) 642
Ehrmann, S., (54) 813
Eichberg, J., (84) 237
Eichel, T., (95) 1691
Einhorn, M., (62) 242, (53) 390, (2) 894, (5) 1414, (52) 1517, *2143
v. Eiselsberg, (28) 1232
Eisenberg, P. Y., (72) 154
Eisendrath, D. N., *986
Eising, E. H., (7) 1764
Ekehorn, G., (66) 813, (96) 903, (30) 1232, (114) 1864
Elam, W. T., (102) 390, (53) 1137
Elder, J. W., (117) 1230
Eliot, 381
Eliot, C. W., (5) 1225, (13) 1328, (87) 1597, (118) 2124
Eliot, E., Jr., (8) 71, (9) 151, (27) 967, (29) 1573, (71) 1857
Eliot, J., (89) 1138
Eliot, L., (92) 722
v. Elischer, J., (99) 1691
Ellefsen, C. J., (128) 1966
Ellett, G. G., (3) 541
Elliot, A. M., (25) 1139
Elliot, G. S. McD., (31) 76
Elliot, R. H., (31) 1139, (37) 2125
Elliott, C. A., (39) 72, (19) 151, (54) 1685
Elliott, E. E., (8) 1328
Elliott, J. H., (7) 1331
Elliott, R. H., (18) 723
Ellis, A. G., (84) 74, (39) 2120
Ellis, A. N., (21) 305, (24) 1055
Ellis, H., (132) 722, (112) 2124
Ellis, H. B., (22) 1328, (91) 1685
Ellison, F. O'B. (33) 2125
Elsberg, C. A., (51) 809
Elsner, H., (65) 1234
Elsner, H. L., (37) 153
Elsworth, R. C., (17) 239
Elwood, C. R., (98) 309
Ely, G. W., (20) 1512
Ely, L. W., (60) 809
Ely, T. C., *1816
Embden, G., (104) 315
Emerson, L., (35) 72, (85) 541, (68) 897, (98) 1330
Emery, W. D., (28) 1859
Enderlen, (63) 1962
Engel, (77) 1063
Engel, C. S., (55) 901, (50) 1961
Engel, K., (99) 1691, (80) 1862
Engel, St., (51) 725
Engelbach, W., *1265
Engelmann, R., (5) 1134
Engels, W., (84) 1518
England, F. R., (117) 1950
England, J. W., *1241
English, W. T., (108) 74
Engman, M. F., (42) 1956
Entrican, J., (19) 723
Eppenstein, (74) 1063
Epstein, A. A., (31, 32) 1766
Epstein, E., (52) 393
Erb, Jr., W., (54) 2126
Erdheim, J., (111) 468
Erdmann, J. F., (1) 1134, (47) 2121
Ericson, E. C., (123) 1138
Erlanger, J., *1343, (9) 1769
Escat, E., (46) 812
Esch, (61) 313, (79) 1336
Essen-Möller, E., (62) 813
Esser, (114) 1691
Essig, N. F., (59) 540
Estes, F. E., (74) 1958
Estes, W. L., (97) 722, (54) 809
Ethridge, M. D., (101) 1058
Evans, D. J., (10) 1857
Evans, J. S., (47) 1957
Evans, T. H., (71) 309, (21) 1055
Evans, W. A., (60) 1685
Eve, P. F., (127) 74
Evelt, W., (73) 1773
Everhard, S., *205
Ewald, C. A., (47) 1060, (56) 1140
Ewart, W., (5) 1598
Ewing, F. C., (55) 1137
Ewing, J., (7) 2035, (9) 2120
Eyster, J. A. E., (45) 1057, (33) 1855
v. Ezdorf, R. H., *11

F

Faber, K., (45) 158, (88) 903
Fabre, P., (26) 239
Fabris, P., (101) 1863
Faget, C., (53) 1597
Fahr, (101) 396, (85) 1774, (95) 1964
Fairchild, D. S., (27) 389
Faison, J. A., (95) 541
Faith, T., (28) 1594
Falconer, J. L., (20) 1139, (23) 2040
Falconer, R. C., (121) 1331
Falkner, A., (90) 314
Falloise, A., (33) 239
Fantz, T. S., (100) 541
Farr, C. B., (36) 1684
Farrar, C. B., (6) 1419
Fasano, M., (58) 159
Faught, F. A., (18) 1765
Faure, J. L., (22) 1050, (40) 1139, (40) 2125
Faure, M., (37) 393, (46) 1688
Faust, J., (85) 1142
Favre, M., (38, 41) 1771
Fawcett, E., (51) 1688
Feer, E., (53) 1860
Fehling, H., (12) 2177
Feiss, H. O., (28) 306, (115) 1419
Felch, B. F., (104) 1230
Fellner, B., (89) 1424
Fellner, Jr., B., (53) 2126
Fellner, L., (54) 76, (58) 1234
Fellner, O. O., (87) 1142
Fennel, J. L., (79) 1768
Fenner, E. D., (31) 896
Fenwick, E. H., *1151
Ferari, M., (120) 1965
Fere, C., (35, 42) 393, (41) 543, (37) 900, (74, 79) 972
Ferguson, A. D., (106) 1959
Ferguson, A. H., *1153
Ferguson, J., (30) 719
Ferguson, S. W., (28) 724
Fernet, C., (27) 1232
Ferrai, C., (59) 159
Ferreira, J., (30) 1420
Ferron, M., (40) 900
Fessler, J., (70) 545
Fest, F. T. B., (120) 1230
Fiebig, (37) 1232
Field, D. L., (83) 2123
Findlay, J. W., (90) 2039
Findlay, L., (36) 1687
Findley, P., (92) 1229, (44) 1855, (67) 1958
Fink, F., (81) 314, (47) 643
Fink, G. H., (21) 1770
Fink, L. G., (35) 2125
Finley, F. G., (37) 896
Finley, G. W., (110) 1959
Finley, H. L., (82) 154
Finney, J. M., (17) 311, (36) 2041
Finney, J. M. T., (14) 538
Finsterer, H., (72) 395
Fiorvanti, L., (49) 2178
Fiori, P., (111) 2046
Firth, R. H., (29) 1599
Fischel, L., (58) 1772
Fischel, W., (94) 154
Fischer, A., (37) 156
Fischer, B., (55) 241, (87) 2128
Fischer, L., (84) 1418, (75) 1825
Fischer, M., (112) 1603
Fischer, T., (61) 813
Fischer, W., (45) 240
Fischer-Defoy, W., (55) 241, (94) 315
Fischl, R., (32) 642
Fish, E. F., (92) 1058
Fish, H. M., (52) 1057, (4) 1682
Fisher, E. E., (80) 1597
Fisher, I., (37) 1595
Fisher, J. M., (38) 1329, (35) 2120
Fisher, J. T., *1825
Fisher, T., (27) 1859
Fisk, A. L., (31) 460
Fittipaldi, E. U., (108) 1519
Fitzgerald, F. J. C., (107) 1857
Fitzgerald, J. G. (103) 1597
Fitzpatrick, E. H., (62) 237
Fleiner, W., (78) 1963
Fleischmann, P., (108) 1775
Fleischner, E. C., (46) 1767
Fleming, E. W., (79) 74
Flesch, H., (34) 156
Fletcher, A., (76) 1137
Fletcher, J. W., (69) 721
Fletcher, M. H., *191
Flexner, J. A., (106) 237
Flexner, S., *560, (65, 68) 969, (12) 1685
Flick, L. F., (38) 1595
Flint, W. H., (88) 970
Foa, P., (117) 2130
Fock, (29) 2177
Focke, (26) 642
Foltz, J. E., (79) 897
Foote, C. C., (105) 810
Foote, C. J., *125
Foote, S. A., (82) 309
Ford, C. B., (57) 540
Ford, J. H., (116) 1959
Ford, W. E., (40) 538
Ford, W. M., (29) 234
Fordyce, J. A., (98) 810, (5) 1514
Forgue, E., (30) 1059, (43) 2125
Forlanini, C., (75) 1234
Forman, R. H., (35) 1599
Fornaca, L., (70) 644
Fornari, L., (36) 2178
Fornet, (44) 643
Fornet, W., (65) 544, (71) 1861
Forssner, H., (115) 1864
Forster, W. H. C., (11) 391
Försterling, K., (72) 78
Foscue, G. B., (89) 309
Foster, B., (93) 1330
Foster, C. L., *685
Foster, J. M., (105) 237
Foster, S. D., (73) 1597
Fothergill, W. E., (5) 1058
Fotheringham, J. T., (6) 1769
Fournier, A., (58) 1600, (53) 1688
Foulkrod, C., (43) 808, (303) 2120
Fowler, E. P., (81) 1058
Fowler, R. S., (22) 388, (102) 810
Fox, C. P., (113) 898
Fox, G. H., (128) 810
Fox, H. (44) 72
Fox, R. H., (6) 970
Fraenkel, A., (83) 467
Franchere, F. E., (87) 74
Francis, L. M., (58) 1957
Frangenheim, P., (96) 396, (81) 1774
Frank, F., (87) 1235
Frank, L., (115) 154, (94) 1418
Franke, F., (61) 1772
Frankel, J., (18) 2177
Frankenstein, K., (70) 77
Franklin, A. L., (34) 1513
Franklin, C. A., (5) 387
Franklin, G. C., (18) 1959
Franklin, G. D., (23) 1515
v. Franqué, O., (64) 77
Franz, K., (94) 1602
Franz, S. I., *1464
Fraser, C. F., (16) 641
Fratini, G., (39) 2178
Fratti, G., (69) 902
Frazier, C. H., *679, *744, *849, *923, (111) 970
Frazier, J. M., (101) 722, (114) 1597
Frederick, E. V., (96) 237
Freed, J. W., (109) 1597
Freeman, J. A., (121) 309
Freeman, L., *2047
Freeman, R. G., (2) 458
Freer, O. T., *161, (7) 2039, (76) 2123
Freidrichs, A. G., (53) 236
Freigerb, A. H., (71) 2122
Fremont-Smith, F., (14) 2120
French, H., (19) 811
French, J. M., (119) 898, (73) 1418
French, R. E., (32) 463
French, T. R., (8) 1955
Freund, H. A., (36) 1513
Freund, H. W., (78, 83, 84) 78
Freund, R., (51) 813, (88) 973
Freudenberg, A. V., (61) 972
Freudenthal, W., (68, 97) 1685
Frey, 1938
Frey, E., (107) 975
Frey, F. M., (34) 2037
v. Frey, M., *645.
Fridenberg, P., (98) 1685.
Friedberger, E., (45) 1421.
Friedenthal, H., (67) 1601.
Friedenwald, J., (13) 639, (42) 896.
Friedlander, A., (21) 895.
Friedmann, C., (50) 1137.
Friedman, E., (72) 1958
Friedemann, G., (63) 1861
Friedrich, P. L., (125) 975.
Froin, (41) 393.
Frolich, T., (140) 1966
Froment, J., (44) 76.
Fromme, F., (83) 972.
Fry, S., (79) 1229.
Frye, F. R., (106) 309.
Fuchs, 1938
Fuchs, H., (85) 2128
Fullar, E., (122) 74, (96) 1058.
Fuller, S. W., (88) 237.
Fullerton, A., (3) 154.
Fullerton, E. B., *1986
Fullerton, R., (23) 239.
Fullerton, W. S., (98) 1514.
Fulton, D., (47) 1768
Funaiolf, G., (38) 2178
Funck, C., (78) 1689.
Funke, J., *469, *556, (10) 2035
Furman, D., (107) 74.
Fürntratt, K., (102) 546
Furrer, A. F., (97) 1138.
Furstenau, R., (54) 1334.
Fuss, S., (94) 1964
Fussell, M. H., *268, *1786
Füth, H., (85) 78, (39) 1333, (79) 1517

G

Gabbi, U., (112) 315.
Gadd, H. W., (30) 2041
Gaehtgens, W., (98) 1235.
Gage, G. R., *687.
Gage, H., (130) 309.
Galbo, C., (118) 2046
Galewsky, (101) 1555.
Gallant, A. E., (8) 639, (59) 721, *1357, *1418.
Galle, O., (61) 394.
Galli, G., (84) 1963
Galluzzi, A., (93) 815.
Galzin, E., (50) 2126
Gamber, W. P., (96) 309.
Gamble, R. A., (43) 1329.
Gamble, W. E., (71) 640.
Ganghofner, F., (95) 79.
Gans, E., (95) 467.
Gant, S. G., (9) 387, (7) 718, (18) 967, (10) 1415, (58) 1768
Garceau, A., (68) 73, (45) 307.
Garceau, E., (99) 1058, *1440, (84) 2039
Gardenghi, 708.
Gardner, A. E., (113) 1138.
Gardner, W., (5) 1857
Garner, T. J., (76) 810.
Garrett, R. W., (110) 1857
Garrod, A., (27) 1515.
Gasparani, A., (115) 1965
Gastpar, (110) 468.
Gates, N. A., (59) 462.
Gaugele, K., (75) 1141.

Gaupp, R., (110) 1143.
Gauss, C. J., (60) 77, (105) 1143, (60) 1234.
Gay, F. P., (52) 971.
Gay, F. W., (12) 234.
Gaylord, H. R., (24) 151.
Gebele, (79) 243.
Gegenbach, F. P., (124) 541.
Gehrmann, A., (31) 720, (121) 970.
Geigel, R., (92) 396.
Geigerstam, E., af. (100) 903.
Geissler, (70) 2127
Geissler, O., (78) 1773
Gelmorn, G., (134) 74.
Gelpke, L., (75) 395, (84) 2128
Gengenbach, F. P., (93) 74.
Gengou, O., (54) 1599.
Gennari, C., (114) 2130
George, S., *103.
Georgi, (62) 313.
Geraudel, E., (32) 311.
Gerhard, S. P., (14) 639.
Gerhardt, C., (104) 546.
Gerhardt, D., (103) 1143.
Germain, H. H., *1701.
German, H., (76) 1963
Germann, M. K., *1296.
Géronne, (56) 1517.
Gessner, W., (63) 1234, (10) 2176
Ghedini, G., (57, 64) 902, (114) 1965, (41) 2178
Ghelfi, A., (129) 547.
Ghent, M. N., (20) 2176
Ghrist, J., (91) 970.
Gianasso, A. B., (110) 315, (116) 547
Giani, R., (118) 2130
Gibb, J. G., (15) 310.
Gibbon, J. H., (27) 2120
Gibbons, H. W., (24) 1854
Gibbs, M. D., (60) 1418.
Gibney, V. P., (72) 1857
Gibson, A. G., (19) 1686.
Gibson, G. A., (7) 390, (13) 463, (1) 641, (3) 1058, (6) 1685, (9) 1769
Gibson, R. D., (72) 1137.
Gidney, H., (34) 1139, (25) 1515.
Gies, W. J., *560.
Giese, (105) 2045
Gifford, H., (41, 47) 236, (68) 1958
Gilbert, A., (46) 2125
Gilbert, J. A., (2) 1593.
Gilbert, R. B., (66) 721, (61) 1330.
Gilbride, J. J., (16) 895.
Gilchrist, A. W., (3) 1230.
Gilchrist, T. C., (8) 1514.
Gilday, A. L. C., (11) 1598.
Giles, A. E., (6) 1857
Giles, B. F., (26) 2040
Giles, G. M., (18) 76, (15) 239, (21) 392, (23) 543, (24) 812.
Gilfillan, J. S., (84) 1958
Gill, C. A., (27) 1139.
Gill, J. M., (18) 1059.
Gillan, J., (17) 1770
Gillespie, W., (20) 305, (21) 1512.
Gillies, S., (31) 724.
Gillmore, R., (34) 151, (31) 2120
Gilpin, J. H., (56) 462.
Gimlette, J. D., (36) 1139.
Gimlette, T. D., (19) 76, (16) 239.
Gindes, E. J., (72) 1063.
Gioielli, P. (67) 159.
Giordano, E., (66) 644.
Girard-Mangin, (42) 2125
Girault, (43) 464.
Girault, A. A., *85.
Girvin, J. W., (84) 1769
Gittings, J. C., (7) 1327.
Glahn, J. (56) 1330.
Glaister, J., (2) 1331.
Glascock, A., (17) 895.
Gleason, J. E., (119) 1138.
Gleitsmann, J. W. (4) 304.
Glendon, W. P. (58) 308.
Glenn, W. F., *1828
Glockner, A., (57) 2043
Glynn, E. E., (21) 971.
Goadby, K. W., (27) 1960
Göbell, R., (72) 2043
Goddard, C. C., (68) 1330.
Goebel, (7) 2176
Goebel, C., (99) 315, (74) 395.
Goelet, A. H., (83) 2039
Goenner, A., (81) 2128
Goepp, R. M., *359.
Goffe, J. R., (25) 1512.
Goggia, (65) 159.
Goggia, C. P., (112) 546.
Goldbaum, M., (48) 465.
Goldberg, B., (58) 1062, (62) 1861
Golden, W. W., (27) 2036
Goldmann, E., (77) 1141.
Goldmann, E. E., (72) 1141.
Goldscheider, (47) 393, (59) 1772, (110, 112) 1775
Goldsmith, A. A., (51) 1685.
Goldsmith, P. G., (10) 2039
Goldspohn, A., (32) 720, (122) 970, (59) 1229.
Goldstein, M. A., (57) 1137, (122) 1230.
Goldstucker, S., (58) 241.
Goldthwait, J. E., (18) 459.
Goler, G. W., (103) 898, (82) 1138.
Goodale, J. L., (3) 1054, (17) 2036
Goodall, E., (2) 1769
Goodall, J. R., (5) 1857
Goodhue, E. S., (64) 810.
Gooding, J. J., *2159
Goodloe, H., (81) 1418.
Goodman, A. L., (5) 2035
Goodrich, C. H., (80) 1768, (58) 1856
Goodrich, J., (84) 897.
Gordlin, H. M., 1407.
Gordinier, H. C., (47) 73.
Gordon, A., (54) 73, (8) 387, (12) 1512, (43) 1685.
Gordon, A. H., (36) 896.
Gordon, E. R., (102) 1058.
Gordon, H. S., (48) 1768
Gordon, S. C., (41) 538.
Gordon, W., (1) 1857
Gore, D. C., (39) 640.
Gore, W. R., *1213.
Gossage, A. M., (13) 1770
Gosset, A., (44) 1139.
Goth, L., (103) 80, (83) 1142, (80) 2128
Gottheil, W. S., (22) 72, (128) 74. (10) 151, (67) 540.
Gottschalk, S., (103) 1774
Gouget, A., (48) 1139.
Gould, G. M., *734, (1) 966, (118) 1419, *1521, (47) 1596, (78, 80, 83) 1685, (82) 1768
Gowers, W. R., (2) 390, (11) 463, (2) 541.
Goyanes, J., 1121.
Graber, S. S., (118) 1857
Grace-Calvert, G. A., (6) 390, (22) 971.
Grad, H., (30) 1055.
Gradle, H., (59) 1957, *1733
Graef, C., (13) 1955
Graham, C., (50) 73, (16) 807.
Graham, E. A., (35) 1227.
Graham, E. E., (61) 540, *1555, *1586.
Graham, H. G., (21) 459.
Grancher, (52) 2041
Granger, C. T., (59) 236.
Grant, G. H., (1) 718.
Grant, H. H., (75) 1514.
Grant, J. D., (3) 1139.
Graser, E., (53) 1234.
Grashey, R., (93) 1143.
Gräupner, (62) 544.
Graves, W. P., (19) 459.
Graves, W. W., (19) 1226).
Grawitz, P., (112, 115, 116) 975.
Gray, A. A., 1406.
Gray, A. L., (44) 1417, (33) 1513.
Gray, C. A., (60) 968.
Gray, F. D., (3) 458.
Graziani, A., (91) 1863
Greedy, F. A., (52) 1513.
Greeff, (56) 1334.
Green, D. W. (70) 1137.
Green, J., Jr., (46) 236, (58) 1137.
Greene, H. M., (69) 73.
Greene, W. H. C., (25) 1859
Greene-Wilson, D., (86) 1958
Greenwood, A., (43) 236.
Gregory, W. H., (13) 899.
Grehant, N., (52) 76.
Greiffenhagen, W., (73) 78.
Greig, E. D. W., (29) 543.
Griffin, O. A., (54) 1957
Griffith, A. H., (63) 73.
Griffith, D. H., (16) 1226.
Griffith, J. P. C., (62) 540.
Griffith, P. G., (30) 1599.
Griffith, T. W., (17) 1598.
Griffith, W. S. A., (3) 970.
Griffiths, G. W., (112) 898.
Griffon, W. A., (15) 234.
Grimani, E., (115) 2130
Grimes, E., (106) 1230.
Grimm, (48) 724.
Grimm, A S., (68) 1418.
Grimsdale, T. B., (32) 971.
Grinker, J., (71) 237, (54) 462, (62) 1057, (26) 1854
Grisson, (22) 2177
Grober, A., (102) 1603.
Groedel, F., (70) 1234.
Groedel, F. M., (94) 396.
Groedel, T., (70) 1234.
Gross, E., (122) 1603.
Gross, H., (65) 2043
Gross, W., 527.
Grossmann, 1844
Grosvener, J. W., (69) 309.
Groszmann, M. P., (63) 1597.
Groszmann, W. H., (79) 390.
Grouven, (54) 394.
Grouzdew, W., (87) 972.
Grube, K., (68) 1335.
Grulee, C. G., (29) 151.
Grunbaum, A. S., (14) 723.
Grünbaum, D., (63) 2043
Grund, G., (60) 1861, (83) 2044
Grünwald, H. F., (57) 2126
Grünwald, L., (100) 1235, (70) 1517.
Gualdi, C., (122) 547.
Gualdrini, G., (88) 814.
Guérin, C., (47) 971, (112) 1331, (49) 1599.
Gucrison, (31) 812.
Guerry, Le G., (128) 898.
Guhr, M., (53) 393.
Guibé, M., (47) 2125
Guillain, G., (32) 239.
Guimbellot, M., (48) 2126
Guisez, (41) 812.
Guiteras, R., (52) 390, (11) 1135.
Gulick, L. H., (1) 458.
Gullan, A. G., (2) 898, (19) 971.
Gundobin, N., (76) 2127
Gunn, K. E., (12) 75.
Gunn, R. M., (5) 1139.
Gushee, E. S., (25) 2176
Gustine, S. D., (56) 1597.
Guszmann, J., (46) 1772
Guthrie, C. C., (28) 1415, *1648.
Guthrie, J. B., (49) 236.
Guthrie, T., (20) 239.
Gutzmann, H., (81) 1862
Guyot, G., (101) 815.
Gwathmey, J. T., *1361.
Gwathmey, L., (108) 1857
Gwyn, N. B., (46) 72.

H

Haab, 1844
Haaland, M., (51) 1517.
Haas, H., (40) 240.
v. Haberer, H., (75) 1423.
Haberman, J. V. (19) 391.
Hackel, E., (29) 2176
Hackler, G. M., (96) 1959
Haecker, R., (127) 975.
Haegel, M., (82) 2044
Hagen, W., (96) 545.
Hager, (68) 313.
Haggard, W. D., *338.
Haggart, A., (33) 1956
Hagner, F. R., (87) 722, (3) 1414, (32) 1956
Hahn, B., (26) 306.
Hahn, J., (84) 243.
Hahn, M., (60) 726.
Haim, E., (69) 1517.
Haines, H. A., (29) 76.
Haines, W. D., (19) 719.
Hake, H. W., (23) 1960
Halberstadter, L., (92) 1235.
Hald, P. T., (104) 2129
Hale, A. B., (26) 1227.
Hall, B., (3) 2039
Hall, C. L., (95) 1769
Hall, E. A., (95) 237, (39) 1136.
Hall, E. N. (107) 1138.
Hall, F. B., (8½) 459.
Hall, G. S., (65) 1597.
Hall, J. K., *1916
Hall, J. N., (4) 806, (49) 1685.
Hall, R. B., (19) 234.
Halle, A., (100) 1603.
Halle, M., (56) 1961
Hallenberger, O., (78) 2044
Halliburton, W. D., (6) 1139.
Hallion, L., (19) 642, (63) 1688, (43) 1859.
Halsey, J. T., (16) 2124
Halsey, L. W., (144) 74.
Halsey, R. H., (86) 1514.
Halsted, T. H., (23) 1328, (39) 2176
Halsted, W. S., *2147
Halter, J., (73) 395.
Hamburger, F., (101) 467.
Hamilton, A., (64) 237.
Hamilton, E. A., (72) 1768
Hamilton, H., (105) 1138.
Hamilton, L. H., (124) 810.
Hamilton, R. J. (40) 971.
Hamilton, T. K., (38) 1687.
Hamilton-Kenny, F., (39) 1516.
Hammerschlag, R., (69) 2043
Hammerschlag, V., (49) 1137.
Hammond, F. C., (11) 718.
Hammond, P., *1523, *1645.
Hammond, S. W., (100) 970.
Hance, I. H., (133) 810, (128) 1139.
Hancock, D. O., (68) 721.
Hancock, T. H., (39) 460.
Handford, H., (29) 1960
Handley, W. S., (3) 309.
Handly, J. W., (98) 1597.
Haney, J. P., (60½) 236.
Hankin, E. H., (5) 1956
Hannes, W. (91) 314, (91) 1142.
Hans, H., (67) 1517.
Hansel, C. E., (93) 390.
Hansell, H. F., (57) 308.
Hansen, P. N., (112) 1864
v. Hansemann, D., (96, 103) 315, (30) 642.
Hanson, D. S., (50) 72.
Hansteen, E. H., (129, 130) 1966
Harbaugh, C. H. (109) 237.
Harbitz, F., (124) 1520, (137, 138) 1966
Harbridge, D. F., (74) 897.
Harcourt, R., (1) 1331.
Hardaway, W. A., (130) 810.
Hardie, T. M., (63) 390, (71) 540.
Hare, F., (22) 1231, (1) 1511.
Hare, H. A., (21) 807.
Hargrave, E. T., (111) 1597.
Hargrove, R. J., (54) 540.
Harkin, F. McD., (39) 2038
Harlan, E., (23) 1055, (67) 1137
Harland, W. G. B., (96) 1418.
Harman, N. B., (22) 1332.
Harnack, E., (69) 544.
Harner, R. C., (39) 1956
Harnsberger, S., (89) 2123
Harper, J. R., (1) 1857
Harriman, W. E., (108) 1230.
Harrington, C., (3) 2174
Harrington, D. W., (102) 74.
Harrington, T. F., (16) 967.
Harris, H. F., (24) 460.
Harris, M. L., *1368.
Harris, P. A., (34) 538.
Harris, R. A., (67) 390, (131) 1139
Harris, S., (51) 540.
Harris, T. J. (94) 1685.
Harris, W., (27) 463.
Harris, W. L., (35) 640.
Harrison, G. T., (84) 2123
Harrison, L. W., (20) 899.
Harrison, R., (93) 1058, (62) 1 (78) 1330, (14) 1331, (68) 1 (22) 1683.
Harrison, W. S., (34) 543, (39) 1
Harrsell, H. F., (42) 2176
Hart, K., (104) 1519.
Hart, R. N., (12) 310.
Hart, T. B., (126) 154.
Hart, T. S., (27) 807, (11) 1054.
Hartenburg, P., 2125
Hartmann, J. A., (56) 2122
Hartshorn, W. E., (3) 806.
Harttung, (48) 1772
Hartung, E., (94) 545.
Hartung, H. H., (66) 897.
Hartzell, M. B., (5) 71, (42) 307, (1229.
Hartzell, M. H., (129) 810.
Hartzell, W. H., (40) 1685.
Harvey, E. B., *553.
Harvey, T. W., (45) 389.
Harwood, W. E., *2076
Hasbrouck, E. M., (30) 1956
Hassin, G. B., (109) 74, (75) 3 (105) 1419.
Hassin, H. B., (108) 1959
Hasslauer, (116) 1691.
Hassler, W. C., (51) 2038
Hastings, H., (69) 390, (66) 810, (970, (88) 1685.
Hastings, T. W., (4) 233, (9) 8 (13) 966, (27) 1415, (19) 1765
Hatcher, R. A., *2059
Hatfield, S. I. (74) 1597.
Hathaway, H., (46) 1599.
Hathcock, A. L., (112) 1597.
Hauch, E., (89) 314.
Hauck, L., (23) 2120
Hauffe, G., (93) 467.
Haultain, F. W. N., (1) 722.
Haury, (40) 1961
Haus, G. A., (125) 1520.
Hawes, M., (97) 541.
Hawley, G. F., *502.
Hay, J., (15, 16) 971, (22) 1960
Hayd, H. E., (46) 1596, (105) 2124
Hayem, G., (23) 155.
Hayman, A. S., (3) 1685.
Haynes, I. S., (14) 1135, (12) 1226.
Hays, H. M., (98) 722.
Hayward, W. C., (18) 1139.
Hazen, C. M., (81) 154.
Hazen, W. P. C., (85) 2123
Hearst, W. L., (109) 1230.
Heath, A. C., *1300.
Heath, C. J., (10) 811.
Heatly, J. A., (53) 2121
Heaton, C. A., *1190.
Hecht, A., (96) 467, (98) 1143.
Hecht, D'O., (45) 461, (63) 1057.
Hecker, (97) 467.
Hecker, R., (97) 79.
Hedges, H. S., (77) 154.
Heerfordt, C., (72) 727.
Heermann, (79) 1063.
Heffron, J. L., (62) 1768
Heg, E. E., (69) 1058.
Hegar, K., (68) 77.
Hehl, F., (31) 1333.
Heichelheim, (73) 1861
Heide, H., (57) 813.
Heidingsfeld, M. L., (40) 720, (44) 1956, (21) 2036
Heilbronner, K., (96) 1691, (71) 1963
Heiman, H., (13) 1853
Heimann, G., (69) 394.
Heineke, A., (80) 395, (82) 396.
Heineke, H., (74) 1861
Heinsheimer, F., (28) 642, (110) 975.
Heinze, (91) 79.
Heiser, V. G., *245.
Heitz, J., (48) 543.
Hektoen, L., (63) 237, *247, (27) 1766
Helbron, (33) 642.
Held, R. J., (86) 1058, (54) 1330.
Hellendall, H. (71) 77.
Heller, J., (48) 1233.
Helmholz, H. F., (24) 1415.
Helsingius, O. F., (77) 1234.

nway, H. B., *2158
ıcter, J. C., (38) 640.
ıinger, R. J., (47) 1685.
ɛrson, F. L., (79) 1685.
ɛrson, J. W., (110) 722.
ɛrson, S. C., (53) 540.
ɔn, G. A., (125) 722.
ge, A., (74) 313.
, (70) 2043
ig, K., (104) 80.
, J. M., (79) 1958
l, O., (11) 2176
ɛg, W., (66) 466.
nan, E. K., (111) 898.
nan, W. J., *1246.
ıco, P., (72) 972.
erff, O., (104) 1143, (60) 1231, 80) 1424.
ıan, G. E., (1) 309.
ıan, J. F., (13) 718.
ıes, O., (101) 1691.
ck, F. C., *14, *1438.
ck, J. B., (8) 2175
ck, J. F., (86) 2039
ing, P. T., 527.
ingham, W. P., (20) 1231, (41) 041
mann, C., (13) 1135.
mann, C. H., (81) 1597.
hey, E. P., (50) 1513.
zler, A. E., (6) 966.
heimer, G., (68) 242, (97) 1964
, H., (98) 467.
, M., (71) 2176, (19) 2177
og, M., (101) 1685, (5) 2214, (19) 2215
, J. H., (30) 896.
, O., (71) 1773
ert, W., *2009
ıerington, A. J., (89) 722.
man, G., (118) 1144, (69) 2127
sner, (59) 313.
es, H. F., (15) 719, *838.
etson, J. T., (14) 155, (21) 811. (11) 1139.
itt, J. H., (120) 810.
lett, R. T., (31) 1859
erdahl, S. A., (123) 1520.
lmun, H. H., *687.
ard, W. E., (79) 74.
ks, H. T., (19) 811.
ley, H. A., (8) 1511.
lebrand, O., (85) 467, (47) 1421.
lebrandt, (47) 240.
lebrandt, H., (88) 1774
lebrandt, K., (106) 1964
lebrandt, W., (98, 99) 1518.
ireth, J. L., (17) 459.
l, C., (30) 234.
l, C. A., (31) 543.
l, C. E., (79) 462.
l, E. C., (49) 1057.
l, H., (61) 390.
l, H. W., (6) 1230, (96) 1514.
l, I. L., (26) 234.
l, R., (61) 1137.
l, R. S., (13) 895.
l, W. C., (30) 538.
ton, D. C., (32) 1683.
ton, W. M., (74) 1330.
ısberg, V., (103) 2039
ıshelwood, J., (71) 462, (15) 463.
ɛsch, M., (77) 78, (40) 1233.
ɛschberg, J. (89) 79.
ɛschberg, K., (53) 1772
ɛshberg, L. K., (31) 1854
ɛschfeld, F., (54) 240.
ɛschfeld, H., (46) 465, (48) 1421.
ɛschfelder, A. D. (46) 1057, (25) 1415, (58) 1417.
ɛschman, L. J., (6) 639, (110) 898.
ɛschstein, L., 543.
ɛshberg, L. K., *433.
ɜ, 1406.
tchcock, C. W., (38) 2038
tchens, A. P., (36) 1855
tchings, F. W., *1376.
xson, C. W., (74) 1137.
ɔbbs, A. G., (67) 1514.
ɔcheisen, (89) 973, (55) 1517, (59, 75) 1861, (61) 2043
ɔchenegg, (103) 467.
ɔdgins, J. C., (116) 154.
ɔelscher, (51) 1137.
ɔerschelmann, E., (40) 1333.
Hoeselin, H., (84) 396.
ɔfbauer, J., (43) 240.
ɔfbauer, L., (36) 156.
ɔff, J. V., (48) 308, (63) 897, (23) 967.
ɔff, J. V. R., (108) 722.
ɔffa, A., (6-) 242, (86) 467, (59) 1140, (57) 1916
ɔffa, T., (103) 546.
ɔffmann, E., (51) 313, (100) 1603.
ɔffmann, F., (59) 1961
ɔffmann, F. A., (48) 240.
ɔffmann, R. S., (63) 466.
ɔffmeyer, H., (81) 1063.
ɔfmann, A., (70) 1335, (76) 1517.
ɔfmann, C., (69) 1141.
ɔfmeier, M., (29) 1333, (113) 1691, (104) 1774
Hohmann, G., (92) 545, (52) 1233, (101) 1603.
Holden, W. A., (103) 1857
Holland, T., (8) 2039
Holländer, E., (94) 974.
Hollen, H. B., (96) 390.
Hollenbeck, H. S., *1277.
Hollister, J. C., (71) 1423.
Hollopeter, W. C., *397, (63) 540.
Holm, A., (74) 727.
Holm, I. C., (126) 1966
Holman, C. J., (89) 1769
Holmes, A. M., (101, 102) 237.
Holmes, B., *318, (19) 388, *1886, (74) 2123
Holmes, G. M., (49) 1599.
Holmgren, I. (95) 903.
Holobut, T., (83) 314.
Holst, F., (52) 1334.
Holst, P. F., (121) 1520.
Holt, E. E., *194.
Holt, L. E., (32) 2037
Holte, H., (49) 73.
Holton, H. D., (8) 1230, *1248.
Holzbach, E., (79) 2128
Holzknecht, 1317.
Homan, G., (25) 1136, (5) 1230.
Hooper, J. W. D., (25, 27) 392.
Hopkins, F. E., (29) 1328.
Hopkins, S. D., (123) 541.
Hopkins, W. B., (118) 154.
Hoppe, (66) 313, (86) 1963
Hoppe, H. H., (18) 234.
Horder, T. J., (12) 1230, (11) 1331, (15) 1419.
Hornibrook, E., (133) 541, *817.
Hornung, (83) 1963
v. Horoszkiewicz, S., (57) 1517.
Horrocks, P., (7) 238, (30) 463.
Horrocks, W. H., (22) 76.
Horsley, J. S., *20.
Horsley, V., (2) 970, (24) 1136, (124) 1331.
Horstmann, (87) 1690.
Horton, G. M., (55) 540.
Horwitz, L., (37) 1420.
Hossack, W. M. C., (28) 1139.
Hotchkiss, L. W., (49) 809, (2) 1511.
Hotz, F, C., (57) 153.
Hough, F. S., *776.
House, A. F., (116) 1419.
Houston, T., (12) 1514.
Howard, L. V., (73) 1958
Howard, W. L., (70) 309, *1891
Howard, W. R., (78) 309.
Howe, L., (77) 462, (72) 897, (84) 1685.
Howe, W. C., (18) 2120
Howell, C. M. H., (24) 1859
Howell, J. M., (44) 2038
Howell ,S. Y., (38) 307.
Howitt, H., (19) 1959
Hubbard, J. C., (29) 1683, (19) 2120
Hubbard, T., (74) 540.
Hubbell, A. A., *1, (56) 1957
Hubby, L. M., (82) 1058.
Huckell, R., (27) 724.
Hudleston, W. E., (32) 543.
Huebschmann, P., (103) 974.
Hughes, C. H., (129) 722, (111, 115) 2124
Hughes, D. A., (16) 1512.
Hughes, H., (122) 154, (54) 1417.
Hughes, J. T., (16) 310.
Hughes, M. R., (101) 390, (112) 1857, (67) 2039
Huismans, L., (87) 2044
Huizinga, J. G., (49) 1596.
Humiston, C. E., (100) 1230.
Humiston, R., *1651.
Humiston, W. H., (49) 538, (42) 2038
Hummel, D. E. M., (93) 1857
Hummelsheim, Ed., (59) 153.
Humphrey, W. O., (114) 898.
Hun, H., (106) 722.
Hunkin, S. J., (109) 1331.
Hunt, E. H., (9) 641.
Hunt, E. L., (15) 1594, (21) 1683.
Hunt, G. B., (12) 1419.
Hunt, J. E., (48) 1513.
Hunt, J. G., (115, 119) 1857
Hunt, M., (19) 2124
Hunt, R., *790, 1405.
Hunt, V. V., (112) 74.
Hunt, W. L., (7) 1682.
Hunt, W. N., (44) 1136.
Hunter, J., (28) 719, (125) 1331.
Hunter, Q. W., (102, 115) 154.
Hunter, W. (17) 463.
Hunziker, H., (71) 545.
Hutchison, R., (18) 1332, (24) 1770
Hutchings, W. H., (120) 1138.
Hutchins, H. T., (26) 1055.
Hutchins, M. B., *15
Hyde, C. R., (34) 72.
Hyde, J. N., (3) 1514.

I

Ibershoff, A. E., (84) 1514.
Iden, J. H., (61) 1513.
Ignazio, F., (45) 2178
Imhofer, R., (51) 1062.
Ingbert, C. E., *361, (131) 722.
Inge, H. T., (101) 1331.
Ingersoll, J. M., (31) 1329.
Inglis, D., (90) 309.
Inouye, M., (71) 897.
Ipsen, J., (59) 813, (102) 974.
Iredell, C. L. M., (25) 724.
Irish, R. H. (49) 308.
Irons, E. E., (35) 1227.
Irwin, J. W., (137) 74.
Isaacs, A. E., (97) 810.
Iscovesco, H., (30) 900.
Isham, M. K.,(66) 154, (92) 970.
Israel, C., (74) 1517.

J

Jaboulay, (33) 156.
Jack, F. L., *165.
Jack, H. P., (113) 309.
Jack, W. A., Jr., (80) 1229.
Jackson, C., (10) 71, (40) 389, (75) 1685, (21) 2124
Jackson, C. M., *550.
Jackson, C. R., (11) 806.
Jackson, E., *105, (52) 153.
Jackson, F. H., (22) 234, (9) 1511.
Jackson, H., (14) 234.
Jackson, H. C., (29) 1766
Jacob, J., (53) 465.
Jacobi, A., (21) 388, (28) 640, (101) 810, *977, (90) 1229, *1545, (13) 1765, (71) 2039
Jacobs H. B., (105) 2039
Jacobsohn, L., (49) 901.
Jacobson, A. C., (18) 1055.
Jacobson, J. H., (69) 1137.
Jacobson, N., (34) 1329.
Jacoby, M., (122) 898.
Jacoby, S., (49) 1060.
Jaeger, A. S., (58) 73, (105) 154, (71) 1768
Jaffé, M., (45) 465.
James, R. J., (70) 73.
James, W. B., (21) 1854
Jameson, N. L., *854.
Jampolis, M., *1460.
Janet, P., (14) 1594, (19) 1683, (9) 1765, (7) 1853, (15) 1956, (16) 2036, (17) 2120
Janeway, H. H., *1093.
Janeway, T. C., (29) 1415.
Jansen, H., (54) 1961
Janssen, P., (65) 1141.
Jaques, W. K., (65) 237.
Jayle, F., (27) 1333, (56, 57) 1688.
Jeamin, C., (60) 1688, (41) 1859
Jeanselme, (40) 312.
Jehle, L., (63) 1335.
Jennings, C. G., (76) 1058.
Jennings, J. E., (68) 462.
Jepson, W., (132) 541, (31) 1513.
Jervey, J. W., (81) 237.
Jesionek, (76) 1063, (103) 1235.
Jessen, F., (75) 1689.
Jessett, F. B., (33) 1771
Jessop, W. H., (28) 463.
Jessup, D. S. D., (24) 234.
Jeudwine, W. W., (22) 899.
Jezierski, P. V., (52) 1860
Joachim, G., (56) 1422, (113) 1775
Jochmann, G., (61) 242, (62) 1335, (58) 1422, (97) 1603, (93) 2045, (14) 2177
Jockers, H., (36) 240.
Jodlbauer, A., (89) 243, (49) 1333.
Johnson, C., (33) 1417.
Johnson, C. K., (69) 1856
Johnson, E. G., (116) 1144.
Johnson, F. M., *1976, (82) 2039
Johnson, H. L. E., *1371, (16) 1514.
Johnson, J. T., (78) 154, (71) 234, (39) 538.
Johnson, N. A., (98) 237, (55) 1513.
Johnson, R., (29) 1515.
Johnson, R. L., (47) 1417.
Johnson, T. M., (87) 137.
Johnston, J. C., (13) 1512, (4) 1514.
Johnston, R. H., (82, 84) 541, *686, (25, 30) 1594, (7) 2119
Johnstone, M. M. S., (126) 1230.
Jolly, R., (85) 1063, (81) 1142.
Jonas, A. F., (116) 238, *825.
Jonas, S., (57) 394.
Jones, C. H., (103) 309.
Jones, C. P., (114) 1857
Jones, D. W., (81) 1857
Jones, H. B., (89) 1597.
Jones, H. E., (8) 2039, (15) 2040
Jones, H. P., (55) 1597.
Jones, H. R., (12) 971.
Jones, M. M., (72) 810.
Jones, R., (1) 154, (3) 898, (12) 1139.
Jones, T. J., (41) 1595.
Jones, W. B., (22) 1858
Jordan, W. M., (50) 540.
Jores, L., (48) 1333.
Joseph, E., (75) 78, (77) 1963
Joseph, H., (66) 1688.
Joseph, M., (72) 1234.
Jourdran, (41) 1139.
Joyce, R. S., (50) 968.
Joyes, C., (138) 74.
Judkins, J. H., (89) 390.
Judson, C. F., (31) 640.
Jung, P., (129) 975, (60) 2043
Jurgens, H. J., (48) 1417.

K

Kahler, J. F., (89) 237.
Kahlo, G. D., (64) 1514.
Kahn, M., (126) 541, *2011
Kaijser, F., (113) 1144.
Kaiserling, O., (51) 240.
Kalliontzis, (67) 972.
Kammann, (48) 1060.
Kanavel, A. B., (35) 151.
Kane, A., (52) 1330.
Kanellis, S. J., (47) 543.
Kaplan, D. M., (13) 537.
Kappeler, O., (64) 466.
Kapsammer, G., (34) 1232.
Karakascheff, K. L., (43) 1333.
Karewski, (27) 642.
Karpa, P., (103) 1964
Karrenstein, (55) 1062. (77) 1423.
Kassabian, M. K., *113.
Kast, L., (96) 974, (61) 1140, (49) 1421
Kasten, J., (42) 1421.
Kathe, (99) 1964
Kaumheimer, G. J., (88) 1058.
Kayser, H., (93) 396, (81) 1963
Kean, J. R., *1175.
Keates, H. C., (13) 75.
Keay, J. H., (13) 391.
Kebler, L. F., *1546, *1623.
Keen, W. W., (111) 154, *469, *566, (40) 2120
Keetley, C. B., (9) 391, (23) 1599, (38) 2041
Kegel, E. T., (87) 2039
Kehrer, E. (81) 1235.
Kehrer, F. A., (65) 77, (62) 1600.
Keith, A., (12) 811, (26) 2125
Kellas, A. M., (21) 1686, (15) 1770
Keller, A., (65) 1517.
Keller, L. (34) 389.
Kelley, J. T., (24, 31) 1956
Kelling, G., (72) 1963
Kellock, T. H., 293, (29) 1771
Kellogg, E. L., (88) 1138.
Kellogg, F. B., (68) 390.
Kellogg, J. H., 136.
Kelly, A. B., (31) 2125
Kelly, A. O. J., (33) 1415, (37) 1684, (32) 1854
Kelly, H. A., (41) 460, (41) 967.
Kelly, W. D., (48) 1329.
Kelsch, (33) 812, (59) 1600, (50) 2041
Kelsey, C. B., (2) 1327.
Kelson, W. H., (18) 391.
Kemp, R. C., (15) 807.
Kemp, S., (76) 727.
Kempner, (53) 240.
Kencrson, V., (10) 305, (7) 537.
Kennedy, A. R., (11) 1594.
Kennedy, D., (24) 311.
Kennedy, J. C., (20) 76.
Kenner, E. B., (59) 809.
Kennon, B. R., (55) 390.
Kentzler, J., (70) 1601, (118) 1775
Kephallinos, N. A., (85) 1424.
Kepler, W., (47) 1137.
Ker, H. R., (6) 309.
Kerley, C. G., (29) 640, (18) 719, *763, (8) 1598.
Kermauner, F., (67) 77, (92) 1235.
Kermorgant, (37) 812.
Kerr, E. K., (59) 1685.
Kerr, I. J., *775.
Kerr, N., (40) 1329.
Kerrison, P. D., *1806
Kerschensteiner (86) 396.
Kessler, A., (91) 2039
Ketchen, A. D., (3) 1959
v. Ketly, L., (99) 546.
Kettner, (63) 1140.
Keys, E. L., Jr., *1895, (103) 1959
Keys, S. W., (112) 1419.
Keyser, C. R., (11) 75.
v. Khautz, A., (106) 467.
Kiaer, G., (80) 540.
Kiefer, G. L., (78) 1058.
Kiefer, H. A., *362, (70) 390.
Kiernan, J. G., (130) 722, (93) 1597, (113, 116) 2124
Killian, G., (16) 463.
Kimberlin, A. C., (99) 309.
Kime, J. W., (115) 1331.
Kimla, R., (95) 1774, (100) 2129
King, A. E., (77) 1229.
King, C., (56) 307, (1) 1853
King, C. P., (79) 1138.
King, E., (86) 897.
King, G., (29) 1139.
King, G. W., *1486, *1739
King, H. M., (2) 387.
King, J. C., (79) 74.
King, J. E., (100) 1769
King, P., (50) 1688.
King, W. E., (26) 1766
King, W. P., (90) 390.
Kinghorn, A., (11) 641, (19) 1139.
Kinghorn, H. M., (24) 807, (35) 1595.
Kingsbury, J., (84) 1229.

Kinkead, R. J., (35) 1961, (34) 2125
Kinnicutt, F. P., (13) 234.
Kinyoun, J. J., (6) 1511.
Kipp, C. J., (97) 1330.
Kirchgessner, P., (98) 1774
Kirchner, A., (53) 813.
Kirchner, W. C. G., (99) 898.
Kirkham, F. W., (56) 968.
Kirkland, T., (11) 899.
Kirkpatrick, W. L., (129) 898.
Kirmisson, E., (48) 2126
Kisch, E. H., (90) 467, (56) 543.
Kisch, F., Jr., (42) 1060.
Kitasato, S., (5) 234, (61) 462.
Kivlin, C. F., (13) 305.
Klaussner, (94) 2128
Klebs, A. G., (34) 1595.
Klebs, H., (34) 1595.
Klein, A., (78) 314.
Klein, E., (4) 1769
Klein, L., (113) 1603.
Klemm, P., (62) 466.
Klieneberger, C., (73) 466, (89) 545, (91) 1690.
Klieneberger, K., (81) 2044
Kline, R. J., (150) 74.
Klopstock, F., (99) 396, (87) 1774
Klotz, O., (40) 896, (64) 969.
Knaggs, R. L., (19) 463.
Knapp, A., (73) 74, (56) 390, (75, 76) 970, (97) 2039
Knapp, H., (54) 153.
Knapp, L., (38) 1228.
Knapp, R. E., *2152
Knauth, (73) 313.
Knight, C. H., (9) 1415.
Knopf, S. A., (12) 459, (61) 810, (16) 1055, (71) 1330, (61) 1597, (12) 1853
Knott, J., (23) 1683.
Knowles, F. C., (13) 2120
Knox, A. F., (57) 1330.
Knox, J. H. M., (29) 896.
Knox, R., (13) 238, (21) 1858
Knox, R. W., (99) 74.
Koblanck, (73) 1336.
Koch, R., (64) 721.
Koch, T. R., (24) 392.
Kocher, (35) 1232.
Koefoed, P., (60) 813.
Koeppe, H., (66) 1063.
Kœrner, O., (98) 2039
Kofmann, S., (64) 1141.
Kohn, A., (108) 1143.
Kohn, A. D., (43) 1855
Kohnstamm, O., (52) 643.
Koike, (37) 724.
Konig, F., (66) 726.
Königer, H., (77) 2044
Konkle, W. B., (17) 1512.
Kopetzky, S. J., (84) 1058, (45) 1137, (30) 1513.
Koplik, H., (18) 1226.
Korangi, 708.
v. Koranyi, F., (84) 1862
Körner, (88) 1602.
Korschum, S., (121) 1603.
Körte, (74) 1063.
Koster, G., (68) 726.
Kowarski, A., (58) 465.
Kownatzki, (69) 77.
Kraemer, A., (82) 1685.
Kraepelin, E., (69) 313, 1120.
Krapp, B., (45) 1333.
Krasting, K., (103) 1519.
Krause, F., (39) 1060.
Krause, P., (68) 1773
Krauss, F., (8) 151.
Krauss, W. C., (24) 2036
Krecke, (60) 313.
Krefting, R., (126) 1520.
Kress, G., (10) 718.
Kress, G. H., (92) 1330, (116) 1331, (50) 2038
Kreuzfuchs, S., (81) 243.
Krienitz, W., (53) 313.
Krobber, E., (129) 1691.
Krohn, M. J., (89) 810.
Krompecher, E., (98) 315.
Krönig, G., (44) 240, (48) 396, (58) 1961
Krönlein, (32) 1232.
Kronthal, P., (44) 724.
Krotoszyner, M., (52) 2038
Krouse, L. J., (24) 640.
Krüger, (96) 1964
Kruger, F., (97) 1143.
Kucher, J., (81) 74.
Kugler, J., (59) 543.
Kuh, S., (72) 237, (55) 462, (64) 1057.
Kuhn, E., (67) 1423.
Kuhn, F., (91) 243, (41) 643, (96) 2045
Kümmel, 2112
Kümmell, H., (59) 1062, (43) 1233.
Küppers, (75) 313.
Kurdinowski, E. M., (59) 77.
Kurtz, J., (47) 153.
Küster, (91) 545.
Kutscher, K., (43) 312, (52) 725.
Kutscher, K. H. (86) 1689.
Kuttner, L., (50) 1060.
Kyle, J. J., (63, 65) 390.

L

Labbé, H., (34) 393, (42) 1961
Labbé, M., (39) 393.
Labhardt, A., (62) 2043
Lacassagne, A., (22) 155.
Lack, H. L., (29) 463.
Lacombe, L., (48) 76.
Ladd, L. W., (92) 237.
La Fetra, L. E., (10) 1598.
Laignel-Lavastine, (40) 393, (83) 1139.
Lake, G. B., *2158
Lake, R., (9) 1058.
Lamb, B. S., (33) 235.
Lamb, G., (11) 391.
Lamb, R. S., (78) 1229.
Lambert, A., *845.
Lambkin, F. J., (35) 543, (17) 1858
Lamborn, W. H., (45) 1228.
Lamela, M. R., (11) 71.
Lamont, W. A., (93) 1230.
Lancereaux, (38) 464.
Landecn, F. G., (121) 154.
Landers, J. R., (154) 74, (64) 308, (90) 541.
Landis, H. R. M., (36) 1595.
Lando D. H., (81) 1958
Landolfi, M., (94) 244, (109) 315, (109) 546, (49) 1516, (89) 1863
Laudow, M., (87) 1424.
Lane, J. E., (32) 1859
Lang, H., (78) 1234.
Lange, F., (93) 243, (76) 1773
Langmead, F., (13) 310.
Langstein, L., (52) 543, (106, 107) 1691.
Langworthy, H. G., (76) 540, (18) 807, (4) 1511, (17) 1594, (66) 1685, (69) 2039
Lankford, J. S., (76) 309.
Lanphear, E., (130) 74, (16) 151, (61) 2039, (52) 2121
La Place, E., (113) 970.
Laqueur, A., (62) 1962
Larkin, J. C., (43) 2038, (22) 2120
Larned, E. R., (68) 237, (51) 461, (82) 1330.
La Roque, G. P., (8) 305, *583, (23) 719, (84) 722, (46) 1228, (29) 2039
Lassar, O., (100) 315, (50) 725.
Lassignardie, H., (20) 642.
Latham, V. A., *916, (91) 1514.
Latta, J. H., (45) 1513.
Latteux, P., (24) 1333.
Lauenstein, C., (71) 1517.
Lauschner, E., (59) 1517.
Lavenson, R. S., (44) 72, (37) 1684.
Laveran, A., (43) 971.
Law, G., (88) 810, (56) 1573.
Law, H., (28) 900.
Lawbaugh, A. L., (50) 1596.
Lawney, E., (98) 541, (64) 1418.
Lawrence, F. F., (21) 1956, (94) 2124
Lawrence, H., (28) 392.
Lawrence, V. E., (34) 1956
Lawrie, W. D., (23) 1686.
Layne, P. C., (79) 154.
Layton, E. N., *274, (75) 2123
Lazarus, P., (85) 1862
Lazelle, H. G., (43) 1136.
Lazelle, W. E., (129) 154.
Leavitt, F., (87) 897.
LeBeuf, L. G., (98) 1857
Le Boutillier, T., (34) 640.
Le Boutillier, W. G., (42) 460.
Le Breton, P., *1094.
Lecène, P., (53) 2042
Lederhose, G., (67) 242.
Lederman, M. D., (30) 72.
Lediard, H. A., (15) 155.
Ledingham, J. C. G., (11) 155.
Leduc, S., (24) 1231, (32) 1420, (55) 1688.
Lee, C. G., (35) 2041
Lee, F. E., (113) 722.
Leedham-Green, C., (4) 810.
Le Fevre, E., (110) 2039, (8) 2124
LeFevre, W. I., *111.
Le Gendre, P., (28) 311.
Legrand, L., (36) 1060.
Legueu, F., (30) 311, (34) 1059.
Lehman, W., (33) 1595.
Lehmann, O., (102) 1774
Lehnkering, P., 951.
Lejars, F., (34) 311, (47) 1961
Leland, G. A., (5) 1054.
Lemere, H. B., *271.
Lemmierre, A., (114) 1603.
Lempe, G. G., (50) 308.
Lendon, A. A., (23) 392, (16) 1059, (39) 1687.
Lendorf, A., (69) 727.
Lengfellner, K., (26) 2177
Lenné, (57) 543.
Lenoble, E., (46) 543.
Leo, A., (81) 1336.
Leo, H., (53) 1140, (102) 1143, (51) 1334.
Leobold, S., (8) 966.
Leonard, C. L., (69) 154, (4) 1853
Leonard, E. L., (110) 541, (58) 2039
Leonardi, E., (68) 159.
Leopold, (72) 466.
Leo-Wolf, C. G., (4) 2035
Lerche, W., (83) 897.
Leriche, R., (50) 76, (33) 392, (38, 41) 900, (48) 2041
Leroux, R., (32) 900.
Lesan, C. T., (68) 810.
Lesem, W. W., (5) 894, (13) 1682.
Lespinasse, V. D., *1189.
Lesser, E., (44) 1060.
Létienne, A., (48) 812.
Letulle, M., (43) 1961, (45) 2125
Leube, M., (108) 2045
Leuchs, J., (62) 1062.
Leuschner, R., (52) 1596.
Levaditi, (59) 971.
Levaditi, C., (51) 1961
Levai, J., (65) 466.
Leven, G., (34) 900.
Levers, P. G., (21) 899.
Lévi, L., 293.
Levinger, (65) 726.
Levings, A. H., (65) 1768
Levinson, J. B., (83) 1689.
Levison, C. G., (54) 2038
Levison, L. A., (86) 237, *936.
Levy, A. G., (5) 722.
Levy, F., (114) 1775, (67) 2127
Levy, R., (97) 237, (54) 1513, (100) 1685.
Lewald, L. T., (59) 896.
Lewers, A. H. N., (10) 155.
Lewiasch, S., (80) 545.
Lewin, C., (114) 468.
Lewin, L., (49) 313, (90) 2044
Lewis, B., *1253, (1) 1327.
Lewis, D., (99) 1138, (44) 1685.
Lewis, D. D., (38, 51) 1855
Lewis, D. H., (135) 541.
Lewis, G. N., (76) 237.
Lewis, H. F., (52) 1855
Lewis, T., (13) 1230, (5) 1769
Lewis, W. A., *2012
Lewisohn, R., (101) 315, (68) 544.
v. Leyden, E., (87) 1862
Lexer, E., (85) 243, (70) 466.
Leys, J. F., (4) 150, (23) 306, (61) 897
Libby, G. W., (95) 1514.
Libman, E., (59) 640.
v. Lichtenberg, A., (93) 1691.
Lichty, D., *2012
Lichty, J. A., (19) 1512.
Lickley, J. D., (23) 1859
Liebermann, J. M., (25) 388.
Liebmeister, G., (101) 1518.
Liebmann, P., (47) 158.
Liefmann, H., (40) 312, (120) 1603, (16) 2177
Liepmann, W., (92) 1063, (92) 1142.
Lightner, C. A., (75) 1058.
Ligouri, F. C., (111) 2039
Lilienstein, (72) 313
Limnell, A. R., (110) 1864
Linas, G., (22) 642.
Lindemann, (32) 2177
Lindemann, L., (89) 396, (40) 643.
Lindenstein, (65) 1861, (6) 2176
Lindley, W., (44) 153, (8) 1330.
Lindman, C., (73) 814.
Lindsay, J., (4) 722.
Lindsay, W. S., (47) 1513.
Lindström, S., (71) 813.
Linenthal, H., (12) 1765
Ling, G. D., (115) 1959
Link. G., (113) 1959
Link, R., (93) 1518.
Linn, C. H., (111) 1138.
Linnartz. (73) 1141.
Litchfield, L., (75) 154.
Litten, M., (67) 2127
Litthauer, M., (42) 312.
Littig, L. W., (94) 2039
Little, E. M., (24) 2040
Little, J. W., (50) 1329.
Little, W. T., (97) 154.
Littlewood. H., (4) 2039
Livierato, S., (107) 546, (67) 902, (97) 1863, (114, 123) 1965, (42) 2178
Lloyd, J., (11) 1139.
Lloyd, J. H., (85) 1418, *1972
Lloyd, S., (51) 390, (10) 537.
Lobenstine, R. W., (64) 640.
Lobingier, A. S., (89) 1330.
Lochridge, E. E., (28) 1227.
Locke, E. A., (16) 71.
Lockhart, F. A. L., (127) 154.
Lockwood, T. F., (46) 1417.
Lockyer, C., (93) 1418.
Loeb, H. W., (12) 2040
Loeb, L., (47) 640, (104) 974, (48) 1957, (100) 1964
Loebel, A., (50) 465.
Loeffler, F., (118, 119) 975.
Loele, W., (45) 643.
Loening, F., (88) 2128
Loewe, O., (58) 153.
Loewenfeld, L., (123) 1691.
Logan, O. T., (26) 1599.
Logan. S., (51) 236.
Logothetopoulos, (85) 972.
Lohrer, H., (111) 1603.
Loison, E., (32) 156.
Lomb, H. C., (101) 1857
Lombard, W. P., *1790
Lombardo, C., (128) 547.
Lommel, F., (44) 1333.
Loude, P., (42½) 464.
Long, J. H., 2114
Longcope, W. T., (1) 387.
Longenecker, D. F., (116) 74, (13 309.
Longino, J. T., (103) 1331.
Longyear, H. W., (97) 2124
Lopez, J. H., (24) 1226.
Lorand, A., (66) 1514.
Lord, F. T., (77) 1418.
Lord, J. P., (91) 1229.
Lorenz, A., (65) 2122
Losey, C., (125) 154.
Lotheissen, (76) 78.
Letsch, F., (71) 395.
Lotz, K., (100) 1691.
Love, J. K., (30) 2125
Lovett, R. W., (4) 1598, (63) 2122
Low, V. W., (14) 463.
Lowell, H., (104) 1857
Lower, W. E., (27) 538.
Lowermilk, R. C., (115) 74.
Lowman, J. H., (114) 1419.
Lubarsch, O., (97) 396, (82) 1774
Lubenau, (117) 1775
Lubenetzky, 1213.
Lucas, F. B., (118) 970.
Luckett, W. H., (119) 238.
Lüdke, H., (73) 1689.
Ludloff, (84) 1063.
Lull, C., 51.
Lumbard, J. E., (3) 2035
Lund, F. B., *479, (18) 2120
Lundblad, O., (64) 813.
Lundborg, H., (112) 1143.
Lusk, G., *1804
Lutz, S. H., (51) 640.
Luys, G., (65) 872.
Lydston, G. F., (21) 72, *169, (37 460, *1911
Lyle, R. P. R., (3) 722.
Lyman, D. R., (129) 1139, (91) 1597.
Lynch, C., (15) 388, (20) 459, (61 721.
Lynch, F. W., (32) 2120
Lynch, J. M., (55) 1057.
Lynds, J. G., (116) 1138.
Lyng, J. A., (60) 236.
Lyngdoh, H., (39) 1859
Lyon, F. B., (37) 1956

M

Maag, H., (52) 158.
Maas, H., (89) 1963
Maberly, J., (26) 1960
MacAlister, D., (8) 1139, (18) 1515.
Macartney, D., (23) 1420, (29) 2125
MacCarty, W. C., (107) 2045
MacCallum, H. A., (15) 1686.
MacCallum, W. G., *984, (15) 1959
MacCormick, A., (17) 1059.
Macdonald, D. M., (29) 1859
MacDonald, J. A., *101.
Macdonald, W. G., (24) 967.
Macevitt, J. C., (24) 388.
Macewen, J. A. C., (13) 155, (22) 1599.
Macewen, W., (1) 390.
MacFadyen, A., (11) 1419.
Macfie, R. C., (18) 155.
Macgowan, G., (62, 132) 810.
Macgregor, R. D., (20) 723.
MacGregor, R. S., (33) 896.
Machol, A., (69) 1773
Macht, D. I., (57) 1417.
Mack, C. S., (83) 1514.
Mackay, E. C., (4) 309.
MacKee, G. M., (16) 459.
MacKenzie, A. J., (93) 1769
Mackenzie, J., (1) 238, (5) 309, (6) 1685, (9) 1769
Mackenzie, K. A. J., *341.
Mackenzie, W., (36) 640, (28) 1687.
Mackey, C., (15) 1331.
Mackinnon, A. I., (118) 238.
MacLaren, M., (7) 1959
Maclaren, A., (52) 809.
Maclaren, R., (1) 810.
MacLennan, A., (5) 1685.
MacLeod, J. M. H., (35) 463.
Macleod, K., (1) 1598.
MacMonagle, B. (48) 896.
MacMurchy, H., (5) 1331.
MacNamara, E., (6) 722.
MacNaughton, G. W. F., (15) 899.
MacNevin, M. G., *14.
MacPhater, N., (104) 1138.
MacSmith, S., (16) 2040
Madden, F. C., (25) 1599.
Madden, J., (72) 309, (43) 1513.
Maddox, J. D., (139) 74.
Maes, V., (51) 236.
Magee, C., (52) 1768
Maggard, D. I., (49) 1513.

Magni, E., (124) 547.
Magnus, R., (71) 1335.
Magnus-Levy, A., (79) 1862
Mahood, H. B., (85) 154.
Maier, F. H., (29) 2120
Majewski, (66) 972.
Malcolm, J. D., (12) 155, (4) 462, (8) 641.
Mallet, J. W., (111) 1857
Mallick, L., (38) 1961
Malone, E., (126) 970.
Malone, H. H., *739.
Manasse, P., (62) 1772
Manchester, H. L., (102) 970.
Mandel, A. R., *1804
Mandl, (99) 1774
Manges, M., (12) 2035
Mangin, F. M., (44) 1599.
v. Mangoldt, F., (68) 1141.
Mann, A. T., (51) 73.
Mann, R. H. T., (84) 390, (41) 1417.
Manning, T. D., (4) 1058.
Manouellan, (59) 971.
Manteufel, (91) 2045
Manton, W. P., (45) 538, (80) 2039
Mantoux, C., (46) 901.
Manwaring, J. G. R., (41) 2038
Manwaring, W. H., (32, 33) 1227, (126) 1331.
Maragliano, D., (110) 1519.
Maragliano, E., (113) 1965
Maragliano, V., (69) 644.
Marchand, J. F., (145) 74, (51) 721.
Marchicio, B., (72) 159.
Marchoux, (40) 1961
Marcon, 138.
Marcy, H. O., *1889, *2135
Mareschal, H., (91) 1857
Marfan, A. B., (48) 1860
Mariani, F., (105) 815.
Marie, (51) 76, (39) 543.
Marie, P., (44) 1772, (3) 2176
Mark, E. G., (43) 1417, (63) 1514.
Markley, A. J., (20) 1136.
Markoe, J. W., (60, 63) 640, (21) 2176
Marks, L. H., (25) 1854
Marmorek, A., (61) 1517.
Marnoch, J., (30) 1771
Marple, W. B., *421, (27) 1594.
Marrs, W. T., (104) 390, (72) 1514.
Mars, J. D., (122) 2124
Marshall, C. R., (6½) 898, (16) 2124
Marshall, G. G., (54) 968.
Marshall, J., (50) 1957
Marshall, V. F., (101) 74, (1) 1955
Martel, H., (42) 464.
Martens, M., (52) 1961
Martin, A., (128) 975, (32) 1059.
Martin, A. F., (8) 1331.
Martin, C. F., (78) 897, (6) 1054.
Martin, E., (131) 810, (31) 967, (39) 1233.
Martin, M., (69) 242, (97) 545.
Martin, P. F., (3) 1593.
Martin, T. C., (52) 721.
Martindale, J. W., (47) 389.
Martinet, A., (28) 155, (29) 311, (38) 543, (35) 900, (39, 43) 1139, (42) 1859, (46) 1961
Martinotti, G., (73) 902.
Marvel, E., (113) 154.
Marvel, P., *493.
Marx, H., (49) 465, (57) 1517, (128) 1691.
Marx, S., (10) 234.
Masciangioli, L., (103) 1863
Masland, H. C., (45) 809, (112) 970.
Mason, H. N., (29) 640, *763.
Mason, J. M., (16) 1765
Mason, R. E., (82) 237.
Massaglia, A., (104) 815.
Massalongo, R., (114) 315.
Massari, G., (80) 814.
Massey, A. Y., (11) 971.
Matas, R., *990.
Materazzi, C. S., (59) 644.
Mathes, P., (54) 1234.
Mathews, A. P., (29) 1227.
Mathews, W. T., (85) 1857
Matignon, J. J., (47) 2041, (44) 2125
Mattê, (72) 242
Matter, C. M., (28) 151.
Matthews, A. A. (126) 1857
Mauclaire, (62) 972.
Maudsley, H. C., (26) 724.
Mauldin, L. O., (129½) 898.
Maury, J. M., (96) 1597.
Maury, R. B., (32) 538.
Mavroyannis, A., (109) 1964
May, C. H., (73, 103) 1857
May, R., (89) 396.
May, W. J., (80) 462.
Mayer, A., (83) 1235, (85) 1689.
Mayer, E., (87) 970, *1553, *1586.
Mayer, F. J., (70) 1229.
Mayer, K., (99) 2045
Mayer, O. B., (114) 1331.
Mayer, T., (47, 67) 1772
Mayhew, D. P., (83) 810.
Maynard, F. P., (33) 1139.
Maynard, J. H., (93) 2039
Mayo, C. H., (132) 898, (28) 967.
Mayo, H. N., *36, (104) 541, (126) 810.
Mayo, W. J., (120) 154, (50) 809, *912, *931, (18) 1959
Mays, T. J., (72) 1330.
Mazzei, T., (104, 106) 1863
McAirty, 293.
McAlister, A., (122) 722, *1087.
McAllister, J. C., (29) 72.
McArthur, A. N., (20) 1059.
McArthur, L. L., (38) 967.
McAuliffe, G. B., *777.
McBride, R. E., (121) 1230.
McCallum, W. G., (113, 114, 115, 116) 810.
McCaskey, D., (131) 74.
McCaskey, G. W., (15) 459, (2) 629, *1800, (12) 1955, (102) 1959
McCaul, G. B., (20) 311.
McClanahan, H., *1145.
McCleary, C. F., (8) 899.
McCleve, T. C., (60) 2039
McClintock, C. T., (26) 1766
McClure, R. D., (116) 810.
McConnell, G. G., (112) 237.
McConnell, J. F., (62) 1418.
McCormack, J. N., *296, *1043.
McCowen, W. T., (33) 1859
McCoy, J., (69) 540, (35, 39) 896
McCrae, T., (16) 2124, (9) 2175
McCreery, F. R., (5) 304, (25) 1226.
McCurdy, S. L., (7) 387, (40) 460.
McDonagh, G. R., (6) 2039
McDonald, E., *1979
McDonald, G. S., (71) 1514.
McDonnell, R. A., (78) 237.
McDonnell, R. H., (132) 309.
McDowell, C. F., (43) 389.
McEwen, E. L., *8.
McEwen, F., (79) 1857
McFadyen, A., (5) 970.
McGavin, L., (17) 811.
McGavran, C. W., (146) 74.
McGibbon, S., (38) 896.
McGill, A., (15) 1514.
McGowan, A. G., (41) 1687.
McGraw, T. A., (36) 2038
M'Gregor, A. N., (34) 1687.
McGregor, R. C., (84) 970, (102) 1685, (36) 2176
McGuire, J. C., (151) 74, (6) 894.
McGuire, S., (36) 389, (106) 1597, (82) 2123
McHenry, J. H., (48) 538.
McIlhenny, P., (52) 236.
McKechnie, M. V., (8) 462.
McKechnie, R. E., (60) 540.
McKee, E. S., (7½, 22) 459, (23) 895, (21) 1136, (20) 1594
McKendrick, J. S., (24) 1420.
McKenzie, B. E., (14) 1959
McKernon, J. F., (15) 2040
McLaren, H., (33) 1687
McLaughlin, A. J., 2113
McLauthlin, H. W., (89) 74.
McLean, N. T., (28) 1055, *1166.
McLeod, J. M., (45) 720.
McLester, J. S., (52) 540.
McMullen, B. H., (94) 309.
McMurtry, L. S., (11) 1857
McNaught, J. G., (28, 45) 1599.
McNeal, B. F., (83) 1857
McPhedran, A., (58) 1057.
McPherson, R., (62) 640, (22) 2176
McRae, F. W., (48) 2121
McReynolds, J. O., (99) 722, (39) 1417.
McSweeney, R. M., (67) 1856
McVay, J. H., (79) 1514.
McVey, W. E., (35) 1956
McWilliams, A. C., (3) 233.
Meachen, G. N., (46) 2041
Meara, F. S., (33) 640, (33) 896.
Medin, O., (102) 903.
Meek, J. W., (66) 1958
Megrail, W. P., *855.
Megaw, J. W. D., (36) 2125
Meier, A., (57) 77.
Meisenburg, (55) 1422.
Mellbye, P. A. M., (122) 1520, (15) 2124
Meltzer, S. J., (14) 459.
Melville, E. W., (131) 154.
Melvin, J. T., (94) 1230.
Melzi, U., (64) 159.
Ménager, 951.
Mendel, E., (60) 242.
Mendel, L. B., (77) 237.
Mendelsson, O., (79) 1234.
Menne, E., (77) 395.
Ménocal, R., (76) 972.
Mercier, C., (21) 1599.
Méricux, (36) 393.
Merkel, H., (103) 1603.
Merrill, E. D., (78) 74, (97) 1418.
Merrill, T., *434.
Merzbacher, L., 1317.
Mesnil, F., (43, 54) 971, (53) 1599.
Messmer, C., (91) 1058.
Metchnikoff, E., (16) 75.
Metzenbaum, M., *1653.
Metzger, (73) 1861
Meunier, L., (65) 1688).
Meyer, A., (95) 974, (5) 1419.
Meyer, E., (80, 81) 395.
Meyer, F., (41) 156, (94) 467.
Meyer, H., (60) 721, (61) 1062.
Meyer, J., (83) 1518.
Meyer, L. B., (18) 1135.
Meyer, R., (83) 1336.
Meyer-Rügg, H., (78) 1517.
Meyer, W., (37) 967, *1069.
Meyers, C., (16) 1686.
Meyerstein, W., (72) 1861, (27) 2177
Mez, C., (30) 2176
Michaelis, L., (109) 468.
Michaelis, R., (79) 467.
Mickle, W. J., (1) 1419.
Migliacci, G., (100) 815.
Milbee, H. H., (110) 1419.
Milchner, R., (93) 974.
Millener, F. H., (43) 896, (85) 1689.
Miller, C., (26) 2125
Miller, C. B., (32) 1055.
Miller, C. J., (73) 1229, (100) 1857
Miller, D. J. M., (17) 1135, (80) 1330.
Miller, H. B., (127) 898.
Miller, H. W., (16) 538.
Miller, R. F., (72) 1685.
Miller, R. T., (44) 1657, (74) 1768, (106) 2039
Miller, W. G., (50) 896.
Millican, K. W., (2) 233.
Milligan, J. A., (134) 309.
Milligan, W., 608.
Millikin, B. L., (47) 2038
Mills, A. E., (19) 1059.
Mills, C. K., (63) 308, (110) 970, (34) 1416, (3) 1419, *1638.
Milner, A. E., (32) 76.
Milroy, W. F., (100) 390, (12) 806, (108) 810.
Minassian, H. A., (110) 1230.
Minciotti, G., (61) 644.
Minelli, S., (98) 1964
Minich, K., (43) 240.
Mink, O. J., *1166.
Minkowski, O., (121) 975, (60) 1335.
Minor, C. L., (102) 898, (32) 1595.
Minor, J. C., (82) 810.
v. Miram, K., (102) 2129
Mirbelli, V., (33) 76.
Mironescu, Th., (50) 1517.
Mitchell, H. C., (67) 237, (50) 461.
Mitchell, S. W., *1967
Mitra, M., (37) 1961
Mittendorf, W. F., (61) 1957
Mix, C. L., (61) 1057, (58) 1685.
Moeller, J., (104) 74
Moffit, H. C., (79) 1418
Mohlan, F. G., (50) 1685
Mohr, L., (60) 1517
Moleen, G. A., (53) 73, (98) 154
Moll, L., (56) 1062
Mollweide, K., (88) 1518
Moloney, P., *1189
Molson, W. A., (36) 896
Monprofit, A., (31) 1059
Monro, T. K., (33) 1687, (33, 37) 2041
Monroe, P. W., (14) 387
Monsarrat, K. W., (26) (30) 971
Montgomery, E. E., *1777, (26) 2120, (58) 2122
Montgomery, F. H., (43) 307
Montgomery, L. H., (115) 237
Montmarquet, J. D., (64) 1856
Monzardo, G., (85) 902, (119) 2046
Moodie, E. L., *110
Moody, G. H., (105) 722
Mook, W. H., (42) 1956
Moon, R. O., (18) 1230
Moore, B. W., (100) 1959
Moore, G. H., (34, 35) 1136
Moore, J. E., *345
Moore, J. T., (98) 74, (77) 309
Moore, M. L., (48) 153
Moore, N., (18) 1686, (23) 1770, (20) 2040, (24) 2125
Moore, R. R. H., (40) 1599
Moore, R. C., (63) 2039
Moore, S. A. (22) 1960
Moore, T. W., *1486
Moore, W., (108) 237, (41) 1516, (32) 1687
Moore, W. G., (40) 640, (28) 1136
Moorehouse, G. W., (91) 237
Moorhead, T. G., (18) 311
Mooser, C. E., *686
Morel, L., (78) 972
Morelli, P. C., (94) 815
Moreschi, C., (45) 1421, (71) 1601
Morgan, A. C., (12) 1415, *2083
Morgan, D., (6) 1853
Morgan, W. G., (51) 308
Morgenbesser, H., (19) 1135
Morgenroth, J., (60) 1962
Mori, M., (51) 1233
Moriarta, D. C., (107) 722
Morichau-Beauchant, R., (43) 76
Morin, (64) 1688
Morison, A., (7) 641
Moritz, F., (40) 156, (62) 2126
Moritz, P., (55) 394
Moro, E., (92) 2045
Morrell, J., *2138
Morris, H., (9) 542
Morris, J. M., (85) 1597
Morris, R. T., (111) 154, (100) 722, (53) 968
Morrow, P. A., (96) 722, *1244
Morse, J. L., (9) 1225, (40) 1595, (9) 1598, (11) 2035, (20) 2120
Morse, W. B., *1192
Morton, C. A., (3) 810
Morton, W. J., (1) 2119
Moschowitz, A. V., (9) 305
Moschocowitz, L. V., (20) 1226
Moscou, J., (27) 155
Moseley, H. P., (9) 1054, (15) 1682
v. Mosctig-Moorhoff, R., (54) 1855
Mosher, H. P., (123) 1230, (17) 1415, *1695
Messaglia, A., (98) 1863
Mosse, M., (66) 1962
Mott, F. W., (6) 810
Motz, (66) 972
Moulden, W. R., (4) 458
Moullin, C. M., (10) 1331, (44) 2041
Moulton, H., (71) 970
Moynihan, B. G. A., (2) 2039
Much, H., (65) 1063, (46) 421, (54) 1860
Muck, O., (115) 1603
Muggia, G., (78) 902
Mühlens, P., (64) 242
Muhsam, R., (52) 813, (100) 1597
Mühsam, W., (78) 1234
Muirhead, A. L., (82) 722
Mullen, J., (37) 1417
Müller, E., (117) 1144, (62) 1335, (97) 1662, (93) 2045
Müller, F., (78) 395
Müller, G., (101) 546
Müller, G. P., (43) 72, (92) 1138
Müller, O., (89) 1690
Müller, P., (82) 1602
Mummery, P. L., (20) 811
Munro, J. C., (98) 898
Munro, W. J., (34) 724, (21) 1059
Munz, P., (58) 543
Murdoch, F. H., (16) 639
Muren, G. M., (39) 153, (50) 2121
Murphy, E. V., (12) 1594
Murphy, F. J., (111) 1230, (75) 1597
Murphy, J. B., (47) 1855
Murray, D. H., (11) 1682
Murray, F. W., (36) 1329
Murray, G. P., (44) 808
Murray, R. W., (4) 154, (27) 971
Murray, W. B., (30) 389
Murray, W. R., (59½) 236, (90) 1769
Murrell, T. W., (84) 154
Murri, A., (98) 244
Muscatello, G., (76) 1861
Musgrave, W. E., (67) 462
Musser, J. H., (9) 895, (84) 1138, *2131
Musson, E. H., *1917
Myers, A. W., (117) 154, (37) 640
Myers, R., (46) 1685
Mygind, H., (89) 903

N

Nagel, J., (43) 1421
Nakajama, H., (36) 643
Nammack, C. E., (7) 71
Nannestad, (120) 1520
Napier, F. H., (72) 462
Napp, O., (113) 468
Nathan, P. W., (7) 2175
Nattan-Larrier, L., (45) 1859
Naumann, G., (113) 1864
Neave, F. F. M., (6½) 898
Neave, S., (18) 541
Nebel, W., (67) 1063
Neck, (109) 1603
Neff, J. M., (46) 1855
Negri, A., (119) 2130
Negro, C., (56) 902
Neilson, W. H., (65) 1058
Neisser, A., (88) 79, (93) 1235
Neisser, M., (90) 1690
Nelli, L., (125) 1965
Nelson, L., *1819
Nenadovics, L., (35) 642
Neu, F. C., *101
Neubauer, O., (79) 395
Neuhäuser, H., (64) 1600
Neujean, V., (37) 240
Neuman, D. S., (102) 541, (94) 810
Neumann, E., (91) 1774
Neumann, F., (87) 1142
Neumann, H., (48) 1137
Neumann, J., (31) 972
Neumann, W., (41) 156
v. Neupert, Jr., C., (111) 1419
Nevins, J., (116) 898
Newman, E. D., (41) 1767
Newbolt, G. P., (29) 971
Newcomb, L. A., (103) 970
Newcomet, W. S., (56) 1229
Newell, F. S., (43) 538, *1531
Newman, F. L., (92) 309

Newmayer, S. W., (42) 1685
Newmark, P., (49) 153
Nias, J. B., (16) 899
Nichols, E. H., (4) 1598
Nichols, J. B., (31) 235, (3) 1682
Nichols, H. J., (38) 1056
Nicholson, W. R., (91) 1138
Niclous, M., (52) 1688
Nicola, B., (120) 2130
Nicola, C. C., (18) 2036
Nicolas, J., (48) 76, (38, 41) 1771
Nicolich, (73) 972
Nicoll, J. H., (2) 810
Nicoll, Jr., M., (80) 1138
Nicolle, (50) 1599
Nicolle, C., (47) 812, (45, 49) 971
Nicolle, M., (54) 971
Nieder, C. F., *272
Nieszytka, (75) 545
Nieter, A., (120) 1603, (16) 2171
Niles, H. D., *832
Nilson, G., (67) 813
Noble, C. P., (30) 1136, (41) 1329, *1881, *1998, *2065
Noc, M. F., 1317
Noer, J., (55) 640
Nofer, G. H., (37) 2176
Noguchi, H., (68) 969, (34) 1855
Norbury, F. P., (20) 1956, (95) 2124
Nordentoft, (73) 727
Norman, A. C., (111) 722
Norman, J. B., (54) 1137
Norris, G. W., (114) 154, (52) 308, (32) 640
Norris, S. C., (73) 2039
Nörstrom, G., (5) 1682
North, N. L., (36) 72
Northrup, W. P., *1182
Norton, H. G., (121) 898
Norton, J. P., *1003
Nouri, 1214
Novy, F. G., *2152
Nowicki, W., (82) 2128
Nydegger, J. A., (38) 460

O

Oakman, C. S., (51) 1596
Oastler, F. R., (33) 808
Oatman, E. L., (69, 70) 970
Oberndorfer, (63) 1772
Oberndörffer, E., (98) 1691
O'Brien, C. M., (19) 311
O'Brien, J. D., (73) 1137
O'Brien, M. C., (6) 806
Ochsner, A. J., (22) 306, *751, (101) 1419
Ochsner, E. H., (69) 237, (52) 462
O'Connor, D. J., (27) 1420
O'Daniel, M. H., (115) 309
O'Donovan, C., (13) 459
Oeri, R., (76) 1336
Oertmann, E., (104) 1603
Oettinger, (43) 464
Oettinger, B., (6) 458
Offergeld, (36) 1232, (97) 1774
O'Hanlon, P. F., (14) 1955
Ohannessian, B., (78) 902
Ohm, I., (109) 1775, (65) 1962
Olander, E., *776
Oliver, C. A., (14) 1765
Oliver, E., (45) 968
Oliver, J., (10) 639
Oliver, T., (12) 542
Olmsted, I., (12) 1959
O'Neil, R. F., (56) 721
Onodi, A., (50) 901
Opie, E. L., (66) 969
Opitz, E., (73) 1234
Oppenheim, H., (46) 1060, (45) 1233
Oppenheimer, S., (125) 1230, (2) 1682
Oram, W. C., (39) 971
Orbison, T. J., (31) 306
Orendorff, O., *205
Ormsby, L. H., (31) 1771
Orr, H. W., (91) 1229
Ortali, C., (118) 1965
Ortega, R., 2114
Orth, J., (38) 1060, (101) 2129
Osborne, F. E., (110) 810
Osborne, O. T., (6) 305, *1475
Osgood, R. B., (64) 2122
Osler, W., (18) 1683, (1) 1769
Osmond, A. E., *1655
v. d. Osten-Sacken, E., (64) 2043
Osterhout, W. J. V., 1408
Ostmann, (58) 313
Ostwalt, F., (14) 75
Otis, E. O., (17) 388, *2154
Otten, M., (102) 396, (86) 1774
Ottendorff, G., (79) 545
Otto, M., (96) 1518
Outten, W. B., (105) 309, (27) 1136
Ovazza, V. E., (119) 1519
Owen, E., (8) 155
Owens, H. K., (71) 1418

P

Packard, G. B., (96) 154
Paden, C. M., (42) 72, (66) 237, (113) 1519
Pagani, C., (79) 902
Page, C. C., (10) 1328
Page, H., (133) 238
Paget, S., (9) 1331
Pahl, P. C. H., (56) 2039
Palm, H., (34) 1333
Palmer, C. D., (95) 1418, (24) 1683)
Palmer, W. H., (15) 538, (16) 1594
Pampoukis, P. S., (108, 112) 1964
Pancoast, H. K., (27) 896
Pancrazio, F., (130) 547
Pane, D., (119) 2130
Pansini, S., (105) 1863
Pantzer, H. O., (102) 2124
Papadopoulos, A., (63) 972
Pariser, C., (98) 974
Parish, H. L., (107) 1331
Parisot, J., (33) 1420
Park, R., (111) 154, (116) 722, (40) 967
Park, W. H., (74) 309, (23) 1854
Parker, F. C., (74) 462
Parker, F. J., (102) 1857
Parker, J., (109) 1691
Parker, R., (4) 541
Parker, R. H., (76) 1597
Parker, W. R., (70) 640
Parkin, A., (14) 1770
Parkinson, J. P., (34) 463
Parks, A. H., *1010
Parnall, C. G., (117) 1138, (28) 1513
Parodi, U., (110, 116) 2130
Parsche, T. W., (48) 968
Parsons, J. H., (45) 2041
Parsons, J. G., *777, (100) 1138
Pascale, G., (121) 547
Paschkis, R., (56) 241
Pasini, A., (42) 76
Pasqui-Mangeli, E., (121) 1965
Pässler, H., (92) 467, (64) 1422, (13) 2177
Passow, A., (87) 467
Pasteur, W., (10) 238
Pastine, C., (107) 1863
Patel, M., (30) 156, (38) 900
Patella, V., (127) 547
Paterson, D. R., (16) 542, (4) 898, (6) 2124
Paterson, M. S., (10) 641, (11) 899
Paterson, P., (4) 970
Pattin, H. C., (3) 1331
Patton, C. L., (50) 1228
Patton, G. F., (59) 1597
Patton, J. M., (73) 1330
Patrick, H. T., (82) 390
Paul, 1406
Paul, F. T., (25, 35) 971, (34) 1771
Paul, L. G., *1830
Paul, W. E., (53) 1768
Paulus, F., (49, 52) 1772
Pawlicki, F., (105) 1964
Pawlow, I. P., (17) 1515
Payr, E., (76) 395, (69) 466
Peak, J. H., (106) 1138
Pearce, R. M., *768 (37) 1056, (31) 1227, (29) 1776, (30) 1854
Pearse, T. F., (8) 970
Pearson, L., (125) 1857
Pease, C. A., (112) 2039
Pease, H. D., (31) 1227, (34) 1329
Peck, E. S., (49) 390
Peddicord, H., (95) 1330
Pedersen, J., (120) 74, (3) 1955
Pedersen, V. C., (14) 806
Pedley, T. F., (2) 1685
Pedrazzini, F., (85) 814
Pelissard, (61) 1688
Pellizzari, F., (106) 315
Pelman, (77) 313
Pelton, H. H., (7) 1511
Penkert, M., (80) 78, (86) 243
Penn, B. S., *1830
Penn, G. E., (79) 810
Pennell, W. W., (120) 898
Penzoldt, (91) 396
Peple, W. L., (88) 2123
Peppert, P., (96) 1603
Percy, J. F., (116) 970
Perekhan, J. S., (105) 1230
Perez, A., (99) 815
Perkins, I. B., (99) 154
Perkins, L. R., (132) 1139
Perman, E. S., (115) 1144
Permin, G. E., (43) 158
Perrin, (33) 1420
Perrincito, A., (112) 2130
Perroy, T., (25) 311, (42) 812
Perry, M. L., (65) 1330
Pers, A., (49) 158
Perugia, A., (60) 902
Perusini, G., (42) 1767
Peschel, (88) 1690
Pesci, E., (90) 815
Peserico, L., (69) 159
v. Pesthy, S., (35) 1420
Peter, K., (113) 975
Peterkin, G. S., (106) 1331
Peters, (30) 2177
Peters, L., (92) 541, (24) 1572
Peters, R., (48) 901
Peterson, F., (59) 308
Peterson, O. H., (41) 240
Peterson, R., (35) 538, *1447
Petges, G., (39) 1771
Petit, G., (44) 1859
Petren, A., (76) 814
Pettit, J. W., (126) 238, (63) 1229
Peyser, M. W., 138
Peyton, T. H., (14) 1059
Pfaff, F., *1819
Pfahler, G. E., (71) 154, (76) 1418
Pfannenstiel, J., (101) 80, (60) 1772
Pfeiffer, C., (75) 1963
Pfingst, A. O., (24) 1328
Pfister, C., (10) 2120
Pfister, M., (54) 1062, (59) 1422
Pfister, R., (71) 545, (96) 2129
Pforte, R., (95) 1602
Phaphanoff, 1213
Phelan, H. du R., (52) 896
Philbrick, I. C., (3) 718
Philip, R. W., (10) 1955
Phillip, C., (80) 243
Phillips, J., (95) 1138
Phillips, L. B., (8) 966
Phillips, W. C., (83) 541
Phillips, W. S., (87) 390
Piccinini, G., (93) 1863
Pich, C. V., (95) 244
Pick, A., (92) 974
Pick, L., (51) 543
Pick, W., (86) 314
Pierce, G. H., (94) 898
Pierce, R. W. C., (15) 1139
Pierpont, J. H., (32) 389
Piffard, H. G., (11) 1853
Pilcher, J. E., (33) 1136
Pilcher, L. S., (31) 72, (38) 153, (56) 809
Pillsbury, H. C., *2148
Pinard, A., (23) 1059
Pincussohn, L., (95) 1143
Pippert, H. T., (102) 1138
v. Pirquet, C., (83) 1424
Pisek, G. R., (86) 390, *398
Pitfield, R. L., *1192, *1918
Pithie, A. D., (17) 641
Plaut, (77) 1063
Plaut, F., (66) 2127
Plaut, M., (52) 901
Plomley, W. J., (42) 1687
Plönies, W., (39) 156
Plonske, C. J., (88) 154
Plummer, E. M., *1701
Plummer, H. S., (50) 1417
Plummer, S. C., (33) 151
Pochhammer, (66) 394
Pockley, F. A., (32) 724
v. Poehl, A., (53) 543
Pogue, G. R., (3) 537, (86) 810
Poirier, P., (49) 2041
Polak-Daniel, L., (102) 315
Polano, O., (67) 1861
Polkinhorn, H. A., (26) 1956
Pollacci, G., (83) 814
Pollack, K., (98) 546
Pollak, L., (60) 2126
Pollak, E., (91) 973, (33) 1333
Pollitzer, S., (41) 1956
Pollock, F., (118) 722
Pollatschek, A., (60) 543, (34) 642
Pollossen, A., (32) 392
Polozker, I. L., (2) 71
Pomeroy, R. H., (53) 1855
Poncet, A., (50) 76, (29) 1059
Pond, A. M., (6) 1682
Pontoppidan, F., (55) 158
Pool, W. P., (52) 640
Pöppelmann, W., (63) 394, (112) 468
Porcher, W. P., (111) 1331, (77) 1768, (20) 2124
Port, F., (100) 1518
Porter, C. A., (39) 967
Porter, E. H., (45) 236
Porter, J. L., (41) 72
Porter, M. F., (64) 153, *435, (106) 2124
Porter, W., (90) 1958
Porter, W. H., (78) 1418, (119) 1857
Posey, W. C., (8) 806
Posner, H. L., (55) 1961
Posnett, W. G. T., (16) 1230
Posselt, A., (82) 243
Post, A., (39) 720
Post, W. C., (113) 1230, (77) 1597
Posternak, S., (46) 1139
Potain, (32) 2041
Pottenger, F. M., (81) 1330, (1) 1764, (13) 2175
Potter, E. F., (14) 1139
Potter, G. W., *363
Potter, N. B., (23) 807, *1354, *1722, *1793
Potter, T., (57) 73
Potter, T. E., (129) 74
Potter, W. W., (41) 307
Potts, B. H., *1188
Potts, C. S., (11) 387
Potts, W. A., (21) 1515
Poulsen, K., (58) 813, (86) 903
Pousson, (46) 308, (68) 972
Pousson, A., (70) 972
Powell, H. H., (20) 538
Powell, N. A., (16) 1959
Power, D., (2) 1857, (15) 1858
Power, J. E., *334
Power, W. B., (50) 1768
Powers, C. A., (7) 1955
Poynton, F. J., (4) 238, (19) 1599
Prag, A., (72) 813
Preble, R. B., (26) 1415, (12) 2175
Predtetschensky, W., (35) 156
Prentiss, D. W., (15) 1054
Pressly, G. W., *359
Prewitt, F. E., (92) 810
Price-Brown, J., (75) 1137, (20) 1328, (69) 2039
Price, C. P., (115) 1138
Price, F. W., (15) 310, (18) 641
Price, G. E., (56) 308
Price, J., (104) 2124
Price, T. S., 1122
Priestley, J., (11) 1058
Primavera, A., (46) 2178
Prince, A. E., (64) 1229
Prince, M., (15) 1328, (18) 1415, (55) 1768
Probst, C. O., (4) 1230, (104) 2039
Proust, R., (28) 1333
Prüsmann, (90) 1963
Pryor, C. E., (12) 234
Pryor, J. H., (3) 387, (9) 966
Pryor, J. W., (107) 237, (1) 1682
Puckner, W. A., *1206, *1258, 1405
Puglisi, S., (96) 1863
Pulverenti, S., (111) 315
Pünton, J., (86) 74, (81) 810, (96) 1769
Purslow, C. E., (2) 309
Pusateri, S., (113, 121) 2130
Puschmann, (74) 242
Pusey, B., *255, *2159
Putnam, C. P., (15) 1598
Putnam, H. C., (123) 2124
Putnam, J. J., (11) 1685
Putnam, J. W., (125) 1138
Putnam, W. E., *583
Putti, V., (67) 2043
Pynchon, E., (26) 72, (72) 390, (62) 1229

Q

Quackenbos, H. F., (105) 1857
Quain, E. P., (47) 1329
Quick, E. W., (1) 1955
Quick, P. H., (93) 309
Quill, R. H., (31) 1599
Quinby, W. C., (11) 1765
Quincke, H., (100) 1143, (76) 1689

R

Raab, L., (90) 1424
Rabinowitsch, L., (50) 313, (100) 974, (4) 2176
Rachford, B. K., (44) 1767, (20) 2036
Racine, (93) 545
Radcliffe, W. D., (124) 154
Ramsay, A. M., (12) 391
Ramsay, J., (40) 1516, (29) 1687
Ramsey, W. R., (101) 1138, (80) 1958
Rand, R. F., (79) 237
Randell, A. E., (43) 1687
Randell, R. M. H., (36) 463
Randolph, B. M., (18) 895
Randolph, R. L., *17, (55) 1417
Rankin, G., (4) 309
Rankin, J. C., (12) 1514
Rankin, J. T., (67) 810
Rankin, W. H., (33) 72
Ransohoff, J., (22) 967, *1177
Ransom, W. B., (8) 1058
Ranzi, E., (105) 467
Rau, C. F., (33) 2037
Rau, W. O., (7) 639
Raubitschek, H., (59) 241
Rauschke, (69) 1601
Rautenberg, E., (78) 1423, (53) 1961
Ravasini, C., (87) 314
Ravaut, P., (36) 76
Ravenel, M. P., (127) 238
Ravogli, A., (44) 307, (20) 719, (47) 721, (19) 1854, (79) 2039
Raw, N., (5) 898, (18) 971
Raw, S., (7) 154
Rawlings, J. A., (94) 1959
Ray, A. M., (40) 235
Ray, T. F., *1377
Raymond, J. H., (32) 72
Raymond, V., (58) 1688
Reber, W., *670
Rebizzi, R., 1213, (92) 1863
Reclus, P., (28) 239, (41) 464
Red, S. C., (104) 722
Redard, F., (24) 642
Reddy, H. L., (8) 1857
Redlich, E., (66) 1423
Redmayne, T., (24) 239
Redpath, N. J., (58) 540
Reed, C. A. L., (7) 1857
Reed, C. B., (31) 151

Reed, E. N., (49) 1855
Reed, R. C. S., (22) 1415
Rees, W. A., (16) 391
Reeve, E. A., (122) 1331
Reeve, J. S., (64) 1768
Reeve, R. A., (1) 1139
Reeves, A. E., (31) 389
Reicher, K., (37) 312
Reichmann, M., (78) 2123
Reid, G., (9) 899
Reifferscheid, K., (82) 1142
Reik, H. O., *1652
Reilly, T. F., *648
Reinecke, K., (38) 1333
Reines, S., (58) 1517
Reinhold, H., (86) 1518
Reissmann, C., (37) 1687
Remlinger, 1214
Remlinger, P., (36) 543
Renaud, G. L., (88) 541
Renault, L., (44) 464
Renaut, F. H., (29) 1420
Renon, 293
Renton, J. C., (15) 542
Rentoul, R. R., (7) 1419
Rettiger, L. F., 1406
Reuschel, F., (90) 1063
Reuss, A. V., (70) 1861
Reuterskiold, A., (75) 814, (101) 903
Reverdin, A., (25) 1059
Rey, A. A., (67) 1688, (44) 1961
Reyburn, R., *1539
Reyher, P., (112) 1691
Reynier, P., (27) 311
Reynolds, E., (34) 460, *1449
Reynolds, O. H., (108) 1138
Reynolds, W., (141) 74
Rhein, J. H. W., *1705, (41) 2176
Rhein, M. L., *258
Rheinboldt, M., (25) 642, (101) 974
Rhodes, J. E., *430, (70, 90) 1685
Rhodes, O. M., (106) 970
Ribbert, H., (97) 1691, (92) 1774, (64) 1962
Ribble, Jr., W. H., (90) 2123
Rice, C. C., (2) 1955
Rich, H. M., (109) 898
Richards, G. L., (20) 640, (14) 2039
Richards, J. D., (16) 1135
Richards, W. H., (27) 2125
Richards, W. T., (74) 1229
Richardson, C. W., (28) 1328
Richardson, F. C., (21) 640
Richardson, H., (112) 154, (54) 308, (17) 639, (2) 1764
Richardson, M. H., (7, 8) 459, (18) 538, (6) 1225, (62) 1514, 1844
Richardson, W. L., (2) 1225
Richardson, W. W., (51) 153
Richartz, A., (86, 87) 545
Richartz, H., (54) 313
Richer, A. J., (100) 898
Richmond, C. F., (60) 462
Richter, (65) 313
Richter, H. M., (26) 151
Richter, K., (70) 395
Ricker, P. L., (31) 2176
Ricker, W. G., (68) 1856
Ricketts, B. M., (110) 154
Ricketts, H. T., *33, *358, *1067
Riddell, J. R., (27) 812
Ridlon, J., (21) 151
Riebold, G., (53) 901, (110) 1603, (127) 1691
Rieder, H., (88) 396, (100) 2045
Riedinger, (64) 1234
Rielander, A., (90) 1235
Ries, E., (46) 461, *1869
Riese, H., (70) 242, (59) 465
Riesmeyer, L. T., (23) 640
Rietschel, H., (105) 1691
Rigden, A., (1) 1959
Riggs, C. E., *1969
Ring, G. O., *994
Ringel, (59) 1335
Ringueberg, E. N. S., (6) 151
Rininger, E. M., (42) 1136
Rinne, F., (53) 1334
Risel, H., (97) 1518
Risley, S. D., (41) 2176
Rissmann, P., (75) 1336
Ritter, A., (118) 1603, (120) 1691
Ritter, C., (126) 975
Ritter, E., (94) 2045
Ritter, G., (57) 1062
Ritter, J., *683
Rittershaus, A., (76) 1423
Riva, A., (71) 644
Riva-Rocci, (96) 815
Rivers, W. C., (5) 154
Rivet, L., (45) 812
Rob, J. W., (11) 238
Robb, H., (29) 538
Robbers, (56) 394
Roberts, D., *273
Roberts, H. H., (126) 722
Roberts, J., (2) 1230
Roberts, J. B., (36) 460, (53) 809, (22) 2036
Roberts, L. M., *2159
Roberts, N., (131) 238
Roberts, W., (43) 2176
Roberts, W. H., (92) 1685, (49) 1768
Robert-Simon, (77) 972
Robertson, A., (33) 1961
Robertson, C. M., (79) 540, (101) 1230, *1725
Robertson, E. W., (35) 389
Robin, A., *1563
Robinovitch, L. G., (43) 1767
Robins, C. R., (87) 2123
Robinson, A., (2) 1139, (119) 1959
Robinson, A. R., (6) 1514
Robinson, B., (110) 74, (17) 151, (103) 237, (60) 308, (66) 309, (76) 390, (110) 1058, (15) 1226, (19) 1415, (108) 1419, (2) 2119
Robinson, G. W., (97) 1769
Robinson, R., (45) 1139
Robinson, W. J., *508, (7) 1230, *2145
Robson, A. W. M., (7) 899, (1) 2039
Roby, J., (109) 541
Rocchi, G., (102) 1863
Rochester, D., (72) 1418, *1983
Rochon, 292
Rockwell, A. D., (10) 1682
Rodari, P., (62) 1140
Rodgers, M. A., (91) 1330, *1829
Rodhe, E. E., (65) 813
Rodiger, H., (35) 1333
Rodman, W. L., (111) 154, *842, (86) 1418
Roe, J. O., (5) 2039
Roeder, H., (46) 240
Roeder, P., (67) 726
Roethlisberger, P., (38) 312
Roger, H., (30) 239, (42) 2125
Rogers, A. F., (27) 1227
Rogers, E. J. A., (94) 74
Rogers, J., *655
Rogers, J. F., (4) 1327
Rogers, J. T., (85) 897, (124) 1138
Rogers, L., (6) 154
Rogers, P. F., (42) 1228
Rolleston, J. D., (16) 155
Rollin, (47) 465
Rolls, J. A., *1737, *2092
Rolly, (64) 1335, (65) 1422, (58) 1860, (86) 2044
Romanelli, G., (42) 2178
Romberg, E., (80) 1602
Römer, P. H., (65) 1063, (46) 1421, (54) 1860
Rommel, O., (77) 1861
Ronzani, E., (67) 644
Roony, R. F., (72) 722
Roos, E., (89) 1518
Roos, L. L., (12) 71
Roos, N. B., (9) 1328
Roosa, D. B. St. J., (54) 390, (2) 2035
Root, E. H., (65) 154, (92) 1597
Roque, (43) 543
Rorig, (64) 726
Rosakis, (111) 1964
Rose, A., (119) 74, (20) 895, (37) 1228 (46½) 2121
Rosenau, M. J., *1007, (43) 1056, (57) 1229
Rosenbach, O., (39) 312, (75) 466, (66) 1517
Rosenbaum, A., (60) 1140
Rosenberg, E., (77) 1601
Rosenberg, S., (53) 1421
Rosenberger, F., (57) 465, (89) 1774
Rosenberger, R. C., (55) 308, (95) 390, (37) 2120
Rosenfeld, G., (41) 1233
Rosenfeld, S., (99) 79, (88) 314
Rosengart, J., (95) 545
Rosenhaupt, H., (107) 1603
Rosenheim, S., (33) 1329
Rosenheim, T., (56) 465
Rosenow, E. C., (36) 1227
Rosenstern, I., (49) 643
Rosenthal, G. E., (90) 898, (62) 1685
Rosenthal, L. J., (13) 639
Rosenthal, M. I., (20) 71
Rosenwasser, M., (100) 2124
Ross, A., (120) 238, (25) 306
Ross, G. G., (88) 1418
Ross, G. W., (5) 390, (9) 2124
Ross, H., (27) 2040
Ross, H. H., (46) 1513
Ross, H. R., (21) 311
Ross, J. F. W., (12) 1857
Ross, T. S., (24) 1139
Rössler, O., (104) 1691
v. Rosthorn, A., (100) 80, *1872
Rotch, T. M., *729
Roth, A. H., *1262
Rothfuchs, R., (67) 1335, (90) 2128
Rothmann, M., (115) 1775
Rothreck, J. L., (128) 309
Rothrock, J. T., (101) 898, (133) 1139
Rothschild, 293
Rothschild, M., (49) 2038
Rothschuh, E., (103) 1691
Roth-Schulz, W., (74) 1689
Rothwell, P. D., (51) 1513
Rothwell, W. J., (91) 74
Rouget, J., (53) 1599
Routh, A., (2) 722
Roux, E., (36) 812
Rover, H. W., (96) 1230
Rovighi, A., (89) 1418, (112) 2046
Rovsing, T., (44) 158, (87) 903
Rowan, C. J., (45) 1855
Roy, T. A., (24) 719
Roy, W., (41) 393
Royet, (43) 543
Royster, H. A., *111, (80) 237
Rubow, V., (78) 727
v. Ruck, S., (2) 1853
Rucker, Jr., J. B., (39) 1684
Rudinger, C., (89) 1424
Rudloff, P., (77) 74
Rudolf, R. D., (14) 1686, (91) 1769, (70) 2039
Rudolph, W., (75) 2044
Ruediger, G. F., *1171, (34) 1227, (30) 1766
Ruffin, K., (113) 1857
Ruffin, S., (32) 1956
Rugh, J. T., (6) 1414, (70) 2122
Ruhemann, J., (55) 813
Rühl, (87) 78.
Rühl, W., (90) 1602
Ruhs, C., (132) 975
Rülf, J., (106) 1519
Rumpf, (66) 1335
Runge, E., (54) 543, (59) 2043
Ruppel, W. G., (66) 1234
Rush, W. H., (91) 898
Russell, A. E., (14) 542
Russell, J. S. R., (8) 391
Russell, J. W., (15) 391
Russell, R. H., (44) 1516, (25) 1687, (16) 1858
Rust, C. H., (80) 1514
Rustin, F., (42) 720
Rutherford, R. W., (105) 1597, (60) 1957
v. Rutkowski, W., (82) 1862
Ryan, G. N., (70) 810
Ryan, L. A., (50) 1957
v. Rydygier, A. R. R., (77) 545, (65) 1601
Ryerson, G. S. *2051

S

Saalfeld, E., (99) 467, (54) 901
Saathoff, (89) 2128
Sabbatani, P., (74) 159
Sabrazes, J., (25) 155
Sacerdote, P., (49) 812
Sachs, (99) 1143, (117) 1691
Sachs, A., (73) 1423
Sachs, B., *1526
Sachs, H., (31) 642, (90) 1690
Sadger, J., (100) 546
Sahli, H., (109) 975
Sailer, J., (27) 896 (36) 1684
Saint-Philippe, R., (37) 464
Saito, S., (109) 2045
Salaghi, S., (44) 393
Salant, W., *765, *1467
Salge, B., (57) 1140
Salignat, L., (33) 311
Salmon, A., (45) 393
Salto, S., (77) 1689
Salus, G., (57) 241, (82) 1424
Salvendi, H., (46) 1333
Sampson, J. A., (22) 1512
Samuely, F., (34) 1420
Sanders, C. A., (109) 1419
Sanderson, S. E., (114) 309, (44) 896
Sandusky, C. M., (108) 1597
Sanes, K. I., (36) 1136
Sanfelice, F., (75) 902
Sanger, (59) 725
Santa Maria, A., (97) 815
Santini, A., (100) 244
Sappington, S. W., (33) 2037
Sarcinelli, F., (77) 902
Sargent, D. A., (62) 1597
Sargent, P. W. G., (22) 2040
Sarvonat, F., (44) 543
Sarwey, O., (84) 972, (84) 1602
Sasaki, K., (36) 312
Sauerbruch, F., (127) 975
Saundby, R., (1) 74, (25) 463, (1) 1685
Saunders, E. W., (99) 1769
Saunders, W. H., (103) 1419
Savage, G. C., *353
Savariaud, M., (21) 642, (36) 900
Savill, A. F., (18) 463
Sawtelle, H. W., (88) 1857
Sawyer, P. E., (89) 2039
Sawyer, W. B., (51) 1768
Scallon, J. E., (96) 810
Scannell, D. D., (9) 1853
Schabort, T. I. P., (86) 1235
Schachner, A., (18) 151
Schadle, J. E., (5) 966, (124) 1230
Schaefer, F., (64) 2043
Schäfer, E. A., 527
Schamberg, J. F., (143) 74, (41) 720
Scharl, P., (80) 1862
Schatz, (47) 901
Scheib, A., (100, 101) 1774, (73) 2127
Scheibe, A., (39) 643, (102) 2039
Scheimpflug, M., (108) 467
Schell, W., (104) 154
Schellenberg, G., (94) 79
Schenck, B. R., (68) 640
Scherck, H. J., *500, (19) 807
Scherer, S. P., (107) 154
Schickele, (37) 643
Schiefferdecker, P., (55) 465
Schiff, E., (77) 2127
Schilling, T., (63) 726, (61) 1861
Schindler, C., (57) 725
Schirmer, K. H., (52) 1062
Schirmer, O., (63) 242, (130) 975
Schittenhelm, A., (109) 1143
Schlagenhaufer, (96) 1774
Schlapp, M., (87) 1418
Schläpfer, V., (24) 2177
Schlasberg, H. I., (91) 903
Schlecter, R., (32, 33) 2176
Schleich, G., (86) 1602
Schleip, K., (94) 1518
Schlesinger, (28) 1771
Schlesinger, A., (52) 313, (68) 2127
Schlesinger, E., (45) 1060, (52) 1334
Schlesinger, H., (58) 1335
Schlesselmann, J. T., (82) 1514
Schlocssmann, H., (83) 1862
Schlimpert, H., (64) 544
Schlossmann, A., (51) 725
Schlotterbeck, J. O., (91) 309, *1392
Schmaus, H., (66) 77
Schmidlechner, K., (58) 77, (97) 315
Schmidt, A., (49) 240, (60) 971, (57) 1422, (119) 1691
Schmidt, A. E., (27) 1854
Schmidt, H., (45) 312
Schmidt, K., (72) 2127
Schmidt, O., (31) 2215
Schmidt, W., (87) 1602
Schmieden, H., (68) 394
Schmieden, V., (99) 1603
Schmincke, A., (89) 1774
Schmitt, J. A., (13) 387
Schmitter, F., (38) 1056
Schmoll, E., (63) 1422
Schneideman, T. B., (52) 1957
Schoedel, J., (75) 2127
Schœnijahn, W. C., (81) 1768, (60) 1856
Schofield, A. T., (8) 1419
Scholz, F., (100) 396, (84) 1774
Scholz, W., (111) 1775
Schoots, J. J., (90) 1058
Schorer, E. H, (29) 896
Schossberger, A., (34) 156
Schrager, V. L., (37, 46) 1855
Schreiber, E., (76) 1963
Schröder, (133) 975
Schröder, M., (85) 1518
Schroeder, W., (49) 640, (85) 1330
Schroeder, W. E., (30) 151
Schuberg, A., (31) 2177
Schubert, G., (87) 1963
Schueller, M., (28) 807
Schuldt, F. C., (14) 2176
Schüle, (87) 1518
Schulein, W., (111) 975
Schultze, E., (132) 975
Schultze, F., (67) 466
Schultze, K., (57) 1335
Schultze, W. H., (125) 1691
Schulz, A., (63) 544
Schulz, H., (117) 975
Schulze, W., (66) 1601
Schuman, E. A., (94) 390, (38) 808
Schuster, L., (105) 546
Schutte, P., (75) 1773
Schütz, J., 527
Schwab, M., (86) 1142
Schwab, S. I., (108) 309
Schwarz, H., (97) 1959
Schweizer, R., (104) 1964
Schwyzer, G., (82) 897
Scott, D. W., (93) 722
Scott, H. T., (78) 810
Scott, J. W., (102, 103) 722
Scott, N. S., (103) 2124
Scott, W., (6) 1331
Scudder, C. L., *19
Seaman, L. L., (11) 1226
Sears, G. G., (17) 1956, (6) 2175
Sears, M. H., (70) 1958
Sedgwick, J. P., (52) 1417
Seegert, P., (74) 1336
Secchi, T., (117) 547
Seelig, M. G., (35) 460, (24) 1765, (23) 1956, (23) 2036, (24) 2120, (2) 2174
Seeligmann, L., (56) 313, (81) 467, (82) 1518
Segale, M., (126) 547
Seiber, N., (67) 313
Seitz, L., (93) 2128
Selberg, F., (90) 243
Selby, C. D., *1485
Sellheim, H., (83) 78, (38) 240
Selling, T., (84, 85) 396

Selter, P., (67) 1063
Semple, J. M., (67) 1058
Senator, H., (46) 393
Senator, M., (45) 724
Seneguireff, G., (27) 234
Senn, N., *141, *225, *297, *531, *960, *1050, *1098, *1217
Senseman, T., (100) 1330
Sequeira, J. H., (4) 641
Sera, J. D., (91) 1958
Serafini, G., (84) 814, (33) 2178
Sergent, E., (48) 971, (51) 1599
Setti, G., (102) 815
Sewall, H., 1279
Sexton, L., (126) 309, (59) 1597, (95) 1857
Sforza, C., (57) 159, (108) 546
Shackelton, W. W., (19) 1230
Shaller, J. M., (74) 1058
Shambaugh, G. E., (77) 540
Shangle, M. A., (142) 74
Shannon, L. W., (133) 309
Sharkey, S. J., (20) 1960
Sharp, W. N., (60) 73
Sharples, C. W., (56) 540, (45) 896
Shastid, T. H., (46) 896
Shattuck, F. C., (14) 71, (96) 898, (4) 1225
Shaw, E. A., (23) 76, (24) 543
Shaw, F. C. S., (44) 1687
Shaw, T. C., (4) 74, (8) 238
Shaw, T. P., (11) 1598
Shaw, W. E., (20) 388, (70) 1514
Shedd, P. W., (78) 1514
Sheen, W., (14) 310
Sheffield, H. B., (7) 1054
Sheill, J. S., (6) 1058
Shekwana, P., (16) 2120
Shelden, W. D., (133) 898
Sheldon, J. G., *1458, (4) 1593, (26) 2036
Shelly, E. T., (115) 898
Shelmire, J. S., (83) 309
Shenton, E. W. H., (17) 1230
Shepherd, F. J., *655, (32) 967, (10) 1959
Sherrill, E. S., (114) 237
Sherrill, J. G., (118) 309, (95) 1959
Shields, J. M., (115) 1230
Shiga, K., (62) 462
Shoemaker, G. E., *1917
Shoemaker, J. V., (149) 74, (5) 151, (5) 537, (87) 1136, *1147, (9) 1682, (3) 1764
Shoemaker, W. T., (69) 462, (81) 1685
Schoengut, S., (89) 2044
Schoppler, H., (103) 2045
Secord, E. R., (30) 2036
Sharpe, N. W., (31) 2036
Shoop, F. J., (57) 1856
Shorb, J. DeB., (107) 541
Short, A. R., (11) 723
Shoyer, M., (114) 74
Shrubsall, F. C., (10) 641
Shumway, E. A., *320, (38) 2176
Shurly, E. L., (67) 640, (11) 895
Shute, D. K., (6) 718, (13) 806
Shuttleworth, C. B., (6) 1959
Sichel, G., (78) 1138, (73) 1768
Sick, K., (59) 2126
Siebert, C., (57) 725
Siegel, E., (78) 242
Siegfried, M., (52) 465
Sieveking, H., (105) 974
Sights, H. P., (12) 966, (112) 1138
Signorelli, A., (108) 1863
Sigworth, H., (83) 1597
Sikora, P., (31) 1420
Silbergleit, H., (93) 1963
Silfverskiöld, P., (99) 903
Sill, J., (77) 1058, (48) 1596
Silvestri, T., (110) 546, (98) 815, (90) 1863
Simmonds, M., (107) 1143
Simmons, G. H., (90) 970
Simon, C. E., (32) 1415, *1737
Simon, F., (61) 1962
Simon, S., (100) 237
Simons, A., (38) 156, (61) 2126
Simons, J. E., (84) 309
Simons, M., (110) 1331
Simpson, C. E., (95) 309
Simpson, F. T., (17) 1226
Simpson, G. S., (13) 811
Simrock, K., (78) 467
Sinclair, R., (8) 542
Singer, L. U., (23) 1765
Sinkler, W., *1337, (54) 1768
Sippel, A., (72) 1423, (91) 1602
Sisto, P., (111) 2130
Sittler, P., (77) 466, (74) 1773, (55) 1860
Sitzenfrey, A., (77) 1336
Skinner, C. E., *1541
Skinner, E. H., (128) 541
Skoldowski, J., (63) 1062
Skoog, A. L., *1821
Skultechi, E., (89) 815
Slick, B. B., (76) 1958
Slocum, H. A., (12) 895
Sluder, G., (56) 1137
Sluka, E., (101) 467
Sluss, J. W., (56) 73
Smale, M. A., (17) 1328
Smart, D., (17) 971
Smart, J. H., (42) 1417
Smit, J. A. R., (93) 79
Smith, 608
Smith, A. E., (71) 1958
Smith, A. L., (42) 538, (33) 1055, (118) 1959
Smith, A. L. H., (17) 541
Smith, C. A., (65) 73, *1693
Smith, C. M., (47) 1688
Smith, D., (77) 970
Smith, D. L., (16) 310
Smith, E., (5, 117) 74
Smith, E. E., (121) 2124
Smith, E., Jr. (95) 154
Smith, E. B., (15) 723
Smith, E. O., (25) 640, (21) 2120
Smith, E. T., (36) 724
Smith, F., (43) 1599
Smith, F. J., (9) 1685
Smith, G. F. D., (17) 541
Smith, G. S., (98) 1138
Smith, H., (53) 153, (19) 155, (32) 1139, (22) 1515, (34) 1859
Smith, H. E., (63) 1957
Smith, O. C., (55) 721
Smith, R. J., (95) 810
Smith, R. M., (68) 1058
Smith, R. R., (44) 538
Smith, S. M., (62) 390, (86) 1685
Smith, S. W., (57) 1957
Smith, T. F., (67) 73
Smith, W. A., (10) 1135
Smith, W. D., (81) 970
Smith, W. T., (66) 1597
Smurthwaite, H., (9) 2039
Smythe, F. D., (50) 1855
Sneve, H., (57) 236, (83) 1958
Snow, W. B., (87) 1229
Snyder, W. H., (48) 721
Soiland, A., (90) 1330
Solenberger, A. R., (12) 1054, (25) 1328
Solger, F. B., (56) 1772
Solis-Cohen, S., *265
Solley, J. B., (28) 1854
Sollier, P., (41) 1961
Solly, S. E., (84) 810
Solmersitz, F., (68) 1423
Somers, H., (48) 2038
Somers, L. S., (27) 72, (41) 389, *741
Somerset, W. L., (17) 1853
Sommer, (54) 1334, (79) 2044
Sommerville, D., (18) 1770
Sondern, F. E., (50) 390, (65) 640, (10) 2175
Sonnenburg, E., (106) 975
Sonneville, P., (37) 1139
Sorensen, (56) 158
Sorensen, I., (51) 158
Sorgo, J., (80) 314
Sormani, B. P., (95) 396, (80) 1774
Sorrentino, F., (109) 1863
Sotheron, E., (28) 234
Souchanoff, S., (43) 393
Southard, E. E., *1271
Southard, J. D., *112.
Souther, C. T., (19) 1594
Souther, J. H., (123) 722
Southworth, T. S., (61) 236, (64) 540, *1083
Soutter, R., (66) 2122
Spaether, I., (47) 1233
Spaether, J., (87) 1063
Spagnolio, G., (80) 902
Spear, E. D., (17) 305
Spears, L. P., (119) 309
Specht, O., (56) 77
Speese, J., (43) 72
Spelman, J. F., (71) 1058
Spemann, H., (65) 1772
Spencer, J. C., *1735
Speroni, D., (81) 395
Spiess, C., (80) 1963
Spicer, W. E., (79) 1058
Spiegel, O., (38) 1420
Spieler, F., (71) 1063
Spielmeyer, W., (65) 1335
Spiller, W. G., (1) 387, *679, *744, *849, (76) 897, *923, (7) 1327, (35) 1684, (10, 45) 1685
Spisharny, J. K., (78) 1141
Spivak, C. D., (99) 237, (87) 810, (4) 894, (8) 1764, (40) 2176
Sprague, F. B., (21) 1328, (16) 1415
Sprague, J. S., (29) 719, (104) 1597
Spratling, W. P., (8) 234, (20) 967, (57) 1768
Spratt, C. N., *37, (56) 153
Springthorpe, J. W., (23) 724
Squier, J. B., (3) 1511
Squire, J. E., (5) 541
Stacy, H. S., (37) 1516
Stalberg, K., (97) 903
Standish, M., (96) 970
Stanton, S. C., (65) 897
Staples, H. L., (99) 1514
Stark, H. S., (1) 1593
Stark, S., (19) 71
Starkey, T. A., (33) 306, (9) 1230
Starling, H. J., (14) 1419
Starr, C. L., (6) 1598
Starr, M. A., *926
Stäubli, C., (83) 396
Stauder, A., (130) 1691
Stawell, R. R., (45) 1516, (26) 1687
St. Clair, C. T., (86) 1138
Stedman, H. R., (75) 897
Steele, A. J., (69) 2122
Steele, H. W., *1405
Steele, J. D., (68) 154, (98) 390, *496, (46) 640, (49) 1957
Stein, A. E., (106) 1603
Stein, O. J., (24) 720
Stein, R., (18) 1853
Steiner, L., (124) 1603
Steiner, W. R., (18) 640, (90) 1597
Steinert, H., (121) 1691
Stembo, L., (55) 1772
Stemen, C. B., (106) 74
Stemmler, (41) 1060
St. Engel, (51) 725
Stengel, A., (7) 1685, (47) 1957
Stephani, (74) 2127
Stephens, G. A., (7) 541
Stephens, H. D., (30) 392
Stephens, J. W. W., (17) 899, (35) 1859
Stephens, T. G., (103) 1138
Stephenson, S., (11) 811, (21) 1594
Stern, H., (111) 309, (2) 1134, *1621
Stern, W. G., (19) 1055, (46) 2038
Sternberg, J. D., (125) 810
Sternberg, W., (58) 725, (106) 1775
Stetten, De W., (12) 1682
Steven, J. L., (25) 812, (13) 1139
Stevens, A. F., (22) 1139
Stevens, E. W., (96) 74, (122) 541
Stevens, G. T., *175
Stevens, J. F., (61) 2122
Stevens, J. W., (2) 718
Stevenson, H., (7) 722
Stevenson, M. D., (70) 897, (53) 1957
Steward, F. J., (32) 1771
Stewart, 139
Stewart, D. H., (97) 1058
Stewart, F. E., (11) 2124
Stewart, F. T., (43) 2121
Stewart, J., (17) 1959
Stewart, J. B., (104) 810
Stewart, J. C., (53) 1057
Stewart, J. E. F., (40) 1687
Stewart, R. W., (42) 808
Stewart, T. G., (19) 1858
Stickle, C. W., (86) 1330
Stickel, M., (61) 1600
Sticker, A., (102) 1519, (73) 1963
Stieda, A., (82) 1963
Stiel, (48) 312
Stieren, E., (76) 154 (23) 1594
Stiles, C. W., (50) 1057
Stiles, H. J., (14) 1598
Still, C. F., (2, 6) 641
Stillman, F. L., (30) 1328, (45) 2038
Stirling, R. A., (29) 724
Stites, F. M., (4) 2119
Stitt, E. R., (64) 462
Stivers, J. R., (59) 1856
St. John, D., (126) 1139
Stock, P. G., (18) 1419
Stocker, F., (78) 970
Stockert, W., (44) 1421
Stockman, R., (2) 2124
Stockton, G., (73) 1058
Stoddard, B. B., (94) 1597
Stoeltzner, W., (56) 1860
Stoeltzner, W., (64) 1063, (56) 1860
Stokes, A. C., (109) 810
Stoll, H. F., (3) 966
Stolper, L., (89) 1602
Stone, B. H., (65) 1856
Stone, H. H., (117) 1331
Stone, I. S., (32, 34, 35, 37, 40) 235, (125) 898
Stone, W. S., (38) 538, (4) 639
Stookey, C. G., (92) 2039
Stookey, L. B., (50) 153
Stout, P. S., (44) 640
v. Stoutz, W., (69) 1423
Stover, G. H., (100) 154, (104) 237, (7) 806
Stow, B., (40) 153, (43) 1595
Stowe, H. M., (27) 151
Stowell, W. L., (21) 1226
Strader, G. L., (62) 1957
Strasburger, J., (70) 1773
Strasser, A., (50) 240
Strasser, A. A., (127) 1139
Strassmann, F., (93) 314
Stratton, R. R., *1271
Strauch, A., (45) 1956
Strauss, A., (92) 243, (60) 465
Streintz, F., (104) 467
Strodl, G. T., (12) 1594
Strohe, H., (63) 313
Strong, R. P., (63) 462
Strong, T. J., (130) 154
Strout, E. S., (51) 1417
Strübing, (69) 1234
Strubing, P., (124) 975
Struthers, J. W., (25) 2040
Stuart, C. S., 1579
Stuart-Low, W., (25) 1770
v. Stubenrauch, L., (93) 1063, (116) 1603, (66) 2043
Stucky, J. A., (54) 1057, (4) 1955
Stucky, W. F., (93) 1514
Studer, T. F., (74) 970
Stuffer, W. H. (92) 154
Stumm, T. W., (82) 1958
Stumpfs, 2113
Stuver, E., (90) 74, (66) 1418
Suckstorff, (74) 74
Sudeck, P., (95) 2045
Sudhoff, K., (122) 1691
Sucss, E., (80) 314
Sultan, G., (73) 545
Summers, J. E., Jr., (62) 2039
Sumner, G. H., (71) 810
Sunde, P. H., (65) 810
Sutcliffe, W. G., (17) 1139
Sutherland, F. E., (102) 1419
Sutherland, H. L., (103) 1059, (82) 1857
Sutherland, M. H., (114) 1138
Sutherland, W. D., (83) 243
Sutter, H., (77) 1517, (83) 2128
Sutton, H. T., (49) 721
Suzuki, S., (86) 1857
Swan, W. H., (61) 1418
Sweet, J. E., (65) 969
Sweet, W. M., *770, (67) 897
Swenson, E., (64) 2043
Swinburne, G. K., (36) 1767
Swope, S. D., (119) 1230
Syers, H. W., (13) 641, (20) 1332
Syme, W. S., (35) 1687
Symes, W. L., (34) 1961
Symmers, W. St. C., (4) 1685
v. Szaohy, J., (40) 1060
v. Szontagh, F., (70) 1063

T

Taakbe, E. F., (65) 308
v. Tabora, D., (42) 1333
Taddei, D., (111) 1519
Tait, W. C., *1557
Takabatake, (100, 101) 2039
Takaki, K., (33) 543, (1) 894
Talbot, E. S., *261
Talley, J. E., *730
Talma, S., (42) 724
Tamicsie, J. P., (127) 810
Tanberg, A., (136) 1966
Tanquary, J. H., (89) 1958
Tansard, A., (71) 972
Tansini, I., (113) 315, (74) 902, (38) 1232
Taplin, A. B., (42) 971
v. Tappeiner, H., (89) 243, (49) 1333, (80) 2044
Tate, M. A., (70) 1597
Tatsusaburo, (75) 74
Taussig, A. S., (92) 74
Taussig, F. J., (23) 1512, (101) 1959
Tausz, B., (49) 724
Travel, E., (66) 1141
Taylor, A. E., (10) 310, *1406
Taylor, A. N., (100) 810
Taylor, A. S., *2091
Taylor, E. W., (52) 73
Taylor, F. E., (21) 239, (7) 1058
Taylor, H., (17) 1419
Taylor, H. N., (121) 74
Taylor, J., (26) 463
Taylor, J. C., (3) 1853
Taylor, J. M., (7) 305, (11) 537, *1551
Taylor, L. C., (52) 1685
Taylor, M. R., (83) 1330
Taylor, P. R., (117) 309
Taylor, R. T., (6) 234, (88) 722, (72) 2122
Taylor, R. W., (82) 1229, (7) 1514, (70) 1857
Taylor, S., (5) 238, (39) 971
Taylor, W. J., (25) 967
Taylor-Jones, L., (30) 640, (127) 1230
Tchitchkine, A., (53) 971
Teale, T. P., (18) 1598
Tedeschi, E., (94) 1863
Telford, E. ., (6) 898
Telford, E. D., (23) 2040
Terni, C., (23) 812
Terrier, F., (29) 156, (29) 900, (53) 2042
Terry, M. O., (105) 1058
Terson, A., (85) 1685
Testi, A., (108) 315
Thalwitzer, F., (64) 1861
Thaon, P., (32) 239
Thayer, W. S., *1352
Theard, S. L., (96, 97) 1857
Thébaud, A., (49) 1139
Theilhaber, A., (57) 77, (62) 726
Theisen, C. F., (119) 1419
Theodor, F., (98) 79
Thévenot, L., (54) 2042
Thiberge, G., (36, 40) 76
Thiele, (116) 975
Thierry, E., (26) 311
Thiéry, P., (35) 1059
Thies, (123) 1603
Thies, J., (82) 78, (88) 1142
Thiriar, J., (26) 1059

Thiroux, (29) 239, (56) 1599
Thistle, W. B., (8) 1685
Thoma, F., (117) 722
Thoma, R., (99) 2129
Thomas, F. W., (63) 810
Thomas, H. W., (20½) 1139
Thomas, J. J., (26) 538
Thomas, J. L., (6½) 1959
Thomas, L., (152) 238
Thomas, L. A., (69) 810
Thomas, O. T., (24) 538
Thomas, T., (28) 971
Thomason, H. D., (60) 897
Thompson, A. H., (3) 641
Thompson, F. D., (59) 968
Thompson, G. F., (48) 1855
Thompson, H. H., *2092
Thompson, J. A., (15) 1059, (32) 1516, (38) 2125
Thompson, M. G., (69) 1330
Thompson, R. L., (62) 969
Thompson, W., (18) 305
Thompson, W. G., (4) 2174
Thomsen, O., (54) 158
Thomson, E., (28) 812
Thomson, E. S., *89
Thomson, H., (81) 78, (56) 1234
Thomson, H. C., (24) 463, (26) 1859
Thomson, J. J., (4) 966, (80) 1058
Thomson, St. C., (8) 310, (31) 463, (10) 1419, (5) 2039
Thomson, W., (2) 462, (27) 900
Throne, B., (23) 1854
Thorbecke, K., (86) 2128
Thorel, C., (72) 1335
Thorington, C., *358
Thornburgh, R. M., (51) 896
Thorne, W. S., (74) 722
Thornhill, F. M., (25) 719
Thornton, C. G., (70) 721
Thrasher, A. B., (32) 1329
Thresh, J. C., (1[illegible] 723, (15) 1139, (24) 1960
Thrush, M. C., (22) 1226
Thue, H., (139) 1966
Thursfield, H., (31) 1515
Tibbits, W., (30) 543
Tiedemann, E., (15) 2177
Tieken, T., (57) 1685
Tilcston, W., (16) 305, (29) 807
Tilley, H., (11) 2039
Tilliss, (64) 1772
Tillman, J., (74) 814
Tinkham, H. C., (99) 970
Tintemann, (68) 1962
Tischler, (86) 1424
Tixier, 293
Tizzoni, G., (115) 547, (92) 815, (52) 1599, (88) 1863, (122) 1465
Tobey, E. N., (39, 40) 1056
Tobin, R. F., (28) 2014
Tobler, L., (68) 1063
Toby, W. D., (81) 897
Tocher, 607
Todd, J. C., (78) 1958
Todd, J. C., (97) 74, (101) 541, (97) 1230, (78) 1958
Todd, J. L., (10) 391
Tognetti, A., (91) 815
Tolot, G., (44) 543
Tomaschewski, (74) 1141
Tomaszewski, E., (106) 1143
Tomlinson, H. A., *1338
Tomlinson, J., (44) 389
Toogood, F. S., (10) 1230
Torbett, J. W., (124) 309
v. Torday, F., (96) 79, (50) 1860
Torek, F., (1) 2035
Török, B., (86) 1862
Torrey, J. C., (34) 1056
Totman, D. M., (37) 307
Toussaint, H., (31) 156
Tracy, E. A., (11) 966
Tracy, S. E., (13) 1054
Trapani, P., (60) 159
Trautman, G., (57) 1772, (17) 2177
Trautmann, H., (52) 1421
Travers, E. A. C. (20) 392
Travers, F. T., (11) 1230
Trendelenburg, F., *81, (57) 809
Treplin, (92) 79
Treub, H., (27) 1059
Treupel, G., (84) 1518
Treutlein, A., (74) 466, (86) 1063
Trevithick, E., (19) 541
Triffi, M., (33) 76
Troitzky, I. V., 381
Trommer, E., (127) 722
Tromp, F., (77) 1773
Trowbridge, D. H., (73) 390
Trudeau, E. L., (22) 807
Tsamalis, (111) 1964
Tubby, A. H., (2) 154
Tucker, A. F., (59) 73
Tucker, E. F. G., (23) 1139
Tuffey, F. S., (119) 154
Tuffier, T., *1249
Tuley, H. E., (22) 1956
Tulloch, F. M. G., (25) 899
Tumminia, P., (44) 2178
Tunis, J. P., (29) 306
Tupper, E. D., (76) 1768
Turan, F., (61) 1234
Turcman, H. G., (98) 1769
Turner, A. J., (29) 392
Turner, A. L., (22) 2124
Turner, D., (5) 641
Turner, H. G., (17) 1959
Turner, J. S., (28) 1417
Turton, E., (14) 1770
Tuszkai, O., (43) 1060
Tuttle, J. P., *426
Tweedy, E. H., (12) 1059, (26) 1420
Twitchell, D. C., (24) 807, (35) 1595
Tyndale, W. R., (57) 1513
Tyrrell, J. B., (11) 639
Tyson, J., (85) 74, (46) 1957
Tyzzer, E. E., (73) 237, *1237

U

Uffenheimer, A., (52) 240, (42) 643, (119) 1603, (54) 1860
Uffenorde, W., (89) 1063
Uhlenhuth, (120) 975
Ulrich, G. A., (36) 2120, (42) 2121
Uhls, L. L., (67) 1330
Ullmann, K., (55) 543
Ulrici, H., (69) 1423
Umber, (51) 643
Umber, F., (84) 467
Unger, D. F., (115) 970
Unger, J. W., (112) 722
Unna, P. G., (95) 315
Unruh, (66) 1772
Upham, J. H. J., (19) 966
Upson, H. S., *1719
Utley, J. H., (46) 153, (131) 541

V

Vaccari, A., (85) 1235
Vail, D. T., (19) 1328, (89) 1685
Vaillard, L., (46) 971
Valdonio, G., (112) 1519
Vale, F. P., (29) 1854
Valentine, F. C., (54) 721
Valk, F., (123) 74, *485
van Amstel, D. P., (38) 393
Van Buskirk, E. M., (51) 1330
Vance, A. P. M., (84) 1330
Van der Bogert, F., *1918
Vanderhoof, D. A., *1561
Vanderslice, J. W., (77) 390, (34) 896
Vander Veer, A., (121) 238, (29) 967, *1299, (7) 1414
Vandeweyer, (75) 1063
Van Elk, 708
Van Epps, C., (107) 1230
Van Fleet, F., (89) 1514
Van Harlingen, A., (38) 720
Van Hook, W., (23) 151
Van Meter, S. D., *37, (86) 970
van Roojen, P. H., (105) 1519
Vansteenberghe, P., (37) 1139
Van Wart, F. P., (33) 640
Vanzetti, F., (110) 2130
Varlamidis, C., (111) 1964
Vassal, J. J., (43) 971
Vaughan, G. T., (38, 39) 235, (64) 897
Vaughan, V. C., (7) 895, (15) 967, (1) 1054
Vedeler, (142) 1966
Velhagen, (8) 2176
v. Velits, D., (60) 1600
Velrich, A., (90) 1774
Venema, T. A., (44) 1233
Verco, J. C., (33) 1516
Verth, (82) 545
Vestberg, E., (111) 1143
Vezprémi, D., (98) 396, (83) 1774
Viereck, (69) 1335
Vicentini, F., (60) 1057
Victor, A. C., (19) 640, (17) 719
Vignoli, A., (70) 159
Villa, E., 137
Vincent, R., (12) 1598
Vincent, S., (9) 811, (14) 899
Vincenzi, L., (66) 544
Vineberg, H. N., (3) 71
Vinnedge, W. W., (108) 154
Violet, H., (32) 392
Viscontini, C., (113) 546
Vitry, G., (34) 393, (42) 1961
Vocke, (131) 1691
Voeckler, (76) 545, (79) 1963
Vogel, J., (47) 312
Vogeler, W. J., (48) 1057
Vogelius, F., (70) 727
Vogt, W. H., (99) 1959
Voisin, R., (50) 1139
Völker, W., (64) 2126
Voorsanger, W. C., (33) 1595
Vorpahl, K., (34) 1767
Vörner, H., (124) 1603, (50, 54) 1772
Voyles, V. A., (86) 1597
Vulliet, H., (49) 1860
Vulpius, O., (81) 1424, (48) 1961

W

Wadsworth, A., (30) 1227, (33) 1766
Wadsworth, R. G., (34) 460
Waelsch, L., (97) 2045
Wagner, E. R., (105) 1331
Wagner, H. L., (71) 390
Wahrer, C. F., *760
Wainwright, J. M., (126) 74
Waiss, G. C., (70) 237, (53) 462
Waite, L., (2) 966, (107) 1058, (106) 1419, (107) 1959
Waldo, R., (61) 1768
Waljaschko, O., (91) 2128
Walker, C. E., (12) 899
Walker, E., (94) 1058, (108) 2124
Walker, E. E., (4) 1414
Walker, F. B., (57) 462
Walker, H. O., (49) 2121
Walker, J. E., (74) 1857
Walker, J. T. A., (18) 1770
Walker, J. W., (26) 1139
Walker, J. W. T., (15) 811, (10) 1058
Walker, N., (2) 1514, (1) 2124
Walker, R. E., (41) 1136
Wallace, C., (6) 2119
Wallace, C. H., (41) 640
Wallace, D., (21) 463
Wallace, J. W., (9) 1857
Wallian, S. S., (25) 895
Wallich, V., (26) 1333
Wallin, K. A., (113) 1864
Wallis, F. C., (5) 462
Walmsley, D. L., (97) 309
Walscheid, A. J., (47) 968
Walsh, J. E., (81) 722
Walsh, J., (56) 1417
Walsh, J. J., (43) 153, (26) 388, (103) 810, (47) 1057, (89) 1229, (80) 1418, (63) 1768, (124) 2124
Walsh, J. L., (20) 1055
Walter, J. R., (42) 1595
Walton, G. L., *1341, *1524, (53) 1768
Walz, K., (38) 643
Ward, E., (14) 391
Ward, G. G., Jr., (34) 808
Ward, S. B., (61) 1856
Ward, W. D., (39) 808, (21) 1765
Ward, W. W., (77) 722
Wardrop, D., (27) 76
Ware, M. W., (123) 238, (34) 306, (120) 2124
Warfield, L. M., (17) 538, (21) 1415, (98) 1959
Warner, F. M., (66) 640
Warren, J. C., (1) 1225, (8) 1853
Warren, S. P., (27) 1055
Warrington, W. B., (24) 971, (29) 2041
Washburn, F. H., (53) 308
Washburn, R. G., (54) 640
Wassermann, A., (88) 79, (66) 2127
Wassmuth, A., (56) 2126
Wasson, W. L., (66) 1856
Waterhouse, R., (28) 1960
Waterman, G. A., (16) 719
Waters, D., (105) 74
Wathen, J. R., (110) 309
Wathen, W. H., (108) 2039
Watkins, I. L., (23) 234
Watkins, T. J., (25) 151
Watson, D. C., (11) 542
Watson, J. A., (73) 1685
Watson, J. H., (20) 463, (14) 971
Watson, J. J., (94) 541
Watson, M., (20) 392
Watson, W. T., *1909
Waugh, G. E., (13) 1419
Waugh, W. F., (4) 71, (54) 896, (102) 1230, (59) 1330, (20) 1415, *1479, (44) 1513, (78) 1597
Weaver, P., (63) 153
Webb, G. B., (11) 151
Weber, F. P., (28) 2125
Weber, S., (122, 123) 975
Weber, S. E., (16) 1682
Webster, G. W., *557, (119) 970
Webster, J. C., (44) 461, (39, 40, 41, 42) 1855
Webster, R. W., (93) 2123
Wederhake, (68) 1517
Wederhake, K. J., (92) 1602
Weeks, J. E., *324
Weeks, L. C., (122) 1138
Weichardt, W., (76) 313, (64) 1517, (124) 1691
Weil, E., (36) 643
Weinberg, (110, 116) 468
Weinberg, J., (105) 1603
Weinberg, W., (39) 1421, (92) 1424
Weinbrenner, C., (93) 1602
Weindler, F., (62) 77
Weinrich, M., (51) 901
Weinstein, A., (101) 2045
Weinstein, E., (46) 1233
Weinstein, E. M., (76) 1601
Weinstein, H., (10) 966
Weir, W. H., (22) 538
Weiss, L., *2071
Weischer, A., (70) 1141
Weisenburg, T. H., (45) 72, (76) 897, (8) 1414, (34) 1416
Weiser, W. R., (27) 1683
Weissbart, (64) 313
Weisz, E., (97) 974
Welch, J. E., (23) 2176
Welch, J. S., (69) 1958, (59) 2122
Welch, W. H., (112) 810, (14) 1328, (88) 1597, (119) 2124
Welford, A. B., (8) 1959
Wellman, F. C., (13) 71, (94) 390, (21) 543, (53) 725, (32) 1961
Wells, E. F., (55) 1685
Wells, F., (111) 237
Wells, J. E., (120) 1331
Wells, J. M., (100) 1058
Wells, H. G., (41) 1056, (45) 1855
Wells, H. P., (93) 154
Wells, W. H., (14) 1682
Welsh, D. A., (17) 1059, (34) 1516
Welty, C. F., (66) 390, *2052
Wende, G. W., (38) 1767
Wendel, (67) 1141
Wendel, W., (117) 1603
Wennagel, E., (62) 1422
Wenzel, F., (72) 1773
Werder, X. O., (109) 2124
Werelius, A., (36) 151
Werner, R., (93) 1691
Wesbrook, F. F., (123) 154, (87) 1769
Wesenberg, G., (100) 467
Wessel, C., (103) 2129
Wessinger, J. A., (29) 460
West, H. H. (102) 1331
West, S., (3) 238
Westcott, T. S., (65) 540, (28) 896
Westenhoeffer, M., (80) 1689
Westermark, F., (63) 813
Westphal, (62) 1234, (30) 1333
Wethered, F. J., (1) 898, (21) 1686, (15) 1770
Wetherell, H. E., 380
Wetherill, H. G., (65) 1418, (48) 1685
Wette, T., (74) 1423
Weyl, T., (72) 1601
Whalen, C. J., (86) 541
Wheaton, C. L., (33) 720
Wheeler, C. L., (94) 1514
Wheeler, E. C., (66) 73
Wheelock, C. F., (86) 1229
Wherry, W. B., (71) 1058
Whipham, T. R. C., (14) 811
Whipple, G. H., (119, 123) 810
Whise, M., (37) 720, (80) 2123
Whitacre, H. J., (85) 237, (24) 895
Whitby, C. J., (49) 1688
White, F. W., (10) 1765
White, G. H., (122) 810
White, J. M., (12) 305
White, J. W., (47) 1957
White, M. J., (89) 1857
White, S., (3) 462, (17) 1959
White, W. H., (14) 1858
Whitehead, A. L., (95) 2039
Whitehill, N. M., *509
Whiteside, G., *1252
Whitford, H. N., (74) 237, (82) 970
Whitman, R. C., *204, (36) 1056
Whitney, J. L., (7) 1135
Wichern, H., (98) 1603, (88) 2128
Widal, F., (64) 972
Widerström, K., (70) 813
Wieck, O. A., (91) 1963
Wiener, A., (46) 1137
Wiener, J., (54) 2121
Wiesel, J., (41) 1421
Wiesner, B., (21) 2177
Wiget, H., (104) 2045
Wiggin, F. H., *2003
Wiggin, T. B., (47) 461
Wiggins, J. L., (49) 968, (65) 1229
Wilbert, M. J., *1989
Wilbur, R. L., (75) 722, (32) 807
Wilcox, R. W., *347
Wilder, W. H., *570
Wile, I. S., (81) 1138
Wilkes, W. O., (99) 1418, (5) 1853
Wilkinson, H., (76) 1857
Wilkinson, O., (76) 462, (27) 1328, (109) 1857
Wilks, S., (4) 390
Willbern, D. Y., (113) 1597
Wille, O., (74) 1234
Willey, V. J., (60) 153
Williams, A., (40) 2038
Williams, C. L., (22) 723
Williams, C. M., (2) 304, (5) 2119
Williams, E. G., (110) 1597
Williams, J. W., (48) 1228, (23) 1415
Williams, O. T., (41) 971
Williams, S. E., (15) 2176
Williams, U. V., (77) 1514
Williamson, C. S., (117) 898, (123) 970, (53) 1685
Williamson, O. L., (80) 810
Williamson, R. T., (20) 1599
Willard, De F., (6) 71
Willmoth, A. D., (76) 1514
Willson, R. N., *29
Wilms, (65) 394, (79) 1141
Wilner, A. S., (7) 151
Wilson, A., 1120
Wilson, F. C., (82) 1418
Wilson, H., (74) 154
Wilson, H. A., (9) 459
Wilson, H. P., (87) 154
Wilson, N. L., (25) 72
Wilson, R., (10) 387
Wilson, R., Jr., (131) 898
Wilson, R. P., (6) 154
Wilson, T., (25) 2125
Wilson, W., (81) 309

Wilson, W. H., (111) 810
Wiltse, J. W., (43) 968, (63) 1856
Wiltshire, J. W., (114) 1959, (76) 2039
Witzel, O., (68) 1517
Wimmer, (77) 727, (107) 2129
Wimmer, A., (48) 158
Windel, J. T., (62) 1330
Windsor, F. N., (40) 1859
Wingate, U. O. B., (66) 1058
Wingrave, W., (24) 1686
Winslow, C. E. A., (27, 28) 1227
Winslow, J. R., (67) 1685
Winston, J. W., (4) 537
Winternitz, (41) 312
Wintsch, C. H., (58) 809
Wirsing, (116) 1775
Wise, J. C., (63½) 897, (87) 1857
Wise, S. P., (68) 1137
Wiseman, J. R., (37) 153
Witherspoon, T. C., (107) 898, (76) 1229
Wittek, K., (82) 1235
Wittmaack, (131) 975
Witzel, O., (50) 1233
Wohlgemuth, J., (49) 393
Wolbach, S. B., (16) 71, (42) 1056
Wolbarst, A. L., (4) 1054
Woldert, A., (75) 309
Wolf, H. E., (28) 1766, *2138
Wolff, E., (67) 394
Wolff, L., (94) 903
Wolff, W., (93) 974
Wolff, W., (9) 2176
Wolff-Eisner, A., (61) 726, (60) 1140, (25) 2177
Wolfheim, R., (88) 1235
Wollenberg, A., (126) 1691
Wood, A. J,. (24) 724
Wood, B. G., (77) 810
Wood, C. A., (39) 1513, (64) 1597
Wood, C. M., (63) 1685
Wood, G. B., (24) 72
Wood, H. C., Jr., *2061
Wood, P. R., (73) 810
Wood, W. A., (45) 1516
Woodbury, F. T., (128) 238
Woodhead, G. S., (9) 723
Woodruff, C. E., (128) 238
Woodruff, H. W., (22) 1594
Woods, E. F., *1377
Woodson, R. S., (60) 1513
Woodward, R. M., (56) 896
Woolley, P. G., (66) 462, (80) 970, *1089
Woolsey, G. E., (52) 968
Worcester, A., (17) 807
Worcester, D. C., (34) 2176
Worden, C. B., (27) 896
Worstell, G., (87) 541
Worthington, H., (79) 2123
Worthington, R. A., (16) 1331
Wöseher, (129) 1691
Wose, A. M., (112) 309
Wray, C., (92) 1514
Wright, A. E., (68) 2039
Wright, A. H., (55) 1228, (4) 1857, (107) 2124
Wright, F. R., (134) 898
Wright, G. A., (17) 1331
Wright, H., (10) 971
Wright, J., (22) 640, (22) 719, (20) 807, (26) 895, (21) 967, (22) 1055, (23, 29) 1136, (18) 1328
Wright, J. H., (15) 305, (98) 2129
Wright, J. W., (78) 462
Wright, R. H., (91) 2123
Wright, S. E., (103) 1230
Wright, W., (16) 74, (9) 310, (14) 1230, (20) 1858
Wrzosek,, A., (79) 314
Würdemann, H. V., *409, (69) 897, (29) 1594
Würdinger, (129) 1691
Wybauw, (75) 1000
Wyeth, J. A., (99) 810, *1738
Wyman, H. C., (61) 153, (86) 2123

Y

Yankauer, S., (23) 72
Yates, D. G., (15) 895
Yates, J. L., (34) 1683
Yeakley, W. H., (67) 1418
Yocom, J. R., *1019
Young, A., (32) 2125
Young, A. D., (11) 234
Young, E. E., (12) 1331
Young, F. W. B., (23) 971
Young, H. B., (24) 1594
Young, J. C., (45) 1596
Young, J. V., (61½) 236

Z

Zacco, F., (75) 972
Zagari, G., (116) 2046
Zahn, H., (84) 545
Zahorsky, J., (42) 640
Zammit, T., (21) 76
Zander, (61) 544
Zangemeister, W., (56) 725
Zanoni, G., (58) 644, (63) 902
Zarniko, C., (68) 1601
Zeisler, J., (43) 1956
Zenner, P., (75) 1418
Zentmayer, W., (73) 154
Zickgraf, (54) 643, (40) 1421
Zickel, G., (80) 1235
Ziegel, H. F. L., (6) 2035
Ziegler, C., (14) 2177
Zichen, T., (91) 467
Zieler, K., (45) 1772
Zimmermann, G., (59) 390
Zinsser, A., (32) 1333
Zinsser, H., (67) 969
Zipkin, R., (106) 2045
Zironi, G., (107) 315
Zoeppritz, H., (73) 466, (89) 545
Zolki, (76) 74
Zuccola, P. F., (97) 244
Zuckerkandl, O., (50) 813
Zuelzey, R., (55) 643
Zum-Busch, J. P., 294
Zurhelle, E., (79) 78
Zweifel, P., (57, 60) 1234
Zwar, B. T., (42) 1516
Zweig, (56) 643

Circulation Exceeds 47,500 Copies.

THE JOURNAL

OF THE

American Medical Association

Annual Subscription, $5.00 | Published Weekly Under the Direction of the Board of Trustees | Single Copies, 15 Cents

Vol. XLVII | CHICAGO, ILLINOIS, DECEMBER 29, 1906 | Number 26

CONTENTS AND DIGEST

ORIGINAL ARTICLES.

The Management of Tuberculosis. Sanity: Candor: Humanity. J. H. Musser, M.D., Philadelphia 2131

Varying therapeutics. Protests. The sanatorium treatment too highly estimated by many of its advocates. Danger of politics in sanatoria. Need of candor on the part of physicians with patient and public. Treatment.

The Stem Pessary for Amenorrhea and Dysmenorrhea. J. H. Carstens, M.D., Detroit 2133

Amenorrhea. Dysmenorrhea. The author's method of employing the pessary in each. Conclusions.

Discussed by Drs. Reese, Henry and Carstens.

The Best Method of Closing Aseptic Wounds, Especially Those of the Abdomen. Henry O. Marcy, A.M., M.D., LL.D., Boston 2135

Causes of failure. Suturing in layers; its technic. Reduction of scar tissue. Closing and dressing the wound. The value of buried sutures.

Discussed by Drs. Ferguson, Reynolds, Clarke, von Rosthorn, Stoltz, Dührssen, Dorsett and Marcy.

Cases of Meningitis with Isolation of Diphtheria Bacillus from Cerebrospinal Fluid. Joseph Morrell, M.D., and Herman E. Wolf, M.D., Chicago. 2138

Rarity of observations of the diphtheria bacillus in the central nervous system. Report of case with bacteriologic tests and findings. Conclusion.

Etiology of Cerebral Palsies in Children. William J. Butler, M.D., Chicago.2139

Theories of the causation of postnatal paralyses in children. Brief statement of the causes of spastic hemiplegia. Case summaries. Hemorrhages due to arterial tension during convulsive attacks. Encephalitis.

Bacteriologic and Blood Findings in Thirty-six Cases of Bowel Infection of Infants. J. C. Cook, M.D., Chicago. 2141

Types of cases examined. Blood examination. Significance of blood examination.

Discussed by Drs. Morse, Wentworth and Cook.

The Dietetic Treatment of Diabetes Mellitus. Max Einhorn, M.D., New York 2143

Disadvantages of a purely animal diet. Illustrative diet lists. Special cures. Stomach complications in diabetes.

Discussed by Drs. Stern, Solis-Cohen, Osborne, and Einhorn.

A Novel Method of Using Strychnin and Hydrastin in Sexual and Vesical Weakness. William J. Robinson, M.D., New York City 2145

Classes of cases treated. Objections to oral administration. Technic of local administration. Comparison of its result with those from oral administration. Conclusion.

Discussed by Drs. Tracy, Benedict and Robinson.

The Results of the Complete and Incomplete Occlusion of the Abdominal and Thoracic Aortas by Metal Bands (Abstract). W. S. Halsted, M.D., Baltimore 2147

The effects of occlusion, partial and complete. Macroscopic and microscopic findings in the arterial wall. The effects on the spinal cord and its coverings. Practical applications.

Discussed by Dr. Keen.

Reduplication of Heart Sounds. Henry C. Pillsbury, M.D., Lowell, Mass..2148

What is reduplication? Its causes. Method of examination. Transitory reduplications. Relation between reduplication and gallop rhythm. The relation between reduplication and extra beats. Physiologic reduplication. Influence of tea,

Continued on next page.

NEXT ANNUAL SESSION, ATLANTIC CITY, N. J., JUNE 4-7, 1907.
COPYRIGHT, 1906, BY THE AMERICAN MEDICAL ASSOCIATION.
LIST OF OFFICERS P. 6; NATIONAL AND STATE SOCIETIES, P. 39.
ENTERED IN THE CHICAGO POSTOFFICE AS SECOND-CLASS MATTER.

POST-GRADUATE MEDICAL SCHOOL OF CHICAGO--See Special Announcement Page 36

Saunders' Books on Practice

Sahli's Diagnostic Methods
JUST ISSUED—THE FAMOUS DIAGNOSIS

Anders' Practice of Medicine
JUST READY—THE NEW (7TH) EDITION

Friedenwald and Ruhrah on Diet
JUST READY—THE NEW (2D) EDITION

Boston's Clinical Diagnosis
JUST ISSUED—THE NEW (2D) EDITION

(SEE PAGES 3, 4, 5)

Rolleston on the Liver
RECENTLY ISSUED—AUTHORITATIVE

Stevens' Practice of Medicine
RECENTLY ISSUED—NEW (7TH) EDITION

Pusey and Caldwell on X-Rays
RECENTLY ISSUED—THE NEW (2D) EDITION

Nothnagel's Practice
ELEVEN VOLUMES NOW READY

CONTENTS AND DIGEST — Continued.

coffee, alcohol and tobacco. Arteriosclerosis. Typhoid. Reduplication in organic disease of the heart. Summary and conclusions.

The Cultivation of Spirillum Obermeieri. A Preliminary Note. F. G. Novy, M.D., and R. E. Knapp, B.S., Ann Arbor, Mich. 2152

Cultivation experiments. Sac cultures in rat serum.

The Tuberculosis Dispensary: Its Methods, Value and Limitations. Edward O. Otis, M.D., Boston.....2154

Advantages of the tuberculosis dispensary. Its social side. Home supervision. Limitations. Plan pursued at the Boston Dispensary. Teaching and research utility. The simple equipment required.

Discussed by Drs. White, Osborne, Dunham, Lewis, Solis-Cohen, Burnham, Reilly and Otis.

CLINICAL NOTES, NEW INSTRUMENTS, ETC.

A Tissue Joint of the Little Finger. George B. Lake, M.D., Wolcottville, Ind. 2158

Death from Bromo-Seltzer. Case of Acetanilid Poisoning. Henry Bixby Hemenway, M.D., Evanston, Ill...2158

Report of case with autopsy. Editor's note.

A Monocephalus, Tetrabrachius, Tetrapus. J. J. Gooding, M.D., Gilmore Ohio 2159

Antidote for Suprarenal Preparations. L. M. Roberts, M.D., Little Falls, Minn. 2159

The Opsonic Index in Typhoid Fever. A Preliminary Report. C. P. Clark, M.D., Chicago 2159

A Point in the Management of Uveal Sarcomas. Brown Pusey, M.D., Chicago 2159

A New Combined Operating Table and Office Table. John H. Downey, M.D., Gainesville, Ga. 2160

EDITORIALS.

AMENORRHEA AND BRAIN TUMOR: Intracranial growths and disturbances of menstruation. Cessation of menstruation an early symptom of acromegaly. The function of the hypophysis 2162

SLEEPING SICKNESS: Scope of this disease does not extend beyond that of tsetse fly. High death-rate from sleeping sickness in Africa causing much alarm. Need for further investigation 2162

THE GUIDE TO CURRENT MEDICAL LITERATURE: The Index to Current Medical Literature. Separate publication of this guide in pamphlet form. 2163

TIME OF DEATH: Time of day at which death is most likely to occur. Most deaths said to occur between 2 and 6 in the afternoon, and fewest between 7 and 12 at night. No accurate investigations on this point 2163

THE NEXT PHARMACOPEIA: The Board of trustees of the United States Pharmacopeia taking active steps for the issuance of the 1910 edition. THE JOURNAL the official organ of the Pharmacopeial Convention 2163

DISEASE DISSEMINATION BY INSECTS: Conveyance of disease from animals to man through insects. Insects found in fodder. Unfamiliar insects whose possibilities as disease disseminators have not been established 2164

MEDICAL NEWS.

CALIFORNIA: Donation — Physician Wins Suit — Library Trustees Elected — Hospitals Benefited 2164

COLORADO: October Deaths—Communicable Diseases—MacGregor Memorial 2164

CONNECTICUT: Mayo in Hartford—November Deaths—Communicable Diseases — Infectious Diseases 2164

GEORGIA: Physician's Fire Losses.....2164

ILLINOIS: Personal—For the State Insane—January Examination. Chicago: Physicians Warned—Smallpox—Deaths of the Week—Bequests—Scarlet Fever and Diphtheria 2164

INDIANA: Morbidity and Mortality....2165

IOWA: Hospital Opened—Personal—Medical Society Meeting 2165

MASSACHUSETTS: To Complete Hospital—Diseases in Schools—School Inspectors Appointed — Boston Needs Tuberculosis Hospital — Personal—Tuberculosis Prevention 2165

MICHIGAN: Epidemic Diseases—Source of Typhoid Located—Will Ask for Laboratory—Ill and Injured—Personal...2165

MISSOURI: In Memory of His Son—Snodgras Laboratory—Municipal Sanitarium Report—Personal — Meeting of Pharmacists and Physicians—Hospital Notes... 2165

NEW HAMPSHIRE: Personal—School Sanitation 2166

NEW YORK: Reception for Students and Nurses—Lecture Room Dedicated—State Will Oppose Sewer—Promotions at Craig Colony—Medical Examining Board Appointed. New York City: Alumni Meeting—Dr. Emmet Knighted — Hospital Dedicated — Many Crippled Children — Contagious Diseases — Testing Opsonic Method—Hospital Asks Aid—The Seney Hospital 2166

NORTH CAROLINA: Sanatorium Opened—Personal—Doctors' Homes Burglarized... 2167

OHIO: Malpractice Suit Ended—Epileptic Hospital Report—Communicable Diseases. 2167

PENNSYLVANIA: Personal—State Hospital for Inebriates — Typhoid Fever — California Relief Fund — Insane Hospitals of the State. Philadelphia: Medical Report — Medical Inspection—Bequest — To Stop Quackery — Bacteriologic Laboratory Report — Medical Inspection — Contract Awarded—Municipal Hospital Report — Health Report—Personal.....2167

TEXAS: Epidemic Diseases—Asylum Report. 2168

WISCONSIN: Smallpox—Did Not Comply with State Law—Against Illegal Practitioners 2168

GENERAL: Yellow Fever Situation in Cuba —Beriberi and Trachoma in Mexico.2168

FOREIGN: New Hospital for Skin Diseases in England — Antialcohol Party in the French House of Deputies—Honors for Publishers of Medical Books—International Annals of Gastrointestinal Surgery —Final Adoption of International Unification of Formulas for the Heroic Drugs —Hospital Management in New South Wales—Lack of Uniform Cocain Legislation in India—Bust of Hanot Unveiled—Medical Work in China—Cancer Research in Hungary—Ebstein's Seventieth Birthday—Eyesight Tests for German Railroad Employés—Prizes Awarded by the French Académie de Médecine in 1906 — Pure Milk in Australia—Educational Number of Paris "Progrès Médical"—Public Honors at Funeral of Head Nurse at Paris Hospital 2168

CORRESPONDENCE.

Prescribing Aconite by the Old Pharmacopeia — Dispensing versus Prescribing —Broken Thermometer in Child's Rectum —Traveling Fakirs: A Remedy — The "Philistine" on Vaccination—Medical Organizations and Appointments on Health Boards 2170

QUERIES AND MINOR NOTES.

Locum Tenens in California—Double Vision — Non Repetatur — Carrel's Technic of Anastomosis—Mortality of Pneumonia.. 2171

THE PUBLIC SERVICE. 2172

MARRIAGES. 2172

DEATHS. 2172

SOCIETY PROCEEDINGS.

Coming Meetings 2174

BOSTON MEDICAL LIBRARY MEETING....2174

CURRENT MEDICAL LITERATURE.

American Medical Journals.

Treatment of Pneumonia 2174

Infantile Mortality and Dirty Milk—Exophthaimic Goiter—A Year's Experience in Intestinal Surgery — Exophthalmos in Leukemia — Typhoid and Paratyphoid Spondyiitis—Tuberculous Laryngitis 2175

Antistreptococcic Serum—Chronic Constipation 2176

Foreign Medical Journals.

Cystinuria and Alcaptonuria—Early Signs of Measles—Physical Measures in Treatment of Chronic Kidney Affections..2176

Spinal Anesthesia—Plastic Operations on the Thorax — Voerner's Carbolic Acid Treatment of External Affections—Publotomy and Artificial Premature Delivery —Acute Intestinal Tuberculosis — Erythema Nodosum of Mucosa in Relation to Syphilis—To Separate the Components of Tetanus Toxin—Action of Roentgen Exposures on the Ovaries and Gravid Uterus 2177

Early Diagnosis and Treatment of Typhoid —Alcohol in Pneumonia — Pathogenesis of Pure Mitral Stenosis — Removal of Crusts in Ozena — Symptoms of Insufficiency of the Liver — Permeability of Kidneys in Liver Affections — Artificially Induced Hyperemia in Treatment of Wounds in Rabbits' Ears — Appendicitis and Pleurisy 2178

ALL MEDICAL BOOKS OF ALL MEDICAL PUBLISHERS CARRIED IN STOCK BY W. T. KEENER & COMPANY, 90 WABASH AVENUE, CHICAGO, ILL

WHY NOT "BRUSH UP" BY TAKING A POST-GRADUATE COURSE? NOTICE THE P. G. ADS. IN THIS ISSUE, ALSO REFER TO THE CLASSIFIED COLUMNS FOR A LOCUM TENENS.

Saunders' Books on Practice

Sahli's Diagnostic Methods

JUST ISSUED

EDITED, WITH ADDITIONS, BY FRANCIS P. KINNICUTT, M.D., AND NATH'L BOWDITCH POTTER, M.D.

In Dr. Sahli's great work all methods of examination for purposes of diagnosis are exhaustively considered, special attention being given the examination of the stomach, sputum, feces, urine and blood. *Dr. Lewellys F. Barker,* of Johns Hopkins, says: "I am delighted with it, and it will be a pleasure to recommend it to our students in the Johns Hopkins Medical School." The nervous system has been very elaborately detailed, giving unusual space to electric examination. This American edition contains all the material of the new fourth German edition with which it simultaneously appeared. The illustrations are numerous and practical.

Octavo of 1008 pages, profusely illustrated. By PROF. H. SAHLI, of Bern. Edited, with additions, by FRANCIS P. KINNICUTT, M.D., Professor of Clinical Medicine, Columbia University; and NATH'L BOWDITCH POTTER, M.D., Visiting Physician to the City Hospital, New York. Cloth, $6.50 net; Half Morocco, $7.50 net.

Anders' Practice of Medicine

JUST ISSUED
NEW (7th) EDITION

Seven large editions of this work amply testify to its practical usefulness. *Dr. Chas. Lyman Greene,* of the University of Minnesota, says: "Your book seems to me one that in every way meets the requirements of both student and practitioner, being complete, practical, up to date, and readable." *Dr. Wm. E. Quine,* of the College of Physicians and Surgeons, Chicago, says: "I consider Anders' Practice one of the best single volume works before the profession." In this edition extensive changes have been made throughout the entire work, many of the sections having been rewritten. Tropical and subtropical diseases have received special attention. Indeed, Dr. Anders' book has become justly celebrated as the most up-to-date work on practice.

Octavo of 1297 pages, illustrated. By JAMES M. ANDERS, M.D., Professor of Practice of Medicine and of Clinical Medicine, Medico-Chirurgical College, Philadelphia. Cloth, $5.50 net; Half Morocco, $6.50 net.

Friedenwald and Ruhräh on Diet

JUST ISSUED
NEW (2d) EDITION

This practical book has been prepared to meet the needs of the general practitioner, medical student, hospital interne, and trained nurse. The articles on diet in diseases of the digestive organs contain numerous diet lists and explicit instructions for administering. The feeding of infants and children, of patients before and after anesthesia and surgical operations, and the latest methods for feeding after gastro-intestinal operations have never before been discussed with such practical detail. *Dr. George Dock,* of Ann Arbor, says: "It seems to me that you have prepared the most valuable work of the kind now available. I am especially glad to see the long list of analyses of different kinds of foods." *The doctor is told precisely how to feed his patient.*

Octavo of 728 pages. By JULIUS FRIEDENWALD, M.D., Clinical Professor of Diseases of the Stomach, and JOHN RUHRÄH, M.D., Clinical Professor of Diseases of Children, College of Physicians and Surgeons, Baltimore. Cloth, $4.00 net; Half Morocco, $5.00 net.

See also the two pages following

W. B. SAUNDERS COMPANY, Philadelphia and London

Australian Agency: 429 Bourke St., Melbourne, where our books can be bought at London prices

Saunders' Books on Practice

Boston's Clinical Diagnosis

JUST ISSUED
NEW (2d) EDITION

Two large editions of Dr. Boston's work have been called for in one year—an evidence that the book meets a demand. *The Boston Medical and Surgical Journal* says: "He has produced a book which may be regarded eminently as a practical and serviceable guide." There are extensive articles on Trypanosoma; on the application of the Reaction for Albumin, including Bence-Jones' Albumose; on the Malarial and other Blood Parasites; and on many other subjects of the greatest importance to the general practitioner.

Octavo of 563 pages, 330 illustrations. By L. NAPOLEON BOSTON, M.D., Associate in Medicine, Medico-Chirurgical College, Philadelphia.
Cloth, $4.00 net; Half Morocco, $5.00 net.

Nothnagel's Practice

COMPLETE IN TWELVE VOLUMES
ELEVEN VOLUMES NOW READY

The American edition of this famous practice has been received with remarkable favor. Eleven volumes are now ready, and the twelfth, completing the work, is in active preparation. In its review the *Boston Medical and Surgical Journal* says: "The work as a whole stands pre-eminently as *the best* treatise on medicine now extant." The American edition is under the editorial supervision of DR. ALFRED STENGEL.

Twelve octavos of about 950 pages each.
Per volume: Cloth, $5.00 net; Half Morocco, $6.00 net. *Volumes Sold Separately.*

Rolleston on the Liver

RECENTLY ISSUED
BY AN AUTHORITY

Of this new work *The Journal of the American Medical Association* says: "The book is eminently practical. Rolleston's contributions to the subject of the pathology and clinical course of diseases of the liver during the last decade have been numerous, and he is known as a critical observer and a clear writer. These characteristics are seen in this book." The work includes also an exposition of the diseases of the Gall-bladder and Bile-ducts.

Octavo of 794 pages, illustrated. By H. D. ROLLESTON, M.D. (Cantab), F.R.C.P., Physician to St. George's Hospital, London, England.
Cloth, $6.00 net; Half Morocco, $7.00 net.

Stevens' Practice

RECENTLY ISSUED
NEW (7th) EDITION

This work has met with a remarkable reception. The New York *Medical News* says it is "an up-to-date handbook conveniently arranged for ready reference;" while the *Medical World* says "the work covers completely the ground gone over by the student, special stress being laid on diagnosis, differential diagnosis, and treatment." In this edition the revision has been extensive, in many cases entire chapters having been rewritten.

12mo of 556 pages. By A. A. STEVENS, M.D., Professor of Materia Medica, Therapeutics and Clinical Medicine, Woman's Medical College, Philadelphia.
Flexible Leather, $2.50 net.

Pusey and Caldwell on X-Rays

RECENTLY ISSUED
NEW (2d) EDITION

Two large editions of this work within a year testify to its practical value. *The Boston Medical and Surgical Journal* says: "It is indispensable to those who use the x-rays as a therapeutic agent; and its illustrations are so numerous, its descriptions of apparatus, of technic, and of tissue-changes so complete, that it becomes valuable to every one." In making the revision the text has been brought down to the present day and a number of new illustrations added.

Octavo of 690 pages. By WILLIAM ALLEN PUSEY, M.D., Professor of Dermatology, University of Illinois; and EUGENE W. CALDWELL, B.S., Director of the Edward N. Gibbs X-Ray Memorial Laboratory, Bellevue University.
Cloth, $5.00; Half Morocco, $6.00 net.

See also the page preceding and the one opposite

W. B. SAUNDERS COMPANY, 925 Walnut St., Phila.

Australian Agency: 430 Bourke St., Melbourne, where our books can be bought at London prices

Saunders' Books on Practice

Saunders' Pocket Formulary

JUST ISSUED—THE NEW (8th) EDITION
Adapted to the New (1905) Pharmacopeia

Of Saunders' Formulary *American Medicine* says: "In its new edition this formulary is thoroughly representative of the most recent therapeutic methods, and its convenient size and mechanical get-up make it one of the most desirable works of its kind." The editor has shown rare discretion in the elimination of many obsolete formulas, inserting in their place newer and better ones, embodying a large number of approved new remedies.

Edited by WILLIAM M. POWELL, M.D., with 1831 formulas. Flexible Leather, with side Index, wallet and flap, $1.75 net.

Thornton's Dose-Book

JUST ISSUED—THE NEW (3d) EDITION
Adapted to the New (1905) Pharmacopeia

Dr. Thornton's handy book has beeome a standard on dosage and prescription writing. Of it *Dr. C. H. Miller,* Northwestern University, says: "It will afford me much pleasure to recommend the book to my elasses, who often fail to find sueh information in their other text-books." In revising the text for this third edition the radical change in strength or name of many ehemicals, drugs, and preparations has neeessitated the rewriting of many seetions.

12mo of 392 pages. By E. Q. THORNTON, M.D., Assistant Professor of Materia Medica, Jefferson Medical College, Philadelphia. Flexible Leather, $2.00 net.

Mathews' How to Succeed in Practice

RECENTLY ISSUED

There has long been a demand for sueh a work as this, giving the young practitioner some idea of the business side of his profession and of the means by whieh suceess, both professional and business, is to be attained. This interesting work, therefore, by one who has reached a suecessful maturity, will be found of great praetical assistanee. *Dr. Chas. A. L. Reed* says: "I recall no recent book written in a more captivating style, and I am sure that it will be read by practically the entire profession."

12mo of 215 pages, illustrated. By JOSEPH M. MATHEWS, M.D., President of the American Medical Association, 1898-'99. Cloth, $1.50 net.

Lockwood's Practice

RECENTLY ISSUED
NEW (2d) EDITION

In revising this work for the second edition many portions were entirely rewritten, a number of new artieles added, and the book mueh enlarged. *The Practitioner,* of London, says: "We think this volume deserves success. The teaching in it is generally sound and well up to the more recent seientifie level." The subjeet of Malaria has been entirely rewritten, as has also the subjeet of Diseases of the Digestive System.

Octavo of 847 pages. By GEORGE R. LOCKWOOD, M.D., Attending Physician, Bellevue Hospital, N. Y. Cloth, $4.00; Half Morocco, $5.00 net.

Jakob and Eshner's Internal Medicine

IN SAUNDERS' ATLAS SERIES

This volume describes the physical signs of all internal diseases with rare exactness, and in addition is an admirable atlas of clinieal microseopy. *Johns Hopkins Hospital Bulletin* says: "This very convenient volume can be recommended unhesitatingly to the practicing physician no less than to the student in clinical microscopy and physieal diagnosis." It forms a reference handbook whieh will render admirable service in daily practice.

By DR. CHR. JAKOB, of Erlangen. Edited, with additions, by A. A. ESHNER, M.D., Professor of Clinical Medicine, Philadelphia Polyclinic. Cloth, $3.00 net.

See also the two pages preceding—Send for new illustrated catalogue

W. B. SAUNDERS COMPANY, Philadelphia and London

Australian Agency: 430 Bourke St., Melbourne, where our books can be bought at London prices

OFFICERS OF THE AMERICAN MEDICAL ASSOCIATION, 1906-1907

GENERAL OFFICERS

PRESIDENT—William J. Mayo, Rochester, Minn.
PRESIDENT-ELECT—Joseph D. Bryant, New York, N. Y.
FIRST VICE-PRESIDENT—Herbert L. Burrell, Boston, Mass.
SECOND VICE-PRESIDENT—Andrew C. Smith, Portland, Ore.
THIRD VICE-PRESIDENT—D. S. Fairchild, Des Moines, Iowa.
FOURTH VICE-PRESIDENT—W. S. Foster, Pittsburg, Pa.
GEN'L SECRETARY—George H. Simmons, 103 Dearborn Ave. Chicago.
TREASURER—Frank Billings, Chicago.
BOARD OF TRUSTEES—T. J. Happel, Chairman, Trenton, Tenn., 1907; W. W. Grant, Denver, Colo., 1907; Philip Marvel, Atlantic City, N. J., 1907; E. E. Montgomery, Vice Chairman, Philadelphia, 1908; A. L. Wright, Carroll, Iowa, 1908; H. L. E. Johnson, Washington, D. C., 1908; William H. Welch, Baltimore, 1909; Miles F. Porter, Ft. Wayne, Ind., 1909; M. L. Harris, Secretary, Chicago, 1909.
JUDICIAL COUNCIL—G. W. Guthrie, Wilkesbarre, Pa., Chairman; D. C. Peyton, Jeffersonville, Ind.; George Ben Johnston, Richmond, Va.; W. B. Russ, San Antonio, Texas; W. S. Foster, Pittsburg.
COUNCIL ON MEDICAL EDUCATION—Arthur D. Bevan, Chicago, Chairman, W. T. Councilman, Boston; J. A. Witherspoon, Nashville, Tenn.; Charles H. Frazier, Philadelphia; Victor C. Vaughan, Ann Arbor, Mich.
COUNCIL ON PHARMACY AND CHEMISTRY—G. H. Simmons, Chairman, Chicago; C. Lewis Diehl, Louisville, Ky.; C. S. N. Hallberg, Chicago; R. A. Hatcher, New York City; Reid Hunt, Washington, D. C.; L. F. Kebler, Washington, D. C.; J. H. Long, Chicago; F. G. Novy, Ann Arbor, Mich.; W. A. Puckner, Secretary, Chicago; S. P. Sadtler, Philadelphia; J. O. Schlotterbeck, Ann Arbor, Mich.; Torald Sollmann, Cleveland; Julius Stieglitz, Chicago; M. I. Wilbert, Philadelphia; H. W. Wiley, Washington, D. C.
ORATION ON MEDICINE—James B. Herrick, Chicago.
ORATION ON SURGERY—William H. Wathen, Louisville, Ky.
ORATION ON STATE MEDICINE—Samuel G. Dixon, Philadelphia.
NEXT ANNUAL SESSION, ATLANTIC CITY, N. J., JUNE 4-7, 1907.

OFFICERS OF SECTIONS

PRACTICE OF MEDICINE—Chairman, Thomas D. Coleman, Augusta, Ga.; Secretary, Joseph L. Miller, 100 State St., Chicago. Executive Committee—Alexander Lambert, New York City; Richard C. Cabot, Boston; Herbert C. Moffitt, San Francisco.

OBSTETRICS AND DISEASES OF WOMEN—Chairman, J. Wesley Bovée, 815 Connecticut Ave., Washington, D. C.; Vice-Chairman, Edward Reynolds, 65 Marlboro St., Boston; Secretary, W. P. Manton. 32 W. Adams Ave., Detroit, Mich. Executive Committee—C. L. Bonifield, Cincinnati; Charles S. Bacon, Chicago.

SURGERY AND ANATOMY—Chairman, Arthur D. Bevan, 100 State St., Chicago; Vice-Chairman, J. G. Mumford, 29 Commonwealth Ave., Boston; Secretary, Harvey Cushing, 3 W. Franklin St., Baltimore. Executive Committee—Charles A. Powers, Denver; Maurice H. Richardson, Boston; Robert F. Weir, New York City.

HYGIENE AND SANITARY SCIENCE.—Chairman, Prince A. Morrow, 66 West 40th St., New York City; Secretary, Elmer E. Heg, Seattle, Wash. Executive Committee—G. T. Swarts, Providence, R. I.; John S. Fulton, Baltimore; Denslow Lewis, Chicago.

OPHTHALMOLOGY—Chairman, G. C. Savage, Nashville, Tenn.; Vice-Chairman, A. A. Hubbell, Buffalo, N. Y.; Secretary, Albert E. Bulson, Jr., Fort Wayne, Ind. Executive Committee—Robert L. Randolph, Baltimore; C. R. Holmes, Cincinnati; Lewis H. Taylor, Wilkesbarre, Pa.

DISEASES OF CHILDREN—Chairman, J. Ross Snyder, Birmingham, Ala.; Secretary, A. H. Wentworth, 352 Marlboro St., Boston. Executive Committee—Charles G. Kerley, New York City; John Lovett Morse, Boston; W. C. Hollopeter, Philadelphia.

STOMATOLOGY—Chairman, M. I. Schamberg, 57 W. 58th St., New York; Vice-Chairman, Edward W. Branigan, 2 Commonwealth Ave., Boston; Secretary, E. S. Talbot, 103 State St., Chicago. Executive Committee—G. F. Eames, Boston; Vida A. Latham, Chicago; H. P. Carlton, San Francisco.

NERVOUS AND MENTAL DISEASES — Chairman, Morton Prince, 458 Beacon St., Boston; Secretary, T. H. Weisenburg, 2030 Chestnut St., Philadelphia. Executive Committee—H. T. Pershing, Denver; J. H. McBride, Pasadena, Cal.; Wharton Sinkler, Philadelphia.

CUTANEOUS MEDICINE AND SURGERY—Chairman, R. R. Campbell, 100 State St., Chicago; Secretary, M. L. Heidingsfeld, 19, W. 7th St. Cincinnati. Executive Committee—John A. Fordyce, New York City; Henry G. Anthony, Chicago; Douglas W. Montgomery, San Francisco.

LARYNGOLOGY AND OTOLOGY—Chairman, S. MacCuen Smith, 1429 Spruce St., Philadelphia; Vice-Chairman, Philip Hammond, 419 Boylston St., Boston; Secretary, W. Sohier Bryant, 57 W. 53rd St., New York City. Executive Committee—John F. Barnhill, Indianapolis; Robert C. Myles, New York City; Otto T. Freer, Chicago.

PHARMACOLOGY AND THERAPEUTICS—Chairman, H. C. Wood, Jr., 3942 Wainut St., Philadelphia; Vice-Chairman, H. R. Slack, LaGrange, Ga.; Secretary, C. S. N. Hallberg, 36 12th St., Cor. Mich. Blvd., Chicago. Executive Committee—O. T. Osborne, New Haven, Conn.; Heinrich Stern, New York City; Thomas F. Reilly, New York City.

PATHOLOGY AND PHYSIOLOGY—Chairman, Walter L. Bierring, Iowa City, Iowa; Secretary, W. B. Cannon, Harvard Medical School, Boston. Executive Committee—Joseph McFarland, Philadelphia; Winfield S. Hall, Chicago; Henry A. Christian, Boston.

The new monthly which furnishes the information asked for by its subscribers.

Medical Notes and Queries

EDITED BY

Henry W. Cattell, A.M., M.D.

With regular contributions by

Edward Willard Watson, M.D.

CONTENTS OF NOVEMBER ISSUE

Notes.—Heart-block.—The Limitations of Formaldehyde Gas as a Disinfectant.—The Possible Dissemination of Tubercle Bacilli by Insects.—Appendicitis and Boric Acid. The Rubber Teat and Deformities of the Jaw.—The American Pharmacological Society.—A Tariff of Medical Fees.—How to Succeed in Private Practice.—The Index Medicus.—The Ziegler Memorial.
Philadelphia Letter.
New Books.

CONTENTS OF DECEMBER ISSUE

Notes.—Public Health Defence League.—The Sale of Acetanilide to the Laity.—The Laboratory Work of the Pennsylvania Department of Health.—The Physiologic Action of the Roentgen Ray.—Dr. Simon Flexner's Work on Experimental Cerebrospinal Meningitis and its Serum-Treatment.—Cerebral Localization and the Classification of Insanity.—International Association of Medical Museums. Schuylkill Water.—Breakfast Foods and Breakfast Fads.
Communications.—Edebohls' Greek.
Philadelphia Letter.—The Loder Suit.—Ambulances Collide with Patients Aboard.—Dr. Dixon's Ruling on Vaccination Law of Pennsylvania.—The Philadelphia Rapid Transit Co.—The Increase of Typhoid Fever.—The December Examination of the State Medical Board.—Post-Graduate Course in Internal Medicine.—The Muetter Lecture on Surgical Pathology.—Attempt to Grow a Nose; Skin Grafted and Patient's Arm Bound to His Face.—Dr. Mayo in Philadelphia.—How Our Hospitals are Supported.—Dr. Joseph Hearn's Accident.—Hurt in Game of Squash.—Dr. Henry Sykes.—Deaths of Dr. David B. Birney, Mr. Cadwallader Biddle, Dr. Edith Cadwallader Crowder, and Dr. William M. Angney.
New Books.
Reprints Received.

The subscription price per year (12 issues) is one dollar. Single copies 10 cents. Subscriptions may commence at any time. Sample copies furnished upon request.

Medical Notes and Queries Co.
41 N. Queen St., LANCASTER, PA.

For advertising rates address:

O. F. THEIS
253 North Fourth Street, **PHILADELPHIA, PA.**

By Dr. William R. Huggard
H. B. M. Consul at Davos, Switzerland.

A Handbook of Climatic Treatment Including Balneology

Cloth, 8vo, 536 pages, $4.00 net.

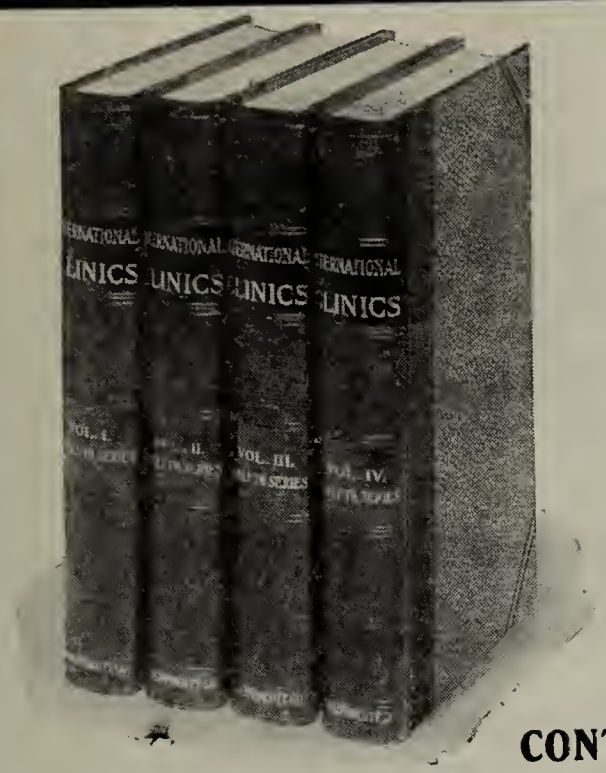
"We may congratulate Dr. Huggard upon the success which has attended his treatment of his subjects, for the result has been to produce a volume which is a mine of useful information, written in a manner most convenient for reference and in interesting style . . . He is always clear in his statements and practical in his recommendations."—*Lancet*, London.

"The book is carefully and clearly written, and is creditably free from any tendency to exaggerate the effects with which it deals."—*The London Times.*

"The writer has had exceptional opportunities of working at the subject, and has collected materials steadily during many years. He has accordingly produced, as he might be expected to do, a standard work; his book may be taken as a trusty guide by all those who seek information on climatic and balneological questions." — *Bristol Medico - Chirurgical Journal.*

"This is unquestionably the best book which has appeared on the subject in the English language."—*Journal of Balneology and Climatology.*

THE MACMILLAN COMPANY
Publishers, 64-66 Fifth Ave., N. Y.



JUST ISSUED

The International Clinics

give bedside instruction by the leading medical men of the world. One volume (300 octavo pages) every three months, containing 25 practical articles, short and crisp, giving the latest views as to diagnosis, therapeutics and treatment, beautifully illustrated, thoroughly indexed, covering every department of medicine and surgery. Positively the most practical and economical work you can buy. Investigate.

Cloth, $2.00 *per volume.*
Half Leather, $2.25 *per volume.*
Payable, $2.00 *every three months.*

CONTENTS OF VOLUME IV—SIXTEENTH SERIES

TREATMENT

Electrotherapeutics. By John H. W. Rhein, M.D.
The Prevention and Treatment of Chronic Nephritis. By James M. French, M.D.
The Etiology and Treatment of Chronic Constipation. By J. Dutton Steele, M.D.
The Treatment of Obesity. By P. Grocco, M.D.
The Non-operative Treatment of Renal or Ureteral Calculi Causing Colic. By Howard Lilienthal, M.D.

MEDICINE

Clinical Observations on the Care of Tuberculous Subjects. By William Porter, A.M., M.D.
Pulmonary Tuberculosis in the Middle-aged and the Aged. By J. Edward Squire, C.B., M.D.
Recent Additions to Our Knowledge of the Physiologic Influence of Lowered Barometric Pressure. By Henry Sewall, Ph.D., M.D.
Obscure Renal Hematuria. By Arthur R. Elliott, M.D.
Myxedematous Infantilism and Incomplete Myxedema. By Roger S. Morris, M.D.
Syphilitic Aortitis. By C. Dieulafoy, M.D.
Recent Progress in Disorders of the Adrenals. By Leon Bernard, M.D.

SURGERY

The Principles of Treatment of Fractures of the Lower Extremity. By George G. Ross, M.D.
Suggestions in the Treatment of Hip-Joint Disease. By Russell A. Hibbs, M.D.
Tuberculous Hip-Joint Disease; Osteomyelitis and Transplantation of the Fibula; and Ankylosis of the Jaw. By James F. Rinehart, M.D.
Vesical Tumors. By David Wallace, C.M.G., F.R.C.S.
The Treatment of Hemorrhoids. By George P. Müller, M.D.

OBSTETRICS AND GYNECOLOGY

Placenta Prævia and Its Treatment. By Joseph B. De Lee, M.D.
Lacerations of the Cervix of the Uterus and Their Repair. By W. A. Newman Dorland, A.M., M.D.
The Management of Chronic Cystitis in the Female. By Daniel H. Craig, M.D.

LARYNGOLOGY

The Laryngological Complications of Pulmonary Tuberculosis. By E. F. Trevelyan, M.D. (Lond.), B.Sc., F.R.C.P.

OTOLOGY

The Mastoid Operation. By Charles W. Richardson, M.D.

ROTCH'S PEDIATRICS. The rapid exhaustion of the *fourth edition,* has necessitated this *fifth edition,* largely rewritten, affording the author an opportunity to bring the work absolutely up to date. The various diseases are considered in turn. First we have the diseases of the new-born; then the diseases of nutrition; the diseases of the skin; the diseases of the mouth, stomach, heart, liver, pancreas, kidneys and nervous system, and, in fact, all of the organs are described in detail. Under the heading of the specific infectious diseases, tuberculosis is given the prominence and detailed description which its frequency merits. In the same division we also find typhoid fever, diphtheria, pertussis, and the exanthemata. *By Thomas M. Rotch, M.D., Professor of Diseases of Children, Harvard University. Illustrated. Octavo. Cloth,* $6.00. *Sheep,* $7.00.

FRANCINE, PULMONARY TUBERCULOSIS, Its Modern and Specialized Treatment. This book presents the subject of the treatment of consumption in a practical and masterly fashion. Each chapter is essentially a monograph on the subject with which it deals, and presents not only the author's views and experience, but those of other prominent workers in this field. Broadly speaking, the book discusses the hygienic, climatic, and dietetic treatment of tuberculosis; the treatment by specific therapy; the use of drugs; the treatment of symptoms and complications. A highly interesting and important chapter is that dealing with the methods of study and treatment of cases at the Phipps Institute, Philadelphia. *By Albert Philip Francine, M.D., of the staff of the Henry Phipps Institute, Philadelphia; Examining Physician to the White Haven Sanatorium; Instructor in Medicine and Physician to the Medical Dispensary of the University of Pennsylvania; Medical Registrar to the Philadelphia Hospital.* 12 *mo.* 240 *pages. Illustrated. Cloth,* $2.00 *net.*

J. B. LIPPINCOTT COMPANY

LONDON *SINCE 1872* **PHILADELPHIA** *SINCE 1792*

OVOFERRIN

(Ferri Vitellinum Syntheticum)

Ovoferrin is easily-assimilable organic iron. It is prescribed extensively as a blood-maker and general tonic in conditions of anaemia, nervous exhaustion and malnutrition associated with loss of appetite and sensitive conditions of the gastro-intestinal tract.

Ovoferrin creates appetite, does not disturb digestion or produce constipation, and does not affect the teeth.

Each tablespoonful of Ovoferrin is equivalent to one grain of elementary iron. The dosage is from one-half to one tablespoonful in wine-glass of water or milk before or after meals and at bed-time; children, one to two teaspoonfuls in water or milk.

Furnished by druggists, on prescription, in twelve-ounce bottles.

BARNES and HILLE

LONDON PHILADELPHIA SYDNEY

The Status of

ARGYROL

(Argenti Vitellinum Syntheticum)

As a remedy for gonorrhea is shown by the following excerpt from the latest (1906) edition of PROF. EDWARD L. KEYES' Text-Book on Genito-Urinary Diseases:

"We shall describe the only two methods which have achieved success in our hands, placing first the method by Argyrol injection, in favor of which we are relinquishing the method by irrigation.

"In order to control acute gonorrhea by this treatment, the urethra must be constantly bathed in Argyrol for at least two weeks in severe cases. To this end the injection must be administered every three or four hours (even during the night if possible), each time following this method: Having filled a quarter-ounce, blunt-nozzle urethral syringe with a ten (10) per cent. Argyrol solution, the patient urinates, and then placing the nozzle of the syringe within the lips of the meatus, and compressing these upon it, slowly presses the piston home and injects the solution. Then withdrawing the syringe and pinching the lips of the meatus together, he retains the injection five (in severe cases ten) minutes by the watch. In order to keep himself clean, he must wear a gonorrhea bag and must be supplied with a 1 to 500 solution of corrosive sublimate, a drop or two of which removes the black stains of Argyrol as if by magic.

"The effect of this treatment is to keep the urethra constantly bathed in Argyrol, for the injected fluid almost always forces its way into the bladder so that the next urination is a retrojection.

"Under this treatment the discharge rapidly diminishes, and at the end of two weeks, earlier in mild cases, the number of injections may be reduced to three, and then to two, a day, and a mild astringent injection of zinc or zinc and lead taken once or twice a day."

BARNES and HILLE

LONDON PHILADELPHIA SYDNEY

Twenty-eight years' constant use of

GARDNER'S

SYRUP OF HYDRIODIC ACID

by the medical profession, has so established it in the confidence of prescribers, that the name "HYDRIODIC ACID" at once suggests that of R. W. GARDNER, who made it available in 1878.

This preparation has won an enviable reputation for superior activity and reliability.

It is prepared from PURE RESUBLIMED IODINE and contains 6.72 grains GASEOUS HYDROGEN IODIDE in each fluid ounce.

Its prominent features are its activity, palatability and the fact that it produces no gastric disturbance or other unpleasant effects.

When you want the most rapidly assimilated and active form of IODINE, prescribe HYDRIODIC ACID and be sure to specify "GARDNER'S."

Firm of R. W. GARDNER,

NEW YORK.

Mulford's Antitoxin

is largely responsible for the present low mortality of Diphtheria. Reports prove that it

"Saves Most Lives"

Mulford's Antitoxin is Always Reliable

It is prepared under ideal conditions. Rigid care is taken to safeguard its purity and potency. It is furnished in an aseptic syringe ready for immediate use. It is exchangeable for a fresh supply if not used during date specified on the label; this precludes the use of a weak or outdated serum if you specify "MULFORD'S ANTITOXIN."

H. K. MULFORD COMPANY

CHEMISTS

New York
Chicago

PHILADELPHIA

St. Louis
San Francisco

Is Lower Price a Valid Reason for Preferring Stearns' Antitoxin?

Yes: because its quality is unsurpassed and its injecting device (the Simplex Syringe) is unequaled.

The reduced price results from economy in marketing—not in preparing the serum.

This economy is effected by our having abandoned, 14 months ago, the wasteful and unnecessary practice of exchanging new for unsold serum. Now, the druggist buys Stearns' Serums outright; never returns a package to us; hence there is no waste, no overproduction, no high price to pay for that waste.

Thus, the user of Stearns' Antitoxin pays for only what he uses; the user of any other brand pays for a large proportion of wasted returned serum besides what he uses.

No one has ever presumed to question the high quality of Stearns' Antitoxin. It is prepared by scientific experts in our splendidly equipped laboratories. No precaution is neglected, no expense spared, to make it as nearly perfect a product of its kind as science and skill can produce. Hundreds of thousands of doses have been used: it is everywhere recognized as conforming to the highest standards of life-saving efficiency.

The retail price of Stearns' Diphtheric Antitoxin is $1.75 for 1000 units; $3 for 2000 units; $4 for 3000 units. That is, from 15 to 20 per cent. less than other standard brands.

Therefore, you have every reason—Quality, Convenience, and Economy—for preferring Stearns' Antitoxin when buying or prescribing.

OUR PACKAGE

The serum syringe container which we are now supplying meets the demands of the medical profession more fully than any similar device of which we have knowledge. It is hermetically glass-sealed at both ends—no rubber stoppers are used. The needle forms a firm connection with the glass by means of a metal collar externally threaded. It is sterilized before packing. A flexible rubber connection is supplied with each container. Our serum package combines safety and convenience in the highest degree.

A RELIABLE ANTITOXIN

Our Antidiphtheric Serum is accurately standardized, elaborate physiologic tests being employed to determine its potency and uniformity. Its purity is assured by our scientific methods of manufacture (indeed, it would be difficult to imagine a safeguard which we do not apply). Absence of pathogenic bacteria is further established by careful bacteriologic examinations of the finished serum before it leaves the laboratory.

Bulbs of 500, 1000, 2000, 3000 and 4000 units.

WE ACCEPT OLD STOCK IN EXCHANGE FOR FRESH SERUM.

PARKE, DAVIS & CO.

HOME OFFICES AND LABORATORIES
DETROIT, MICH., U. S. A.

IN THE TREATMENT OF

Cystitis **Urethritis**

Pyelitis **Prostatitis**

URIFORM

The efficient urinary antiseptic

Reduces infection and exerts an anti-catarrhal effect upon the inflamed mucous membrane of the urinary tract.

Each dessertspoonful contains—*Hexamethylenamine, 7½ grs.; Saw-Palmetto, 5 grs.; Santal, Damiana, Coca, āā2½ grs.; Nux Vomica, ¼ gr.*

Literature and Samples supplied upon request

Schieffelin & Co., New York

Buffalo LITHIA WATER

MEDICAL OPINIONS OF BUFFALO LITHIA WATER

Dr. J. Allison Hodges, *Pres. University College of Medicine, and Prof. of Nervous and Mental Diseases, Richmond, Va.:* "In Albuminuria of Pregnancy, this water is one of the very best alkaline diuretics, and, with milk diet, is one of my sheet anchors."

Edward M. Eidherr, M.D., Ph.D., Ch.D., Ph.G., *University of Vienna, Chicago, Ill.:* "I have found BUFFALO LITHIA WATER of undoubted service in the treatment of Uric Acid Gravel, Chronic Rheumatism and Gout."

Dr. William A. Hammond, *Surgeon General (retired) U. S. Army, formerly Professor of Diseases of the Mind and Nervous System in the University of New York, etc., Washington, D. C.:* "I have had considerable experience with BUFFALO LITHIA WATER in the treatment of Bright's Disease. I have witnessed the Albuminuria of the affection, and also casts of the renal vessels, disappear on the use of the water, and this not only in a single case, but in several of which I have full notes. It must in these cases be taken in large quantities, and its use continued for a considerable time."

Additional Testimony Upon Request to the **Proprietor, Buffalo Lithia Springs, VIRGINIA**

Euquinine is Children's quinine

"Quinine" is the sulphuric acid salt of the base quinine.
Euquinine is the ethylcarbonic acid salt of the same base.

It is tasteless

MERCK & CO., NEW YORK

For INSOMNIA

Veronal

(Diethylbarbituric Acid or Diethylmalonylurea)
Average dose 7½ grains.

Send for Literature to
Merck & Company
NEW YORK.

Send for Literature to
Continental Color and Chemical Co.
NEW YORK.

Buffalo LITHIA WATER

MEDICAL OPINIONS OF BUFFALO LITHIA WATER

Geo. Ben. Johnston, M.D., LL.D., *Prof. Gynecology and Abdominal Surgery, University of Virginia, Ex-Pres. Southern Surgical and Gynecological Assn., Ex-Pres. Virginia Medical Society and Surgeon Memorial Hospital, Richmond, Va.:* "Almost any case of Pyclitis and Cystitis will be alleviated by it, and many cured."

Dr. Lewis Bosher, *Richmond, Va., Professor of Surgery, Medical College of Virginia:* "I have frequently used BUFFALO LITHIA WATER with the most satisfactory results in all conditions where an active diuretic is indicated, and have found it especially serviceable in Rheumatic and Gouty conditions, Albuminuria of Pregnancy, Catarrh of the Bladder, and other diseases affecting the urinary organs."

Dr. Stuart McGuire, *Richmond, Va., Surgeon in charge of St. Luke's Home, Professor of Principles of Surgery, and of Clinical Surgery, University College of Medicine, Richmond, Va., etc.:* "In cases of headache from lithæmia, of headache from passive congestion of the kidneys, of strangury from concentrated urine, and a host of other ills, I always advise BUFFALO LITHIA WATER."

Dr. P. B. Barringer, *Chairman of Faculty and Professor of Physiology, University of Virginia, Charlottesville, Va.:* "After twenty years' practice I have no hesitancy in stating that for prompt results I have found nothing to compare with BUFFALO LITHIA WATER in preventing Uric Acid Deposits in the body."

Additional Testimony Upon Request to the Proprietor, Buffalo Lithia Springs, VIRGINIA

That plastic dressings possess marked therapeutic value is evident from their increasing use in hospitals and by the medical profession. Believing that their valuable properties are enhanced by the use of a superior base, we have always made Antithermoline from the finest quality of imported Kaolin, and clinical evidence has justified us in so doing.

Antithermoline

(G. W. CARNRICK)

is a most effective application in all conditions of irritation, congestion and inflammation; it contains no poisonous ingredients (hence may be applied to raw surfaces without discomfort), is not greasy, is miscible in water, is antiseptic and mildly astringent. It forms an elastic covering, preventing access of air and bacteria, and is therefore an ideal dressing for wounds, burns, ulcers, etc.

G. W. CARNRICK CO.

28 Sullivan Street

NEW YORK

FORMULA

Each pound of Antithermoline contains 4,000 grs. of imported kaolin washed and purified, 14 grs. Boracic acid, 14 grs. oil of Eucalyptus, Menthol and Thymol, combined; 4 9-10 fluid oz. glycerine

INDICATIONS

Burns

Bee Stings

Bites of Poisonous Insects

Poisoned Wounds

Eczema

Pruritus

Intertrigo

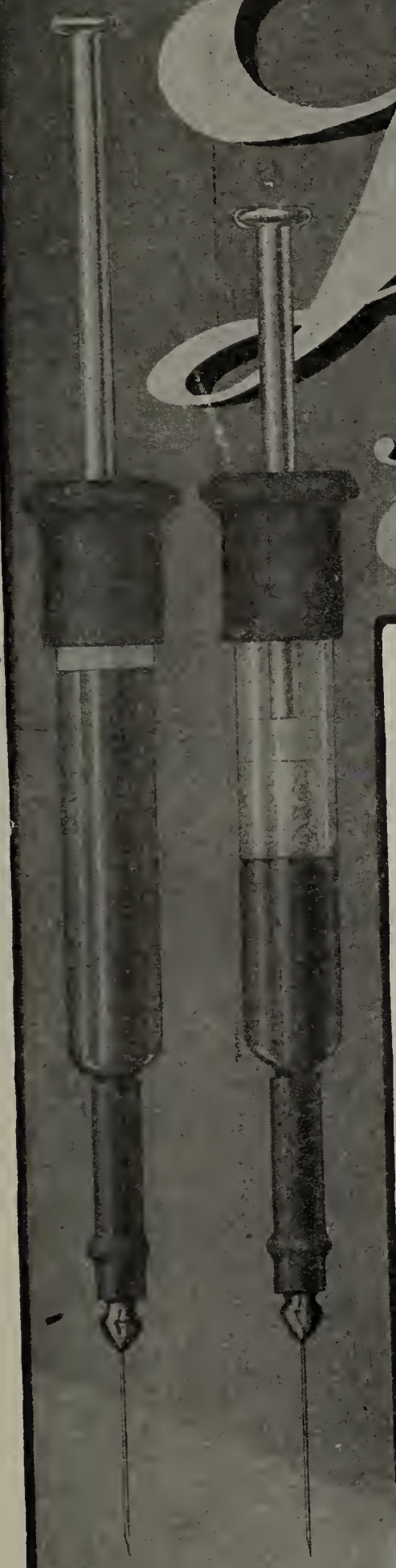
Congestions of Organs and tissues of the Pelvis

Pneumonia and all Inflammatory conditions of Respiratory Tract.

ANTITHERMOLINE

is for sale by the Drug Trade only in 10 oz. 50c. size. 1¾ lb. $1.00 size. Also in 5, 10 and 25 lbs. for hospital use. A package sent to any physician on request.

Lederle's Diphtheria Antitoxin Refined and Concentrated



Ordinary Antitoxin Serum 3000 Units

Lederle's Concentrated Antitoxin 3000 Units

ACTUAL SIZE

Antitoxin in the purest form known and of the highest potency.

From 1000 to 1500 Units in each Cubic Centimeter—more than double the strength of ordinary Antitoxic Serum.

As a result of eliminating the non-antitoxic substances from the serum the volume of dosage is reduced one-half while rashes and other disturbances are lessened about fifty per cent.

Refined Antitoxin, as we prepare it, *was first used by the* Department of Health of New York City, *(in whose research laboratory the method of preparing it was perfected,) more than eighteen months ago. Since that time more than four thousand (4000) cases of diphtheria have been treated with it in New York City alone. Carefully noted results show urticaria and other disturbances to be reduced 50 per cent. by its use, while the advantage in the reduction of the volume of dosage is apparent. It is now employed exclusively by the* Department of Health of New York City, *and is rapidly being taken up by Physicians and Municipal and State Health Departments generally.*

LEDERLE ANTITOXIN LABORATORIES,
U.S.GOVT LICENSE NO.17
Schieffelin & Co.,
Selling Agents
170 William St., New York

ARMOUR'S SOLUBLE BEEF

unlike many preparations of beef juices, essences and jellies contains no preservative. It is the pure and wholesome

CONDENSED NUTRIMENT

of raw beef, predigested by artificial methods and ready for absorption into the system. One-quarter teaspoonful will go as far as 10 to 20 teaspoonfuls of most liquid beef preparations.

In paste form, readily soluble, has a pleasant and agreeable taste and if given ad libitum will not nauseate.

Samples upon request to physicians.

ARMOUR & COMPANY, CHICAGO

APENTA

NATURAL HUNGARIAN APERIENT WATER

"Gentle but satisfactory in its action. Always of the same strength, which, of course, is a matter of great importance. Remarkable for its richness in magnesium sulphate, exceeding that of all other bitter waters."

—*New York Medical Journal.*

"Its composition is constant. The practitioner is thus enabled to prescribe definite quantities for definite results."

—*The Lancet.*

Sole Importers:

Apollinaris Agency Co., 503 Fifth Avenue, NEW YORK.

PROGRESSIVE THERAPEUTICS

ALUMNOL IN DERMATOLOGY.

Aluminum Betanaphthol-Disulphonate

By J. ABBOTT CANTRELL, M.D.

Professor of Diseases of the skin in the Philadelphia Polyclinic, Dermatologist to the Philadelphia and St. Agnes Hospitals, Phila.

Of late the antiseptic treatment of diseases of the skin has made such decided progress that one must certainly be upon the alert to keep abreast of the times, and although we can not feel certain that all of the remedies recommended for this result will fulfill the claims that have been advanced, yet one of the latest, Alumnol, has proven itself of decided advantage in my service at the Philadelphia Polyclinic, where I have advised its use in one hundred cases.

The drug was discovered by Heinz and Liebrecht (*Berlin klin. Wochenschr.*, No. 46, 1892), who also discovered dermatol, which, in distinction to Alumnol, is an insoluble salt, and this places the latter in a more desirable form for use in dermatological practice. Heinz and Liebrecht claim for the drug that it is a soluble salt of a naphthol-sulphonic acid and aluminum; that it contains fifteen per cent. of aluminum; that it is a fine, grayish-white powder, light in weight and stable, being also nonhygroscopic; that it is perfectly soluble in all liquids, with the exception of ether (soluble in Ether-Gottheil), and this makes it a valuable adjunct in the antiseptic treatment of diseases of the skin.

According to the experiments of Heinz and Liebrecht, its antiseptic properties are not marked, as several experiments with bacillus anthracis and other micro-organisms were found not to have the desired results; these parasites survived in it for at least twenty-four hours, although it did prevent their further growth; as an astringent, it was found to have decided properties. The discoverers had occasion to use it in their dermatological, surgical and gynecological practice, in which they had used it in from ten to fifty per cent., in those of a more acute condition. Therefore, as it proved to be useful as an astringent, they advised its use in those affections of an eczematous nature and where the parts were denuded and discharging great quantities of serum or where there was ulceration.

Martin Chotzen, of Breslau (*Berlin klin. Wochenschr.*, No. 48, 1892), in whose hands it was placed by the discoverers for experimental use in affections of the skin, reports that he has used it in about 300 cases during a year's trial.

Chotzen advises its use as a powder of from 10 to 20 per cent.; as a solution in strengths of from 1 to 5 per cent.; as a spirit from 2½ to 10 per cent.; as an ointment in 2½, 5, 10, and 20 per cent. He also advises varnishes made with bassorin and shellac in strengths ranging from 5 to 15 per cent., also as a gutta-percha plaster of from 5 to 50 per cent. Chotzen states that with one of the preceding formulæ he received good results in acute and chronic conditions of the skin, such as eczemas, intertrigo, pustular affections, such as acne and acne rosacea, parasitic affections, ulcers, prurigo, and other diseases of a surgical nature.

Gottheil (*N. Y. Medical Journal*, Nov. 4, 1893, p. 532) gives the record of 60 cases as witnessed in his hands as follows: Acute inflammations, such as eczema, 16 cases, wherein the result was very satisfactory, in which he thought it was more the protection of the parts. Chronic inflammation, such as eczema of a seborrheal nature, ten cases, in which he states there were no absolute failures and no irritation. Syphilitic affections—superficial and deep-seated—9 cases, and here the result was not satisfactory. In ulcers, it was used in 9 cases with satisfactory results, and in 7 cases of parasitic affection with some good result.

After a careful persual of the writings of the foregoing gentlemen I decided to make a trial of this agent in my service, and therefore report as follows:

The following formulæ were adopted for use in my clinic:

Powder:
℞. Alumnol ..... 3ss.
Pulveris amyli ..... 3iss.
M.

Unguent No. 1:
℞. Alumnol ..... gr.x.
Petrolati ..... ℥ss.
M.

Unguent No. 2:
℞. Alumnol ..... gr.xx.
Petrolati ..... ℥ss.
M.

Unguent No. 3:
℞. Alumnol ..... gr.xxx
Petrolati ..... ℥ss.
M.

Unguent No. 4:
℞. Alumnol ..... 3j.
Petrolati ..... ℥ss.
M.

Solution:
℞. Alumnol ..... ℥ss.
Aqua ..... ℥ij.
M.

According to the preceding formulæ the following cases were treated:

1. Acute inflammatory affections, 19 cases, as follows:

Eczema—15 cases, all of the vesicular type and of durations of from 7 to 15 days—treatment in all lasting from 1 to 3 weeks. These cases were directed to use unguents Nos. 1, 2 and 3 and the result in all was satisfactory.

Erythema intertrigo—3 cases, all affecting the groin and being of 3 to 4 days' duration; the use of the foregoing powder was advised and the result was gained in from 3 to 4 days.

Herpes Zoster—2 cases, one of the intercostal region and one of the brachial region, having lasted from 2 to 3 days before coming to the clinic, in both of which the above mentioned solution was advised. The result was that of a protective only, it having no positive curative effect.

2. Chronic inflammatory affections—37 cases as follows:

Eczema—23 cases made up of the seborrheic type and eczema rubrum; in these cases the disease had existed from 2 to 4 weeks or more; the result was satisfactory in all the cases following the use of unguents Nos. 1, 2 and 3; treatment applied mostly from 2 to 4 weeks.

Ulcers of a nonsyphilitic type—13 cases; by the use of the foregoing powder there was noticed a decided moderation of the condition, a cure resulting in from 3 to 4 weeks in all the cases.

Sycosis, nonparasitica—1 case; after using unguents 1, 2 and 3 for 3 weeks no curative results were noticeable.

3. Syphilitic affections—5 cases, all of the ulcerative tubercular type; these cases were under the notice of myself for from 4 to 6 weeks, and had used in that time both the powder and the solution. There was no appreciable result.

4. Parasitic affections, 39 cases.

Scabies—21 cases of from moderate to decidedly aggravated conditions; all cases cured in about from 2 to 4 weeks' treatment. This, of course, was too slow to depend upon its use entirely.

Tinea circinata—5 cases; cured in 3 to 6 days with unguent No. 2.

Tinea versicolor—2 cases; good result in from 3 days to a week with unguent No. 2.

Impetigo contagiosa—11 cases; all cured in from 3 to 6 days with the use of unguent No. 1.

After the foregoing facts, one must certainly give this drug more consideration in the treatment of diseases of the skin, and I do not hesitate to state that the drug fills the place that has been claimed for it.—*The College and Clinical Record, May, 1894.*

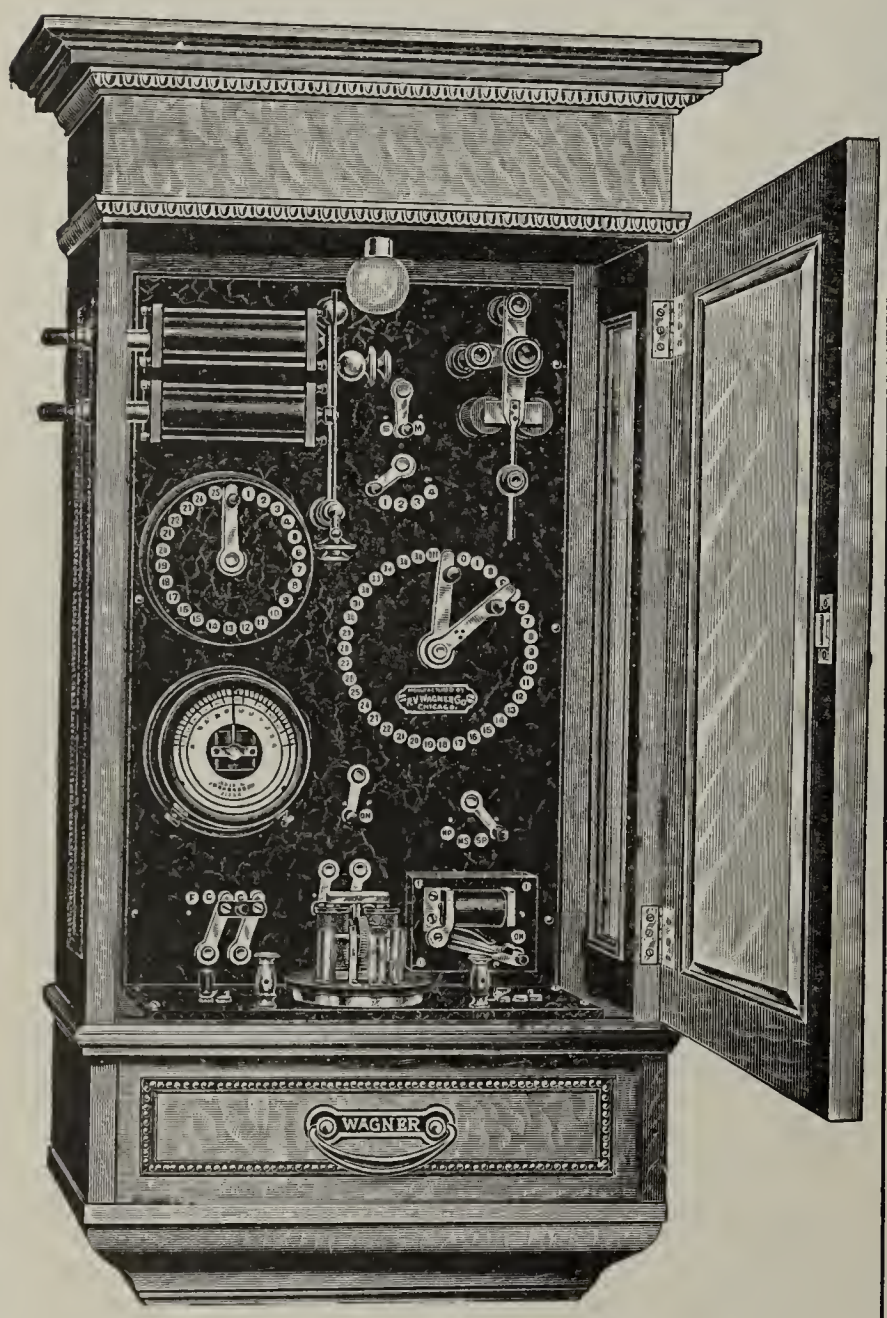
The above excerpts abstracted by the firm of

Victor Koechl & Co., NEW YORK, N. Y.

A New Universal Wall Cabinet

For Galvanic, Faradic and Sinusoidal work. May be adapted for use with cells or any commercial current. Is made with all parts detachable so as to be sold from $45 to $90, according to the attachments required.

Dependable to give the same uniform results every time used.



The wide range of and variation in the currents obtainable from this NEW UNIVERSAL WALL CABINET has not yet been duplicated by any other similar apparatus.

Our Special Catalogue of Galvanic, Faradic and Sinusoidal apparatus tells why and is interesting. Send for Copy.

R. V. WAGNER CO.

140 Wabash Ave., - Chicago

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

103 Dearborn Avenue :: :: Chicago, Ill.

PHONES, NORTH 717 AND 2023 CABLE ADDRESS: "MEDIC, CHICAGO"

Subscription price: $5.00 per annum in advance
Foreign Subscription, including Postage, £1 12s.

Postage in the United States and Canada, Cuba, Mexico, Hawaii, Guam, Porto Rico, and the Philippines, free. Subscriptions may commence at any time. Volumes begin with the first issue of January and the first issue of July.

MEMBERSHIP IN THE AMERICAN MEDICAL ASSOCIATION.

The By-Laws regarding membership require that the applicant be an active member of his state association. This, in most states, necessitates membership in his county or district society, if one exists. If his county is not organized, the applicant may obtain and hold membership in the state association through the nearest county society which is chartered by the state society. Applications must be accompanied with a certificate showing that the applicant is an active member of such recognized society, and should be sent with the annual subscription—five dollars—to the AMERICAN MEDICAL ASSOCIATION, 103 Dearborn Avenue, Chicago. This subscription covers THE JOURNAL for twelve months. A subscriber who is qualified can have his name transferred to the membership list without expense, provided his subscription for the fiscal year is paid.

FISCAL YEAR.

The fiscal year of the AMERICAN MEDICAL ASSOCIATION is from January 1 to December 31; and the annual dues paid by a new member cover only the fiscal year, no matter at what time of year the membership is obtained. Those who pay their dues and join the ASSOCIATION at the annual meeting in June, for instance, pay only for the fiscal year which ends with the December following, and the annual dues for the following fiscal year are payable the succeeding January, at which time a statement is sent to each member. Such members, however, are entitled to THE JOURNAL for a full year, even though the membership be not continued.

ORIGINAL PAPERS.

Articles are accepted for publication with the understanding that they are contributed solely to this journal.

CONTRIBUTIONS TYPEWRITTEN.

It will be satisfactory to all concerned if authors will have their contributions typewritten before submitting them for publication. The expense is small to the author—the satisfaction is great to the editor and printer. We can not promise to return unused manuscript.

ANONYMOUS COMMUNICATIONS.

Anonymous communications, whether for publication, for information, or in the way of criticism, are consigned to the wastebasket unread.

NEWS.

Our readers are requested to send us items of news of a medical nature, also *marked* copies of local newspapers containing matters of interest to members of the medical profession. We shall be glad to know the name of the sender in every instance. The last forms of THE JOURNAL are closed at 10 a. m. Wednesday, and all matter must be in before that time.

ILLUSTRATIONS.

Half-tones, zinc etchings and other illustrations will be furnished by THE JOURNAL when photographs or drawings are supplied by the author.

COPYRIGHT.

Matter appearing in THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION is covered by copyright, but as a general thing, no objection will be made to the reproduction in reputable medical journals of anything appearing in its columns if proper credit be given.

ADVERTISEMENTS.

Advertising forms go to press eight days in advance of the date of issue. In sending in copy time must be allowed for setting up advertisements and for sending proofs. No proprietary medicines can be advertised until approved for advertising by the committee on advertising of the Council on Pharmacy and Chemistry.

CHANGE OF ADDRESS.

In ordering a change of address it is important that both the old and new addresses be given. Change should reach us not later than Monday if following Saturday's issue is to be forwarded to new address.

REMITTANCES.

Remittances should be made by check, draft, registered letter, money or express order. Currency should not be sent, unless registered. Stamps in amounts under one dollar are acceptable. Make all checks, etc., payable to "AMERICAN MEDICAL ASSOCIATION."

WARNING.

Pay no money to agents unless letter showing authority for making collection is presented.

The value of grape juice as a drink for convalescents is admitted by the entire medical fraternity. The purity of the juice is the vital thing.

Welch's Grape Juice

is the juice of the grape in its natural state, put up with every precaution in new, hermetically sealed glass bottles.

Sold by leading druggists everywhere. 3-oz. bottle by mail, 6c. Pint bottle, express prepaid, East of Omaha, 25c.
Our booklet, "The Food Value of the Grape," is worth reading. Sent free.

WELCH GRAPE JUICE CO.
WESTFIELD, N. Y.

Obstinate Insomnia

IN CASES OF

MENTAL EXHAUSTION
NEURASTHENIA

MELANCHOLIA
HYSTERIA

PROMPTLY AND SAFELY RELIEVED BY

NEURONIDIA

A fluid preparation of agreeable taste, and free from disturbing effect upon the stomach or depressing action upon the heart.

Neuronidia is generally administered in doses of one dessertspoonful, repeated if necessary, and may be relied on to produce sleep except in the presence of pain or severe mental excitement.

See description, Journal A. M. A., Vol. XLVII, page 1489.

Schieffelin & Co.
NEW YORK.

WHEN YOU DESIRE CELL NOURISHMENT IN TYPHOID

and other fevers, you should try

TROPHONINE

Sat. sol. nucleo-proteid et albumen cum enzymes R. & C.

It differs from the ordinary liquid foods, for it is a saturated solution of nucelo-albumens and nucelo-proteids, a high and most assimilable form of nutriment.

Dispensed in a menstrum of pancreatized glutten and peptone and contains only 13.6 per cent. of alcohol by weight to preserve the organic matter, so should be given in wine when stimulation is necessary.

Send for Samples and Prove its Clinical Worth.

REED & CARNRICK

42-44-46 Germania Ave. **Jersey City, N. J.**

Do You Have Trouble with Modified Milk?

"The reason so much difficulty is had in feeding cows' milk to infants is that digestion in the calf is different from infantile digestion; cows' milk is physiologically adapted to a calf's stomach; human milk to the infant's stomach."
—(*Chapin-Archives of Pediatrics, Vol. XXI, p. 579.*)

YOU doubtless frequently have children in your care who cannot digest fresh cows' milk, no matter how carefully it is modified. From a chemical standpoint the two are widely different. Nature intended cows' milk for the stomach of the calf. Thus there will always be a large percentage of infants who will have constant stomachic and intestinal trouble with fresh cows' milk.

Nestlé's Food

is the most easily assimilable of all products devised for infant feeding. The reason for this is that the question has been solved not by chemical formulæ, but by clinical study of how best to treat cow's milk to adapt it to the needs of the child's stomach. This is fully set forth in our pamphlet, "Recent Work in Infant Feeding." A copy of this, with samples of Nestlé's Food, we shall be glad to send to any physician.

HENRI NESTLÉ, New York

FOUR FACTS—For the Consideration of Physicians

BETHESDA

THERAPEUTICALLY EFFICIENT in DIABETES and ALBUMINURIA

ELIMINATIVE in ALL CACHEXIAS

DILUENT in ALL FEVERS

ADJUVANT in ALL CHRONIC DISORDERS

FREE:—"Clinical Points on Diabetes and Bright's Disease,"
An Article Read Before the Wisconsin State Medical Association.

Bethesda Mineral Spring Co., Waukesha, Wis.

VICHY CÉLESTINS

French Republic Property

Bottled under the direct supervision of the FRENCH GOVERNMENT, which guarantees Genuineness and Purity. **Known for many centuries as the BEST and STRONGEST Natural Alkaline Water : : : : : : :**
Drink from the **natural spring,** *says Sir Henry Thompson, F.R.C.S., London*

CAUTION: So-called **VICHY** in BULK or SIPHON is not **VICHY**

VICHY IS NEVER IMPORTED OTHERWISE THAN IN BOTTLES

220 Broadway, New York

PHYSICIANS, ATTENTION

We have placed upon the market, within the past two months, two new types of High-Frequency Coils, viz.,

The "AJAX" in a new specially designed cabinet, new spark gap and new terminals, ... $200.00

The "AJAX SPECIAL" is a combination of the "AJAX" and the "CYCLONE" coils. This instrument is the most complete instrument of its kind ever offered to the profession. From it we obtain the Thermo-Faradic, D'Arsonval, Ultra Violet Ray, X-Ray and High-Frequency currents, besides a most beautiful effleuve.

Price, ... $250.00

WATCH FOR CUTS OF ABOVE MACHINES IN THE JANUARY ISSUE.

ELECTRO-RADIATION COMPANY, Dept. B.

18 Boylston Street, Boston, Mass.

ALLOUEZ BI-MAGNESIA

Effective in Glycosuria, Diabetes, Nephritis, Bright's, Albuminuria, and Acid Disorders, Rheumatism, Gout, Calculi. An Efficient, Natural Diuretic and Solvent.

EVIDENCE OF EFFICACY

WM. E. HONAN, M.D., New York: "The ages of the diabetics treated with Allouez was from 40 to 81 years. Sugar present from 1 to 4 per cent. In several cases gravity was reduced and sugar disappeared quite speedily. Doctor, results so far have been very good. You suggested that I advise as to my experience with the water." (Letter to Dr. Egbert Guernsey, New York City.)

CLIFFORD MITCHELL, A.M., M.D., Chicago: As the patients cured by Allouez had resisted the action of jumbul, arsenic, lithia and codeine, I ask: "IS IT A DISCOVERY IN THE THERAPEUTICS OF DIABETES!"

L. W. HOWK, M.D., Rochester, N. Y.: "I have used Allouez very satisfactorily in albuminuria of pregnancy."

MORRIS HALE, M.D., Hot Springs, Ark.: "Allouez-Magnesia Water has given me invaluable aid in the treatment of diabetes."

SIMON BARUCH, A.M., M.D., 79th St., N. Y.: "I have used Allouez in diabetes with good results; in some cases success was remarkable."

BENJ. F. BAILEY, A.M., M.D., Lincoln, Neb.: "Have been well satisfied with Allouez-Magnesia Water in diabetes and Bright's disease."

Write Now for literature. Druggists Everywhere. Half gallons (still); quarts, pints, half pints (sparkling).

Highest Awards at Paris, 1900; St. Louis, 1904.

ALLOUEZ MINERAL SPRING CO.
(P. O.) Green Bay, Wis.

—— DISTRIBUTORS ——

Chicago, Schmidt & Ade, Schiller Bldg.

New York, H. T. Hodgskin, 68 Broad
Detroit, G. & R. McMillan
Washington, W. T. Kaiser & Co.
St. Paul, Noyes Bros. & Cutler
Toronto, Lyman Bros. Co.
St. Louis, Meyer Bros. Drug Co.
Montreal, Fraser, Viger & Co.
Worcester, Mass., W. S. Pratt
Buffalo, Kempff Bros.
New Orleans, Finley Dicks Co.
Tacoma, E. Gregory
Philadelphia, Kaiser & Co.
Louisville, G. Zubrod & Co.
Boston, S. S. Pierce Co.
Hamilton, Ont., Balfour & Co.
Cleveland, Chandler Rudd Co.
Omaha, Richardson Drug Co.
Denver, Scholtz Drug Co.
San Francisco, D. M. Fletcher
Los Angeles, F. W. Braun & Co.
Portland, Ore., Archer & Shanz
Vancouver, B. C., Hudson Bay Co.
Oklahoma City, Scott Drug Co.

Bernd's Physicians' Account Books

THE MOST PRACTICAL SYSTEM OF KEEPING PHYSICIANS' ACCOUNTS
SEND FOR PRICE LIST AND DESCRIPTIVE PAMPHLETS.

ADOLPH BERND

P.O. BOX 598. ST. LOUIS, U.S.A.

Truth and Poetry Concerning Uric Acid

By Lewellys F. Barker, M.D.

Professor-elect of Medicine in the Johns Hopkins University, Baltimore; Physician-in-charge to the Johns Hopkins Hospital.

93 pages, Paper Cover, 50c. Cloth Cover. 75c.

¶ The Problem as to the origin, deposition and elimination of uric acid has been discussed by many excellent and anthoritative writers during the past few years. ¶ THE JOURNAL in a series of editorials, under the above title, published an epitome of the present state of knowledge of this question as presented in the literature. ¶ It was not the intention to reprint them, but owing to numerous requests which have been received we have issned them collectively in book form. ¶ The booklet contains a review of (1) the doctrines which have been held regarding the formation of uric acid in the body, (2) the normal fate of uric acid in the tissues, (3) the facts bearing on the localization of the process of uric acid formation and decomposition, (4) the chemical and physical properties of uric acid and urates, including the conditions of solubility and precipitation and the relation of uric acid to pathologic processes, (5) the excretion and solubility of uric acid and methods of getting rid of it. ¶ The purpose of the pamphlet is to help clarify the ideas of the medical practitioner regarding the uric acid diathesis. ¶ The progressive physician, who aims to practice rational rather than empirical therapeutics, can very profitably read and assimilate the subject matter of this compilation.

Sent post-paid on receipt of price

American Medical Association Press

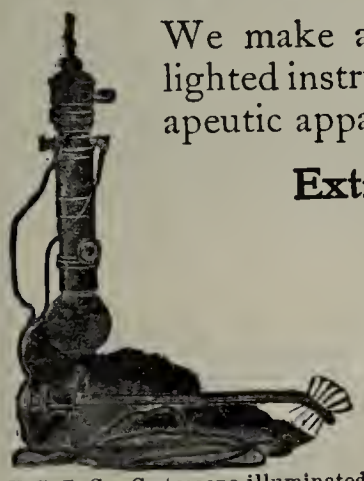
103 Dearborn Avenue . . . . Chicago

Electrically Lighted Instruments

In the hands of progressive physicians, the miniature electric lamp is rapidly superceding the head mirror.

WE MANUFACTURE

Cystoscopes	Wall Plates
Urethroscopes	Transformers
Rectal Specula	Cautery Coils
Bronchoscopes	X-Ray Coils
Auriscopes	Socket Current Controllers
Laryngoscopes	Batteries, Etc.



E. S. I. Co. Cystoscope illuminated on Socket Current Controller.

We make all kinds of electrically lighted instruments and electro-therapeutic apparatus.

Extra Lamps 50c.

Write for Catalogue.

Electro Surgical Instrument Co.

Rochester, New York

THE XXX COIL COSTS YOU 30 PER CENT

Less Than What the Trust Asks

WE MAKE

Resonators
H. F. Apparatus
X-Ray Tubes
Tube Shields
Interrupters
Rectifiers
Rheostats
Wall Plates
Cautery
Transformers
Controllers for Small Lamps
Cystoscopes
Urethroscopes
Auriscopes
Laryngoscopes

12 inch outfit as shown	$175.00	For Direct or Alternating Current
15 " " " "	240.00	
18 " " " "	340.00	
20 " " " "	405.00	

Send for General Catalog. **All Goods Guaranteed.**

Wm. Meyer & Co., 56 Fifth Avenue, Chicago, U. S. A.

IF YOU DON'T SEE WHAT YOU WANT

WRITE US

We make thousands of articles. We guarantee and stand back of everything we make. No firm in the world can meet our prices on the same class of goods. If you buy of us and do not find the goods equal to what any other firm in America could sell you at their prices, send them back. Send for our new catalogue.

FRANK S. BETZ CO., :: ***Hammond, Indiana***

THE SCHEIDEL COIL
FOR CHRISTMAS

IT WON'T GO IN YOUR STOCKING BUT IT

SHOULD GO IN YOUR OFFICE

WRITE FOR OUR SPECIAL HOLIDAY PROPOSITION

W. SCHEIDEL COIL CO.
MANUFACTURERS, ORIGINATORS AND PATENTEES
CHICAGO, ILL.

Being leaders in the manufacture of Bacteriological Apparatus and Sterilizers for years, we have never known an article to meet with such instant approval and immediate adoption by physicians as has the

ROCHESTER STERILIZING OUTFIT
It fills a long felt want surely and successfully — THAT'S WHY.

FOR IT COMBINES { An Instrument Sterilizer, A Dressing Sterilizer, and A Water Sterilizer } **ALL IN ONE**

Heated by gas or gasoline; either style of burner is furnished; or a shelf for Primus oil stoves, as you prefer. The neat appearance of the strong, heavily enameled frame to which the Sterilizers are fitted makes a handsome addition to any office. Your Instrument Dealer will tell you about it, if you ask; or you may address the manufacturers.

WILMOT CASTLE CO. - 5 Elm St. - ROCHESTER, N. Y.

OF SPECIAL INTEREST TO SURGEONS, PATHOLOGISTS AND BACTERIOLOGISTS

INFECTION, IMMUNITY AND SERUM THERAPY.

In the relation to the Infectious Diseases which attack man; with considerations of the allied subjects of Agglutination, Precipitation, Hemolysis, etc.

This volume is a reprint of a series of articles on immunity which appeared in the Journal during 1905 with a number of additions and such revisions as were thought necessary. The type is large and the reading made easy by convenient side headings.

In this book there is made available to the general medical reader desirable and important reliable information concerning immunity and infections now contained only in special technical journals not usually in the hands of physicians and students. One special feature is the complete index which serves as a glossary of new terms that have been added to the science. The contents of the book is divided into two parts.

PART ONE—GENERAL.

Chapter 1.—Parasitism, Infectiousness, Contagiousness.
Chapter 2.—Infectious Etiology.
Chapter 3.—General considerations.
Chapter 4.—History and Development.
Chapter 5.—Natural Immunity.
(a) Protection afforded by the body surfaces.
(b) The protective nature of Inflammation.
(c) The antibacterial and antitoxic nature of natural Immunity.
Chapter 6.—Acquired Immunity.
Chapter 7.—Toxins and Antitoxins.
Chapter 8.—The "Structure" of Toxins and Antitoxins and the nature of the Toxin-Antitoxin Reaction.
Chapter 9.—The Phenomena of Agglutination.
Chapter 10.—The nature of the substances concerned in Agglutination.
Chapter 11.—Precipitins.
Chapter 12.—(a) General properties of Bactericidal Serums.
(b) Amboceptors and complements.
Chapter 13.—Cytotoxins.
Chapter 14.—Phagocytosis.
Chapter 15.—The Side-chain Theory of Ehrlich and Its Relation to the Theory of Phagocytosis.
Chapter 16.—Principles of Serum Therapy.

PART TWO—SPECIAL.

Group 1.—Acquired Immunity is chiefly antitoxic.
(a) Bacterial Diseases.
(b) Intoxication by soluble Plant Toxins.
(c) Intoxication by soluble Animal Toxins.
Group 2.—Acquired Immunity is chiefly antibacterial.
Group 3.—Acute Infections in which lasting Immunity is not established.
Group 4.—Chronic Infection in which lasting Immunity is not established.
Gronp 5.—Diseases of Protozoon Etiology.

600 pages, illustrated Cloth. Sent by mail prepaid on receipt of $2.00 (former price $2.50).

AMERICAN MEDICAL ASSOCIATION PRESS
103 Dearborn Avenue - - - - CHICAGO

The Present-Day Physician

has need of every device which will enable him to take care of his practice more quickly and more satisfactorily.

ALLISON APPLIANCES

are designed with a particular view to the exacting requirements of the busy practitioner. You can, therefore, make no mistake if you purchase an outfit of our manufacture.

The stamp of "Allison" on physician's equipment stands for superiority in material, workmanship and finish.

You would do well to write for our complete catalogue of

Chairs, Tables, Cabinets and Oto-Laryngological Specialties.

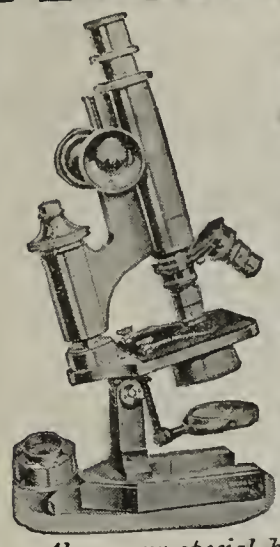
W. D. ALLISON COMPANY

915 N. Alabama Street

INDIANAPOLIS

New York, 110 E. 23rd Street
Boston, Colonial Building
Seattle, Wash., 310 Arcade
Berkeley, Cal., 2430 Fulton St.
Chicago, 35 E. Randolph
Pittsburg, Empire Building
Philadelphia, 321 Mint Arcade
Buffalo, 1050 Ellicott Square
New Orleans, 141 Elk Place

MICROSCOPES



We are sole American Agents for R. & J. Beck's Celebrated Microscopes. These instruments are used by the United States, British and Canadian Governments and are the Standard of two Continents. They are perfect in workmanship, convenient in design and lowest in price.

Beck's Continental Microscope,
for Blood and Urinary work, $41.25

Beck's Continental Microscope,
for Blood, Urinary and Bacteriological work, - - $67.50

Also many special bargains in slightly used Microscopes.

We manufacture a complete line of

URINARY AND BLOOD PRESSURE APPARATUS

including:

Hand Power Centrifuges.
Dudgeon's Sphygmograph.
Rivi Rocci Sphygmomanemometer.
Purdy Electric Centrifuges.
Gaertner's Tonomater.
Thomas Haemacytometer.

Complete lists on application.

WILLIAMS, BROWN & EARLE,

Dept. Q, 918 Chestnut St., Philadelphia, Pa.

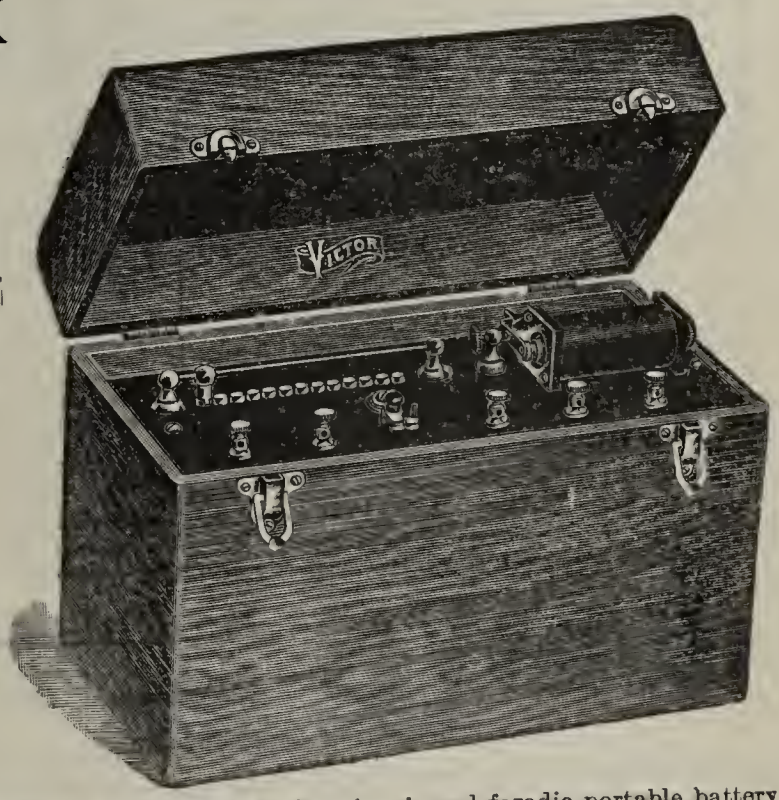
The TRADE-MARK of QUALITY

Victor No. 6. Combination Transformer, Vibrator, Cautery and Surgical Engine.

Victor No. 1. Vibrator handle used in connection with No. 6 Transformer.

Almost a complete office equipment in one compact, convenient instrument comprises:

**Cautery,
Vibrator,
Pneumo-Massage,
Surgical drilling engine,
and Diagnostic lamp regulator**



Victor No. 3. Fourteen cell galvanic and faradic portable battery.

The Victor No. 3 battery is unique in design, convenient, reliable, durable, easily renewed, finely finished and correct in every detail.

We manufacture everything electrical that is good.

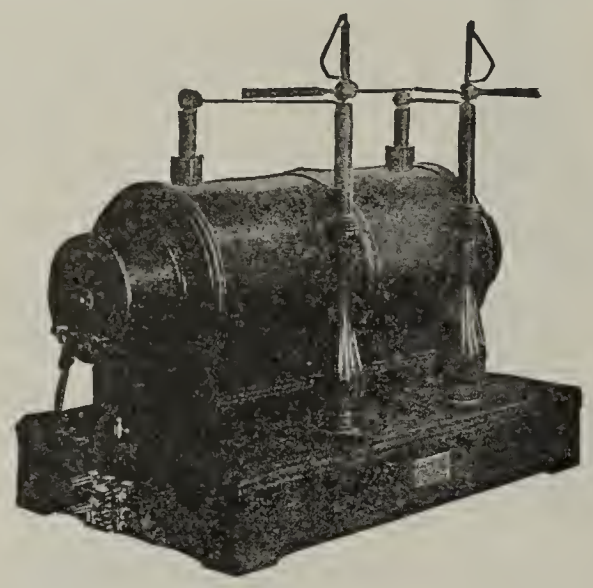
Send for latest Catalogue A28.

VICTOR ELECTRIC CO.,

Main Office & Factory, : : 55-61 Market St., Chicago, Ill.

New York Branch, 110 East 23rd St. **Boston Branch, 100 Boylston St.**

X-RAY APPARATUS



Our Famous "JUMBO" Coil

The Roentgen Mfg. Co builds *X-Ray Coils* and accessories of *highest quality*. We supply complete outfits for radiographic, fluoroscopic and therapeutic use; also High Frequency Apparatus. Our prices are reasonable and our best references are the equipments we have supplied. State requirements and ask for catalogue.

WE CARRY A LARGE STOCK OF X-RAY TUBES.

JAMES G. BIDDLE
6th Floor Stafford Building
1112-1114 CHESTNUT ST. PHILADELPHIA

Lehman's Carriage Heaters.
350,000 IN USE

IF YOU ARE LOOKING FOR THE BEST
YOU WILL BUY A CELEBRATED

LEHMAN Carriage and Automobile HEATER

GOOD FOR SLEIGHS, TOO. THEY ARE UNIVERSALLY KNOWN AS THE STANDARD.

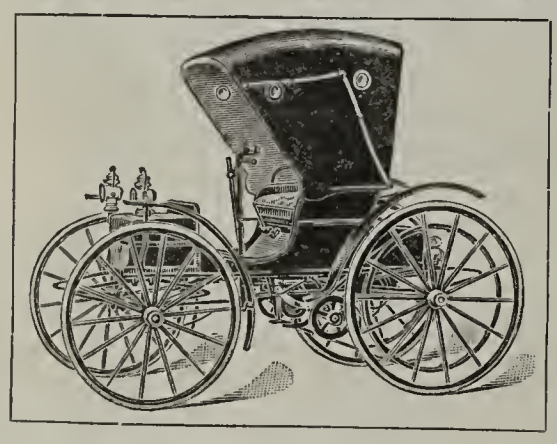
350,000 LEHMAN HEATERS are in actual use, by physicians, horsemen, farmers, etc., who highly recommend them.
They burn **Lehman** Coal which gives no smoke, produces no flame and from which there is no danger whatever. One-third of a cake of our fuel costs only 2 cents and is sufficient for a day's use.

LEHMAN HEATERS AND COAL have been on the market over 20 years and are recognized as the standard and best. **BEWARE OF IMITATIONS.** Send for our booklet giving full particulars, and mention *Journal American Medical Association.*

LEHMAN BROS.
Manufacturers
10 Bond Street, New York

J. W. ERRINGER
Gen'l West Sales Agent
45 E. Congress Street, Chicago Ill.

THE HOLSMAN AUTOMOBILE



WINTER USE. It is during that season of the year, when the temperature is below freezing and there may be considerable snow on the ground, that the practical utility of an automobile is put to the test. If the machine cannot readily do that work it is not a complete success, and is not equal to the exacting service of a practicing physician. The automobile that is suited for that service, necessarily must be entirely satisfactory the balance of the year.

FOUR YEARS OF SUCCESS. The Holsman automobile has now been on the market four years and has long since passed the experimental stage. It is built high enough to travel the country roads like a carriage and can be run twelve months in the year. It clears the center of the road by eighteen inches, and therefore has TWICE THE ADVANTAGE of the ordinary machine in muddy, rutty, rough or rocky roads. Has large wheels, solid rubber tires and **RIDES LIKE A CARRIAGE.** The Holsman exclusive patent marks an era in automobile building. It does away with all live axles, friction clutches, differential gears, pumps, etc. Reverses without extra gears. **No water to freeze; No puncture troubles; No odor. New hill climbing power.** Ask for Catalogue B.

The Holsman Automobile Company

Chicago Automobile Show, Feb. 2 to 9, Main floor, Collseum MONADNOCK BLOCK, CHICAGO

LAWS

Regulating the Practice of Medicine in the United States, Canada, Cuba and Mexico

Reprinted from The Journal A. M. A., Nov. 16, 1901, and revised to July 1, 1906.

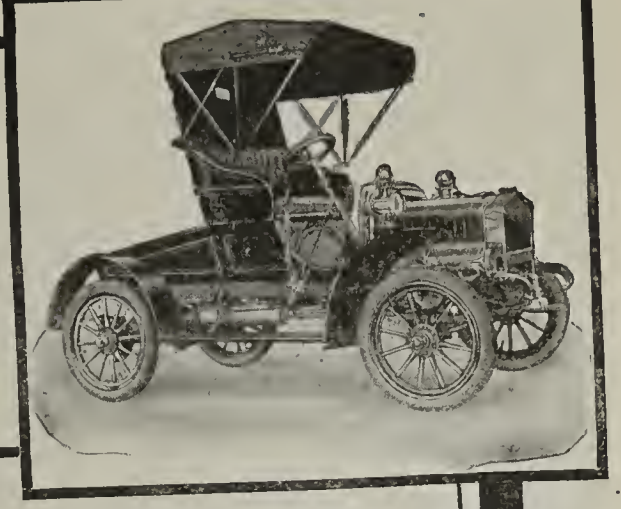
IN this book will be found a résumé of the conditions or legal restrictions of medical practice now in force. The frequent inquiries that are made to THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION as to these points prove that a digest of the medical laws, brought as nearly up to date as possible, will be appreciated. In many cases those sections of the law which are of special interest have been given verbatim, and in all cases the essential facts are stated. Recent legislation is given in full, so far as it pertains to medical practice. In every case the matter has been submitted to the secretaries of the several examining or licensing boards, and embodies their corrections. The name and address of the secretary of each examining board is given, so that any detailed information that may be wanted can be secured by direct correspondence. A summary inserted at the end of the pamphlet gives briefly all essential information about each law.

Paper Cover. Price, **30c.** Stamps acceptable. Sent prepaid

AMERICAN MEDICAL ASSOCIATION PRESS, 103 Dearborn Ave., CHICAGO

The "Maxwell"

The IDEAL DOCTOR'S CAR



THE automobile to be practical for the busy physician, must be absolutely reliable; must be easy to operate and must be capable of maintenance at lowest possible cost. Because these three characteristics have made *The Maxwell* the second largest seller in America, it is the IDEAL DOCTOR'S CAR.

The Maxwell Catalogue is more than a book of specifications. It is a complete treatise on the comparative merits of the various systems of automobile construction. *Sent free if you write Dept. 21.*

MAXWELL-BRISCOE MOTOR CO.

RIVER ST., TARRYTOWN, N. Y.

Members American Motor Car Manufacturers Association, New York

MAIN PLANT: Tarrytown, N.Y.

DEALERS IN ALL LARGE CITIES

FACTORIES

CHICAGO, ILL. PAWTUCKET, R. I.

OFFICIAL INSIGNIA

A M A

Price $1.00. This badge is the insignia of the Association. The red cross in the center is set on a white enamel background. The letters A.M.A. are displayed in gold, with wide outside margin of purple and gold. Size—diameter 5-8 inches.

AMERICAN MEDICAL ASSOCIATION

.... Application for Membership ....

_____ 190____

I hereby make application for Membership in the **American Medical Association.** *I am a member in good standing of the* _____ *County and* _____ *State Medical Societies.*

Signed _____ (Name in full)

Street _____ *City* _____

County _____ *State* _____

MEMBERSHIP, HOW OBTAINED.—A member in good standing of the Constituent Association of the state in which he resides or a medical officer of the U. S. Army, of the U. S. Navy, or of the U. S. Public Health and Marine-Hospital Service, may become a member of the American Medical Association by presenting to the general secretary: (1) satisfactory evidence of one of the above qualifications; (2) written application for membership on the prescribed form, and (3) the annual dues. (By-laws, Sec. 1, Chap. 1, Book 1.)

One year's dues, Five Dollars, which also covers subscription to THE JOURNAL, must accompany each application. There is no initiation fee. Send this slip, with enclosure, to AMERICAN MEDICAL ASSOCIATION, 103 Dearborn Avenue, Chicago, Ill.

Application secured by Dr. _____

CERTIFICATE OF STATE OR COUNTY MEDICAL SOCIETY

_____

This Certifies that _____ M.D.

of _____ is a member in good standing

of the { Association / Society _____

{ President / Secretary _____

Streeter Hospital

2646 Calumet Avenue
CHICAGO, ILL.

Open to the Profession

Physicians have absolute control of their patients. All private rooms. Graduate or Training School nurses provided. - - - -

Telephone Calumet 90.

LAKESIDE

Lake Geneva Sanitaria

Lake Geneva, Wis.

LAKESIDE for General and Nervous Diseases—*No mental cases taken.*
TWO HOMES with complete sanitarium equipment

OAKWOOD for Mental Diseases
Acute cases received for diagnosis and treatment.
Convalescing cases re-edncated.
Rates are as low as the most efficient treatment and the best trained nursing will permit.
60 ACRES OF OAK WOODS

DR. OSCAR A. KING, Superintendent
Chicago Office 72 Madison Street
Cor. State Street
Hours: 10 to 2 Tuesdays and Fridays.

THE LARGEST AND MOST THOROUGHLY EQUIPPED OF SANITARIUMS

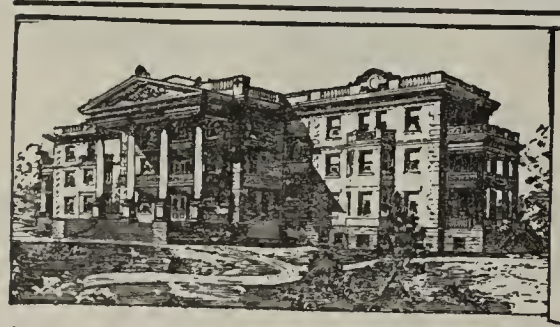
The Battle Creek Sanitarium management were the first to organize a thoroughly complete system of physiological therapeutics. Water-cures had existed before—eclectic institutions, mineral springs, and similar establishments—but the Battle Creek institution was the first to organize a system and method embodying all physiological agencies.

Nearly forty years' experience in this institution has demonstrated that the great majority of chronic invalids, of all classes, including many considered incurable, can be trained up to a state of healthful vigor by a systematic regimen, based upon scientific principles, combined with a thorough-going application of the resources of hydrotherapy, phototherapy, thermotherapy, massage, Swedish movements, Swedish gymnastics, electrotherapy, and the open-air treatment, guided by the exact findings of bacteriological, chemical, microscopical, and other accurate methods of examination.

Special ward for surgical cases, with perfect appointments.

For information concerning the facilities afforded, terms, etc., address

THE SANITARIUM, Battle Creek, Mich.



Waukesha Springs Sanitarium

FOR THE CARE AND TREATMENT OF
NERVOUS AND MENTAL DISEASES. *New, absolutely fireproof building*

BYRON M. CAPLES, M.D., Supt. - - - WAUKESHA, WIS.

Gulf Coast Health Resort

BILOXI
Mississippi

Sea breezes and sunshine. Outdoor the year round. An ideal place for CONVALESCENTS. ¶ Patients with insomnia, neurasthenia, and indigestion especially benefited here. System of balneotherapy thorough, and includes HOT SEA BATHS. Rates from $15 to $60 per week. Equipment complete.

BILOXI SANATORIUM

H. M. Folkes, M.D., Pres.

SANATORIUM WALDHEIM

An Institution for the Cure and Treatment of Chronic Diseases . . A Residence for the Convalescent

The Institute is situated in the beautiful lake region of Waukesha Co., on the north shore of Oconomowoc Lake, and surrounded by a Park of 20 acres of woods, hills and dales, affording ample shade and quietude.

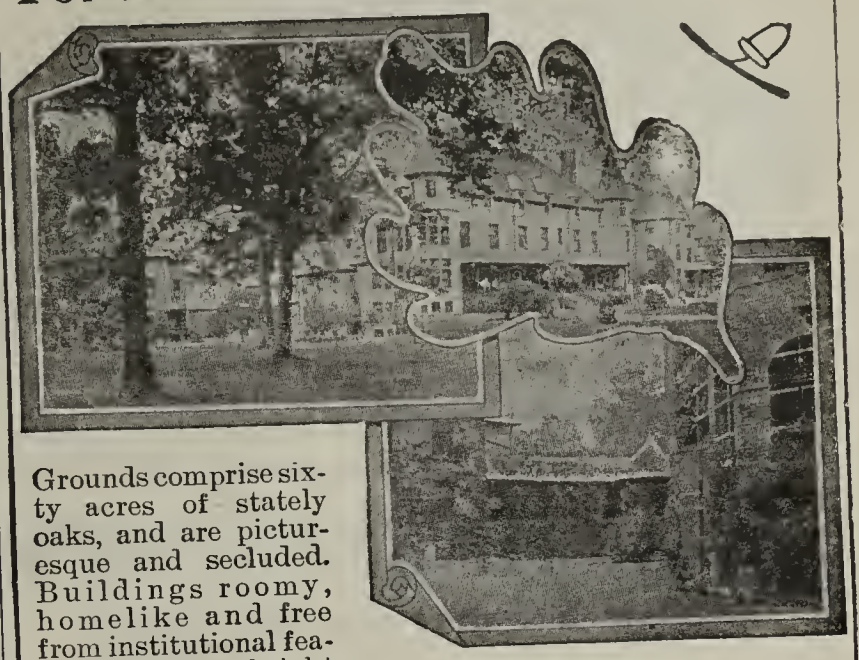
The sanitary conditions are the most perfect, and all principal modes of treatment are applied, such as Hydrotherapy, Electricity, Gymnastics, etc., and all the better foreign and domestic mineral waters are in use.

For further particulars and prospectus write to

DR. J. H. VOJE : : OCONOMOWOC, WIS.

Oak Grove Hospital

For Nervous & Mental Diseases



Grounds comprise sixty acres of stately oaks, and are picturesque and secluded. Buildings roomy, homelike and free from institutional features. Interiors bright and cheerful. Luxurious furnishings. superior appointments and skilled attendance. First-class cuisine. Equipment for hydrotherapeutic and electric treatment complete and modern. Static, Galvanic and Faradic Apparatus, Electric Bath, Turkish and Russian Baths, and Massage. Use of Gymnasium, Billiard Room, Bowling Alley, and Carriages, Free.

Prosit A therapeutic, antacid table water, from a flowing well 265 ft. in depth; used in the Hospital, and supplied in bottles and siphons.

For terms address

DR. C. B. BURR Medical Director, FLINT, MICH.

Oxford Retreat

A PRIVATE HOSPITAL FOR THE TREATMENT OF

Insanity, Nervous Disorders, Inebriety and Opium Habit. For Men and Women.

Facilities and advantages are unsurpassed for the proper care and treatment of all forms of the above named disorders. Careful attention is given to the proper classification of patients. Average one attendant to every four patients. Supervision at all hours. Every needed convenience and any accommodation that may be desired. Retired and homelike. Site elevated, beautiful and salubrious. *39 miles from Cincinnati, 84 miles from Indianapolis, 8 trains daily. Terms moderate.* For references, terms, etc., address

The Pines

A Private Sanitarium for Nervous Disorders and Morphine Habitues. For Women Only.

Insane not admitted. Every facility for proper treatment. Careful supervision at all times.

Retired, accessible; surroundings beautiful. Modern in all its appointments, lighted by electricity and heated by steam. Sanitation perfect. Send for descriptive circular.

Under the same control and Medical Management as the Oxford Retreat.

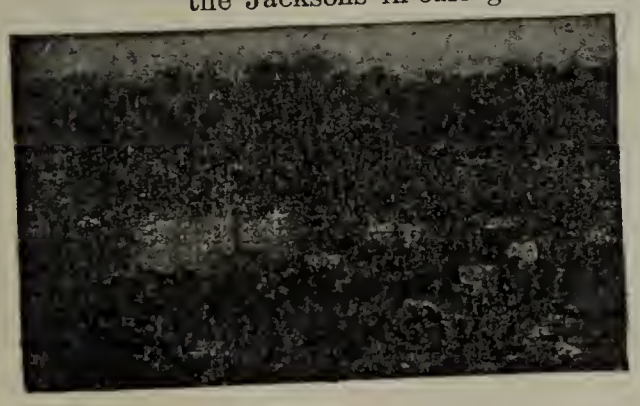
G. F. COOK, M.D., Physician in Charge

OXFORD, Butler Co., OHIO

The JACKSON HEALTH RESORT

DANSVILLE, NEW YORK

Send for illustrated literature. Fifty year's experience by the Jacksons in caring for the sick.



Fire Proof Building Brick and Iron

SUNMOUNT TENT CITY

Santa Fe, New Mexico

Accepts Incipient Cases of Tuberculosis

Improved Tent Cottagos. pure mountain water, excellent table, beautiful scenery, cool summers, temperate winters. No sand or dust storms. Two resident physicians. Rates moderate.

BOOKLET ON APPLICATION

Maplewood

(INCORPORATED)

JACKSONVILLE, ILLINOIS

Dr. Norbury's private Sanatorium for the treatment of NERVOUS AND MILD MENTAL DISEASES. Conducted strictly upon ethical lines, this institution offers its facilities to supplement the work of the family physician. NO NOISY, VIOLENT OR OTHERWISE OBJECTIONABLE CASES WILL BE RECEIVED. Two buildings. Thirteen acres of ground. Our own dairy. Gravel springs water. Further particulars, address FRANK P. NORBURY, M.D., office, 420 W. State Street. ALBERT H. DOLLEAR, Resident Physician. CONSULTING STAFF: Dr. Frank R. Fry, Dr. C. C. Chaddock, Dr. M. A. Bliss, St. Louis, Mo.; Dr. Hugh T. Patrick, Dr. Harold N. Moyer, Chicago, Ill.

Our Rates are Lowest and our Equipment

Surpasses any other American Sanitarium

Any approved treatment given in any Sanitarium in the world is given here. Meets every personal and professional requirement. Sixty Zander Swedish machines. All kinds of baths and massage, X-ray and all electrical appliances.

Special attention given rheumatism or its sequelæ in the treatment of which we have been singularly successful.

This institution offers unusual facilities for modern scientific treatment of nervous and organic diseases as well as all acute or chronic non-contagious affections. No insane cases admitted. Correspondence solicited with the profession. Write for booklet.

DR. S. S. STACK, Sacred Heart Sanitarium, MILWAUKEE, WIS.

FAIRMOUNT HOME

A WELL-EQUIPPED INSTITUTION,

exclusively for the scientific treatment of narcotic and alcoholic addictions. No pain, diarrhea, profuse sweating or extreme nervousness. For detailed method write for circular and reprints of papers read at the American Medical Association.

A. J. PRESSEY, M.D. 900 Fairmount St. CLEVELAND, O.

THE

CINCINNATI SANITARIUM

Private Hospital and Residence

Incorporated 1873

Proprietary interest strictly non-professional. Both sexes and all classes of Mental and Nervous Diseases provided for.

DETACHED APARTMENTS FOR NERVOUS INVALIDS, OPIUM HABIT, INEBRIETY, ETC.

Electric Cars from City to Entrance :: Long Distance Telephone, P. 135

F. W. LANGDON, M.D., Medical Director
B. A. WILLIAMS, M.D., Senior Resident Physician
JOHN C. SHEETS, Business Mgr., College Hill, O.

THE GLEN SPRINGS,

The AMERICAN NAUHEIM

A health resort and hotel of the highest class. Modern bathing establishment. Curative mineral waters for GOUT, RHEUMATISM, NEURALGIA, SCIATICA, diseases of the NERVOUS SYSTEM and of the HEART and KIDNEY.

The Nauheim Baths and Resistance Movements

for diseases of the HEART and BLOOD VESSELS. The only place in America using a NATURAL BRINE for the Nauheim Baths. The brine from our

NAUHEIM SPRING

is a stronger iodo-bromo-muriated brine than that of BAD NAUHEIM.

VALUABLE SPRINGS FOR CROUNOTHERAPY

specially valuable in DIABETES, GOUT, DIGESTIVE DISORDERS and ANÆMIA.

For illustrated book and further particulars please address,

WM. E. LEFFINGWELL, *Pres.*, - Watkins, N. Y.

AMERICAN MEDICAL DIRECTORY

1. BECAUSE it is the only national directory owned and published by the medical profession.

2. BECAUSE it is the only directory compiled from official and not from personal information.

3. BECAUSE it is the only directory in which every physician is treated exactly alike.

4. BECAUSE it will contain the names of all legally qualified practitioners of medicine.

5. BECAUSE it will contain the official list of members of each county and state society and of the American Medical Association.

6. BECAUSE it will contain much more information regarding the personnel of the American medical profession than any other directory.

EVERY PHYSICIAN WHO NEEDS OR USES A MEDICAL DIRECTORY SHOULD PURCHASE THE

AMERICAN MEDICAL DIRECTORY

IN PREFERENCE TO ANY OTHER FOR THESE REASONS:

7. BECAUSE it will contain under each state complete information regarding county and state medical societies, medical laws, state boards of health, medical examining boards and colleges.

8. BECAUSE it will contain a complete list of the Hospitals and Sanatoria of each state which are endorsed by the local profession.

9. BECAUSE it will contain a list of all specialists in each branch of medicine who are truly entitled to the designation.

10. BECAUSE only legitimate advertisements of ethical preparations and articles will be admitted.

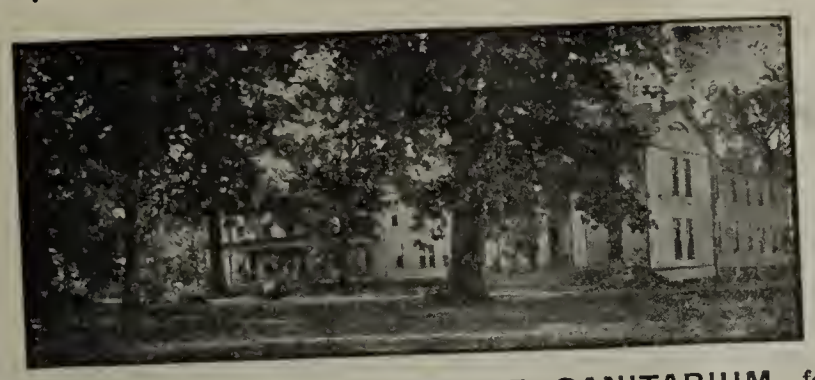
11. BECAUSE no distinction whatever will be made between subscribers and non-subscribers.

12. BECAUSE by purchasing the AMERICAN MEDICAL DIRECTORY you will be supporting the organized profession in the work of accumulating and verifying official information regarding the profession of the United States and Canada.

SEND ORDERS TO

AMERICAN MEDICAL ASSOCIATION PRESS, 103 DEARBORN AVE., CHICAGO, ILL.

Memphis **LYNNHURST** Tennessee



DR. S. T. RUCKER'S PRIVATE SANITARIUM for the TREATMENT of SELECT cases of the various NERVOUS and MENTAL Diseases and Drug addictions. Delightfully located on extensive private grounds. Equipment new, modern and complete. Separate building for female patients. Experienced nurses in attendance and individual treatment given to each patient. Artesian chalybeate and soft waters. Climate mild, equable and salubrious. For further particulars and terms apply to
S. T. RUCKER, M.D., Medical Superintendent, Memphis, Tenn

ST. HELENA CALIFORNIA SANITARIUM

PORTION OF MAIN BUILDING.

LOCATED sixty-five miles from San Francisco, situated on an elevation overlooking the beautiful Napa Valley, surrounded by natural groves, lawns and semi-tropical gardens.

CLIMATE, delightful both summer and winter. Abundance of sunshine, almost no frost.

NO ORDINARY HOSPITAL but an ideal medical institution, completely equipped, including competent physicians and trained nurses.

PHYSICIANS recommending patients to us have assurance of strict professional courtesy.

NO TUBERCULAR or other infectious, contagious or obnoxious cases received.

For illustrated booklet address

ST. HELENA SANITARIUM, - SANITARIUM, NAPA COUNTY, CALIFORNIA.

Otter Lake Medical and Surgical Sanitarium

For Nervous and Mental Diseases

OTTER LAKE, : : : MICHIGAN

Built upon an elevation in a beautiful grove. Secluded but accessible. Our building is new, well lighted and heated by steam. Scientific cooking. Electric, Russian, and Turkish baths. Massage.

Complete modern facilities for Surgical operations. General chronic invalids cared for. Our rates are from ten to thirty dollars per week, according to condition of patient.

P. E. MARSH, M.D., Med. Supt.
H. E. RANDALL, M.D., Consulting Surgeon.

For full particulars, address
M. N. DAWSON, Business Manager.

ESPERANZA SANATORIUM

For the Hygienic-dietetic Open-Air Treatment of pulmonary diseases. Cottage System. Best location in Southern California. Altitude 1800 feet. Modern institution, thoroughly equipped.

DR. NORMAN BRIDGE

of Los Angeles and Pasadena, personally directs the care and treatment of patients.

FOR PARTICULARS, ADDRESS

DR. F. C. MELTON, General Manager **ALTADENA, CAL.**

Dr. Moody's Sanitarium, San Antonio, Texas,

For Nervous and Mental Diseases, Drug and Alcohol Addictions. Modern buildings, equipments and conveniences for genial home environments, comforts, and for rational scientific treatment, which is strictly along ethical lines. Location and locality ideal for health, rest and recuperation. Address, G. H. MOODY, M.D., 315 Brackenridge Ave. (Formerly Asst. Phys. to State Asylums at Austin and San Antonio, Tex.)

TEXAS SANITARIUM FOR TUBERCULOSIS, LLANO, TEXAS.

An Ideal Winter Climate. All Modern Conveniences. Strictly Ethical.

This Sanitarium is devoted exclusively to the treatment of Tuberculosis. It occupies a large estate at an altitude of 1100 feet, 100 miles from Austin, Texas, on the railroad. The climate is sunny, mild, dry and dustless. For further information address

M. M. SMITH, M.D., Secretary, Austin, Texas.

OFFICERS

J. T. Wilson, M.D., Pres., - - Sherman, Tex.
J. W. McLaughlin, M.D., V.-Pres., Austin, Tex.
M. M. Smith, M.D., Sec.-Treas., - Austin, Tex.

HILL CREST SANITARIUM, CHARLOTTESVILLE, VIRGINIA.

In a bracing **SOUTHERN CLIMATE**, tempered by high sheltering mountains, **NEURASTHENICS, MILD MENTALS, HABITUES** and other sufferers from nerve-exhaustion can be treated by natural outdoor methods all winter Warm tents for nerve convalescents when desired. No tubercular cases taken. An equipment like that of the best northern institutions, but a different climate. For illustrated circular, etc., address **Box 495, Charlottesville, Va.**

NEWHOPE PRIVATE SANITARIUM NEW HAVEN, CONN.

Especially for the treatment of Acute and Chronic Rheumatism, Arthritis Deformans, Gout, Acute and Chronic Nephritis, and Cancer by Roentgen radiation. The equipment includes complete modern facilities for surgical operations, the application of dry hot air, the various forms of electricity, X-Ray therapy, Mechanical Vibration, Microscopical and Chemical Diagnosis.
The laboratory facilities have been placed at the disposal of physicians throughout the state, and reports upon specimens submitted by them for chemical or bacteriological examinations can usually be furnished within twenty-four hours.

Telephone connections

CLARENCE EDWARD SKINNER, M.D., Physician-in-charge No. 67 GROVE STREET

Walnut Lodge Hospital Hartford, Conn.

Organized in 1880 for the Special Medical Treatment of

ALCOHOL AND OPIUM INEBRIATES

One of the oldest private asylums in the country with full legal power of control, and every appliance for scientific treatment.

T. D. CROTHERS, M.D., Supt., HARTFORD, CONN.

RIVER CREST SANITARIUM

Licensed by the State Commission in Lunacy.

Astoria, L. I., New York City

For Nervous and Mental Diseases

Home-like private retreat. Beautifully located. Easily accessible. Detached building for alcoholic and drug habitues. Hydrotherapy. Electricity. Massage. J. JOS. KINDRED, M.D. President. WM. E. DOLD, M.D. Physician in Charge.
New York office, No. 616 Madison Ave., cor., 58th St.

"BEVERLY FARM"

Home and School for Nervous & Backward Children

Awarded a grand prize Diploma and Medal by Louisiana Purchase Exposition. New school house with Gymnasium recently built enables acceptance of a few more selected children. Location ideal in midst of 135 acres, one hour from St. Louis via Chicago & Alton R.R. Individual school work and habit training. Consultation held at home if desired. Undue publicity avoided. Address all communications to
DR. W. H. C. SMITH, Supt., Godfrey, Madison Co., Ill.

Crest View Sanatorium

GREENWICH, CONN.

A quiet, refined home for the care and treatment of chronic invalids, especially those of a nervous nature, or mild mental cases. Scenery and surroundings unsurpassed. Address

H. M. HITCHCOCK, M.D.

MARY C. RUDOLPH MATERNITY HOME

Ethical
Exclusive
Home Like
Situation
Retired

Homes for infants provided by adoption, if desired. Terms reasonable. Address,
RUDOLPH MATERNITY HOME
219 Spring St. Nashville, Tenn.

Pontiac Hospital

Pontiac, Illinois

Conducted on Ethical lines. Confinement cases taken and strict privacy observed. Apply

Dr. E. H. Fitzpatrick, L.R.C.P., Edinburgh
Pontiac, Illinois

CHICAGO PASTEUR INSTITUTE

For the Preventive Treatment of Hydrophobia and the study of Infectious Diseases.

228 Dearborn Avenue, - Chicago

ANTONIO LAGORIO, M.D., Director. G. B. BRUNO, M.D. Assistant.
Established 1890.

WANTED

Every member of the AMERICAN MEDICAL ASSOCIATION to wear one of the Official Buttons. Price $1.00. This badge is the insignia of the Association. Is becoming more popular every year. Each member will find it an advantage to wear one.

JOURNAL A.M.A., 103 Dearborn Av., Chicago

THE GRANDVIEW

PRICE HILL, CINCINNATI

For Mental and Nervous Diseases, Alcoholism and Drug Habit

Recently enlarged and refurnished. Location ideal. Large grounds and beautiful views. *Especial feature is the homelike care and individual treatment. No ward service.*

BROOKS F. BEEBE, M.D., Supt., CINCINNATI, OHIO

FAIR OAKS SUMMIT, N. J.

For the care and treatment of Nervous Diseases, selected cases of Mental Alienation, Drug and Alcohol Addictions. Voluntary cases only. No objectionable cases taken. Twenty miles from, and the highest point within thirty miles of New York City. An ideal place for rest and recuperation.

DR. ELIOT GORTON *(Formerly First Asst. Physician to the New Jersey State Hospital at Morris Plains),* **SUMMIT, N. J.**
L. D. 'Phone 143.

MEDICO-SURGICAL ASPECTS of the Spanish-American War by NICHOLAS SENN, M.D.

Fully illustrated and attractively bound. 379 pages. 112 illustrations. Cloth. Sent by mail on receipt of 75c. Stamps accepted.

AMERICAN MEDICAL ASSOCIATION PRESS . 103 Dearborn Avenue CHICAGO, ILL.

Two Recent Additions to Pathological and Physiological Literature

SECTION ON PATHOLOGY AND PHYSIOLOGY, 1903

This volume contains several valuable clinical reports which the physician will find of great assistance in remembering and identifying many obscure pathological conditions. 192 pages, 30 illustrations, 2 charts, cloth. Size, 6 x 9½ inches. **Price, 50 cents. Postage, 10 cents.**

SECTION ON PATHOLOGY AND PHYSIOLOGY, 1904

One important and practical chapter entitled **"The Nature and Significance of Leucocytosis,"** by DR. A. MANSFIELD HOLMES, gives a very vivid clinical description of the diagnostic importance of the leucocyte count in appendicitis. 448 pages, 93 illustrations, 8 tables, cloth. Size, 6 x 9½ inches. **Price, 50 cents. Postage, 20 cents.**

AMERICAN MEDICAL ASSOCIATION PRESS, 103 Dearborn Avenue, Chicago, Ill.

KENILWORTH SANITARIUM

TELEPHONES { KENILWORTH 78 / EVANSTON 778

Kenilworth, Illinois

(C. & N. W. RAILWAY. SIX MILES NORTH OF OHIOAGO)

Built and equipped for the treatment of nervous and mental diseases. Approved diagnostic and therapeutic methods. Special system of ventilation. Rooms impervious to noise. Elegant appointments. Bath rooms en suite, steam heating, electric lighting, electric elevator.

SANGER BROWN, Physician in Charge

Telephone Central 3707

100 State Street, Chicago

"NORWAYS"

Dr. Sterne's Sanatorium for Nervous Diseases, 1820 East Tenth St. (facing Woodruff Park), INDIANAPOLIS, IND.

A thoroughly modern, well-equipped institution for the treatment of nervous and other constitutional diseases, the various drug habits and alcoholism. Paralytic children and those in need of the "rest cure" are especially treated. No mental cases are taken. Beautiful location and extensive grounds.

For information apply to DR. ALBERT E. STERNE.

Thomas E. Holland, M.D., William V. Laws, M.D., W. Turnor Wootton, M.D.

Drs. Holland, Laws & Wootton

Attending Physicians and Surgeons,

OZARK SANITARIUM

Offces 344 Central Avenue

HOT SPRINGS, ... ARKANSAS

SOUTHERN CALIFORNIA

The Pottenger Sanatorium

For Diseases of the LUNGS and THROAT

MONROVIA, CALIFORNIA

offers an opportunity for the cure of TUBERCULOSIS, in one of the best ALL-YEAR-ROUND CLIMATES in the world, 1000 feet elevation.

Besides open-air and good food, all scientifio measures which have proven of value are used in selected cases.

Everything new and modern; electric lights, mountain water, valley and mountain scenery unsurpassed.

F. M. POTTENGER, A.M., M.D. } Medical Directors
CHAS. C. BROWNING, M.D. }

Los Angeles, Office 601-3 O. T. Johnson Bldg.

Chicago Maternity Hospital

and Training School for Nursery Maids

1033 North Clark Street, - Chicago

Devoted to Obstetrics and the care of well babies under one year.

EFFA V. DAVIS. M.D., Chief Medical Attendant.

DR. PETTEY'S RETREATS

FOR THE TREATMENT OF

ALCOHOL AND DRUG ADDICTIONS

958 DAVIE AVENUE, MEMPHIS, TENN.
1939 EAST EVANS AVE., DENVER, COLORADO.
1849 DWINELL ST., OAKLAND, CALIF.

Methods employed render these addictions the most certainly and readily curable of all the chronic ailments. For particulars address the Retreat most convenient to you.

NEW MEXICO COTTAGE SANATORIUM

SILVER CITY, N. M.

For Throat and Pulmonary Tuberculosis.

Perfect situation in the mountains of Southern New Mexico. Altitude 6,000 feet. Splendid Climate. Excellent food. Moderate price. Separate Cottages for patients. Medical Director, Dr. E. S. Bullock, in constant attendance.

For full particulars write the Business Manager,

MR. WAYNE MacV. WILSON.

THE WINYAH SANITARIUM, Asheville, N. C.

ESTABLISHED 1888

Dr. Karl von Ruck, Med. Director

A modern and completely equipped Institution for the Treatment of Tuberculosis; high-class accommodations. Strictly scientific methods. For particulars and rates

WRITE TO

(Please mention this Journal.) *Wm. Schoenheit, Business Mgr.*

DR. SPRAGUE'S SANATORIUM

HIGH OAKS . . LEXINGTON, KENTUCKY

Cases of Nervous and Mental Diseases and Liquor and Drug Addictions Received . . . .

Many years' experience in treating these cases, a complete therapeutic equipment, and skilled nursing in beautiful home-like surroundings have given excellent results. The buildings, a large brick house and three cottages, are in the center of twelve acres of well-shaded grounds. Number limited to 19. Long-distance telephone.

Address . . Geo. P. Sprague, M.D., Lexington, Ky.

"ON-THE-HILL"

WATERTOWN, Litchfield Co., CONNECTICUT

Just the place you are looking for to regain your health, among the Litchfield Hills. A modern Sanatorium for Nervous and Chronic Invalids, Convalescent, Medical and Surgical Cases. Operative Surgical Cases also received. Location excellent, surrounded by 25 acres of land, fine views, walks and drives. Terms moderate. Telephone connection.

Apply to **CHARLES WARREN JACKSON, M.D.**

¶ All days are out-of-door days in the "Land of the Sky"

¶ Asheville Climate, Water and Scenery are Famous.

Doctor Carroll's Sanitarium is an institution employing all rational methods for the treatment of Nervous, Habit and mild Mental Cases; especially emphasizing the natural curative agents—Rest, Climate, Water and Diet.

ROBT. S. CARROLL, M.D.,
Asheville, N. C.

HALL-BROOKE

A licensed private **Hospital** for **Mental** and **Nervous** diseases. **Alcoholism** and the **Drug Habit.** The houses are equipped with every **modern appliance** for the treatment and comfort of their patients. The grounds, of over **100 acres**, are retired and inviting. Patients received from any **location. Terms moderate.**

DR. D. W. McFARLAND, Green's Farms, Conn.

SILVER CITY SANATORIUM

For the treatment of

TUBERCULOSIS

Altitude, 6,000 feet

Delightful Location One Mile North of Town.

R. B. LEAVEL, M.D., Medical Director and Resident Physician

SILVER CITY, NEW MEXICO

Post-Graduate Medical School of Chicago

W. FRANKLIN COLEMAN, M.D., President. ARTHUR R. ELLIOTT, M.D., Vice-President. FRANKLIN H. MARTIN, M.D., Secretary. W. L. BAUM, M.D., Treas. F. A. BESLEY, M.D.

FACULTY

PATHOLOGY AND BACTERIOLOGY
F. R. Zeit, M.D.

MEDICINE
Arthur R. Elliott, A.M., M.D.
M. M. Portis, M.D.
Geo. F. Butler, M.D.
H. F. Goodwin, M.D.

SURGERY
T. J. Sullivan, M.D.
Frederick A. Besley, M.D.
Wm. R. Cubbins, M.D.
A. E. Halsted, M.D.
Allen B. Kanavel, M.D.
H. M. Richter, M.D.

ORTHOPEDIC SURGERY
Robert Hardon, M.D.

GYNECOLOGY
Franklin H. Martin, M.D.
Albert Goldspohn, M.D.
Emil Ries, M.D.
A. McDermid, M.B., M.D.

DISEASES OF RECTUM
Stuart Johnstone, M.D.

STOMACH AND INTESTINES
Fenton B. Turck, M.D.
Milton H. Mack, M.D.
G. F. Pierce, M.D.

EAR
Geo. P. Marquis, M.D.

EYE
W. Franklin Coleman, M.D., M.R.C.S.
Geo. F. Suker, M.D.
Clark W. Hawley, M.D.
R. S. Patillo, M.D.

NOSE AND THROAT
G. P. Head, M.D.
O. J. Stein, M.D.
James T. Campbell, M.D.

NERVOUS DISEASES
Julius Grinker, M.D.

SPECIAL COURSES

In February we shall offer a General Course, lasting one month, beginning the first of the month, in which the student may make a selection from all the work of the School. This course includes General Medicine, General Surgery, Gynecology and Abdominal Surgery, Diseases of Children, Dermatology, Eye and Ear Diseases, Nose and Throat Diseases, Electro-Therapeutics and Obstetrics, all illustrated by Clinical teaching. Evening lectures on Anesthetics and Technique will also be a feature of the course (and the Student may, if he so desires, confine himself to any one of these departments).

Our faculty is so complete and our clinical material so abundant that we are able practically to conduct a SPECIAL SCHOOL in each department and the courses will consist of clinics and lectures extending throughout the entire day, so that every hour of the day may be profitably employed.

For catalogue and special literature, address,

FRANKLIN H. MARTIN, M.D., Secretary
2400 Dearborn Street, - - - - Chicago

FACULTY

OBSTETRICS
C. E. Paddock, M.D.
A. McDermid, M.D.

DISEASES OF CHILDREN
J. C. Cook, M.D.
Thos. Grant Allen, M.D.
Joseph Brenneman, M.D.

SKIN AND VENEREAL DISEASES
W. L. Baum, M.D.

ANATOMY
Wm. R. Cubbins, M.D.

ELECTRO-PHYSICS
C. S. Nelswanger, M.D.

EXTRA-MURAL FACULTY

MEDICINE
Robert H. Babcock, M.D.
H. W. Gentles, M.D., C.M.

SURGERY
D. N. Eisendrath, M.D.
L. L. McArthur, M.D.
D. A. K. Steele, M.D.
J. B. Murphy, A.M., M.D.

GYNECOLOGY
Lester Frankenthal, M.D.
Henry T. Byford, M.D.
Henry P. Newman, M.D., A.M.

EAR
Norval H. Pierce, M.D.
Seth Scott Bishop, M.D., LL.D.

EYE
Casey A. Wood, M.D.
T. A. Woodruff, M.D.

NOSE AND THROAT
T. Melville Hardie, M.D., B.A.

NERVOUS DISEASES
Sydney Kuh, M.D.
Richard Dewey, M.D.
Daniel R. Brower, M.D.

SKIN AND VENEREAL DISEASES
L. Blake Baldwin, M.D.

CHICAGO POLICLINIC

OPERATIVE SURGERY

For further particulars address
M. L. HARRIS, Secretary, 174 East Chicago Avenue, Chicago

During January, in addition to the regular clinical schedule, we offer a series of SPECIAL OPERATIVE COURSES upon the CADAVER. These will be conducted personally by Dr. Paul Gronnerud and will cover the whole field of Surgery, including Amputations, Ligations, Resections, Pelvic, Abdominal and Cranial work, supplemented by work on animals.

THE NEW YORK EYE AND EAR INFIRMARY

School of Ophthalmology and Otology — For Graduates of Medicine.

Clinics daily by the surgical staff of the Infirmary. Special courses in Ophthalmoscopy, Refraction, Operative Surgery of the Eye and Ear and Pathology.

The abundant clinical material at this well-known institution affords students an unusual opportunity for obtaining a practical knowledge of these special subjects. Two vacancies on the House Staff exist in January and July of each year. For particulars address the Secretary,

DR. GEO. S. DIXON, New York Eye and Ear Infirmary.

W. A. FISHER, M.D., President A. G. WIPPERN, M.D., Vice-President

Chicago Eye, Ear, Nose and Throat College

POST-GRADUATE INSTRUCTION

Diseases of the Eye, Ear, Nose and Throat and Fitting of Glasses.

Open the year round. Write for announcement to

J. R. HOFFMAN, M.D., Secretary, 206 EAST WASHINGTON STREET, CHICAGO

New York Polyclinic Medical School and Hospital

UNIVERSITY OF THE STATE OF NEW YORK

214-220 East 34th Street, New York City. Founded 1881

PRACTICAL POST GRADUATE COURSES IN ALL THE DEPARTMENTS OF MEDICINE AND SURGERY

The Dispensary and Hospital yield a variety of material for clinical demonstrations of the technic of major and minor surgical operations, **Physical diagnosis** and treatment of diseases.....¶ **Modern Methods** in the special branches of each department are studied, including **Electro-Radio-Therapy**.....¶ **Laboratory Instruction** in Pathology, Bacteriology and Urinary Analysis.....¶ **Classes in Operative Surgery**..... ¶ **Special and Enlarged Facilities** in the department of **Ophthalmology.** For further information, address

CHARLES H. CHETWOOD, M.D., Secretary of the Faculty

PHILADELPHIA POLYCLINIC

And College for Graduates in Medicine

Practical work in the special branches of Surgery, Orthopedic Surgery, Diseases of the Rectum and Genito-Urinary Surgery, which may be supplemented by special operative courses on the cadaver under competent teachers. In the daily clinics in Diseases of the Skin and Genito-Urinary Surgery, which have a very large attendance, thorough instruction in the diagnosis and treatment of venereal diseases and their complications is given by eminent specialists in these lines. Send for special laboratory announcement.

Write to **R. MAX GOEPP, M.D., Dean, Lombard Street, above 18th Street, PHILADELPHIA, PA.**

New York Post-Graduate Medical School and Hospital

UNIVERSITY OF THE STATE OF NEW YORK

THIS IS THE FIRST INSTITUTION IN AMERICA FOUNDED FOR GIVING GRADUATES IN MEDICINE ADVANCED INSTRUCTION IN CLINICAL MEDICINE AND SURGERY. THE HOSPITAL CONTAINS 216 BEDS.

FACULTY: SURGERY—W. B. DeGarmo, Daniel Lewis, Carl Beck, Willy Meyer, Samuel Lloyd, Robert T. Morris; ORTHOPÆDIC SURGERY—W. O. Plimpton, Henry L Taylor; DISEASES OF THE RECTUM—Samuel G. Gant; MEDICINE—Wm H. Porter, Stephen S. Burt, Reynold W. Wilcox, Leonard Weber, Max Einhorn, Simon Baruch, Edward Quintard, C. F. Wainwright; PATHOLOGY, HISTOLOGY AND BACTERIOLOGY—Henry T. Brooks; CLINICAL PATHOLOGY—Frederick E. Sondern; DISEASES OF WOMEN—Bache Mc. E. Emmet, J. R. Nilsen, H. St J Boldt, G M. Edebohls, Ralph Waldo, James N. West, G. G. Ward, Jr.; DISEASES OF CHILDREN—Henry D. Chapin, Augustus Caille; DISEASES OF THE EAR—D. B. St. John Roosa, Wendell C. DISEASES OF THE EYE—D. B. St. John Roosa, Francis Valk, Edward S. Peck. A. Edward Davis; DISEASES OF THE MIND AND NERVOUS Phillips, James F. McKernon; DISEASES OF THE NOSE AND THROAT—Clarence C. Rice, H. Beaman Douglass; DISEASES OF THE SKIN—W. Bedford Brown, Charles W. Allen; SYSTEM—Graeme M. Hammond, William J. Morton, Joseph Collins; OBSTETRICS—George L. Brodhead, J. O. Polak; GENITO-URINARY DISEASES—Eugene Fuller, Ramon Guiteras; OPERATIVE SURGERY ON THE CADAVER—John J McGrath; ANATOMY—Neil Macphatter. For further particulars, address

D. B. St. JOHN ROOSA, M.D., LL.D., President. JAMES N. WEST, M.D., Secretary of the Faculty, Second Avenue and Twentieth Street, New York City

CALIFORNIA

Oakland College of Medicine and Surgery

OAKLAND, CALIFORNIA

Graded course of four years of nine months each. Well equipped laboratories in all departments; abundant clinical advantages; hospital and out-patient department. **Each class limited to ten students.** Matriculation, $5.00; Tuition, $150.

EDWARD N. EWER, Registrar

Physicians' Building - - - - - Oakland, California

COLORADO

Denver and Gross College of Medicine

MEDICAL DEPARTMENT UNIVERSITY OF DENVER

Four years' graded course. Sessions of eight months each. 25th Annual Session began Sept. 12, 1905. Matriculation fee, $5.00. Tuition fee, $100.00. Well-equipped laboratories in all departments and excellent clinical advantages in dispensary and hospitals.

The climate of COLORADO offers many advantages to students whose health compels them to leave the east.

Catalogue on application.

SHERMAN G. BONNEY, A.M., M.D., Dean.

ROBERT LEVY, M.D., Secretary, California Bldg., Denver, Colo.

ILLINOIS

The Illinois Medical College

DEPARTMENT OF MEDICINE AND PHARMACY

HEMAN H. BROWN, M.D., President. B. BRINDLEY EADS, M.D., Dean.

All buildings new; laboratories modernly equipped; hospital in connection with FREE OBSTETRICAL WARD; large outdoor clinics. Academic year divided into three terms—September, January and May. Course—Four years, seven months. Minimum requirement. *For Catalogue, address*

W. C. SANFORD, M.D., SECRETARY,

182-184 Washington Blvd. . . Chicago

Northwestern University Medical School

(Chicago Medical College)

DR. N. S. DAVIS, Dean.

This Medical School is centrally located, convenient to large hospitals affording abundance of clinical material. The laboratories and lecture rooms are commodious, well-lighted and generously supplied with all modern appliances to aid in carrying on in the most effective manner the study of medicine.

The full course consists of four years, eight months each, beginning Oct. 1st.

The classes are divided into small sections thus, affording to students better opportunities or the advantages of individual instruction. This feature as well as a graded curriculum characterize the work in all the departments.

For further particulars address the Secretary,

Dr. CHARLES LOUIS MIX, :: :: :: 2431 Dearborn St., Chicago

Rush Medical College

IN AFFILIATION WITH

The University of Chicago

Winter Quarter commences January 1, 1907. Properly prepared students may enter at that time. The fundamental branches (Anatomy, Physiology, etc.) are taught at the University of Chicago on University lines. The Clinical branches are taught at Rush Medical College and adjacent hospitals.

For further information address

RUSH MEDICAL COLLEGE, Chicago, Ill.

The College of Physicians and Surgeons OF CHICAGO

To Prospective Students:

The College of Physicians and Surgeons—College of Medicine of the University of Illinois—will open its regular session September 27, 1906. Laboratory equipment complete—clinical matter abundant. Students permitted to specialize in elective studies. Send for Catalogue No. 7 to

FRANK B. EARLE, M. D., Secretary, CHICAGO, ILL.

Congress and Honore Sts.

The Chicago College of Dental Surgery.

FOUNDED IN 1880 2420 GRADUATES

Has continued under the management of its founders since its organization and offers unsurpassed facilities to dental students. For announcement address

DR. TRUMAN W. BROPHY, Dean, 754 W. Harrison Street, Chicago

IOWA

KEOKUK MEDICAL COLLEGE
COLLEGE OF PHYSICIANS AND SURGEONS

THESE TWO SCHOOLS CONSOLIDATED IN 1899.

Regular Winter Session begins Sept. 11, 1906, and will continue to May 21, 1907. The Faculty is composed of men in active practice and with experience in College work. Course of instruction extends over four years and is graded. Under the above combination, facilities have been very much increased. Didactic, Clinical and Laboratory Work very thorough.

Fees and General Ticket, $50.00; Laboratory Courses each $5.00; Hospital Ticket, $3.00 per year. Fees for Dental Department, $100.00; for Pharmacy Course, $50.00 per year. For circular of information address the Secretary, W.B. La Force, M.D., Keokuk, Iowa.

MARYLAND

The Baltimore Medical College

PRELIMINARY FALL COURSE BEGINS SEPTEMBER 1.

REGULAR WINTER COURSE BEGINS SEPTEMBER 20.

Liberal Teaching Facilities; Modern College Buildings; Comfortable Lecture Hall and Amphitheaters; Large and Completely Equipped Laboratories; Capacious Hospitals and Dispensary; Lying-in Department for Teaching Clinical Obstetrics; Large Clinics. Send for Catalogue, and address DAVID STREETT, M.D., Dean, 712 Park Ave., Baltimore, Md.

MASSACHUSETTS

Tufts College Medical School

BOSTON, MASSACHUSETTS

This School offers to men and women a four years' graded course, including all departments of the study of Medicine.

Its Laboratory facilities and Clinical advantages are unsurpassed.

The next session begins the last Wednesday in September and continues until June. For further information or for catalogue address

FREDERIC M. BRIGGS M D. *Secretary*

Tufts College Medical School, Boston Mass.

The Harvard Medical School

The new buildings. four of which are devoted entirely to laboratory teaching and research, will be ready for use early iu the fall of 1906. Abundant facilities for general and special clinica instruction it medicine and surgery are afforded by numerous hospitals of Boston.

Course for the Degree of M.D. A four years' course open to bachelors of art, literature, philosophy, or science and to persons of equivalent standing leads to the degree of M.D. The studies of the fourth year are wholly elective, they include laboratory subjects, general medicine, general surgery, and the special clinical branches. The next School-year extends from Sept. 27, 1906, to June, 26, 1907.

Graduate Courses Throughout the School-year, special courses open to graduates of recognized medical schools are offered in the various subjects of practical medicine and the medical sciences.

Research Work In all the laboratories opportunity is given at all times for properly qualified persons to conduct original investigations.

Special Students, not candidates for the degree of M.D., are admitted, under certain conditions, to all Courses in the School.

For detailed announcements, address

Harvard Medical School, Boston, Mass.

COLLEGE OF PHYSICIANS AND SURGEONS

Standard requirements. Allowance for service in Dispensary and Hospital. Twenty-sixth year opens September 19th. Ample instruction in actual practice.

J. H. JACKSON, A.M., M.D., REGISTRAR, Shawmut Ave., near City Hospital : : : BOSTON, MASS.

MICHIGAN

MICHIGAN COLLEGE OF MEDICINE AND SURGERY

Established 1888

A graded course of four years, of seven months each. Didactic and recitation system. Well-equipped laboratories. Large staff of instructors. Facilities for clinical instruction unsurpassed.
For announcement or information address
E. B. SMITH, M.D., Secretary, Detroit, Mich.
Or HAL C. WYMAN, M.D., Dean.

DETROIT COLLEGE OF MEDCINE

Departments of Medicine and Dental Surgery

38th Annual Session opens Sept. 19, 1906; closes May 30, 1907. Four years' graded course. New buildings. Laboratory courses thorough; equipment modern and complete. Clinical advantages in St. Mary's, Harper, the Children's Free, and the Woman's Hospitals and the House of Providence. For particulars address

H. O. WALKER, Secretary,
612 Washington Arcade, - Detroit, Michigan

MINNESOTA

THE UNIVERSITY OF MINNESOTA

College of Medicine and Surgery

Opens September 18, 1906. Four years of 36 full weeks of graded medical instruction must be spent in laboratory, hospital and dispensary work. The college occupies six fully equipped, modern buildings on the University Campus and a clinical building nearby. A similar dispensary in St. Paul and all the Hospitals of the Twin Cities are fully utilized. A recent generous bequest will provide additional university hospital facilities. For information concerning entrance requirements, combined A.B. and M.D., or B.S. and M.D. courses or graduate work, address THE DEAN, College of Medicine and Surgery, The University of Minnesota, Minneapolis, Minn.

NEW YORK

Cornell University Medical College

The session of 1906-07 begins Sept. 26th. For entrance into any class there is required a preliminary education equivalent to at least a four year "high school" course including English, primary Latin, Algebra and Geometry. The first two years are devoted to Anatomy, Chemistry and Physiology, and may be take either in Ithaca or New York. The last two years are chiefly clinical and must be taken in New York.

For further particulars address
W. M. POLK, M.D., LL.D., Dean, Cornell University Medical College
28th St. and 1st Ave., New York City

Standard of Requirement High

College of Medicine--Syracuse University

Four years' course
Special study room for women—Clinics in three hospitals

Syracuse, N. Y.

Halftone pictures, laboratories, study rooms, etc., sent with pleasure.

LONG ISLAND COLLEGE HOSPITAL,

SESSION 1906-1907

Hoagland Laboratory and Polhemus Memorial Clinic

REGULAR SESSION BEGINS OCTOBER 1, 1906.

Unexcelled Clinical Facilities. The teaching staff is represented in nearly all the hospitals on the east side of New York Harbor, and clinics held in these institutions are open to the students of this college. In the College Hospital and Dispensary 20,000 patients were treated in 1905. Practical clinical courses given in all special branches. Unexcelled laboratory facilities in Microscopy, Bacteriology, Chemistry, Pharmacy, Physiology and Anatomy. Out-patient service in Obstetrics a part of regular curriculum. Send for announcement to

JOSEPH H. RAYMOND, M.D., Secretary of Faculty
Long Island College Hospital, Borough of Brooklyn, New York City

VERMONT

University of Vermont College of Medicine

The fifty-third session of this College of Medicine begins DECEMBER 1, 1906, and continues seven months. A new building with every facility for medical instruction. Moderate expense. For information address.

H. L. WHITE, A.M., Secretary, Burlington, Vermont.

PENNSYLVANIA

WOMAN'S MEDICAL COLLEGE

OF PENNSYLVANIA

57th Annual Session. Thorough course. Four years. Exceptional facilities for Laboratory and Bedside Instruction. Post-Graduate course in Operative Gynæcology in the spring; post-graduate course in Obstetrics in the summer months. Full particulars in catalogue.

CLARA MARSHALL, M.D., Dean,
BOX 600
21st St. & N. College Avenue, Philadelphia, Pennsylvania.

THE JEFFERSON MEDICAL COLLEGE

OF PHILADELPHIA

Founded 1825. **A chartered university since 1838.**

NEW COLLEGE BUILDING, NEW LABORATORIES AND NEW HOSPITAL

The Eighty-third Annual Session will begin Sept. 24, 1907, and continue eight months. For four annual sessions the curriculum provides without extra fee: 1. Practical manual training in ten different laboratories recently fitted up at heavy cost. 2. Recitations by the faculty and others. 3. Didactic lectures and demonstrations in the commodious new buildings. 4. Clinics and bedside ward work in small groups at the College Hospital; beside the clinics given by the staff of the college at the Pennsylvania, St. Agnes', Philadelphia, German, St. Joseph's and Municipal Hospitals. 5. Lying-in cases at the College Maternity.

Two-thirds of the graduates every year secure hospital appointments.

A NEW FIREPROOF HOSPITAL with unrivaled facilities for clinical teaching has been built at a cost of $1,250,000.

For circular and information, address

ROSS V. PATTERSON, M.D., Sub-Dean

VIRGINIA

MEDICAL COLLEGE OF VIRGINIA

Christopher Tompkins, M.D., Dean

Medicine Dentistry Pharmacy

Excellent theoretical course as well as thorough practical and clinical instruction in State Institutions, and hospitals and laboratories of the College.

A College with an established reputation throughout the country.
For catalogue of 68th Session and Announcement for the 69th (which opens Sept. 25th, 1906) address

FRANK M. READE, M.D., Secretary, Richmond, Va.

UNIVERSITY COLLEGE OF MEDICINE

STUART McGUIRE, M.D., President

FACILITIES GOOD. STANDARD HIGH. EXPENSES LOW. CLIMATE MILD.

Member of the Association of American Medical Colleges. Well known and experienced Faculty. Standards of admission, instruction and graduation entitle degrees to recognition in any State. Descriptive Bulletins. Address **William R. Miller, Proctor, Richmond, Va.**

Medico-Surgical Aspects of the Spanish-American War

BY NICHOLAS SENN, M.D.

Every physician has a few leisure minutes each day in which he can enjoy an interesting book. Thus he can rest his mind from that state of apprehensiveness incident to active medical practice. Dr. Senn's book is full of entertaining illustrations which aid greatly in giving a vivid description of ESCULAPIUS ON THE FIELD OF BATTLE. 379 pp., 112 illustrations. Cloth. Price, 50c; postage, 17c. Stamps acceptable.

AMERICAN MEDICAL ASSOCIATION PRESS

103 Dearborn Avenue - - - - - CHICAGO

LIST OF NATIONAL MEDICAL SOCIETIES.

It is believed the information in this table is correct to date of going to press. Officers or others are requested to notify us of any errors or required changes. For further information concerning any society address the secretary.

SOCIETY.	PRESIDENT.	SECRETARY.	NEXT ANNUAL MEETING.
AMERICAN MEDICAL ASSOCIATION	Wm. J. Mayo, Rochester, Minn.	George H. Simmons, 103 Dearborn Ave., Chicago.	Atlantic City, N.J. J'ne 4-7'07
American Academy of Medicine	Casey A. Wood, Chicago, Ill.	Charles McIntire, Easton, Pa.	Atlantic City, N.J. J'ne 1-3'07
Academy of Ophthal. and Oto-Laryng.	J. A. Stucky, Lexington, Ky.	Geo. F. Suker, 103 State St., Chicago.	Louisville, Sept. 26-28, 1907
Anatomists, Association of	F. P. Mott, Baltimore, Hopkins U.	G. Carl Huber, Ann Arbor, Mich.	New York City, Dec. 27-29, '06
Association of Genito-Urinary Surg.	Wm. K. Otis, New York	J. Van der Poel, 36 W. 39th St., New York.	Washington, D.C., 1907
Assn. of Medical Examiners	William Moore, New York	Jno. Guy Monihan, 90 William St., N. Y.	Atlantic City, Jnne 3, 1907
Association of Obstetricians and Gyn.	Robert T. Morris, New York	W. W. Potter, 284 Franklin St., Buffalo.	Sept. 17, 1907
Assn. of Military Surgeons of the U. S.	Col. V. Havard U.S.A. Wash'ton, D.C.	Major J. E. Pilcher, Carlisle, Pa.	Jamestown, Va, Oct., 1907
Assn. of Pathologists & Bacteriologists.	William H. Welch, Baltimore M.D.	Harold C. Ernst, Boston, Mass.	Washington, D.C. May, 1907
Assn. for the Study of the Feeble Minded	W. H. C. Smith, Godfrey, Ill,	E. C. Rogers, Faribault, Minn.	Boston, Mass.
Association of Railway Surgeons	W. S. Hoy, Wellston, Ohio	H B. Jennings. Council Bluffs, Ia.	
Climatological Association	D. Thomas Darlington, New York	Guy Hinsdale, Hot Springs, Va.	Washington, D.C., May, 1907
Dermatological Association	A. Van Harlinger, Philadelphia, Pa	G. W. Weude, Buffalo, 471 Delaware Ave.	New York, September, 1907
Electro-Therapeutic Association	Morris W. Brinkman, New York	Albert C. Geyser. 1239 Madison Ave, N. Y.	September, 1907
Gastro-Enterological Association	H. W. Bettmann, Cincinnati, Ohio.	C. D. Aaron, 32 W. Adams Ave., Detroit	Washington, D.C., May, 1907
Gynecological Society	Clement Cleveland, New York	J. Riddle Goffe, 29 W. 46th St., New York.	Washington, June, 1907
Laryngological Association	A. W. De Roaldes, New Orleans La.	Jas. E. Newcomb. 118 W. 69th St., N. Y.	Washington, D.C., 1907
Laryn., Rhin., and Otol. Society	Wendell C. Phillips, New York	Thomas J. Harris, 117 E. 40th St., N. Y.	New York City, May, ——'07
Medical Colleges, Association of	Geo. M. Kober, Washington D. C.	Fred. C. Zapffe, 1764 Lex'gt'n St., Chicago.	Richmond, Va., March, 18, '07
Medico-Psychological Association	Chas. G. Hill, Baltimore	C. W. Pilgrim, Poughkeepsie, N. Y.	Washington, D. C. June '07
Ophthalmological Society	C. J. Kipp, Newark, N. J.	S. B. St. John, 68 Pratt, Hartford, Conn.	Washington, D. C.
Orthopedic Association	Joel E. Goldthwait, Boston, Mass.	Robt B. Osgood, 372 Marlborough St. Bost'n	Washington, D.C.
Pediatric Society	B. K. Rachford, Cincinnati Ohio.	S. S. Adams, 1 Dupont Circle, Wash., D. C.	Washington, May, 1907
Physicians, Association of	Francis P. Kinnicutt, New York.	H. Hun, 149 Washington Av., Albany, N. Y.	Wash'g'n, D.C., May 7-9, 1907
Proctologic Society	Sam'l G. Gant. New York	A. B. Cooke, Nashville, Tenn.	Atlantic City, N.J J'ne 4-5'07
Public Health Association	F. C. Robinson, Brunswick, Maine	C. O. Probst, Columbus, O. P. O. Box, 760	Washington, May, 1907
Surgical Association	Dudley P. Allen, Cleveland Ohio.	Robt. G. LeCoute, 1530 Locust St., Phila.	Wash'g'n, D. C., May 4-7, '07
Therapeutic Society	Robt. Reyburn, Washington D. C.	Noble P. Barnes, Washington, D. C.	Atlantic City, N.J. J'ne 3-4'07
Urological Association	Bransford Lewis, St. Louis, Mo	Hugh Cabot, 1 Marlboro St., Boston	Washington, D. C. Jnne. '07
Cou. of State and Prov. Bds. of N. A.	Chas. D. Smith. Portland, Me.	John S. Fulton, 10 So. St., Baltimore, Md.	Columbus, O., Oct., 1907
Mississippi Valley Medical Association	H. Horace Grant, Louisville, Ky.	H. E. Tuley, 111 W. Kentucky, Louisville.	Omaha Neb., March, 1907
Missouri Valley, Medical Society of the	O. B. Campbell, St. Joseph, Mo.	Chas. Wood Fassett, St. Joseph. Mo.	
Southern Surgical and Gyn. Association	Lewis C. Bosher, Richmond, Va.	W. B. Haggard, Jr., Nashville. Tenn.	St. Louis, Mo., Dec. 30-1, '07
Western Surgical and Gyn. Association	C. W. Oviatt, Oshkosh, Wis.	Arthur T. Mann, M.D., Minneapolis, Minn.	

LIST OF STATE MEDICAL SOCIETIES.

It is believed the information in this table is correct to date of going to press. Officers or others are requested to notify us of any errors or required changes. For further information concerning any society address the secretary.

SOCIETY.	PRESIDENT.	SECRETARY.	NEXT ANNUAL MEETING
Alabama, Medical Assn. of the State	G. T. McWhorter, Riverton	J. N. Baker, Montgomery	Mobile, April 16, 1907
Arizona Medical Association	Otto E. Plath, Phoenix	John W. Foss, Phœnix	Bisbee, April, 1907
Arkansas Medical Society	C. Travis Drenuen, Hot Springs	C. C. Stephenson, Little Rock	Little Rock, May 15-17, 1907
California, Medical Soc. of the State of	R. F. Rooney, Auburu	P. M. Jones 2210 Jackson St., San Francisco	Sept. 17, 1907
Colorado State Medical Society	H. R. Bull, Grand Junction	Melville Black, Majestic Bldg., Denver	Hartford, May 22-23, 1907
Connecticut State Medical Society	William L. Higgins, So. Coventry	Walter R. Steiner, 4 Trinity St., Hartford	Wilmington, Oct. 8, 1907
Delaware State Medical Society	John W. Clifton, Smyrna	G. W. K. Forrest, 1000 Jackson St., Wilm'ton	Washington, April 2, 1907
District of Columbia, Medical Assn. of	D. Olin Leech, Washington	D. W. Prentiss, 1315 M St., nw. Washington	Tampa, April 17, 1907
Florida Medical Associaton	John MacDiarmid DeLand	J. D. Fernandez, Jacksonville	Savannah, April 17, 1907
Georgia, Medical Association of	H. H. Martin, Savannah	Louis H. Jones, Atlanta	
Hawaiian Territorial Medical Society	J. T. Wayson, Honolulu	A. N. Sinclair, Honolulu	Boise, Oct., 3-4, 1907
Idaho State Medical Society	L. P. McCalla, Boise	Ed. E. Maxey, Boise	Rockford, May 21 23, 1907
Illinois State Medical Society	J. F. Percy, Galesburg	Edmund W. Weis, Ottawa	Indianapolis
Indiana State Medical Association	Geo. J. Cook, Indianapolis, Ind	F. C. Heath, 427 Newton Clyp. B. Indianp'lis	Cedar Rapids, May 15-17, '07
Iowa State Medical Society	E. W. Clark, Grinnell	V. L. Treynor, Council Bluffs	Kansas City, 1907
Kansas Medical Society	L. L. Uhls, Osawatomie	Chas. S. Huffman, Columbus	Louisville, Oct. 1907
Kentucky State Medical Association	D. M. Griffith, Owensboro	Arthur T. McCormack, Bowling Green	New Orleans, May 14-16, '07
Louisiana State Medical Society	Henry Dickson Bruns, New Orleans	P. L. Thibaut, 141 Elk Pl., New Orleans.	Lewiston, June 5-7, 1907
Maine Medical Association	C. E. Williams, Auburu	Walter E. Tobie, 3 Deering St., Portland	
Maryland, Medical and Chir. Faculty of	Hiram Woods, Baltimore	J. Ruhräh, 839 N. Eutaw St., Baltimore	Boston, June 11-12, 1907
Massachusetts Medical Society	G. W. Gay, Newton, (Chestnut Hill)	F. W. Goss, 217 Warren St., Roxbury	Saginaw May, 1907
Michigan State Medical Society	C. B. Stockwell, Port Huron	B. R. Schenck, 502 Wash. Arcade, Detroit	Duluth, August 21, 1907
Minnesota State Medical Association	H. A. Tomlinson, St. Peter	Thos. McDavitt. St. Paul	Gulfport, April 10, 1907
Mississippi State Medical Association	W. W. Crawford, Hattiesburg	L. T. Fox, Benela, Calhoun Co.	Jefferson City. May 14-16, '07
Missouri State Medical Association	C. H. Wallace, St. Joseph	C. M. Nicholson, 4500 Olive St., St. Louis	Billings, May, 1907
Montana State Medical Association	O. G. Warren. Warm Springs	Grace W. Cahoon, Butte	Omaha, May 7-9, 1907
Nebraska State Medical Association	F. A. Long, Madison	H. W. Orr, Lincoln	Reno, Oct. 8-9, 1907
Nevada State Medical Society	A. Huffaker, Carson City	S. K. Morrisson Reno	Concord, May 16-17, 1907
New Hampshire Medical Society	Ira J. Prouty, Keene	D. E. Sullivan, Concord	Cape May, June 25-27, 1907
New Jersey, Medical Society of	Alexander Marcy Jr., Riverton	William J. Chandler, South Orange	Las Cruces, 1907
New Mexico Medical Association	Thomas B. Hart, Raton	R E. McBride, Las Cruces	Albany, Jan. 29, 07
New York, Med. Soc. of the State of	Joseph D. Bryant, New York	Wisner R. Townsend. 64 Madison Ave., N. Y.	Morehead City, May 28-30 07
North Carolina, Med. Soc of the State of	Sam D. Booth, Oxford	David A. Stanton, High Point	Minot, May 14-15, 1907
North Dakota State Medical Association	Robt. D. Campbell, Grand Forks	H. J. Rowe, Casselton	Cedar Point, Aug. 28, 1907
Ohio State Medical Association	B. R. McClellan, Xenia	Frank Winders, Columbus	Shawnee, May 14-15, 1907
Oklahoma State Medical Association	B. F. Fortner, Vinita, I. T.	E. O. Barker, Guthrie	Seaside, 1907
Oregon State Medical Association	E. B. Pickel, Medford	L. H. Hamilton, Portland	Reading, Sept. 23-6, 1907
Pennsylvania Med. Soc. of the State of	Isaac C. Gable, York	Cyrus Lee Stevens, Athens	Manila
Philippine Islands Medical Associaton	Paul C. Freer, Manila	Robert E. L. Newberne, Manila	Providence, June 6, 1907
Rhode Island Medical Society	Christopher F. Barker, Newport	S. A. Welch, 253 Washingtou St., Providence.	Bennettsville, April 10, 1907
South Carolina Medical Association	T. P. Whaley, Charlestou	Walter Cheyne, Sumter	Sioux Falls, 1907
South Dakota State Medical Association	E. T. Ramsey, Clark	R. D. Alway, Aberdeen	Nashville, April 9, 1907
Tennessee State Medical Association	L. A. Yarbrough, Covington	Geo. H. Price, 146 N 8th Ave., Nashville	Mineral Wells, May 7, 1907
Texas State Medical Association of	G. B. Foscue, Waco	I. C. Chase, Ft. Worth	Salt Lake, May 7-8, 1907
Utah State Medical Association	Frederick Clift, Provo	W. S. Ellerbeck, Salt Lake	St. Johnsbury, Oct. 10-11 '07
Vermont State Medical Society	D. C. Hawley, Burlington	George H. Gorham, Bellows Falls	Chase City, Oct. 1907
Virginia, Medical Society of	P. B. Barringer, Univ. Sta., Char-	Landon B. Edwards, Richmond	Seattle, September, 1907
Washington State Medical Association	J. H. Lyons, Seattle. [lottesville	C. H. Thomson, 203 Walker Bldg., Seattle	Huntington, May, 1907
West Virginia State Medical Association	William W. Golden, Elkins	T. W. Moore, Huntington	Superior, Aug. 20-22, 1907
Wisconsin, State Medical Society of	L. H. Pelton, Waupaca	Charles S. Sheldon, Madison	Casper
Wyoming State Medical Society	W. A. Wyman, Cheyenne	Geo. L. Strader, Cheyenne	

Infection, Immunity and Serum Therapy, 500 pp., illustrated, cloth. Price $2.00. American Medical Ass'n 103 Dearborn Ave. Chicago

THE REASON WHY THE

Luther Hand-Made Glove

WON'T RIP

Machine Sewing cuts itself.

Hand Sewing cannot.

A Doctor's Driving Glove.

Hand-Cut, Hand-Sewed and Hand-Finished.

A glove made for practical, comfortable durability. Without a trace of oil, odor or animal glue. Water, weather and perspiration will not harden them; if soiled, may be washed in hot water and soap without injury. Not a dress glove, but nice enough to wear anywhere. We make other styles and make gloves to your measure. Illustrated booklet, samples and self-measurement rule on request.

No. 308. (See cut). Any size, prepaid anywhere - $2.00
No. 308. Made to measure, " " - 2.50

J. P. LUTHER GLOVE CO. 522 Pearl Street **BERLIN, WIS.**

GODD BDNE UNIDN SECURED WITHOUT SHDRTENING DR DEFDRMITY

ORDER THE AMBULATORY PNEUMATIC SPLINT

Adjustable to any patient, either limb, for Recumbent and Ambulatory Treatment of Old Cases of Non-Union, Luxations, Sprains, Knee or Hip-Joint Disease

ANKLE, LEG, KNEE, THIGH AND HIP FRACTURES

Recommend it to your Patients

Its use means Greater Comfort, Perfect Results and Larger Fees. Every Doctor should have this splint on hand. Write us now for literature, prices, terms, etc. Order direct from us or your dealer.
Ambulatory Pneumatic Splint Mfg. Co., 60 A, Wabash Ave., Chicago.

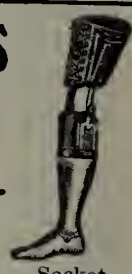
Socket Removed

ARTIFICIAL LEGS

With Patent Slip Socket
(Warranted not to Chafe)

E. H. ERICKSON LIMB CO.
Minneapolis, Minn., U. S. A.

Largest Limb Factory in the World



Socket in place

The Wolfertz Deformity Appliance and Truss Mfg. Co.

Successors to Dr. Robert Wolfertz
Est. 1886. Inc. 1906.
60 Fifth Ave., Cor. Randolph St., Chicago, Ill.

ORTHOPEDIC SURGEONS and manufacturers of **DEFORMITY APPLIANCES** of every description,

Trusses, Abdominal Supporters, Elastic Stockings, Extension Sboes, Artificial Limbs, etc.

Our appliances are the best and latest, and warranted. Catalogue and measurement blanks sent on request. Liberal discount to pbysicians.

We have the largest Factory of this kind in America.

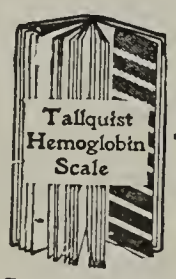
ARMS AND LEGS

WITH RUBBER HANDS AND FEET

***The* Most Natural, Comfortable and Durable. Over 32,000 in use. New Patents and Important Improvements. U. S. Gov't M'f'r.**

Illustrated book and measuring sheet sent free. Established 53 years.

A. A. MARKS, 701 BROADWAY, NEW YORK CITY



Pat. June 26, 1902

A HELP TO A

Better Diagnosis

THE best authorities are agreed that tbe test of the blood for bemoglobin is of much importance in obtaining a correct diagnosis. You don't need an expensive hemoglobinometer. Cabot says "Tbe Tallquist Hemoglobin Scale makes hemoglobin estimation no more of an undertaking tban feeling tbe pulse." White absorbent paper to take tbe specimen, a scale of ten standard tints for comparison, in a little book that slips into the pocket. $1.50 postpaid. If your dealer hasn't it order direct. Special Circular.

EDWARD PENNOCK, *Sole American Agent*
36th & Woodland Avenue, . PHILADELPHIA

Guide to Current Medical Literature

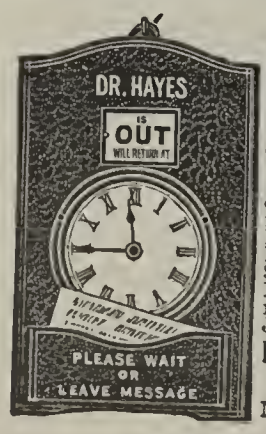
(Reprint from the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.)

This guide offers in convenient form a ready reference to the current medical literature of the world. With this guide one can readily ascertain what articles have been published on any particular medical subject. where such articles may be found, what articles any physician has published and in what medical periodical. The book is issued every July and January and each number covers the literature published in the previous six months. Paper cover. Each issue about 150 pages. **Price, 50 cents.**

An Introductory Offer: Clip out this advertisement, send it with 25 cents and we will mail you the current edition so you may examine it for yourself. If you authorize us, we will place your name on our mailing list and send you a copy every six months for 75 cents a year. Vol. XLVI—January to June 06.

American Medical Association Press
103 Dearborn Ave., Chicago, Ill.

PHYSICIANS' IDEAL OFFICE INDICATOR



What you have long wanted, but could not find. Handsomely designed, witb substantial leather binding and gold embossed. Hangs on wall or door or stands on office table or desk. Sliding panel indicates wbether "in" or "out;" movable hands for adjusting to return hour; pocket at bottom for cards or messages. Price, with name embossed in gold, No.1, Black Buffing Leather, $1.50; No. 2, Handsome Seal Grain, $1.75; No. 3, Genuine Turkey Morocco, $2.00. Prepaid on receipt of price. Mention JOURNAL.

Physicians' Supply House
1116 28th Street
MILWAUKEE . . WIS.

INK USED ON THIS PUBLICATION IS FURNISHED BY

TELEPHONE 3371 MAIN

Canton Printing Ink Company

33-35 W. WASHINGTON ST
CHICAGO, ILL.

VIBRATORS

ALL KINDS

At prices ranging from

$10 to $100

Write for descriptive literature

HUSTON BROTHERS CO.,
35 Randolph St., Chicago

Do You Want to Buy a Practice?

If so, the following queries will be of assistance in writing an advertisement.

(1) What states do you prefer?
(2) Size of town preferred?
(3) Will you buy office equipment?
(4) Will you buy real estate?
(5) City or country practice?
(6) Would you prefer temporary partnership?
(7) How extensive an introduction do you desire?
(8) What nationality of people would suit you best?
(9) Can you take possession at once.
(10) Are you experienced?
(11) Have you surgical ability?
(12) Can you pay cash?

PHYSICIANS DESIRING

LOCATIONS
ASSISTANTSHIPS
PARTNERSHIPS

PURCHASE OR SELL PRACTICES REAL ESTATE

AUTOMOBILES, BOOKS, CARRIAGES, ELECTRIC OR SURGICAL INSTRUMENTS, NEBULIZERS, STATIC MACHINES, TABLES, CHAIRS, ETC., will find it an advantage to place their announcements in these columns.

Charges are $1.50 for fifty words or less; additional words 3o each. A key number for transmission of roplies through this office costs 25o extra—for postage.

When answers are transmitted through this office, it is understood that no information other than that in the advertisement can be supplied by THE JOURNAL.

RESULTS are better when an advertisement receives several insertions, and to those who will remit $6.00 ($6.25 if answers are to be forwarded) for four insertions of a 50-word advertisement, we will give FREE OF CHARGE two more, if the first four do not accomplish the desired results. Notice for free insertions must be received within two weeks of date of last insertion.

Have You a Practice for Sale?

If so, the following queries will be of assistance in writing an advertisement.

(1) What is your practice worth per annum?
(2) Is your practice well established?
(3) In what state are you located? Nearest large city?
(4) Size of your city or town?
(5) Transportation facilities?
(6) Surrounding country? Describe.
(7) Roads? Churches? Schools?
(8) Nationality of people?
(9) Real estate? Describe.
(10) Office equipment—Medical—Surgical? Describe.
(11) Reason for selling?
(12) Price and terms of sale?

Remittance must accompany order. Have your return notice on envelope. To insure insertion in current issue, copy must be received by Monday noon.

We exclude from our columns all known questionable ads, and appreciate notification from our readers relative to any misrepresentation.

JOURNAL AMERICAN MEDICAL ASSOCIATION, 103 Dearborn Avenue, CHICAGO

POSITIONS WANTED.

WANTED — PHYSICIAN OF 10 YEARS' active general medical and surgical, village and country practice, member of county and state medical societies, would take position as assistant to physician doing large general city practice in New York, Massachusetts or Connecticut, or would take full charge of city practice. Address 3987, this office. B

WANTED—BY MARRIED PHYSICIAN, A.B., M.D., a position on staff of sanitarium, one suited to meet the modern needs of a select and wealthy clientage; sixteen years' practice; several years a leading member of medical staff of large sanitarium for nervous diseases, where he had personal clientage of over $100,000 a year; no bad habits; excellent references; strong personality; thorough efficiency. Address 4015, this office. B

WANTED—SALARIED POSITION, SANITARIUM preferred, would consider partnership or contract position; married; Christian; graduate of New York University Medical College, 1891; ten years' valuable hospital and surgical experience abroad; 3½ years on medical staff of the Clifton Springs, Sanitarium; for 2½ years have had charge of the heart cases and the Nauheim baths; references the very best. Address Box 545, the Sanitarium, Clifton Springs, N. Y. B

WANTED—A PHYSICIAN OF 15 YEARS' experience in sanitarium management and treatment of nervous and mental diseases, narcotics, chronic diseases generally; thoroughly conversant with modern esthetic surgery, hydrotherapy; member of American Electro-Therapeutic Association and French Society of Electro-Therapie, with unquestionable credentials; has exhausted his money in unprofitable investments and travel, wishes the position of medical director or superintendent of sanitarium or asylum, or to associate with some one having large office clientele; the Pacific Slope or Mexico preferred. Address Dr. W. Seth W., 416 W. 23d St., New York City. B

LOCATIONS WANTED.

WANTED — BY A GRADUATE OF Northwestern, Chicago, 1902, a practice in Illinois town of 3,000 to 5,000 population; city water and city lights desired; will buy real estate and office fixtures; am married; wish to locate at once. Address 3980, this office. C

WANTED—LOCATION IN CALIFORNIA; will purchase partnership temporary or permanent or entire practice and office fixtures of well-established practitioner with well-paying city or large town practice; do not want real estate; am a regular; aged 26, single, good habits; best of references; What have you? Address 4014, this office. C

WANTED — LOCATION IN NEW YORK State, will purchase outfit or real estate or accept partnership if practice is well established and ethical; have had 15 years' general and hospital experience; give full particulars in first letter and photo, if real estate is offered; this appears once only. Address 4017, this office. C

Display Advertisements

Advertisements under this heading, one inch one time, $4.50; four times, $14. Write for special rates on six months' or yearly orders, and larger space.

ARMY AND NAVY QUIZ 24th Year of This Work

OLDEST QUIZ CLASS IN THE U. S.

Physicians prepared for Army, Navy, Public Health and Marine-Hospital Service; Hospital examinations; State Medical Examining Boards.

MANY VACANCIES IN ARMY AND NAVY NOW

Course of instruction may be begun at any time. Address, naming this journal.

DR. W. BENSEL, 35 W. 87th St., New York City

Examination of the Illinois State Board of Health

The Illinois State Board of Health will hold an examination for physicians, midwives and other practitioners, at the

Great Northern Hotel, Chicago, Jan. 16, 17, 18, 1907, beginning at 9 o'clock a.m., Jan. 16th.

The applicant for examination as a physician, must present a diploma from a medical college of good standing with the Board. No person will be admitted to this examination unless he presents a card of admission, which will be issued to all persons making proper application to the Secretary at Springfield, Ill., on the blank forms prescribed, on or before January 5th. No applications for this examination will be received after January 5th.

Physicians graduated in 1907, will be required to present documentary evidence of preliminary education.

STATE BOARDS AND UNITED STATES MEDICAL SERVICES QUIZ

Physicians prepared for U. S. Army, Navy and Marine Hospital Service; Hospitals and State Medical Examining Boards. For further information, address

DR. WM. A. KIMMET,
465 Fullerton Avenue, Chicago Ill.

ARMY, NAVY, AND MARINE HOSPITAL QUIZ

Founded by DR. FRANCIS S. NASH, now under the management of DR. JULIAN M. CABELL, Capt. and Asst. Surgeon U. S. Army, retired, assisted by the following members of the medical staff of the George Washington University: Chas. S. White, M.D., Asst. Prof. Physiology; E. G. Seibert, Ph.G., M.D., Asst. Prof. Chemistry; D. W. Prentiss, M.D., Asst. Prof. Histology; J. L. Riggles, M.D., Instructor in Anatomy. A thorough course is given in all branches necessary for entrance into the public service. For circular giving full information address E. G. SEIBERT, M.D., Sec'y. 916. 14th St., N. W., Washington, D. C.

MANHATTAN EYE, EAR & THROAT HOSPITAL

210 E. 64th St., bet. 2d and 3d Aves., NEW YORK CITY

Courses of instruction are given to limited classes in Diseases of the Eye, Ear, Throat and Nose. FEES: 3 months, $60.00; 2 months, $45.00; 1 month, $30.00. Operative courses at moderate cost. For further information, address

SECRETARY OF SCHOOL COMMITTEE

WANTED — AN ESTABLISHED WELL-paying practice, city of not less than 10,000, located either in Pennsylvania, Michigan, New York or New Jersey; will buy equipment; must be strictly ethical; thorough introduction required or will form temporary partnership with object of purchase; have had 6 years' general practice and an extensive hospital experience besides. Address 3994, this office. C

PARTNERSHIPS WANTED.

WANTED — PARTNERSHIP, PERMANent or temporary, with view of buying all later; with good doctor having lucrative practice; have had 17 years' experience; well qualified; good habits; married; graduate of two colleges; give full particulars in first letter, amount of business, with terms and price; will buy practice; prefer Missouri, Indiana, Ohio. Address 4020, this office. E

MISCELLANEOUS—WANTED.

WANTED — LITERARY ASSISTANT — to aid in the preparation of large medical work; must have collegiate English education, read German and French easily, and be well posted in all branches of medicine; entire time will be required for several years. Address 3998, this office. K

PHYSICIANS—A CORPORATION WILL provide an independent downtown Chicago office and $100 per month to properly qualified physician with $1,000; investment guaranteed; excellent opportunity given to develop independent practice; state age and qualifications. Address 406 Security Bldg., Chicago. K

WANTED — COMPETENT, CULTURED middle-aged lady desires management of sanitarium, hospital, physician's home-office and household, or any other responsible position, where efficiency, experience and faithful application to duty will be appreciated; highest testimonials and physicians' references. Address 3995, this office. K

APPARATUS, ETC., FOR SALE.

FOR SALE — EUREKA NEBULIZER, price when new $75, in good condition, practically as good as new; mounted on square top plate-glass cover, quarter-sawed oak table, air receiver of seamless steel, tested 500 pounds; table has brass trimmings and glass ball feet, with double pump; price $48. Address J. W. Neal, M.D., Scotland, Ga. N

FOR SALE—DRY HOT AIR CABINETS (gas), 1 for arm, 1 for knees, 2 600 degree thermometers, massage table, invalid chair, all for $30; 1 body cabinet and operating table combined, $35; lot of new surgical instruments, artery forceps, curettes, dilators, pocket cases, etc., one-third regular prices. Address M. Norton, 1127 Sheffield Ave., Chicago. N

GENTLEMEN—I SOLD MY PRACTICE within five days after first and only appearance of my ad. in your Journal. Yours very truly, (name on request), M.D.

(*Continued on next page.*)

DISTRICT VISITING NURSING.

A six months, post-graduate course in District Visiting Nursing and Obstetrical Nursing is offered by the Cambridge School of Nursing. Lectures, classes, and demonstrations in connection with the practical work. Number limited. No fees or expenses. For particulars address the Principal, J. AUGUSTA BRIGGS, 1000 Mass. Ave., Cambridge. Mass.

THE CARTWRIGHT PRIZE

of the Association of the Alumni of the College of Physicians and Surgeons, Medical Department of Columbia University, New York.

This biennial prize of **Five Hundred Dollars**, open for universal competition, will be awarded at Commencement, 1907.

If no one of the competing essays is deemed sufficiently meritorious, the prize is not awarded.

An essay, in order to be held worthy of the prize, must contain the original investigations made by the writer.

This prize is not awarded to any essay which is the work of more than one author, or which is at the same time submitted for another prize.

Each competitor is required to send with his essay a statement that these requirements have been complied with.

Essays in competition for this prize must be sent to the undersigned **on or before April 1, 1907.**

Competing essays must be marked with a device or motto, and accompanied by a sealed envelope similarly marked, containing the name and address of the author.

The payment of the prize money to the successful essayist will be made on his filing with the Treasurer of this Association a printed copy of the essay.

H. E. HALE, M.D.,
Secretary of the Association of the Alumni of the College of Physicians and Surgeons.
752 West End Ave., New York City.

The
Milwaukee County Hospital Training School For Nurses

Incorporated under Laws of the State of Wisconsin.

Offers a superior course of training in nursing to bright ambitious women between the ages of 20 and 35 years, who desire to enter the profession of nursing. **Monthly cash allowance.**

Requirements for admission: Good English education and good moral character. Application papers and further information furnished on request. Address all communications to the

SECRETARY,
Milwaukee County Hospital Training School for Nurses, Wauwatosa, Wis.

Results Satisfactory

Through your advertising columns I have been enabled to make two important transactions involving a good deal of money, and I am sure that the parties to these transactions are also well pleased. ¶ The Doctor is constantly wanting something that some other physician desires to dispose of. Hence in my opinion physicians will find it greatly to their advantage to avail themselves of your want columns. I would suggest also that it is worth while to the reader of the Journal to glance over the want columns every week. ¶ I thank you for your courteous and liberal methods of advertising physicians' wants.

Sincerely yours,
Name On Application. ——Mich.

LOCATIONS FOR SALE.

FOR SALE — KANSAS — A PRACTICE established 13 years; town of 300; fine surrounding country; no opposition; a business of $2,500 yearly; will turn over same to purchaser of my house and office; price $1,000, well worth $1,200; will take part payment. Address T. G. Burris, Allen, Kans. O

FOR SALE — INDIANA—$3,000 BUYS $2,800 cash practice; $500 worth drugs, office furniture, etc., 6-room house, 3-room office, barn; in good town of 750 without other physician; rare opportunity for young man; will introduce; if interested and have the means, at once address 4012, this office. O

FOR SALE — WISCONSIN — $2,000 TO $3,000 practice, established 23 years, to purchaser of my 10-room brick house, furnace heated, barn, four stalls and room for carriages, four lots, well, cistern, cement walks; good roads, high school and churches, $4,500, worth $5,000; good reasons given for selling. Address 3977, this office. O

FOR SALE—NEBRASKA—$3,500 PRACtice, biggest territory in southeast part; electric lighted town; population 750; one other physician; purchaser must buy my fine home, 10-room house, terraced lawn, cave, cellar, cistern, barns, orchard, etc.; cost $4,000 on house alone; wife's health poor only reason; price, $2,500. Address 3796, this office. O

FOR SALE — MISSOURI—ST. LOUIS— Doctor, if you want to change location or wish future, I have the best location in city; will sell outfit of 3 rooms, static machine, fine operating room, etc., at bargain; practice free; some cash down, rest monthly payments; 10-year lease if you wish; reason, sickness; must leave. Address 3993, this office. O

FOR SALE — MISSOURI—FOR $1,500 my residence costing $2,000; practice of $2,000 to $2,800 free; best country location in state; town 400, good school and churches; fine farming country; opposition light; established 19 years; best reason for selling; on M. K. & T. railroad; growing town. Address Geo. A., Johnson, Holliday, Mo. O

FOR SALE — MICHIGAN—$2,500 PRACtice in growing town of 1,000 inhabitants; best farming country in southern part; $1,250 buys practice, new office building, (16x38), centrally located, living rooms upstairs; office furniture, carpets and drugs; if desired will spend two months introducing successor; $500 cash; balance on time. Address 3974, this office. O

FOR SALE—IOWA—$3,000, 10 YEARS' established practice in richest agricultural section of eastern part; collections 98 per cent.; residence, barn, 6 lots, office, furniture, drugs, etc.; $4,000, $1,500 cash, balance to suit; excellent opportunity; can make money from the start; will introduce; reason for selling, going to Europe. Address 3956 this office. O

FOR SALE — COLORADO—MY OFFICE and residence combined; the upper floor of the latter of which is conveniently arranged, for private hospital use to the extent of accommodating some six patients; office adjoins residence on side; property one and half blocks from business center of a good town of 4,000; surrounding country in radius of 8 miles contains 5,000 additional population; property designed and built by the owner, and is especially adapted to the convenience of the general practitioner who does some surgery; this property, with my $6,000 practice, for $5,250, half cash, balance time to suit; collections for past year amounted to $5,240; reason for selling, wish to move to coast for health of family and parents; a bargain. Address 4003, this office. O

(*Continued on next page.*)

ANIMAL MICROLOGY

PRACTICAL EXERCISES IN MICROSCOPICAL METHODS

By MICHAEL F. GUYER

Professor of Zoology in the University of Cincinnati

An indispensable book for the physician or medical student who wishes to learn how to make his own microscopical preparations from normal or pathological tissues, or from bacterial cultures. He is told just what to do with his material, step by step, and why he does it; at what stages he is likely to encounter difficulties and how to avoid them; if his preparation is defective, what the probable cause is, and the remedy. The book is a thorough introduction to the technique of microscopic anatomy and embryology. In an appendix are tabulated nearly three hundred tissues and organs with directions for properly preparing them for microscopical study. Sufficient account of the theoretical side of microscopy is given to enable the student to get satisfactory results from his microscope.

250 pp., 71 cuts, 8vo., cloth, net $1.75, postpaid $1.88
Dept. 47

THE UNIVERSITY OF CHICAGO PRESS
CHICAGO - - - NEW YORK

HUMAN EYE MANIKIN

88 parts of the eye in the gorgeous colors of nature, illustrated and described in simple language. Only $1.00 prepaid to any address.

THE OPTICAL JOURNAL, a weekly paper, $2 a year, covers optics and eyesight examination most fully. 600 physicians have subscribed for it during the past year, to keep abreast with practical refraction, including ophthalmoscopy, retinoscopy, trial case and all known methods. Published by
FREDERICK BOGER PUB. CO., 1 Maiden Lane, N.Y.
Send for free sample copy. Also publishers of books on optometry. Send for list

BOOKS AND BINDINGS

We have in stock many thousand volumes of medical periodicals and second-hand medical books which we will dispose of at considerably lower prices than other dealers.

Complete libraries and small parcels of medical periodicals and books purchased for cash.

BOOK BINDING

Our prices are as follows for binding of the
Jour. Am. Med. Assn., in buckram, per vol. $1.00
Medical Record, per vol. - - - - - - 0.75
Other periodicals bound at proportionate rates.
'Phone connection.....Established 1887.

B. Login & Son,
1328 Third Ave., : New York City.

Section on Practice of Medicine 1905

¶ This volume contains the chapter written by Dr. Frank Billings, entitled "THE SECRET NOSTRUM EVIL." ¶ The author gives a general review of the proprietary medicine question and the methods employed by the manufacturer in the exploitation of his products. ¶ 307 pp. 3 tables. 3 charts. 50 illustrations. Price, $1.00. Postage, 15c.

AMERICAN MEDICAL ASSOCIATION PRESS
103 DEARBORN AVE., CHICAGO.

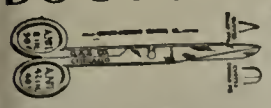
Commoner Diseases of the Eye (SECOND EDITION) How to Detect and How to Treat Them.

DR. CASEY WOOD and DR. THOS. WOODRUFF, Chicago.

Popular text-book for practitioners and undergraduates. 500 pages, 250 illustrations. **Cloth, $1.75, Postpaid.**

For sale by all medical booksellers and **THE OPHTHALMIC RECORD, 72 Madison St., Chicago**

DOCTOR — you can save 10% off any firm's price by buying all your supplies of us.



Special price on Scissors, Cotton and Gauze. A $10.00 Vibrator superior to any. Send us a list of your requirements and we will please you in the matter of price.

German-American Surgical Co.

Wholesale dealers in physicians' supplies

Phone. N. 666. 249 N. Franklin St., Chicago

I. X. L.

CENTRIFUGES

International Instrument Co.

Cambridge, Mass.

I.X.L. Air Compressor

for Doctors' or Dentists' use. Quick producers of Compressed Air, full pressure in 5 minutes. Muddy or Gritty Water does not affect Compressor. **Will reduce water rent 60 per cent.** If not satisfactory will refund money. Write for catalogue and testimonials.

REFERENCES — Drs. P. S. Donnellan, 1028 Spruce St., H. C Register, 1907 Chestnut St., Philadelphia, Pa.; B. F. Neal, Ellenville, N. Y. J. C. Ferguson, Optical and Surgical Supplies, 8 and 10 S. 15th St.; W. V. Willis, 134 S. 11th St., Philadelphia, Pa.

I. X. L. PUMP CO.,
1015 Christian St., Phila.

CAMPBELL X-RAY

AND HIGH FREQUENCY COIL

Remarkable X-Ray results. Price the lowest. Quality the highest. Simple, efficient and always ready. D'Arsonval and Cautery attachment. No interrupter to cause trouble. Guaranteed fully for two years. Easy terms, write us now

CAMPBELL ELECTRIC CO., LYNN, MASS

SLIGHTLY SOILED

MEDICAL BOOKS

AT

REDUCED PRICES

Section on Surgery and Anatomy, 1904

516 pp. 90 illustrations, 2 charts. Cloth. Price, 50c. Postage, 10c.

Contains 35 important chapters. Three especially important articles are entitled

"The Matas Treatment of Aneurysm"
"Diagnosis of Appendicitis"
"Factors in the Mortality of Appendicitis"

Section on Pathology and Physiology, 1904

448 pp. 103 illustrations. 8 tables. Cloth. Price, 50c. Postage, 20c.

The article by DR. A. MANSFIELD HOLMES, entitled

"The Nature and Significance of Leucocytosis"

gives a practical explanation of causes of the variations of the leucocyte count. Many clinical cases with blood findings tabulated systematically are reviewed by the author.

AMERICAN MEDICAL ASSOCIATION PRESS

103 Dearborn Avenue, : : Chicago

FOR SALE—OKLAHOMA—$2,500 PRACtive in live town, population 1,000; good schools, high school; four churches; best farming country in state; collections 95 per cent.; residence, office fixtures, driving outfit, less than cost, practice thrown in, and will introduce purchaser; going to Europe and larger city; snap; write quick; this adv. will appear only once. Address 4019, this office. O

FOR SALE — WISCONSIN — ESTABlished practice; income $5,000 to $6,000 annually; population of town, 700; center rich farming community; entire equipment consisting of large two-story frame building; office fixtures; drug stock valued at $1,000; 4 good driving horses, etc.; excellent opening for German-speaking physician, able to do surgery; nearest large city 20 miles distant; Catholic and Lutheran churches; new public school; two parochial schools; majority of people are German descent; price $5,500; reason for selling is sickness. Address 3968, this office. O

PRACTICES FOR SALE.

FOR SALE — ILLINOIS — CHICAGO— Doctor's office, contents and good-will, located in the heart of city; I established this snap 4 years ago, and last year did $4,000; will sell for actual cost of office; cash only. Address 4022, this office. P

FOR SALE — ILLINOIS—A PRACTICE of $1,500 a year, established for 11 years; town of 250; fine surrounding country; no opposition; will turn over same to purchaser of drugs and office furniture; price $400; must sell at once. Address G. E. Loesch, Lake City, Ill. P

FOR SALE — MICHIGAN — $2,500 cash practice; price for team, buggy, cutter, etc,. $250, part cash; small town, good country; must be taken by January 10; good opportunity for single man; don't write unless you mean business. Address Box 3, Fountain, Mich. P

FOR SALE — MINNESOTA—A WELLestablished practice in village near St. Paul, population 1,200, mostly Swedish-American, collections 95 per cent.; office fixtures, including *x*-ray and practice, $500; practice could easily be increased. Address 3976, this office. P

FOR SALE—ILLINOIS—$1,600 practice in town of 1,200; fine surrounding country; collections good; practice easily increased; finely equipped office; good stock drugs, carriage and harness; will sell at sacrifice; worth $500, will take $350 cash; must sell at once; expect to practice in hospital. Address 4021, this office. P

FOR SALE—NEBRASKA—NORTHEASTern part; for $300 will sell office fixtures and introduce buyer to good paying practice; good, live town, 2,000 population; good schools, nine churches, county seat, splendid agricultural country; must sell at once on account of poor health. Address 4018, this office. P

FOR SALE—MICHIGAN—RARE OPPORtunity; established eye, ear, nose and throat practice in rapidly growing city of 25,000; best equipped office in city; large income for right man; health requires residence in west. Address Chas. M. Steele, M.D., 35 West Main St., Battle Creek, Mich. P

FOR SALE — ILLINOIS — CENTRAL part, a $3,500 annual practice in an exceptionally good location in town of 3,000 people; will sell for invoice price of equipment and fixtures; collections 90 per cent.; competition right; am leaving on account of health; advertisement appears but once; this is a bargain. Address 4013, this office. P

FOR SALE — SOUTH DAKOTA—WILL turn what I can of my $2,500 practice over to competent physician for small consideration; will sell my house, if wanted; this is a nice American town of about 800; 3 churches, high school, good roads, rich territory; am going to a larger city to specialize. If interested, address 4016, this office. P

We are not permitted to give addresses of advertisers. By placing the number on the envelope and sending it in care of this office, the communication will be forwarded.

ARIZONA, her remarkable climate and exceptional opportunities for the investor miner and prospector. Literature free upon request. Address to-day

J. S. ACKER & CO.,

Dealers in High-Class Investments, PRESCOTT, ARIZONA

LAWSON'S BOTTLING

OF

Guinness's Extra Foreign Stout

Brewed and bottled in Dublin.

INPORTED IN PINTS AND HALF PINTS.

A Superior Barley-Malt and Hop Tonic

LAWSON, WILSON & CO., Dublin, Ireland

U. S. Branch: 27 East 22d Street, New York

LABELS AND STATIONERY FOR PHYSICIANS

Gummed Labels, Printed and Engraved Stationery, History Sheets, Collection System.

CLARENCE M. JACOBUS

Send for Catalogues 612 Madison St., Chicago

DR. SMITHSON

THE FAMOUS "EVERBRITE" SIGN

consists of raised GOLD GLASS letters. Mounted on black background of same material. Gold coloring on inside and fired; therefore cannot fade or tarnish. Can easily be seen at night, as letters reflect the slightest light. Physician's special sign 6×14 to 6×24. Letters 2 inches high.

With oak frame $2.25
With oxidized copper frame 2.75
With oxidized copper frame and plate glass 3.50

We will be pleased to quote prices on other sizes and "Everbrite" house numbers.

CHICAGO GLASS NOVELTY CO. : : Marion, Ind.

PLUMBERS' SUPPLIES AT WHOLESALE

If you need anything in my line and wish to

SAVE

20 to 40 Per Cent

on every article, write for my free illustrated Catalog. Shipments promptly made from a very complete stock of guaranteed goods. Small orders are as carefully handled as large ones.

B. M. KAROL, 235 W. Harrison St., CHICAGO, ILL.

THE BEST LINE

BETWEEN

Chicago
Indianapolis
Cincinnati
and **Louisville**

IS THE

MONON ROUTE

Consult Your Local Ticket Agent

FOR SALE — COLORADO—PRACTICE and drug store in growing town in richest agricultural district in the state; stock new and complete; $2,000 for drug stock and office equipment; excellent opportunity for good man looking for location with health as partial object; fine climate. Address 3970, this office. P

FOR SALE — NEW JERSEY — WELL-established practice of $2,500 in growing resident town, 20 minutes from Philadelphia; steam and electric roads; moving to city and wish to leave competent man in my place; price very moderate; further details on application. Address 3969, this office. P

FOR SALE — OKLAHOMA—PRACTICE, $2,500 annually; collections very good; growing town of 1,200; richest part of state; two railroads; five churches; fine schools; price $300, if taken at once; want able man to succeed me; am leaving to take charge of hospital. Address Dr. Larson, Cushing, Okla. P

FOR SALE—SOUTH CAROLINA—PRACTice, $3,500 yearly; fast growing town of 2,500, best county in state; good railroad facilities, 3 churches, good schools, roads and fees; can do business from start; will sell first-class office equipment, stock of drugs, driving outfit; will introduce purchaser; reasons given. Address 3992, this office. P

FOR SALE — TEXAS—$750 BUYS A well-equipped office, with $5,000 practice, in live town, 5,000 population; well located in southwestern part; ideal climate for lung troubles; will give 30 to 60 days' introduction; will take a good man to fill place; don't answer unless you mean business; retiring from practice. Address 3988, this office. P

FOR SALE — ILLINOIS—SOUTH CENtral part, stock of drugs; driving outfit, including good horse; office furniture, instruments, and surgical dressings, etc.; good schools and churches; well established practice; town of 3000; one book and up-to-date stores; can give possession at once; this is good thing and worth investigating; price $1.200. Address 3991, this office. P

HOSPITALS FOR SALE OR RENT.

FOR SALE—ILLINOIS—CHICAGO, NEW 40-room building and grounds; south side; building heated with two furnaces; electric lights and gas throughout the building; water; drainage perfect; two bath rooms; 5 w.c.'s; 30 minutes on train; suitable for private hospital or sanitarium; for sale cheap. Address Dr. Alexander Proudfoot, 100 State St., Chicago, or 'phone 1162 Central. Hours 10 to 1. T

AUTOMOBILES AND CARRIAGES.

FOR SALE — AUTOMOBILE — NO. 3. Holsman runabout with top; purchased last August; in perfect condition; original cost $675; will sell for $525, if taken at once; reason for selling, have bought two-seated car of same make. Address H. W. Nye, Lovilia, Iowa. U

MISCELLANEOUS—SALE OR RENT.

FOR RENT — PENNSYLVANIA — ON account of death of Dr. Griffee, I will rent office, barn, etc.; practice established 32 years; splendid location for competent physician; office equipped with instruments, drugs, etc.; prefer young, active physician, who could board in house; rent reasonable. Mrs. Howard M. Griffee, Taylorville, Bucks County, Pa. W

FOR RENT—CHICAGO—LARGE LIGHT modern offices, with all modern conveniences, elevator and janitor service, electric light, hot and cold water, mosaic and marble hallways, modern office entrance, in modern office building at the N. E. corner Milwaukee and Ashland Avenues. For particulars call or address Julius Moll & Son, 975 Milwaukee Ave., Chicago, Ill. W

LAWS — IF YOU ARE INTENDING TO change your location to another state you will want the booklet entitled "Laws Regulating the Practice of Medicine in United States and Elsewhere." All medical laws, reciprocity, etc., are given. Sent prepaid for 30c. Revised to March 1, 1906. Am. Med. Assn. Press: 103 Dearborn, Ave., Chicago.

From the Animal's Back to Yours

Direct from Furrier.

Grizzly Bear

FUR COATS $16.50

Worth $20, good quality fur, rich brown or black color, extra quality lining. Send us orders for four of these **FUR COATS** at $16.50 each and we will send you one your size **FREE OF CHARGE**, and if you wish to buy one to show as a sample, send us $14.50. State height, weight and chest measure. All money back if not perfectly satisfactory. Write for special price list, all kinds of Furs for men and women.

DETROIT FUR CO., 253 Woodward Ave., DETROIT, MICH.

Near-Brussels Art-Rugs, $3.25

SANITARY—DURABLE—CLEANLY

MADE ESPECIALLY FOR PHYSICIANS' OFFICES

Sizes and Prices	
9 x 6 ft.,	$3.25
9 x 7½ ft.,	3.75
9 x 9 ft.,	4.25
9 x 10½ ft.,	4.75
9 x 12 ft.,	5.25
9 x 15 ft.,	6.25

Beautiful and attractive patterns, woven through and through, which means both sides alike. All colors, and more serviceable than more costly carpets.

Sent by express prepaid.
Also Importers of Portieres and Lace Curtains. Catalogue showing goods in actual colors sent free.

ORIENTAL IMPORTING COMPANY

687-N Bourse Building - Philadelphia

Prof. Karl Hofman

ARTIFICIAL ANATOMICAL WORK

(FORTY YEARS' PRACTICE)

SPECIALTY—Artificial Noses, Ears and Masks | 343 N. Hermitage Ave. CHICAGO, ILL.

CHARLES DANIELS

ATTORNEY-AT-LAW

943-948 Marquette Bldg., - CHICAGO, ILL.

Collection Department Established Over 10 Years. Physicians and Surgeons a Specialty : : :

REFER TO

SHARP & SMITH — FULLER & FULLER CO.
W. R. GRADY CO. — FRASER TABLET CO.
TRUAX, GREENE & CO. — P. H. MALLEN CO.
SARGENT'S DRUG STORE

SEND YOUR COLLECTIONS

BOOK BINDING

For $1.25 per volume we will bind THE JOURNAL in half leather, cloth joints, leather corners, cloth sides. This price applies also to other journals of a similar size. OUR STRONG POINT is magazine binding. Send your books or send a postal to

THE BOOK SHOP BINDERY
Tel. Main 4421. 171 Madison St., Chicago

PATENTS

Caveats, Trade Marks, Design Patents, Copyrights, etc.

Correspondence Solicited. JOHN A. SAUL, Fendall Bldg., Washington, D. C

COMMERCIAL ANNOUNCEMENTS

Advertisements under this heading, 50 words or less, $2.50 per insertion; additional words 5c. each. Write for special rates on three, six months' or yearly orders. (No display type except first two words.) Remittance must accompany order.

DEAD-BEAT ACCOUNTS BOUGHT—Doctor, you have many worthless notes and accounts; some outlawed; we buy any kind with face value $2.00 up, except those against poor widows and old soldiers; send us your list and put a price on them. Wilson's Detective Association; Earl Park, Ind., Drawer No. 777. Z

WANTED — REPRESENTATIVES WHO can furnish first-class references to call on the medical profession and present a proposition which will receive favorable consideration and prove profitable to agents. No sample cases, etc., required, and work is suitable to physicians and medical students. For particulars address 3985, this office. Z

FOR SALE — BARGAINS IN SECOND-hand physicians' chairs, table and cabinets. We have chairs and tables of all the leading makes, some practically new, taken in exchange on our automatic table. Prices from $10 up. Sold on easy payments. Ask for list 2-H. Address W. D. Allison Co., 915 N. Alabama St., Indianapolis, Ind. Z

WANTED — A PHYSICIAN, YOUNG OR middle-aged, to call on physicians with a high-class medical proposition; pleasant, permanent and profitable work; we are in need of a representative who resides in Illinois, Indiana, Michigan or adjacent states; full particulars sent on request. Address 3871, this office. Z

A VALUABLE MONTHLY—THE CONtents of the November and December issues as outlined on advertising page 6 in this issue serve to illustrate the important character of the articles which appear each month in the Medical Notes and Queries. The "Medical Notes" as especially interesting, as they are based upon transactions in the current medical world. Sample copies sent free on request. Mention JOURNAL A. M. A. when writing. Medical Notes and Queries Co., 41 N. Queen St., Lancaster, Pa. Z

WANTED—THE FOLLOWING NUMBERS of THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION:

Vol. i, Nos. 11, 16; Vol. iii, No. 4; Vol. iv, No. 3; Vol. xi, No. 21; Vol. xv, Nos. 2, 4, 5, 9, 23; Vol. xvii, Nos. 11, 18, 22; Vol. xviii, Nos. 1, 2, 3, 26; Vol. xix, No. 18; Vol. xx, No. 26; Vol. xxi, Nos. 12, 16; Vol. xxiv, Nos. 5, 10, 16; Vol. xxv, Nos. 8, 19, 20, 22, 24; Vol. xxvi, Nos. 3, 4, 6, 8, 11; Vol. xxviii, Nos. 18, 26; Vol. xxix, Nos. 17, 19, 25; Vol. xxx, Nos. 1, 2, 3, 5, 7; Vol. xxxii, Nos. 3, 17, 22, 24; Vol. xxxiii, Nos. 2, 7, 11; Vol. xxxiv, No. 1; Vol. xxxvii, No. 7; Vol. xi, Nos. 4, 10, 12; Vol. xli, Nos. 20, 23; Vol. xiii, Nos. 1, 5; Vol. xliv, Nos. 1, 4, 19, 25; Vol. xlv, Nos. 3, 6, 14; Vol. xlvi, Nos. 2, 14; Vol. xlvii, Nos. 1, 2.

TEN CENTS per copy will be paid for the return of any or all of the above numbers. Sender must prepay return charges. JOURNAL AMER. MED. ASSOC., 103 Dearborn Ave., Chicago. By marking package "Returned Periodical" and prepaying express charges a reduced rate may be secured.

QUICK EXCHANGE

We will Sell or Buy your Practice, Property, Drug Stock, Static Machines and Apparatus. Positions, Partnerships, Locations secured. Write for our plan and terms.

CENTRAL MEDICAL EXCHANGE
DEXTER, IOWA

Practices - Locations - Positions

WE ARE MEDICAL BROKERS

and offer exceptional opportunities to the profession. If you wish to dispose of your practice, secure an assistantship, location, salaried position, or purchase a practice, write for our plan

National Medical Exchange
P. O. Box 2284 WASHINGTON, D. C

Laws Regulating the Practice of Medicine in the United States and Elsewhere

GENERAL INFORMATION.—This Booklet contains all condensed information that is essential to enable the applicant to properly qualify himself for state registration. Under the heading of each state a comprehensive and concise statement is given which defines the Composition of the Board, with address of the Secretary, Place of Meeting, Necessary Fees, Application for Licensure, College Standard required, Exemption from Examination, Definition of Act, etc. The medical laws of almost every country in the world are outlined.

CONCISE.—A tabulated statement of the most essential features of the various state laws is included, from which may be obtained, at a glance, all information as to fees, registration upon diploma or examination, preliminary requirements, required years of medical study, etc.

PRACTICAL.—This book likewise enumerates the subjects in which the applicant for registration must be examined. In many instances the exact number of questions asked in each subject is stated as well as the percentage required to pass the examination. A few state boards have made provision for the issuance of temporary certificates. At the present time twenty-two states have formulated arrangements whereby the practitioner may secure registration by reciprocity. Interstate reciprocity, insofar as it has become established, is explained in detail. In short, every question that the state board applicant might wish to ask has been explained in this abstract.

The price of this booklet is 30 cents. Stamps acceptable. Your order will receive prompt attention.

American Medical Association Press

103 Dearborn Ave., Chicago

WANTED

Every member of the AMERICAN MEDICAL ASSOCIATION to wear one of the Official Buttons. Price $1.00 This badge is the insignia of the Association. Is becoming more popular every year. Each member will find it an advantage to wear one.

JOURNAL A.M.A., 103 Dearborn Av., Chicago

AMERICA'S MOST POPULAR RAILWAY

CHICAGO AND ALTON

PERFECT PASSENGER SERVICE

BETWEEN

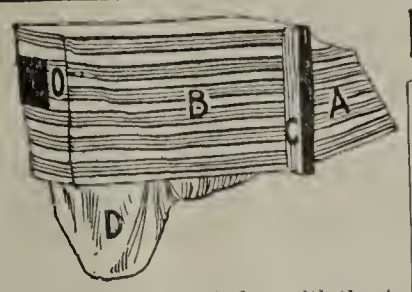
CHICAGO AND KANSAS CITY,
CHICAGO AND ST. LOUIS,
CHICAGO AND PEORIA,
ST. LOUIS AND KANSAS CITY.

THROUGH PULLMAN SERVICE BETWEEN CHICAGO AND

HOT SPRINGS, Ark., DENVER, Colo.,
TEXAS, FLORIDA, UTAH,
CALIFORNIA AND OREGON.

IF YOU ARE CONTEMPLATING A TRIP, ANY PORTION OF WHICH CAN BE MADE OVER THE CHICAGO & ALTON, IT WILL PAY YOU TO WRITE TO THE UNDERSIGNED FOR RATES, MAPS, TIME-TABLES, ETC.

GEO. J. CHARLTON,
GENERAL PASSENGER AGENT,
CHICAGO, ILL.



Tent out of the window, with the A, outside awning, and the B, inside tent, down. One of the adjustable side extensions, C, that fit into the window-stops can be seen about the center. D, detachable skirt with hole at bottom that fits around the neck. O, celluloid window.

FRESH AIR WHILE YOU SLEEP

The Ideal Home Treatment of Tuberculosis is given with the WALSH WINDOW TENT.

Persons of the most delicate constitutions can sleep comfortably in bed in a warm room and breathe the outside air with no exposure to the body. Can be put in and taken out of any size window. Send dimensions.

Price $10.00. Satisfaction guaranteed or money refunded. Send for literature.

Walsh Window Tent Co. Morris, Ill.

The Night Driver's Friend Driving Lamps

PATENTED DECEMBER 19, 1905; MAY 8, 1906; NOVEMBER 6, 1906.

FIG. 1

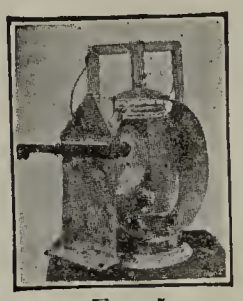


FIG. 5

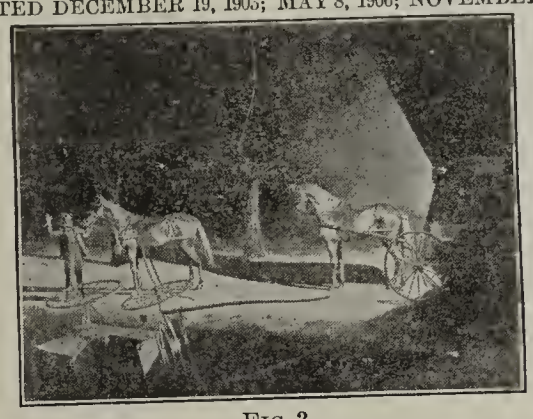


FIG. 2

(Copyrighted, 1906, by Roberts & Mathews, Ansonia, O.)

FIG. 3

FIG. 4

make night driving a pleasure. Fig. 1 shows a pair of our lamps on buggy. Fig. 2 illustrates light from one lamp. A pair of lamps will cut out the shadow of the horse entirely and double the light. Fig. 3 shows lamp A and its holder. The standard screws onto the top prop, and is received into the socket on lamp, and locked in position by the wire clamp as shown in Fig. 4. Fig. 5 shows lamp B, which clamps to the side brace of the top. Either of these lamps can be attached or detached in two seconds. They do not blind the driver, will not blow nor jar out, can be used with a storm front.

If not satisfactory, lamps may be returned within 30 days and we will refund your money.

Price, Express prepaid, { **Lamp A, $3.50; $7.00 per pair.** **Lamp B, $2.50; $5.00 per pair.**

Cash with order, or lamps may be sent C. O. D. Write for illustrated circular.

ROBERTS & MATHEWS, :: :: :: Ansonia, Ohio.

Collections in Chicago and Outside

Seventeen years' experience. Thousands of the best physicians in Chicago our patrons. 45 employes. Prompt remittances.

Our Original Entry and Perpetual Reminder System

for physicians does away with the old method of keeping books and daily visiting lists. The Reminder a wonderful convenience!

C. F. MEYER & CO.

Write us for full particulars

1415 Ashland Block, Chicago

INFECTION, IMMUNITY and SERUM THERAPY

By H. T. RICKETTS, M.D.

Instructor in Pathology, University of Chicago.

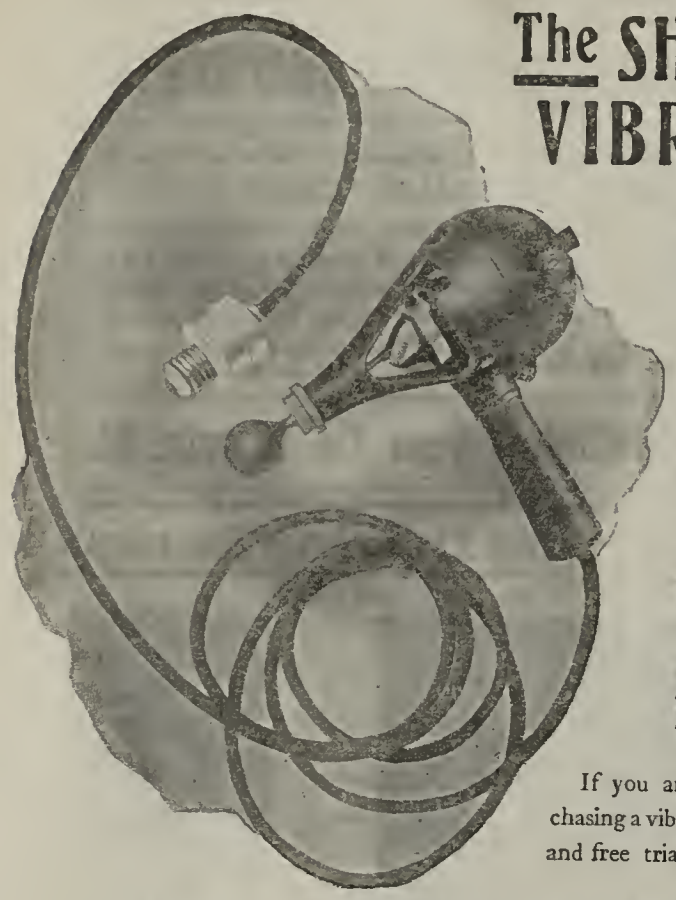
The author has endeavored to present the general principles of the subjects and the important theories and facts, in as simple a manner as possible. Their clinical importance is carefully noted in each instance. A complete index at the end of the book serves as a glossary of terms, the explanations of which may be found on the pages referred to.

I. **GENERAL**—Explaining parasitism, contagiousness, natural and acquired immunity, toxins and antitoxins, agglutination, phagocytosis, principles of serum therapy, etc.

II. **SPECIAL**—Discussing acquired immunity as chiefly antitoxic or antibacterial, acute and chronic infections in which lasting immunity is not established, diseases of doubtful or unknown etiology.

600 pp. Illustrated. Cloth. Price $2.00 (reduced from $2.50). Prepaid on receipt of price.

American Medical Association Press, 103 Dearborn Ave., CHICAGO



The SHELTON VIBRATOR

(adaptable to any Electric-light socket, storage battery or dry cells, 8 in series.)

More powerful, durable and convenient and a great deal less expensive than the large cumbersome pedestal vibrators.

BEWARE
of inferior and cheaper instruments which are similar in appearance to THE SHELTON.

If you are anticipating purchasing a vibrator send for catalog and free trial offer.

Shelton Vibratory Outfits

are recognized as standard the world over
Most complete sets of Vibratory Appliances on the market
Especially manufactured for physicians use

SHELTON ELECTRIC CO. 35-7 Randolph St. CHICAGO.

BRANCH OFFICES:

916 Colonial Bldg. BOSTON | 1214 Chemical Bldg. ST. LOUIS | 150 Nassau Street, NEW YORK

Truth and Poetry

CONCERNING

URIC ACID

An epitome of the present state of knowledge of the subject as presented in literature

BY

LEWELLYS F. BARKER, M. D.
Professor-elect of Medicine in the Johns Hopkins University, Baltimore; Physician-in-Chief to the Johns Hopkins Hospital.

CONTENTS

The Discovery of Uric Acid.
The Origin of Uric Acid from Nuclein.
Demonstration that Uric Acid Arises from the Nucleins and Xanthin Bases of Ingested Food.
Uric Acid Formation in Man.
Destruction of Uric Acid within the Body.
Localization of Uric Acid formation within the body.
Uric Acid in Disease.
Excretion of Uric Acid in Gout.
Other factors concerned therein.

Chicago
American Medical Association Press
103 Dearborn Avenue

93 pages, paper cover, 50c.; cloth, 75c., prepaid.

[ESTABLISHED 1865]

Peabody, Houghteling & Co.

1119 FIRST NATIONAL BANK BUILDING, CHICAGO

Dealers in High-Grade Investment Securities

COMPRISING

CHICAGO CITY MORTGAGES, CHICAGO REAL ESTATE BONDS, CORPORATION AND RAILROAD BONDS

Send for our recent circulars and other interesting investment literature

CHICAGO LABORATORY

Telephone Central 6239

126 STATE ST., CHICAGO

Clinical and Analytical Analyses made in a completely equipped Laboratory by competent men, with prompt service.

RALPH W. WEBSTER, M.D., Ph.D.
Director

MILTON WESTON, HALL, M.D.
Ass't Director

JAMES W. NYE
Manager

THIOCOL

Potassium Guaiacol-Sulphonate-Roche

A soluble form of guaiacol. Odorless; non-irritating; readily assimilated.

Successfully employed in Incipient Tuberculosis, Winter Coughs, Pneumonia and Typhoid Fever.

Both creosote and guaiacol are prone to impair the appetite and disturb digestion. Thiocol, on the contrary, stimulates appetite and does not derange digestion.

Thiocol is procurable in three forms:—Powder; 5-gr. Tablets; and Syr. Thiocol Roche.

Literature and sample on request.

THE HOFFMANN-LA ROCHE CHEMICAL WORKS

51-53 MAIDEN LANE, NEW YORK

The New Local Anesthetic

ALYPIN

Monohydrochloride of benzoyl—1.3—tetramethyldidmino—2—ethylisopropylic alcohol

Equal in efficiency to cocain in all its indications and much safer. Solutions unirritating and capable of sterilization. No mydriasis, paralysis of accommodation, or increase of intraocular tension when used in ophthalmic practice. Readily absorbed by mucous membranes, and causes rapid anesthesia in operative work on nose and throat. Well adapted for infiltration anesthesia and spinal analgesia and in general surgery.

Send for Samples and Literature to

CONTINENTAL COLOR AND CHEMICAL CO.

P. O. Box 1935 **NEW YORK** **128 Duane Street**

EXTRACT OF RED BONE MARROW

is assimilated so easily, that it is strongly in its favor as a nutrient and stimulant to the formative processes in cases where the blood is thin and the hemoglobin insufficient to carry oxygen enough to keep up the fires of life.

Among flesh makers and blood builders **Extract of Red Bone Marrow** stands at the top. Specify it in anemia, chlorosis, marasmus, malarial cachexia, tuberculosis and wherever there is a scarcity of red corpuscles.

Literature to physicians upon receipt of card.

ARMOUR AND COMPANY
CHICAGO

THE SHELTON VIBRATOR

(adaptable to any Electric-light socket, storage battery or dry cells, 8 in series.)

Shelton Vibrator Outfit No. 6

A certain Chicago competitor in their circular letter asks the question: How could seven different concerns profitably represent this Vibrator at the National Electro-Therapeutic Meeting recently held at Philadelphia? Answered in two words: enormous sales

Doctor, do you wish any better PROOF of its superiority?

BEWARE

of inferior and cheaper instruments which are similar in appearance to

THE SHELTON

More powerful, durable and convenient and a great deal less expensive than the large cumbersome pedestal vibrators.
If you are anticipating purchasing a vibrator send for catalog and FREE TRIAL OFFER.

Shelton Portable Vibratory Outfits

are recognized as standard the world over

Most complete sets of Vibratory Appliances on the market

Especially manufactured for physicians use

Branch Offices

916 Colonial Bldg., BOSTON

1214 Chemical Bldg., ST. LOUIS

150 Nassau Street, NEW YORK

SHELTON ELECTRIC CO. 35-37 Randolph St. CHICAGO, ILL.

UNIVERSITY OF ILLINOIS-URBANA
3 0112 046522444